DOT/FAA/AR-01/46

Office of Aviation Research
Washington, D.C. 20591

Full-Scale Testing and Analysis of Fuselage Structure Containing Multiple Cracks

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July 2002

Final Report

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Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
DOT/FAA/AR-01/46		

4. Title and Subtitle	5. Report Date
FULL-SCALE TESTING OF FUSELAGE STRUCTURE CONTAINING MULTIPLE CRACKS	July 2002
	6. Performing Organization Code

7. Author(s)	8. Performing Organization Report No.
John Bakuckas	

9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
Federal Aviation Administration William J. Hughes Technical Center Airport and Aircraft Safety Research and Development Division Materials and Structures Branch Atlantic City International Airport, NJ 08405	11. Contract or Grant No.

12. Sponsoring Agency Name and Address	13. Type of Report and Period Covered
U.S. Department of Transportation Federal Aviation Administration Office of Aviation Research Washington, DC 20591	Final Report
	14. Sponsoring Agency Code ANM-100

15. Supplementary Notes

16. Abstract

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Geometric nonlinear finite element analyses were conducted to support the tests. The strain distributions and fracture parameters governing crack formation and growth were determined. Comparisons with strain-gage data verified the finite element models. For fatigue crack growth predictions, the corresponding mixed mode stress-intensity factors were calculated using the Modified Crack Closure Integral (MCCI) method. Results include comparisons of strain distributions, fatigue crack growth characteristics, and the damage growth process during residual strength test for the two joint configurations. In general, results show that multiple cracking did not have an effect on the overall global strain response. However, the number of cycles to grow a fatigue crack to a predetermined length was reduced by 37% and 27% for the longitudinal lap joint and circumferential butt joint panels, respectively. In addition, the presence of multiple cracks reduced the residual strength of the panels with a longitudinal lap joint by approximately 20%. For the circumferential butt joint panels, the effect of multiple cracking on the residual strength could not be quantified due to premature failures at the load application points in the baseline panel. However, it was observed that the growth of lead crack into the first fastener directly ahead was more rapid for the panel containing multiple cracks.

17. Key Words	18. Distribution Statement
Fatigue crack growth, Residual strength, Longitudinal lap joint, Circumferential butt joint	This document is available to the public through the National Technical Information Service (NTIS) Springfield, Virginia 22161.

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	452	

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EXECUTIVE SUMMARY

An experimental and analytical study was conducted to determine the effects of multiple cracks on the fatigue crack growth and residual strength of curved fuselage panels. Four panels were tested, two panels with a longitudinal lap splice and two with a circumferential butt joint. For each joint configuration, one panel contained only a lead crack and the other contained a lead crack with multiple cracks located along the outer critical fastener row of the joints. The panels were tested in the Full-Scale Aircraft Structural Test Evaluation and Research (FASTER) facility. First, strains were measured under quasi-static load conditions to ensure proper load introduction into the panels. Second, fatigue crack formation and growth were monitored and recorded in real time using the Remote Controlled Crack Monitoring (RCCM) system under constant amplitude loading up to a prescribed amount of fatigue crack growth. Third, the crack growth and residual strength were measured during quasi-static loading to failure.

Geometric nonlinear finite element analyses were conducted to support the tests. The strain distributions and fracture parameters governing crack formation and growth were determined. Comparisons with strain-gage data verified the finite element models. For fatigue crack growth predictions, the corresponding mixed mode stress-intensity factors were calculated using the Modified Crack Closure Integral (MCCI) method. Results include comparisons of strain distributions, fatigue crack growth characteristics, and the damage growth process during residual strength test for the two joint configurations. In general, results show that multiple cracking did not have an effect on the overall global strain response. However, the number of cycles to grow a fatigue crack to a predetermined length was reduced by 37% and 27% for the longitudinal lap joint and circumferential butt joint panels, respectively. In addition, the presence of multiple cracks reduced the residual strength of the panels with a longitudinal lap joint by approximately 20%. For the circumferential butt joint panels, the effect of multiple cracking on the residual strength could not be quantified due to premature failures at the load application points in the baseline panel. However, it was observed that the growth of lead crack into the first fastener directly ahead was more rapid for the panel containing multiple cracks.

INTRODUCTION

Since the 1988 Aloha Airlines accident in which a large portion of the fuselage crown of a Boeing 737 tore apart due to the linkup of small cracks emanating from rivet holes in the lap joint, much effort has been placed on developing methodologies to predict the reduction in residual strength of aircraft fuselage structure due to various multiple-site cracking scenarios. Research efforts sponsored by the Federal Aviation Administration (FAA), National Aeronautics and Space Administration (NASA), and the Department of Defense (DoD) include the development of various analytical tools that address this complex problem at several levels. Both rigorous numerical methods and simplified engineering approaches have been developed to predict crack initiation, growth, and linkup, and residual strength [1-9]. In general, the development of each tool has been focused on analyzing different aspects of the process, such as crack initiation, crack growth, crack linkup, or residual strength of the fuselage structure. When fully validated, the combination of the tools should be able to predict the entire process and could be used in the current fleet of aircraft to predict the effect of multiple-site cracks on the residual strength or in future aircraft designs to prevent the occurrence of multiple-site cracking within the design life of the structure.

As part of the FAA research program, a research effort was conducted at the FAA William J. Hughes Technical Center to assess the effects of multiple-site cracking on the fatigue crack growth and residual strength of fuselage structures. One focus of the research effort is on developing computational methods to determine fracture parameters governing the onset and growth of cracks and the residual strength of fuselage structure with multiple cracks. These methods will be used to predict strain distributions, crack growth, and residual strength.

The second focus is on conducting tests to understand the damage mechanics and guide the model development. A state-of-the-art facility, the Full-Scale Aircraft Structural Test Evaluation and Research (FASTER) facility, was developed to apply realistic flight load conditions to large, full-scale, curved sections of fuselage structure [10 and 11]. Both quasi-static and spectrum loadings can be applied, including differential pressure, longitudinal load, and hoop load in the skin and frames, and shear load. The test data will be used to validate analytical methodologies developed by the FAA and NASA [9]. The FASTER facility is located at and operated by the FAA William J. Hughes Technical Center.

This document reports on tests and analyses that were conducted to verify the predictive methodologies. The curved panels used in the test program are similar to a typical narrow-body fuselage structure consisting of skin, frames, shear clips, stringers, and either longitudinal splice or circumferential joints. A total of four panels were tested, two panels with a longitudinal lap splice and two with a circumferential butt joint. For each joint configuration, one panel contained only a lead crack and the other contained a lead crack with multiple cracks. A strain survey was conducted under quasi-static loading conditions on a test panel to verify proper load transfer from the load application points to the panel. Comparison with an independent full-scale test conducted by Boeing Aircraft Company on an aft fuselage section of an actual aircraft with similar structural details to the panels tested in this program and comparisons with detailed finite element analysis results confirmed appropriate applied load conditions. Crack growth under fatigue loading conditions was measured and recorded up to a predetermined crack length. Finally, crack extension and residual strength were measured under quasi-static loading

conditions. In the following sections, a brief description of the FASTER test fixture is presented followed by the analytical and experimental results, including strain distributions, damage growth process, and residual strength characteristics. These findings provide experimental and analytical procedures for testing curved panels containing multiple-site cracking scenarios.

FULL-SCALE AIRCRAFT STRUCTURAL TEST EVALUATION AND RESEARCH (FASTER) FACILITY

The FASTER test fixture, shown in figure 1, features a unique adaptation of mechanical, fluid, and electronic components and is capable of applying internal pressurization, longitudinal, hoop, frame, and shear loads to a curved panel. As shown in the exploded view in figure 1, the fixture consists of a base structure, hoop load assembly, longitudinal load assembly, fuselage pressure box, frame load assembly, and shear fixture assembly. The FASTER facility also includes a computerized instrument control and data acquisition system and a remote-controlled video system that are not shown in figure 1.

In general, the test fixture is capable of dynamically cycling the internal pressure as well as performing a static pressurization. The hoop and longitudinal stresses are simulated by the controlled application of distributed loads around the perimeter of the test panel. Hoop forces are distributed by individual loading linkages using a two-tier coaxial whiffle tree assembly, which generates four equal forces from each controlled load point. A total of seven load points are used on each side of the specimen, creating a total of 28 attachment points. Longitudinal forces are applied using similar loading devices on each end of the panel, consisting of four load control points and 16 attachment points. Similar devices are available to apply hoop tension loads at each end of a frame.

An innovative shear load application system was developed that uses two load distribution points in the longitudinal direction at the edges of the specimen. The force is applied as a couple and is reacted by a couple in the hoop direction. A unique feature of the shear loading system is the elastomeric coupling between the loading mechanisms and the test specimen. The elastomer, which has a soft shear modulus, creates a close approximation to uniform shear distribution in both the applied and reacted couples.

All forces are generated using water and air as the fluid medium. The external loads are generated by applying water pressure to bladder type actuators, which are controlled by pressure-activated dome valves. The dome valves are automatically controlled by electro/pneumatic (E/P) control valves. The E/P valves are driven by a computer control system in a closed-loop configuration. The operator can control the loads, speed, and type of test. Data from strain transducers, load transducers, pressure transducers, etc., are displayed on color monitors in real time and stored for off-line analysis.

MECHANICAL LOADING MECHANISMS.

Water actuators with a lever arm construction are used to apply loads to the curved panel. The water actuators used are air-water springs. An air-water spring is an elastomeric rubber fabric bellow with metal-end closures which contains a column of compressed air or water. In the FASTER test fixture, water is used. The compressed water provides the force or supports the

load. Air-water springs have wide industrial applications, including vibration isolation, truck suspension, and actuators. They are highly durable, rugged, and reliable. The water actuators used for the FASTER test fixture are more cost-effective than the standard oil-based hydraulic cylinder actuators. The initial purchase cost is much less and no maintenance or lubrication is required. There is no internal rod or piston or sliding seals, as in conventional cylinders. Since there are no moving parts in the water actuator, it is maintenance free, friction free and the response is immediate.

A schematic of the general loading mechanism for the longitudinal and hoop load assemblies is shown in figure 2. The loading mechanism consists of a water actuator, lever arm, fulcrum pivot point, a load cell, and a whiffle tree. The lever arm is connected to the water actuator at one end and to the load cell at the other and rotates about the fulcrum pivot point. The distance from the water actuator to the fulcrum is l_1, and the distance from the top of the lever arm to the fulcrum is l_2. As the water actuator inflates, the bottom of lever arm will displace an amount u_1, rotate at the fulcrum pivot point, causing the top of the lever arm to displace an amount u_2. There are eight loading mechanisms to apply longitudinal load, four attached to each end of the specimen as shown in figure 1. There are 14 loading mechanisms to apply the hoop load, 7 on each side of the specimen. The load is distributed to the edge of the specimen through four links in the whiffle tree for each loading mechanisms as shown in figure 2.

Although the application of shear loading was not included in this test program, a brief description of this capability is described herein for the sake of completeness. The shear load assembly consists of the shear fixture and four counter balance poles and baskets as shown in figure 3. The shear fixture consists of a rigid reaction structure and pairs of water actuators, shear lever arms, pivot points, longitudinal skis, and hoop skis. The longitudinal and hoop skis are attached to the curved panel using elastic polyurethane strips 1″ thick by 4″ wide with a Shore A durometer scale hardness rating of 90. The strips are a hard rubber material on the Shore A scale compared to rubber bands at 40, tire treads at 50, and shoe heels at 70. As the water actuator inflates, the shear lever arm will displace downward, u_1, and will rotate about the shear arm pivot point. As a result, the lever arm keyway, which is attached to longitudinal ski, will displace amount u_2 as shown in figure 3. The displacement u_2 will deform the polyurethane strip, which will distribute the point force at the keyway into a uniform shear force distributed along the entire length of the longitudinal ski. By inflating the two water actuators, which are located at diagonal corners of the reaction structure, the shear loads are applied through the longitudinal skis in equal magnitude but opposite direction. The shear couple is reacted by the rigid support structure, which is attached to the hoop skis. The entire shear load fixture weighs approximately 3800 lbs. To insure this weight is not applied to the panel, the fixture is counter balanced using four weights attached to the fixture through four cable support columns as shown in figure 3.

The frame load assembly loading mechanism is shown in figure 4. The figure shows a cut-away view through a frame loader. The frame-loading mechanism consists of a water actuator, a frame lever arm, a fulcrum pivot point, a radial reaction link, and a frame load link. As the water actuator inflates, the end of the frame lever arm will displace an amount u_1 and will cause a displacement of the frame load link in the hoop direction, u_2. The radial reaction link ensures that the frame attachment point is displaced only in the hoop direction. There are 12 loading mechanisms for the frame load assembly.

The curved panel can be pressurized using either air, water, or a combination of both. The panel skin is attached to the pressure box using an elastomeric rubber seal as shown in figure 4. The seal is bonded to the panel skin and bolted to the pressure box.

HYDRAULIC AND PNEUMATIC SYSTEMS.

All forces are generated using water supplied by a stand-alone water system. The water supply system consists of a 1050-gallon reservoir, a 40-hourspower (HP) pump capable of discharging water at 140-psi pressure. A radiator on the water return line acts as a heat exchanger to keep the water temperature below 105°F. The water supply line and supply manifold is constructed from 3″ schedule 80 CPVC pipe. Under normal operating conditions, 60 psi is sufficient operational pressure. The water return line and manifold are constructed from 4″ schedule 80 CPVC pipe.

A schematic of the hydraulic and pneumatic system for a single loading mechanism is shown in figure 5. The pressure regulator dome valves are attached to the water supply and return manifolds with a 3/4″ flexible hose. The high-precision pressure regulator dome valves control the water outlet pressure to inflate the water actuators of the loading mechanisms. When the water actuator deflates, the water exits to the water return manifold through a constant flow orifice valve. The pressure regulator dome valves use air pressure applied above the valve diaphragm controlled by E/P valves to accurately regulate water outlet pressure. The water outlet pressure is identical to the air inlet pressure applied to the dome above the diaphragm. The E/P valves convert a 0- to 10-volt control input signal to a proportional 0.7 to 127 psi pneumatic air pressure inlet signal sent to the pressure regulator dome valves. Air supply pressure to the E/P valves is set to 130 psi supplied by an air compressor. Plastic tubing having 1/4″ diameter is used to connect the E/P valves to the supply from an air compressor and inlet to the pressure regulator dome valves. The E/P valves are computer controlled in a closed-loop configuration as discussed in the next section.

CONTROL AND DATA ACQUISITION INSTRUMENTATION.

The computer control and data acquisition instrumentation integrates the various mechanical load assemblies of the FASTER test fixture. The control and data acquisition instrumentation uses the VXIbus (VMEbus eXstenions for Instrumentation) standard. The VXIbus standard is based on the VMEbus (versa modular European) architecture, a recognized standard that offers an excellent computer backplane for high-speed digital data transfer and communication between devices. The VMEbus standard was originally designed for digital communication and is too noisy for precise low-level analog measurements of test instrumentation. The VXIbus standard enhanced the VMEbus standard by specifying interference shielding requirements on the backplane and between modules and by increased spacing between modules. The VXIbus standard provides the architecture to allow low-level analog signals to coexist on the backplane with high-speed digital signals resulting in state-of-the-art test and measurement instrumentation with high throughput and versatility.

The control and data acquisition instrumentation contains a six-slot VXI mainframe (HP 1421B). In the current configuration, five slots are used for control and data acquisition, with one reserved for expansion. The zero slot contains a UNIX-based VXI-embedded controller

(HP V732/100) with a 100-MHz RISC processor. The next four slots of the mainframe contain VXI multifunction measurement and control (HP E1419A) modules having 16-bit measurement resolution and 56,000 samples per second maximum reading rate. The HP E1419A module can be configured for a specific measurement and control application by using up to eight signal-conditioning plug-on (SCP) cards. The SCP cards can accommodate up to eight input or output channels and can provide various analog and digital input or output functions. In the first slot, the E1419A module is designed for control of the longitudinal load assemblies, internal fuselage pressure, the shear load assemblies, and system hydraulic supply. In the second and third slots, the E1419A modules have similar configurations, each designed for the control of the hoop and frame load assemblies on both sides of the system. In the fourth slot, the E1419A is designed for 64 channels of data acquisition with 56 low-level signals with a gain of 64 used for strain and crack propagation gages, and eight high-level signals for pressure transducers.

The scanning rate of the control and data acquisition process is 150 times per second. There are 64 channels dedicated to data acquisition from strain gages, load transducers, pressure transducers, crack gages, etc. There are 40 channels to control the FASTER test fixture. The control channels include operation of the E/P valves, using a full proportional integral derivative (PID), closed-loop feedback error control process as shown in the block diagram in figure 6. In the figure, lines indicate the path of a signal, ± the sign of the signal, Σ within a circle designates a summation junction of signals, and the boxes represent a process done to the signal. The controlling signals shown in the figure are the command signal, *Cmd*, the feedback signal from the loading system, *Fbk*, and the error signal *Err*, which is the difference in the *Cmd* and *Fbk* signals. The error signal is used to adjust the response of the load system using proportional error correction, integral error correction, and derivative error correction processes. The proportional error correction process scales the error by parameter *Pgain* to obtain a quick response. The integral error correction process takes the history of the error and integrates over time and scales to parameter *Igain* to reduce steady-state error of the response. The derivative error correction process takes the rate of change of the error and scales to parameter *Dgain* to help damp the response. The final control input signal, *Cin*, is the summation of the *Cmd* signal, and the signals from the proportional, integral, and derivative error correction processes given by:

$$Cin = Cmd + Pgain \times Err + Igain \times \int sign(Err)dt + Dgain \times \frac{d(Err)}{dt} \qquad (1)$$

This signal is then used as input to the E/P value of a loading system as shown, for example, in figure 5. Limit parameters are used to ensure that the system does not run unstable or inadvertently overload the system. These parameters include maximum and minimum limits on the command signal, O_{max} and O_{min}, a limit range on the integral error correction, $\pm I_{lim}$. In addition, a limit is set to shut the system down if the error exceeds parameter $\pm D_{umpl}$.

A target signal specifies the level the command signal must obtain over a certain time interval called the end point, EP, and time (figure 6). The three ramping functions, which are used to define the path the command signal follows to get to the target level, are a haversine (half sinusoidal wave), linear, and step. To synchronize the loading mechanisms, two other control parameters are used: the static hold, S_{hold}, and the dynamic hold, D_{hold}. The S_{hold} and D_{hold}

parameters are limits on the amount of error between the command signal and the feedback signals at the target signal end point and between the target signal end points, respectively. If the S_{hold} or D_{hold} limits are exceeded, a hold is placed on all control channels until the feedback control adjusts itself to within these limits.

The graphic programming language, HP-Visual Engineering Environment (VEE) was used to develop the graphical user interface (GUI) and the control and data acquisition system. The HP-VEE software is designed for use with the HP VXI-based instrumentation. It can access and load any driver for standard VXI instrument cards. The driver then provides a procedural interface to the instrument for programmatic control. The user-friendly GUI of HP-VEE allows a user to efficiently develop code necessary for controlling instruments, acquiring data, display data in real time, analyze and reduce data in real time, or store data to buffers and files for posttest analysis and data reduction. A graphical interface program developed using HP-VEE allows the operator to control the loads, speed, and type of test desired. Data acquisition from strain transducers, load transducers, pressure transducers, etc., are displayed on color monitors in real time and stored for off-line analysis.

REMOTE CONTROLLED CRACK MONITORING (RCCM) SYSTEM.

The Remote Controlled Crack Monitoring (RCCM) system, shown in figure 7, tracks and records multiple crack formation and propagation during loading in real time. The RCCM system is a stand alone, computer-based video data acquisition system capable of monitoring the entire fuselage panel test surface at several levels of magnification with a field of view ranging from 0.05″ up to 14″. The system consists of cameras mounted to two computer remote-controlled, high-precision translation stages and provides accurate and repeatable length measurements.

The RCCM system is comprised of three main components: a mechanical frame assembly, a motion control assembly, and a video data acquisition system. The mechanical frame assembly is used to mount and place the motion control assembly over the test section of the panels while in the fixture. A large rectangular frame made from 4″ square aluminum tubing is mounted on top of the four counterbalance columns of the fixture. A second section sits within the rectangular frame and can slide to provide longitudinal positioning of the motion control assembly. The third component fits within the second section for lateral positioning of the motion control assembly.

The motion control assembly is comprised of three bidirectional and two single-directional translation stages each having a 0.078″ lead screw. A bidirectional translation stage provides 24″ of overall travel in each direction. Two more bidirectional translation stages are mounted underneath the 24″ bidirectional stage, each providing 36″ of travel in longitudinal direction and 12″ of travel in the lateral direction. Periscope stages are mounted to the two 36″ by 12″ bidirectional translation stages to provide translation in the z direction of 10″.

The motion of the stages are remotely controlled by a computer via a joystick, mouse, and keyboard, which sends step and direction commands through a 50-pin ribbon cable to each of the eight motor driver modules. The stages are powered by 24 volt, 4 ampere, and four-phase

stepper motors that provide 200 full steps per revolution. The stepper motors driver modules further divide the step to ten increments, providing motion resolution of 0.000039″. The accuracy of the lead screws is 0.0039″ per 10 inches of travel and bidirectional repeatability is 0.000236″.

The video data acquisition assembly contains two black and white RS-170 format analog cameras operating at 30 frames per second with high-resolution 768- by 493-pixel chips. The two cameras are mounted to each of the two periscope stages. A high magnification zoom lens (narrow-field-of-view (NFOV) lens) is attached to the first camera and provides a field of view ranging from 0.05″ up to 0.5″. The NFOV lens was modified to accommodate a simple belt-driven motor to control the zoom ring remotely. In addition, a fiber-optic ring light is attached to the end of the NFOV lens to provide localized lighting that also can be controlled remotely.

A zoom lens (wide-field-of-view (WFOV) lens) is attached to the second camera with a focal length range of 0.45″ to 2.71″, having complete motorized zoom, focus, and iris controls built-in. A +1 diopter and +2 diopter were added to the WFOV lens end to provide a field of view ranging from 2″ up to 14″.

Video data acquisition and reduction software provides real-time crack length measurement capabilities from the cameras on each stage. Using a cross-hair on the image as a reference, accurate measurements of crack length can be obtained through the control of the translation stages. Up to 360 of the 768- by 493-pixel digital images can be captured continuously and stored in bitmap format at a rate up to 30 frames per second. The software can playback the stored images. In addition, direct hookup to monitors and video control recording (VCR) equipment is provided for continuous real-time monitoring and recording.

EXPERIMENTAL PROCEDURE

The test matrix for the four curved panel tests is shown in table 1. Panel CVP1 contains a longitudinal lap splice with a lead crack. Panel CVP2 has the same configuration and lead crack as CVP1 with the addition of multiple small cracks emanating from rivet holes ahead of the lead crack. Panel CVP3 has a circumferential butt joint with a lead crack. Panel CVP4 has the same configuration and lead crack as panel CVP3 with the addition of multiple small cracks emanating from rivet holes ahead of the lead crack. These panels were subjected to a sequence of three loading functions: (1) initial monotonic, quasi-static loading to a predetermined load level; (2) a constant amplitude cyclic loading; and (3) a postfatigue monotonic, quasi-static loading up to fracture.

PANEL CONFIGURATIONS.

Detailed engineering drawings for the four panels tested are presented in appendix A. The selected panel configurations represent generic fuselage structure from a narrow-body aircraft, fabricated according to original equipment manufacturing (OEM) specifications. It was decided in this program to test panels that were generic instead of aircraft specific, since the purpose of this study is to provide experimental data to support and verify analysis methodologies to assess the effects of multiple cracks applicable to all aircraft types. The panel size was selected so that

the test section will contain large damage such as a two-bay crack with central frame severed. The test section of the panel was sized in order to minimize the effect of the test fixture attachment points along the perimeter.

Typical panel dimensions are 120″ in the longitudinal direction, 68″ in the circumferential direction, with a radius of 66″ as shown in figure 8. For all four panels, the skin was 2024-T3 aluminum with a thickness of 0.063″. Each panel had six frames with a 19″ spacing and seven stringers with a 7.5″ spacing. The cross-sectional properties of the substructure are shown in figure 9. The frames and shear clips were 7075-T6 aluminum with thicknesses of 0.071″ and 0.063″, respectively. The stringers were also 7075-T6 aluminum with a thickness of 0.063″, except for S4 where the thickness is 0.071″. As shown in the photographs, the shear clip is connected to skin using NAS1097AD6 rivets with a pitch of 1.0″. The stringer is connected to skin using NAS1097AD6 rivet with a pitch of 1.25″. The frame and shear clips are connected using MS20470AD6 rivets with a pitch of 1.0″, and the shear clips and stringers are connected using HL518-6 Hi-Lok pin fasteners.

The edges of the curved panels, where loads are applied, were reinforced by bonding six layers of 0.045~0.065-inch-thick aluminum alloy doublers to the skin to ensure a uniform load transfer. Along the perimeter of the panel, reinforcing doublers with a length of 112″ on the longitudinal sides and 56″ on the hoop sides were added. Holes with a diameter of 0.5″ were spaced approximately 4″ apart along each side and 3.5″ apart along each end to attach the whiffle tree assemblies which apply the load. There were 28 load application points on each longitudinal side and 16 load application points on each end. Doublers were also added to the frame ends where they attach to the frame loaders.

LONGITUDINAL LAP JOINT PANEL CONFIGURATION. Figure 8 shows a schematic of the longitudinal lap joint test panels CVP1 and CVP2 as well as the dimensions and location of the strain gages. Details can be found in appendix A. Photographs of the CVP1 panel are shown in figure 10. As shown in figure 8, there are six frames, F1 through F6, in the circumferential direction and seven stringers, S1 through S7, in the longitudinal direction. A longitudinal lap joint is located along stringer S4 as shown in figure 11. The joint consist of two layers of the 2024-T3 panel skin with a thickness of 0.063″ and two layers of 2024-T3 finger doublers with a thickness of 0.025″. Four rows of fasteners, A, B, C, and D, are used to connect the skin and doublers. For rows A and D, MS20470AD5 rivets were used with a pitch of 1.5″. For row C, MS20470AD6 rivets were used with a pitch of 0.813″, and for row B, NAS1097AD6 rivets were used with a pitch of 0.813″. The distance between rows A and B and rows C and D is 0.875″, and the distance between rows B and C is 1.25″.

The initial damage configuration for the two longitudinal lap joint panels is shown in figure 12. For both panels CVP1 and CVP2, a crack-like slit representing a lead crack was placed symmetrically across frame F4, machined in the skin along the critical rivet row A in the longitudinal lap splice. The total length of the lead crack was 7.0″ long. Between rivet holes 2L and 2R, the crack-like slit was saw cut with a width of 0.012″. The tips of the lead crack emanated 0.5″ from the centerline of rivet holes 2L and 2R where it was wire cut to a width of 0.008″. For panel CVP2, small multiple cracks were machined in the first 18 rivets to the left

and right of the lead crack centerline rivet designated 0. The nominal length of each crack is indicated in figure 12. The nominal width of all the cracks was 0.008″.

CIRCUMFERENTIAL BUTT JOINT PANEL CONFIGURATION. Figure 13 shows a schematic of the circumferential butt joint test panels CVP3 and CVP4 as well as the dimensions and location of the strain gages. Photographs of the CVP3 panel are shown in figure 14. The structural details of CVP3 and CVP4 test panels were similar to those in the longitudinal lap joint panels and can be found in appendix A. Both CVP3 and CVP4 test panels have a butt joint in the circumferential direction between frames F3 and F4 as shown in figure 15. The joint consists of two layers of the 2024-T3 panel skin with a thickness of 0.063″, a 2024-T3 finger doubler with a thickness of 0.025″, and a tapered doubler with a thickness of 0.071″, which tapers to a thickness of 0.025″ along the edge. Eight rows of fasteners, A through H, are used to connect the skin and doublers. For rows A and H, MS20470AD5 rivets were used with a pitch of 1.5″. For rows B, C, F, and G, NAS1097AD6 rivets were used with a pitch of 0.75″, and for rows D and E, S4931919-6 Hi-Lok pin fasteners were used with a pitch of 0.75″. The distance between rows A and B and rows G and H is 0.875″, and the distance between rows B and C, C and D, F and G, and E and F is 0.625″. The distance between rows D and E is 1.0″.

The initial damage configuration for the two circumferential lap joint panels is shown in figure 16. For both panels, CVP3 and CVP4, a crack-like slit representing a lead crack was placed symmetrically across stringer S4, machined in the skin along the critical rivet row A in the circumferential butt joint. Stringer S4 was cut to simulate a broken stringer. The total length of the lead crack was 7.0″ long. Between rivet holes 2L and 2R, the crack-like slit was saw cut to a width of 0.012″. The tips of the lead crack emanated 0.5″ from the centerline of rivet holes 2L and 2R where it was wire cut to a width of 0.008″. For panel CVP4, small multiple cracks were machined in the first 12 rivets to the left and right of the lead crack centerline rivet designated 0. The nominal length of each crack is indicated in figure 16. The nominal width of all the cracks was 0.008″.

STRAIN GAGE LOCATIONS.

Strain gages were placed on all four panels to monitor the strain distribution and to ensure proper load introduction. The precise location of the strain gages and types of strain gages, coatings, cables, and adhesives are provided in detail in appendix B. For the longitudinal lap joint panels CVP1 and CVP2, the approximate locations of the stain gages on the skin, frames, and stringers are shown in figure 8. In general, 20 axial strain gages were located on both the inner and outer flanges of the frames. The stringers were instrumented with eight axial strain gages on the flange and hat section (see detail in figure 8). The skin was instrumented with eight strain gage rosettes. At one location on the skin, two back-to-back 45° strain gage rosettes (gages 31 and 32) were installed to provide a measure of bending of the skin.

For the circumferential lap joint panels CVP3 and CVP4, the approximate locations of the strain gages on the skin, frames, and stringers are shown in figure 13. Panels CVP3 and CVP4 were instrumented with 9 strain gage rosettes (45°) in the skin and 31 axial strain gages in the frames and stringers. At two locations on the skin, namely at gages 36 and 37 and at gages 39 and 40, two back-to-back 45° rosette gages were installed to provide a measure of bending of the skin.

TEST CONDITIONS.

The longitudinal lap joint and circumferential butt joint panels were subjected to the sequence of loadings listed in tables 2 and 3, respectively. Three different quasi-static loadings were applied, followed by fatigue loading and postfatigue residual strength loading.

Three quasi-static loadings were applied, as shown in tables 2 and 3, to determine the strain distribution and insure proper introduction of load into the panels. In load condition 1a, each panel was subjected to an internal pressure; 10.1 psi for longitudinal lap joint panels and 8.8 psi for the circumferential butt joint panels. Hoop and frame loads were applied as reactive loads from the internal pressure. In load condition 1b, only longitudinal load was applied. Load conditions 1a and 1b were superimposed for load condition 1c. For the longitudinal lap joint panels, load condition 1c simulates the cylindrical pressurization that a section of the fuselage along the neutral axis would experience. For the circumferential butt joint panels, load condition 1c simulates a fuselage down-bending condition that a fuselage section along the crown of the aircraft would experience, where the longitudinal stress is 50% higher than the hoop stress.

In load sequence 2, shown in tables 2 and 3, the same load conditions as in load sequence 1c was applied at constant amplitude and a frequency of 0.2 Hz with an R-ratio (minimum to maximum load) of 0.1. Crack growth of the lead crack and small multiple cracks were continuously monitored and recorded using the RCCM system.

The postfatigue residual strength test was performed using loading condition 3 as listed in tables 2 and 3. Frame F4 in longitudinal lap joint panels, which was intact prior to the residual strength test, was saw cut midway between stringers S4 and S5 to simulate a broken frame. The panels were statically loaded until catastrophic failure. For the longitudinal lap joint panels, the applied loading consisted of internal pressurization with reactive hoop and frame loads with a longitudinal stress that was 50% less than hoop stress. For the circumferential butt joint panels, the applied loading consisted of internal pressurization with reactive hoop and frame loads, with a longitudinal stress that was 50% higher than the hoop stress.

VERIFICATION OF TEST RESULTS.

The test results from a full-scale test conducted on an aft fuselage section of an actual narrow-body aircraft by Boeing Aircraft Company in Long Beach, CA, were compared to the FASTER test results. The aft fuselage test article is shown in figure 17. The test article was mounted on a strong back fixture and pressurized quasi-statically from 0 to 7.8 psi for three tests. A section of aircraft, from frame station 1269 to 1288 and stringer L4 to L5, was instrumented with strain gages as shown in figure 18. The instrumented section of the aft fuselage test article has a structure which is similar to the four curved panels tested in the FASTER facility with a similar radius, skin thickness, and substructure detail. A 45° rosette gage was placed near skin mid-bay location A, and uniaxial gages were placed in the cap and flange of stringer L4, locations B and C, and the inner and outer frame cap at frame station 1269, locations E and F. The strain gage data from the three tests are listed in the tables of appendix C. Strains measured from these locations were compared with the strains measured at similar locations in longitudinal lap joint panels CVP1 and CVP2.

ANALYSIS

Geometric nonlinear finite element analyses were conducted using the commercial finite element code ABAQUS 5.8 [12]. A full description of the analysis procedures and results are provided in appendix D. A brief description is provided herein. In general, two analyses were conducted for each panel: the first to predict the strain distributions and the second to compute the stress-intensity factor (SIF) solutions. The SIF solutions were used to predict the fatigue crack growth of the curved panels and the predictions were compared with test results.

DESCRIPTION OF MODELS.

The panels were modeled using two-dimensional shell elements with each node having six degrees of freedom. Figure 19 shows the global view of a typical finite element model of panel CVP3. Four-noded shell elements were used throughout to model the skin, frames, shear clip, stringers, and intercostals, except near the crack tips. In the immediate vicinity of the crack tips, eight-noded shell elements were used. The major geometric details of the panels were modeled, including the cross-section properties of the substructure (frames, stringers, shear clip, and intercostals), the dimensions of finger doublers, and the load attachment doublers. Beam elements were used to model the rivets that connected the substructures with the skin and the substructures to one another. The semiempirical equation developed by Swift [13], shown below, was used to calculate the shear stiffness of the beams as:

$$k_{shear} = \frac{E'd}{5 + 0.8\left(\frac{d}{t_1} + \frac{d}{t_2}\right)} \tag{2}$$

where $E' = 10.5\times10^6$ psi is the effective modulus, $d = 0.1875''$ is the fastener diameter, and $t_1 = 0.063''$, and $t_2 = 0.063''$ are the thickness of the skin and substructure (shear clip or stringer), respectively. To simplify the global panel modeling, the rivet holes were not modeled. The typical finite element model of a panel had 250,000 degrees of freedom.

The load conditions specified in tables 2 and 3 were simulated in the analysis. For the hoop, frame, and longitudinal loads, nodal point forces were applied at the load application points in the actual test, as shown by the arrows in figure 19. Internal pressure was applied to the inner surface of the skin.

THE MODIFIED CRACK CLOSURE INTEGRAL (MCCI) METHOD.

In the MCCI approach [14-16], it is assumed that the energy released during crack extension is the same as the work that would be needed to close the crack, and that the energy released can be related to the four components of SIF. The four components of SIF are the Mode I SIF caused by tensile load, K_1, the Mode II SIF cause by in-plane shear load, K_2, the SIF due to symmetric bending loads, k_1, and the SIF due to out-of-plane shear and twist loads, k_2, as shown in figure 20.

The MCCI method approximates the rate of work needed to close a crack using the local crack tip displacements and forces. The displacements and forces at the nodes of the four elements surrounding the crack tip were obtained from the finite element results for each crack length, as shown in figure 20. The work (W_i) done to close a crack of length, Δa, for each nodal degree of freedom is given by [16]:

$$W_i = \frac{1}{2t\Delta a}\left[F_i^{Close}\left(u_i^{top} - u_i^{bot}\right)\right], i = 1,\cdots,6 \tag{3}$$

where t is the thickness of the panel, F is the force needed to close the crack surfaces, u is the displacement component on each surface of the crack, and i denotes the degree of freedom (DOF). The total amount of work done to close a crack of length, Δa, is numerically equal to the total amount of strain energy released during a crack growth increment of Δa, and the components of strain energy release rate can be related to the stress-intensity factors. Thus, the work done to close the crack is related to the SIFs as:

$$W_2 + W_6 = \frac{K_1^2}{E} \tag{4}$$

$$W_1 = \frac{K_2^2}{E} \tag{5}$$

$$W_4 = \frac{k_1^2 \pi}{3E}\left(\frac{1+\nu}{3+\nu}\right) \tag{6}$$

and

$$W_3 + W_5 = \frac{k_2^2 \pi}{3E}\left(\frac{1+\nu}{3+\nu}\right) \tag{7}$$

where E = 10,500 ksi and ν = 0.3 are the Young's modulus and Poison's ratio of the panel skin material and K_1, K_2, k_1, and k_2 are the SIFs described earlier. Only the Mode I SIF, K_1, was used to predict the fatigue crack growth behavior because, as will be shown, it was found to be the dominant SIF compared to the other modes.

RESULTS AND DISCUSSION

The effects of a lead crack and multiple cracking on the strain distribution, fatigue crack growth, and postfatigue residual strength for both the longitudinal lap joint panels (CVP1 and CVP2) and the circumferential butt joint panels (CVP3 and CVP4) were studied. In the following sections, strain survey test results and analytical predictions are first discussed, followed by the fatigue crack test results, and lastly, the residual strength test results.

STRAIN SURVEY.

The strain distribution was measured and predicted at ten equal load increments up to the maximum values for load sequences 1a through 1c in tables 2 and 3 for the longitudinal lap joint and circumferential butt joint panels, respectively. The strain gage locations for each joint configuration are shown in figures 8 and 13 and appendix B. Details of the predicted strains are provided in appendix D.

The strain survey test was repeated twice using water and twice using air for each panel to verify the repeatability of the results and determine the effect of the pressurizing media. The raw data from the strain survey for the strain gages on each panel are listed in the tables in appendix E. In the tables, for each test condition (1a, 1b, and 1c) and run (Air 1 and 2, Water 1 and 2), applied loads and strains measured at each gage at each of the ten equal load increments up to the maximum loads are listed.

The raw data was reduced to remove the strain offset that occurred due to preloading after the panel was installed in the fixture. In the strain gage data reduction, the first three data points were removed to minimize the effects of preloading and free play. A linear regression using a least squares method was used to curve-fit the remaining data set to the following first order polynomial:

$$\varepsilon = A\chi + B \tag{8}$$

where ε is the dependent strain variable, χ the independent load increment variable, A the slope, and B the ordinate intercept. Parameter B was used to define the zero load offset used to shift all data in the set. The reduced strain gage data is listed in appendix F at the ten equal load increments up to the maximum loads for each load sequence. Cross-reference tables in appendix E list the corresponding values of the applied loads.

In general, for all panels tested, strain gage results from the four runs were repeatable for gages measuring strain in the principle loading direction. In particular, strains measured in the skin, the stringer cap, and outer cap of the frames had the least amount of scatter. Strains measured in the inner frame cap had the most scatter. Complete results are given in appendix F. Representative results are discussed for each joint configuration in the subsequent sections.

LONGITUDINAL LAP JOINT CONFIGURATION. The hoop strain at a rosette strain gage located in the skin mid-bay, as a function of applied pressure, is shown in figure 21 for panel CVP1 (lead crack only) and panel CVP2 (lead crack and multiple cracks). The load was applied in ten equal increments up to the maximum values listed for test condition 1c (table 2), which simulates a cylindrical pressurization. For each panel, the test was repeated twice using water and twice using air. As shown in the figure, the strains are nearly identical for both panels for all four runs, indicating that small multiple cracks have no effect on the global strain response at the given load level. As expected, there were no differences in the results when air or water was used to pressurize the panel.

In addition, the three sets of results from the Boeing full-scale test (appendix C) measured from a rosette strain gage in the skin mid-bay location are plotted in figure 21. The Boeing full-scale test results are repeatable and match the results from CVP1 and CVP2 panels up to the maximum pressure of 7.8 psi. This indicates that the loading applied using the FASTER facility closely resemble the pressurization of a fuselage structure.

Also shown in figure 21 is a plot of the results predicted using the ABAQUS finite element analysis as described in detail in appendix D. The prediction from analysis shown by the solid curve in the figure is in good agreement with the experimental data validating the finite element analysis.

Similar results are shown in figures 22-27 for other strain gage locations for test condition 1c (table 2). In general, strain gage results from panels CVP1 and CVP2 were repeatable and in close agreement with the Boeing full-scale test results for the skin mid-bay location (figures 22 and 23) for the outer fame cap (figure 24) and the stringer cap (figure 25). For strain gage results from the two panels measured at the frame inner cap (figure 26) and the stringer flange (figure 27), the agreement with the Boeing full-scale test results is not as good due to more scatter. Overall, trends in the results show good agreement with the Boeing full-scale test and provide confidence that the applied loads were introduced into the panels correctly.

The hoop strain in the skin for panels CVP1 and CVP2 for test condition 1c (table 2) is shown in figure 28. The data shown for each panel is the average of the four tests conducted. As shown in the figure, the magnitudes of the measured strains in both panels were similar and the distributions were nearly uniform in the middle of the panels. Thus, multiple cracking did not effect the overall strain response.

CIRCUMFERENTIAL BUTT JOINT CONFIGURATION. The longitudinal strain in the skin mid-bay, as a function of load step, is shown in figure 29 for panel CVP3 (lead crack only) and panel CVP4 (lead crack and multiple cracks). The load was applied in ten equal increments up to the maximum values listed for test condition 1c (table 3), which simulates a fuselage down bend condition. For each panel, the test was repeated twice using water and twice using air. As shown in the figure, the strains are nearly identical for both panels for all four runs indicating that small multiple cracks have no effect on the global strain response at the given load levels. As expected, there were no differences in the results when air or water was used to pressurize the panel. Predictions from analyses, shown by the curves, were in excellent agreement with the experimental data.

The longitudinal strain in the skin for panels CVP3 and CVP4 for test condition 1c (table 3) is shown in figure 30. In addition, the distribution of longitudinal strain in the stringer is shown in figure 31 for both panels for test condition 1c (table 3). The data shown in both figures for each panel is the average of the four tests conducted. As shown in the figures, the magnitudes of the measured strains in both panels were similar.

In general, similar trends in strain gage data were obtained at the other gage locations in the both joint configurations. That is, experimental results were very repeatable and the analytical predictions were in good agreement with the test results. Measured strains were nearly uniform

in the middle of the panel. This provides confidence that the applied loads were introduced properly and the models have enough fidelity to capture the mechanical response. In addition, the small multiple cracks had no effect the global strain response.

FATIGUE CRACK GROWTH.

The fatigue crack growth was measured during the constant amplitude loading, defined by load sequence 2 in tables 2 and 3 for the longitudinal lap joint and circumferential butt joint panels, respectively. The growth of the lead crack and the multiple cracks was monitored and recorded. Details of the analysis procedure and results are provided in appendix D. All experimental fatigue crack growth data is provided in the tables of appendix G. Representative results are presented for each joint configuration.

LONGITUDINAL LAP JOINT CONFIGURATION. Photographs of crack extension under fatigue loading obtained from the RCCM system are shown in figures 32 and 33 for panels CVP1 and CVP2, respectively. The photographs illustrate the damage growth process from the original slit to the first neighboring rivet (3R and 3L). The block size of the grid paper on the top of each photograph is 0.05″. In general, for both panels, the crack extension was symmetric and collinear indicating a symmetric load in the region of the crack. As the crack length increased, the in-plane crack opening displacement increased indicating Mode I crack growth. Some Mode III crack growth was assumed to occur where out-of-plane (bulging) deflection of one of the crack faces occurred opposite to the lap joint along stringer S4. There was little deflection of the crack face reinforced by the lap joint.

For panel CVP1, the crack growth rate of the lead crack increased as the crack tip approached the rivet directly ahead. In the test shown in figure 32, after 3850 cycles, the lead crack on the right-hand side grew 4.2575 inches and the tip was approximately 0.2″ from rivet hole 3R. In the next 40 cycles, the crack grew 0.15″ and the tip was only 0.05″ from the rivet hole. Shortly afterwards, at 3916 cycles (an additional 26 cycles) the lead crack grew into rivet hole 3R. A large number of cycles were required to reform the crack on the opposite side of the rivet hole (an additional 909 cycles) for a total of 4825 cycles.

For panel CVP2, the crack growth rate of the lead crack and the small crack increased as they grew closer together. As shown in figure 33, fatigue cracks formed from the small crack notches at rivets 3L and 3R when the lead crack tip was approximately 0.25″ from the small crack notch tip after 2852 and 3000 cycles, respectively. The lead crack and the smaller crack then grew faster when at approximately 0.15″ apart, the lead crack and the small crack linked up within four cycles, as shown in the photographs taken on the left side at 2884 and 2888 cycles. The crack reformed on the opposite side, as shown, after 3000 cycles.

The predicted stress-intensity factor ranges for the lead crack in panels CVP1 and CVP2 are listed in table 4 and shown in figure 34. The numbers inside the circles along the x axis represent the location of rivets. As shown in the figure, ΔK_1, which governs Mode I crack growth, is the dominant SIF range. The next highest SIF range, Δk_2, which would cause Mode III crack growth, was not significant. Thus, as stated earlier, only the Mode I SIF was used to predict the crack growth. For short crack lengths, the values of the SIF were similar for both

panels. For CVP2, the SIF increased compared to CVP1 as the lead crack tip approached the rivet directly ahead due to the small cracks at the rivet hole.

The half length of the lead crack, as a function of number of fatigue cycles, is shown in figure 35 for panels CVP1 and CVP2. The initial half-crack length prior to loading was 3.5″. Loading condition 2 (table 2) was used to simulate a cylindrical pressurization. In figure 35, the circular and square symbols represent the measured crack lengths at both the left and the right crack tips, respectively, for each panel. The numbers inside the circles along the y axis represent the location of rivets. For panel CVP1, indicated by the open symbols, the vertical jumps indicate crack extension across a rivet hole. When this happened, the crack length increased instantaneously by the diameter of the rivet hole. The rate of crack growth increased as the crack tips approached the rivet holes. The horizontal segments shown in the plot indicate the number of cycles before the crack reformed on the opposite side of the rivet hole. As the crack length increased, the delay in crack reformation (incubation period) decreased due to the larger crack driving force. For panel CVP2, which contained multiple cracks, the vertical jumps in the experimental data indicate linkup of the lead crack and a small multiple crack. When this happened, the crack length increased instantaneously by the diameter of the rivet hole plus the lengths of the small cracks at that rivet. There was no crack reformation. The length of the lead crack front instantaneously grew the length of the small cracks located in the rivets directly ahead. As a result, the number of cycles needed to grow the lead crack to the final length (~12.5 inches) in panel CVP2 was approximately 37%, less than that in panel CVP1.

The Mode I SIF range, ΔK_I, (figure 34) and the crack growth data for 2024-T3 aluminum [17-19] were used in a cycle-by-cycle crack growth analysis program to predict the fatigue crack growth in panels CVP1 and CVP2, also shown in figure 35. A complete description of the analysis procedure is provided in appendix D. Briefly, the rivet holes were not explicitly modeled in the finite element analysis. For panel CVP1, crack growth across rivet holes, indicated by the vertical jumps in the curve, was modeled by instantaneously increasing the length of the crack by the diameter of the rivet hole when the crack reached the rivet. For panel CVP2, crack growth across the rivets was modeled by instantaneously increasing the length of the crack by the diameter of the rivet plus the length of the small cracks at the rivet when the lead crack reached the first small multiple crack. It is important to note that only ΔK_I was used to predict crack growth since it was the dominant SIF. There were indications of other loading modes, specifically the Mode III from the Δk_2, calculated from analysis and from the crack-bulging deflection observed during the test. Mode III crack growth was not included in the crack growth analysis due to the lack of experimental crack growth data. Good agreement was obtained between experiments and predictions relying on ΔK_I. For CVP2, the growth of the small multiple crack in the rivet ahead of the lead crack was not accounted for in the analysis.

In figure 36, the crack tip positions of the lead crack and the small cracks at the rivet holes ahead of the lead crack are plotted as a function of the number of cycles for panel CVP2. The labeled circles on the x axis denote the rivets directly ahead of the lead crack on the left and right hand sides. In general, fatigue cracks formed from the small crack notches when the lead crack tip was an average distance of 0.426″ from the small crack notch tip. The average length of observable cracks formed from the notches was 0.019″. The rate of crack growth of the lead crack and the small crack increased as their tips grew closer together. Sudden linkup of the lead

crack and small crack occurred within an average of four cycles when the average distance of their tips reached 0.238″. In general, this process repeats itself. On one occasion, at rivet 4R, the lead crack and the small crack grew past each other, as shown in the inset of figure 36.

As the damage grew during fatigue loading, the strain distribution changed as shown in figure 37 for panel CVP2. In this figure, the hoop strain at a gage located in the mid-bay of the skin, SG35T, and a gage located in a frame, SG10, is plotted as a function of the lead crack length normalized with respect to the distance of the strain gages from the crack centerline. When this ratio is equal to one, the crack tip and the strain gage location coincide. For a value less than one, the crack is growing towards the gage, and for a value greater than one, the crack has grown past the gage. As shown in the figure, the value of strain in gage SG35T increased as the crack grew and reached a maximum value when the crack tip and gage location coincided. The value of strain decreased as the crack grew past the gage SG35T. For gage SG10, the value of strain increased as the crack grew closer to the gage. The fatigue test was stopped before the crack tip reached SG10.

CIRCUMFERENTIAL BUTT JOINT CONFIGURATION. Photographs of crack extension under fatigue loading obtained from the RCCM system are shown in figure 38 and figure 39 for panels CVP3 and CVP4, respectively. The photographs illustrate the damage growth from the original slit to the first neighboring rivets on either side (3R and 3L). The block size of the grid paper on the top of each photograph is 0.05″. For panel CVP3, the lead crack growth rate increased as the crack approached the rivet directly ahead. As shown in figure 38, after 4715 cycles, the lead crack tip was approximately 0.15″ from rivet hole 3R. Shortly afterwards, at 4918 cycles, the lead crack grew into rivet hole 3R. An additional 1307 cycles were required for the crack to reform on the opposite side of the rivet hole.

The crack growth of the lead crack and small crack directly ahead is shown in figure 39 for panel CVP4. In general, it was observed that when the path of lead crack projected above or below the rivet directly ahead, the lead crack and adjacent small crack grew past each other. This is shown in the photographs on the left side of figure 39. If the path of the lead crack was in a direction to intersect the rivet directly ahead, the crack tips coalesced as shown in the photographs on the right side of figure 39.

The predicted stress-intensity factor ranges for the lead crack in panels CVP3 and CVP4 are listed in table 5 and shown in figure 40. The numbers inside the circles along the x axis represent the location of rivets. As shown in the figure, ΔK_1, which governs Mode I crack growth, is the dominant SIF range. The next highest SIF range, Δk_2, which would cause Mode III crack growth, was not significant. Thus, as stated earlier, only the Mode I SIF was used to predict the crack growth. For short crack lengths, the values of the SIF were similar for both panels. For CVP4, the SIF increased, compared to CVP3, as the lead crack tip approached the rivet directly ahead due to the small cracks at the rivet hole. In both cases, for crack lengths longer than the stringer spacing of 7.5″, the SIF range reduced due to the stiffening of stringers bridging the crack.

The fatigue crack growth behavior of panels CVP3 and CVP4 is shown in figure 41. The initial half crack length prior to loading was approximately 3.5″. Loading condition 2 (table 3) was

used to simulate a narrow-body fuselage down bending where the longitudinal stress was 50% higher than the hoop stress. In figure 41, the circular and square symbols represent the measured crack lengths of the left and the right crack tips, respectively, from both panels. The numbers inside the circles along the y axis indicate the locations of the rivets. For panel CVP3, crack growth across a rivet hole is indicated by a vertical jump in the data, where the crack length instantaneously increases by a length equal to the hole diameter. The horizontal segments shown in the plot indicate the incubation period or the number of cycles for the crack to reform on the opposite side of the rivet hole. For panel CVP4, which contained multiple cracks, the vertical jumps in the experimental data indicate the point when the lead crack and small multiple crack linked up. When this happened, the crack length increased instantaneously by the diameter of the rivet hole plus the lengths of the small cracks at that rivet. There was no crack reformation. The small crack at the rivet hole on the opposite side became the new lead crack front. As a result, the number of cycles to grow the lead crack to the third rivet hole in panel CVP4 was approximately 27% less than that in panel CVP3. At the third rivet holes, 5R and 5L, the crack tips had just reached the first intact stringers (S3 and S5), increasing the incubation period for panel CVP3 and decreasing the subsequent crack growth rate for both panels.

The Mode I SIF range, ΔK_I, (figure 40) and the crack growth data for 2024-T3 aluminum [17-19] were used in a cycle-by-cycle crack growth analysis program to predict the fatigue crack growth in panels CVP3 and CVP4, also shown in figure 41. Details of the analysis procedure are provided in appendix D. Briefly, the analysis based on ΔK_I was in good agreement with the test data for crack growth in both panels until the crack reached the third rivet hole. Little crack bulging was observed during the test, indicating that the crack growth was primarily due to Mode I loading.

The crack tip positions of the lead crack and the small cracks at the rivet holes ahead of the lead crack is plotted as a function of the number of cycles for panel CVP4 in figure 42. In general, fatigue cracks formed from the small crack notches when the lead crack tip was an average distance of 0.283″ from the small crack notch tip. The average length of observable cracks formed from the notches was 0.0115″. The crack tips coalesced at rivets 3R and 4R while they grew past each other at rivets 3L, 4L, 5L, and 5R, as shown in the inset of figure 42. Cracks typically reformed from the notch tip of the crack on the opposite side once linkup occurred or as soon as the two cracks grew past each other.

Strain redistribution occurred as fatigue cracks formed and grew in panels CVP3 and CVP4 as shown in figure 43. In this figure, the longitudinal strain at a gage located in the mid-bay of the skin, SG36L, and a gage located in a stringer, SG26, is plotted as a function of the lead crack length normalized with respect to the distance of the strain gages from the crack centerline for both panels. When this ratio is equal to one, the crack tip has grown to the strain gage location. For a ratio value less than one, the crack is growing towards the gage, and for a ratio value greater than one, the crack has grown past the gage. As shown in the figure, the strain measured in gage SG36L in both panels reaches a maximum when the crack tip and gage location coincided. The value of strain decreased as the crack grew past gage SG36L. For gage SG26, the measured strain increased as the crack grew closer to the gage and is maximum when the crack grew up to the gage. Note that the trends of the results for both panels are nearly identical. This provides confidence that the applied loadings, data acquisition characteristics, and test

procedure were the same for both panels, that the test data is repeatable and reliable, and that the small multiple cracks had no effect on the global strain response.

COMPARISONS WITH OTHER DATA. The fatigue crack growth data generated in this study was compared with similar data previously generated by Boeing Aircraft Company [20] on wide-body panels using a full-barrel test fixture. Similar to the damage in the CVP1 and CVP2 panels, the initial damage configuration for the Boeing wide-body panels consisted of a two-bay crack in the outer rivet row of a longitudinal lap joint with (test 2) and without (test 1) smaller, collinear multiple cracks approximately 0.05″ long. Unlike the CVP1 and CVP2 panels representing a narrow-body aircraft fuselage structure, the Boeing panels represented wide-body aircraft fuselage structure having a radius of 127″. Other differences include the joint configuration, substructure details, and the loading fixture. The raw data for the Boeing full-scale test is shown in table H-1 of appendix H for a baseline panel containing only a lead crack, test 1, and a second panel containing the same lead crack configuration with the addition of multiple cracks, test 2.

For panel test 1, a 5″ saw cut was made in the central tear strap and the outer rivet row of the skin placed symmetrically across a frame. The lead crack tips terminated at fastener holes. Consequently, no cracks developed after 1170 cycles. Similar phenomena was observed in panel CVP1 after the lead crack grew into a fastener hole, a number of cycles were required to reform a crack on the opposite side of a hole. For test 1, the lead crack tips were saw cut 0.25″ beyond the fastener holes to a length of 5.71″, and the test was resumed. Stable fatigue crack growth occurred up to 3101 cycles, where the total crack length was 36.91″, at which fatigue loading was terminated.

For panel test 2, small multiple cracks were saw cut in the outer rivet row of the skin. In addition, a 5″ saw cut was placed symmetrically across a frame in the outer critical rivet row of the skin. The tips of the lead crack extended 0.05″ beyond the fastener holes. Unlike panel test 1, the central tear strap was intact prior to testing panel test 2. After 281 cycles, no crack growth was observed in panel test 2 and the tear strap was cut to match the initial condition in panel test 1. The test was then resumed. Stable crack growth occurred up to 1231 cycles, where the total crack length was 17.20″. At 1233 cycles, dynamic crack extension occurred, where the total crack length was 37.44″, at which fatigue testing was terminated.

To compare the results from panel test 1 and panel test 2, the raw data was reduced (appendix H) so that the initial damage configurations and corresponding cycle counts in both panels matched—an initial crack length of 5.71″ with the central tear strap severed. For panel test 1, the cycle count data was shifted by 1171 cycles corresponding to a crack length of 5.71″. For test 2, the cycle count data was shifted by 451 cycles corresponding to a crack length of 5.71″, which was approximated using a linear interpolation. In addition, the final crack lengths used were matched to correspond to stable fatigue crack growth. For panel test 1, the final crack length assumed in the comparison was 17.20″, which was selected to best compare with that in panel test 2, where the final crack length for stable cracking was 17.30″. The reduced data is shown in table H-2 in appendix H for panel tests 1 and 2.

A comparison of the fatigue crack growth data generated for CVP1 and CVP2 panel with the Boeing full-scale barrel panels, test 1 and test 2, is shown in figure 44. The circular symbols are

the data set from the CVP1 (baseline) and the CVP2 (multiple crack) panels. The square symbols are the data set from the Boeing test for the baseline panel containing only a lead crack (test 1) and for the second panel containing the same lead crack configuration with the addition of multiple cracks (test 2). For each data set in the figure, the crack length data and the cycle count data were normalized with respect to the final crack length and final cycle count for the baseline panel. As shown in figure 44, the normalized fatigue crack growth data from both sets have similar rates. In addition, both data sets show that small multiple crack caused a reduction in the number of cycles to grow the crack to a predetermined length. For the current study, a 37% reduction was measured; and for the Boeing full-scale barrel tests, a 54% reduction was measured.

RESIDUAL STRENGTH.

After the fatigue loading, each panel was loaded quasi-statically to failure to measure the crack growth and residual strength. The lead crack length for the longitudinal lap joint panels (CVP1 and CVP2) was approximately 25″ and for the circumferential butt joint panels (CVP3 and CVP4) was approximately 19″. For longitudinal lap joint panels, the frame directly underneath the crack centerline, frame F4, was cut prior to the residual strength test to simulate a broken frame. For the circumferential butt joint panels, stringer S4 had already been cut to simulate a broken stringer. All the residual strength data is provided in the tables of appendix I. Representative results are presented for each joint configuration.

LONGITUDINAL LAP JOINT CONFIGURATION. Results from the residual strength test of panels CVP1 and CVP2 are shown in figure 45, where the square and circular symbols represent the crack extension for the left and right crack tips, respectively. The numbers inside the circles along the x axis indicate a rivet location. During the test, cylinderical pressurization was applied quasi-statically, and the crack extension measured up to panel failure. In the initial stages of loading, slow stable crack extension was observed in both panels up to 10.25 psi pressure for panel CVP1 and 8.5 psi pressure for panel CVP2. The crack grew rapidly through rivets 9 through 11 on both the right and left side to the first intact frames (F3 and F5) for both panels, and then were arrested. An increase of pressure was required to grow the cracks past the frames in both panels, and stable crack extension continued until catastrophic failure occurred at 11.14 psi for panel CVP1 and 9.16 psi for panel CVP2. The presence of multiple cracks reduced the residual strength by approximately 20%.

The position of the lead crack tip and the small multiple crack tips at rivets 9R through 18R are plotted as a function of the applied pressure in figure 46 for the right side of panel CVP2. In the figure, the point at which the lead crack and small crack directly ahead of it coalesced is called the linkup position and is indicated in the plot by the two arrowheads in contact. The direction of crack growth, right or left, is indicated by the arrowheads. Initially, stable crack extension of the lead crack occurred where an increase in applied pressure to 8.44 psi was required to grow the crack. At 8.44 psi, the lead crack and the small crack at rivet 9R linked. The crack at rivet 9R had grown during the loading, so the new crack front was at approximately 14″. The applied pressure was increased to 8.57 psi, where the lead crack and small cracks at rivets 10R through 15R suddenly merged. Crack growth was then arrested due to the intact frame located at rivet 13R. With increase in the applied pressure to 8.60, 8.8, and 9.019 psi, linkup occurred between

the lead crack and small multiple cracks at rivets 15R, 16R, and 17R, respectively. At an applied pressure of 9.16 psi, panel CVP2 failed catastrophically. It was observed that the lengths of the small multiple cracks at linkup were nearly constant with an average length of 0.3697".

CIRCUMFERENTIAL BUTT JOINT CONFIGURATION. The load application points failed prematurely during the residual strength test of panel CVP3. A tab end failed first at the longitudinal load application point as shown in figure 47. During the original fatigue loading of CVP3, a fatigue crack initiated from a manufacturing flaw at the stop-drill hole at the end of a load transfer slot. The fatigue crack grew and caused the end tab to break during the first residual strength test attempt. The tab end was repaired and the residual strength test was resumed. The tab ends at several longitudinal load application points then failed as shown in figure 48. At these locations, the tab ends delaminated, resulting in bearing failures of the tab ends. All tab ends were then reinforced with several layers of 4130A steel doublers as shown in figure 49. The doubler layers were cold bonded using EA9309.3NA and bolted together using NAS 6204 and 6205 steel bolts. After reinforcing all tab ends at the longitudinal load application points, the residual strength test was resumed and the panel failed in the test section during the third test attempt.

Results from three residual strength tests for panel CVP3 are shown in figure 50, where each of the three runs is shown using different symbols. Crack growth began at a pressure of 17 psi in the first run. Stable tearing then occurred up to a pressure of 19.1 psi. At this point, one of the load attachment points failed and the test was stopped. The broken load attachment point was repaired and the test was restarted from zero load. During the second run, the panel was loaded monotonically up to a pressure of 18.4 psi, then stringer S3 broke causing a large amount of crack extension at the left crack tip. One of the longitudinal load application reinforcement doublers delaminated at one of the load application points. After repairing the panel a second time, the panel was loaded again. In the third run, stringer S5 failed at an applied pressure of 17 psi, causing the crack to extend to the next intact stringers S2 and S6. The panel then failed catastrophically at a pressure of 17.9 psi. Note that after each attempt of residual strength, the maximum load reduced.

The effect of multiple cracking on the residual strength of the circumferential butt joints cannot be accurately quantified since the final residual strength of panel CVP3 could not be determined. However, the effect of multiple cracking on the damage growth process can be seen using the first test done for the residual strength. Figure 51 shows the results from the first residual strength test for panel CVP3 and the residual strength test for panel CVP4. In this figure, the numbers inside the circles along the x axis indicate the location of rivets. For panel CVP3, growth of the lead crack was slow and stable up to rivet 7. A continuous increase in load was required to extend the crack. However, the load attachment point failed prematurely. For panel CVP4, once the lead crack started to grow, the subsequent growth was very rapid through rivet 7. Catastrophic failure of panel CVP4 occurred at a pressure of 20.75 psi.

The position of the lead crack tip and the small multiple crack tips at rivets 6L through 12L is plotted as a function of the applied pressure in figure 52 for the left side of panel CVP4. In the figure, the point at which the lead crack and small crack directly ahead coalesce is called the linkup position and is shown in the plot by the two arrowheads in contact. The direction of crack

growth, left or right, is indicated by the arrowheads. At an applied pressure of 20 psi, the lead crack and the small crack at rivet 7L linked up. The crack from rivet 7L continued to grow on further increase in applied pressure. At an applied pressure of 20.75 psi, panel CVP4 failed catastrophically. The lengths of the small multiple cracks at linkup were nearly constant, with an average length of 0.4374".

COMPARISON WITH OTHER DATA. The residual strength data generated in this study was compared with similar data previously generated by the Boeing Aircraft Company [20 and 21] on wide-body panels, using a full-barrel test fixture, and by Foster Miller [22] on narrow-body panels, using a panel pressurization fixture. The Boeing panels tested [20 and 21] represented wide-body aircraft fuselage structure having a radius of 127". For the panels tested in reference 20, a floating frame construction was used and for the panels tested in reference 21, a shear-tied frame construction was used. Similar to FAA longitudinal lap joint panels CVP1 and CVP2, the Boeing panels had an initial damage configuration of a two-bay crack in the outer rivet row of a longitudinal lap joint with and without smaller, collinear multiple cracks with a length of approximately 0.05". In addition, the central frame was severed.

The Foster Miller (FM) panels tested [22] represented narrow-body fuselage structure having a radius of 75". Different from the two-bay crack configurations for the FAA and Boeing tests, the FM panels had an initial damage configuration of a single-bay crack in the outer rivet row of a longitudinal lap joint with and without smaller, collinear multiple cracks with a length of approximately 0.05". Other differences among the FAA, Boeing, and FM tests include the joint configuration, skin thickness, substructure details, and the loading fixture employed.

The reduction of residual strength due to multiple cracks measured in these tests is compared in figure 53. As shown in three of the four tests, an approximate 20% reduction in the residual strength was measured. For the shear-tied panels tested by Boeing [21], the residual strength was reduced by ~10% due to multiple cracks.

POSTTEST OBSERVATIONS AND ANALYSIS.

After the residual strength tests, all panels were examined to determine the extent of damage. In general, the final state of damage was similar for the two panels of each joint configuration. Posttest analysis of the strains was conducted to interpret the observed damage.

LONGITUDINAL LAP JOINT CONFIGURATION. The final state of damage in panel CVP1 is shown in the photographs in figure 54 (the final state of damage in panel CVP2 was similar). As shown in the figure, the skin crack grew to a length of approximately 68". A large amount of permanent bulging of the crack faces occurred. A considerable amount of damage occurred to the substructure as frames F3 and F5 were fractured (frame F4 was cut prior to the residual strength test).

Analysis of the residual strength test data of panels CVP1 and CVP2 shows that frames F3 and F5 fractured due to load transfer from the skin to the frame as the crack grew. In both panels, the frame failure occurred from the hi-lok connecting the outer flange of the frame to the stinger as shown in the photograph in figure 55 for CVP1. In both panels, a strain gage was located in the

frame approximately 3″ from this crack site. The strain measured by the strain gage and the crack length is plotted as a function of applied pressure for panels CVP1 and CVP2 in the graph in figure 55. As shown, the value of strain increased gradually with pressure. When the crack reached frame F5 there was an abrupt increase in the strain. Values of strain of 4958 με and 5219 με were measured in frame F5 at failure for panels CVP1 and CVP2, respectively.

CIRCUMFERENTIAL BUTT JOINT CONFIGURATION. The final state of damage in panel CVP3 is shown in figures 56 and 57 (the final state of damage in panel CVP4 was similar). The photographs in figure 56 show the crack path along the original rivet row, the change in crack path from the original rivet row, and the fractured doublers at the load transfer slots. Once the doublers fractured, the panel was broken completely in half. A considerable amount of damage occurred to the substructure where all seven stringers fractured during the residual strength test as shown in the photographs in figure 57.

The maximum strain measured in stringer S5 is plotted as a function of applied pressure in figure 58 for both panels. Data plotted for panel CVP3 is from the first residual strength test attempt. As shown, the value of strain increased linearly as the pressure increased. Values of strain of 3710 με and 3992 με were measured in frame S5 at failure for panels CVP3 and CVP4, respectively.

CONCLUDING REMARKS

An experimental and analytical investigation was undertaken to assess the effects of multiple cracking on the fatigue crack growth and residual strength characteristics of curved panels with either a longitudinal lap splice or a circumferential butt joint. The Full-Scale Aircraft Structural Test Evaluation and Research (FASTER) facility was used to apply realistic loading conditions to curved panels representing fuselage sections. Both quasi-static and constant-amplitude fatigue loadings were applied to the panels. A geometrically nonlinear finite element analysis was used to determine the strain distribution in the panels and the fracture parameters necessary for predicting the fatigue crack growth behavior of the panel were calculated.

A total of four panels were tested, two panels with a longitudinal lap splice and two with a circumferential butt joint. For each joint configuration, one panel contained only a lead crack and the other contained a lead crack with small multiple cracks. Strains were measured under quasi-static loading conditions to ensure proper load introduction to the panels. The strain measurements were highly repeatable and were in good agreement with the finite element analyses. The presence of multiple cracks did not affect the overall global strain response.

In general, symmetric, collinear crack propagation was observed under constant-amplitude fatigue loading for the four panels tested. Reasonable agreement was obtained between experimental fatigue crack growth data and predictions relying on the Mode I stress-intensity factors calculated from finite element analyses of the test panels. The number of cycles to grow a fatigue crack to a predetermined length was reduced by approximately 37% due to the presence of multiple cracks for the longitudinal lap joint panels and 27% for the circumferential butt joint panels.

Residual strength tests were conducted on each panel after the fatigue loading. For the curved panels with the longitudinal lap splice, the initial damage consisted of a two-bay crack with a length of approximately 25″ with the central frame cut. The presence of multiple cracks reduced the residual strength of the panels with a longitudinal lap joint by approximately 20%. For the curved panels with the circumferential butt joint, the initial damage consisted of a four-bay crack with a length of approximately 19″ with the central stringer cut. The residual strength of the baseline panel containing only a lead crack was not measured due to premature failures at the load application points. Consequently, the effect of multiple cracks on the residual strength of the circumferential butt joint configuration could not be quantified. However, it was observed that the growth of lead crack into the first rivet was more rapid for the panel containing multiple cracks.

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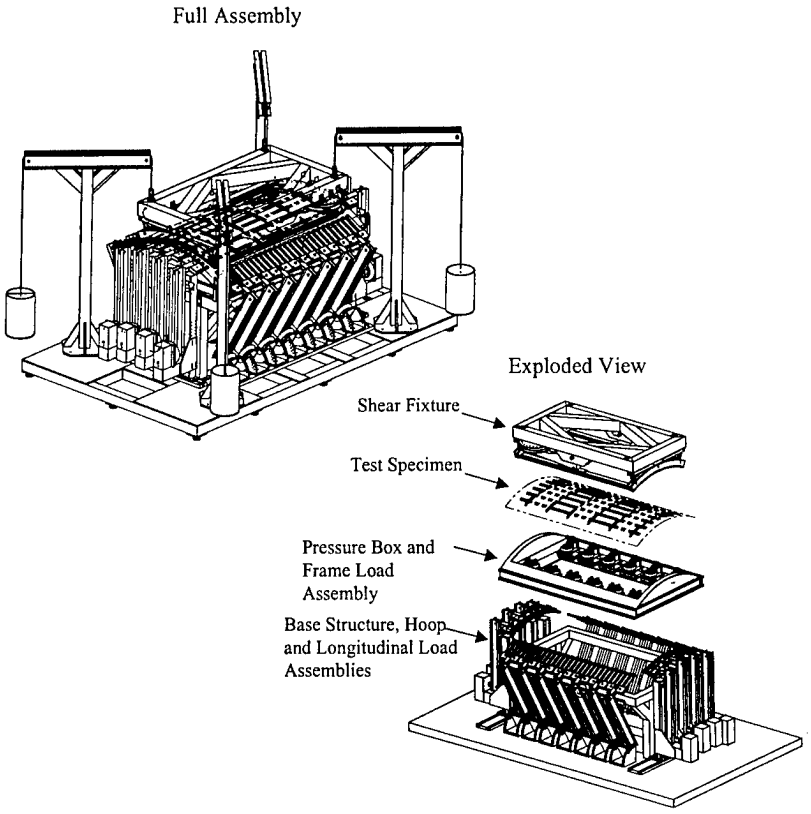


FIGURE 1. FULL-SCALE AIRCRAFT STRUCTURAL TEST EVALUATION AND RESEARCH (FASTER) FIXTURE

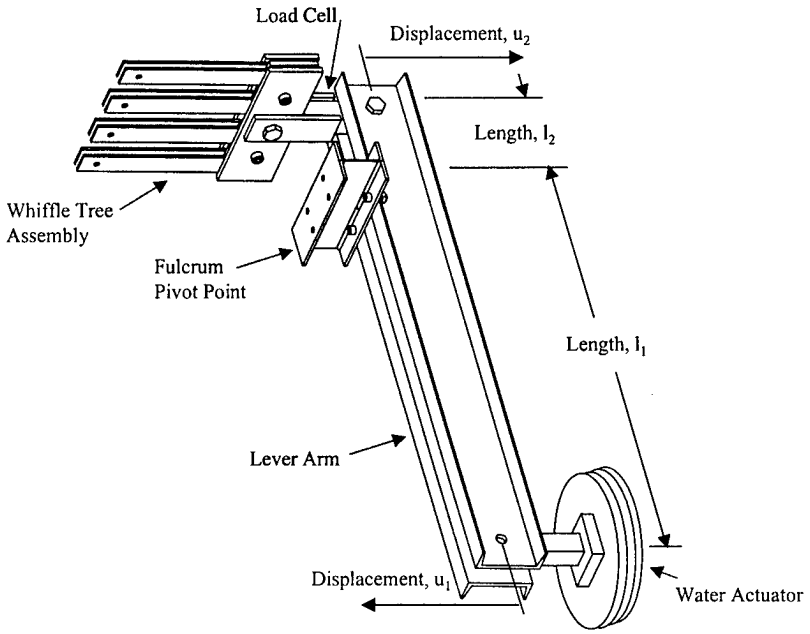


FIGURE 2. SCHEMATIC OF LONGITUDINAL AND HOOP LOADING MECHANISM

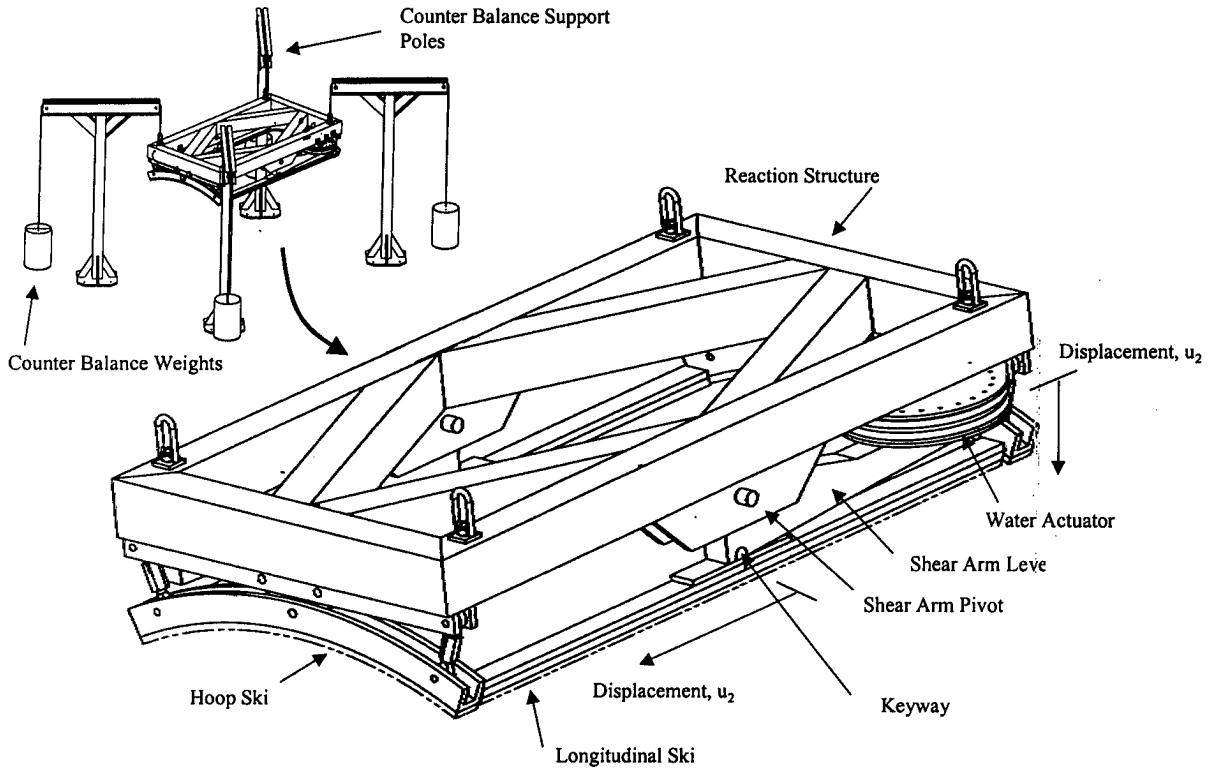


FIGURE 3. SCHEMATIC OF SHEAR LOADING MECHANISM

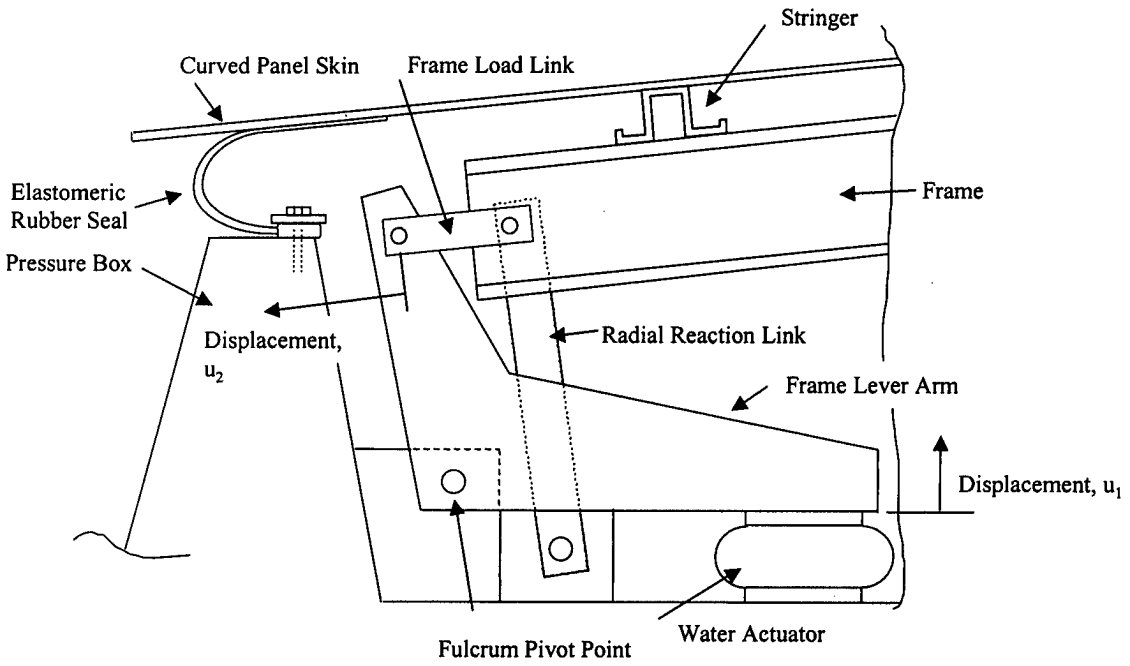


FIGURE 4. SCHEMATIC OF FRAME LOADING MECHANISM

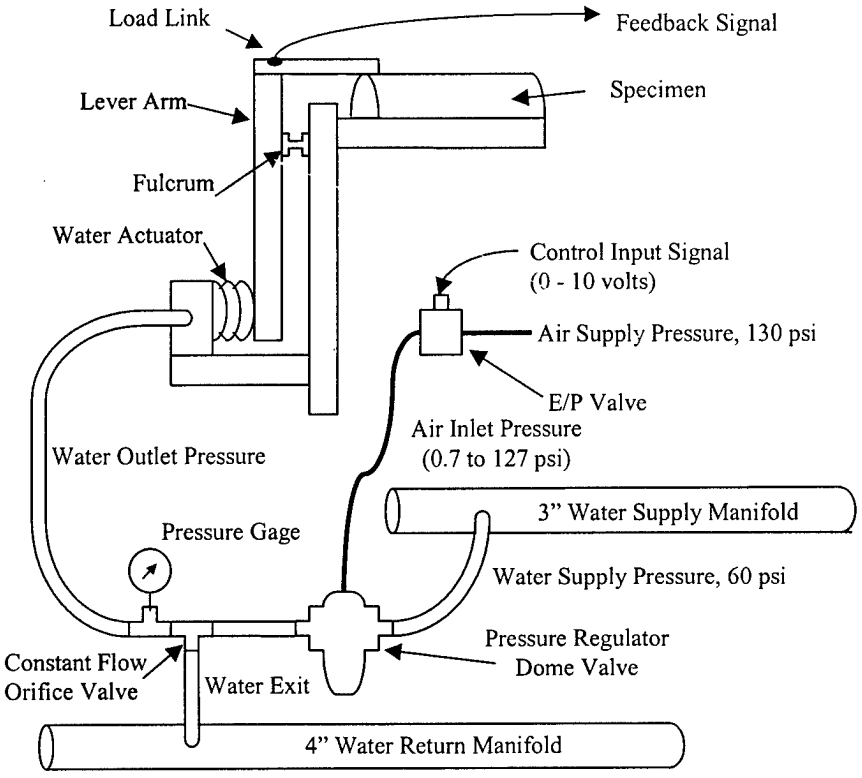


FIGURE 5. SCHEMATIC OF THE HYDRAULIC AND PNEUMATIC SYSTEM

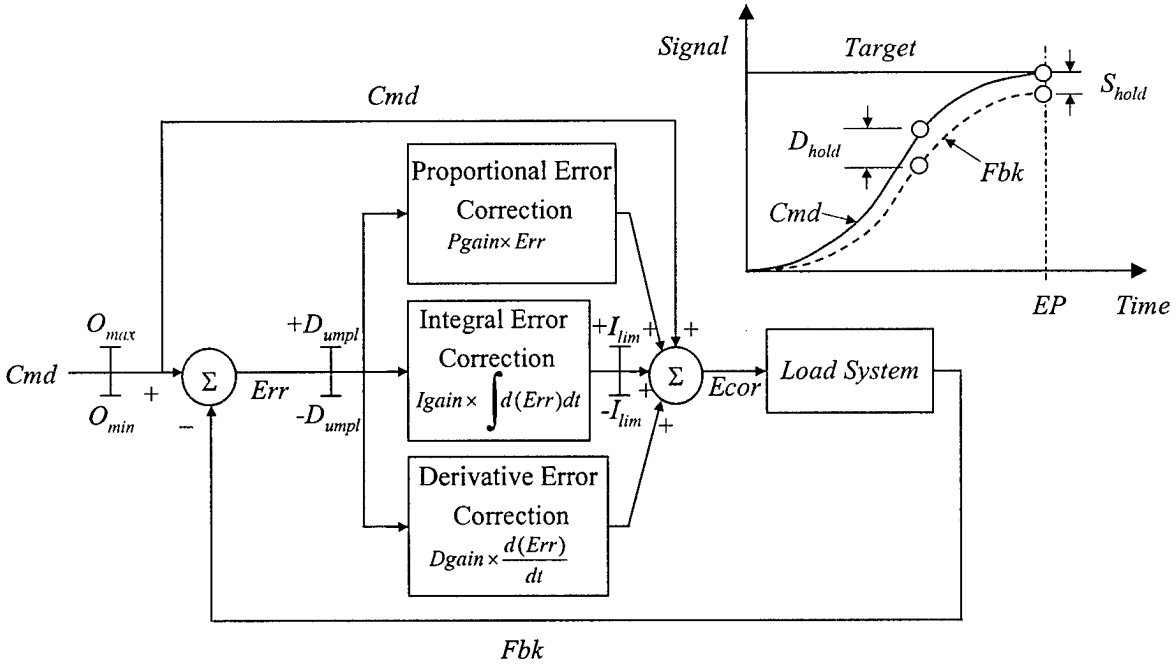


FIGURE 6. SCHEMATIC OF THE PROPORTIONAL INTEGRAL DERIVATIVE (PID) CLOSED-LOOP ERROR CORRECTION PROCESS

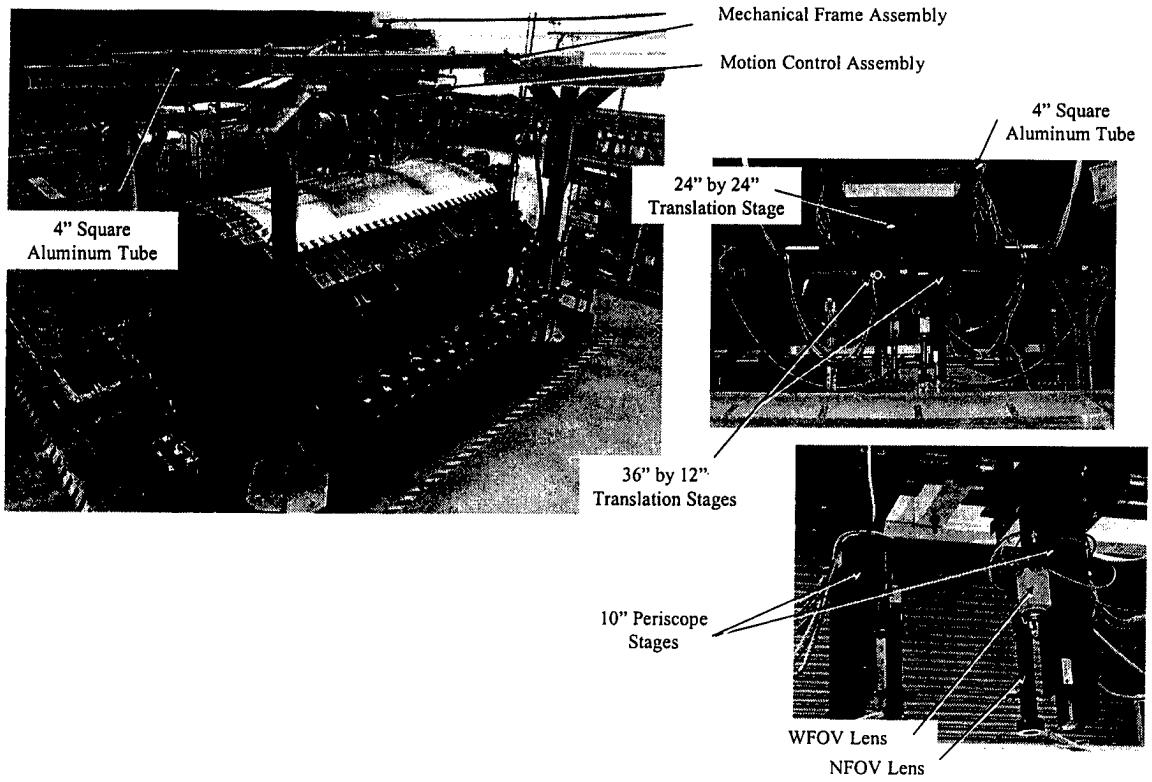


FIGURE 7. PHOTOGRAPHS OF FASTER FACILITY AND RCCM SYSTEM

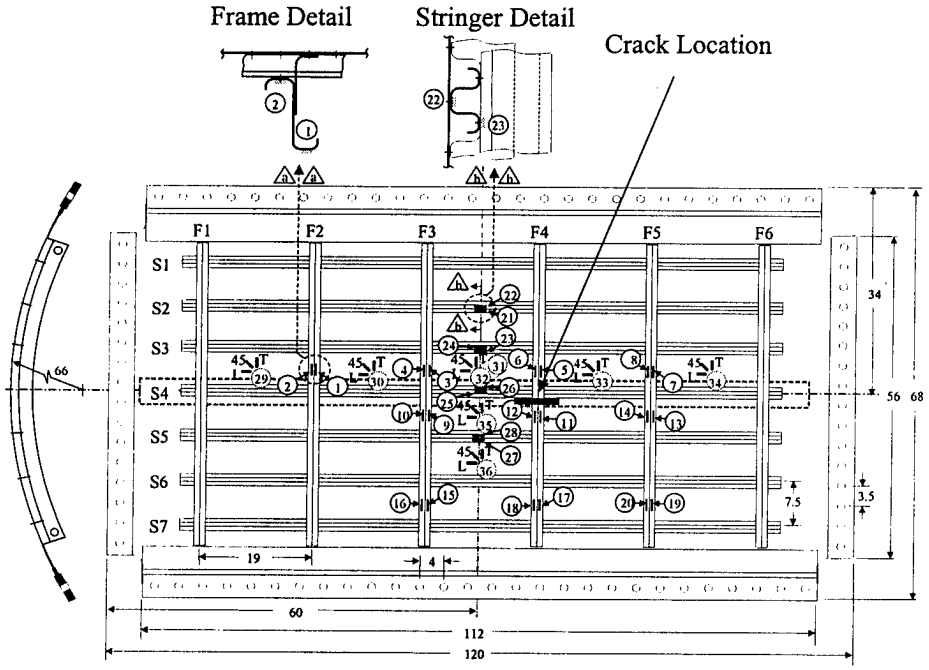


FIGURE 8. CVP1 AND CVP2 PANEL CONFIGURATION AND STRAIN GAGE LOCATIONS

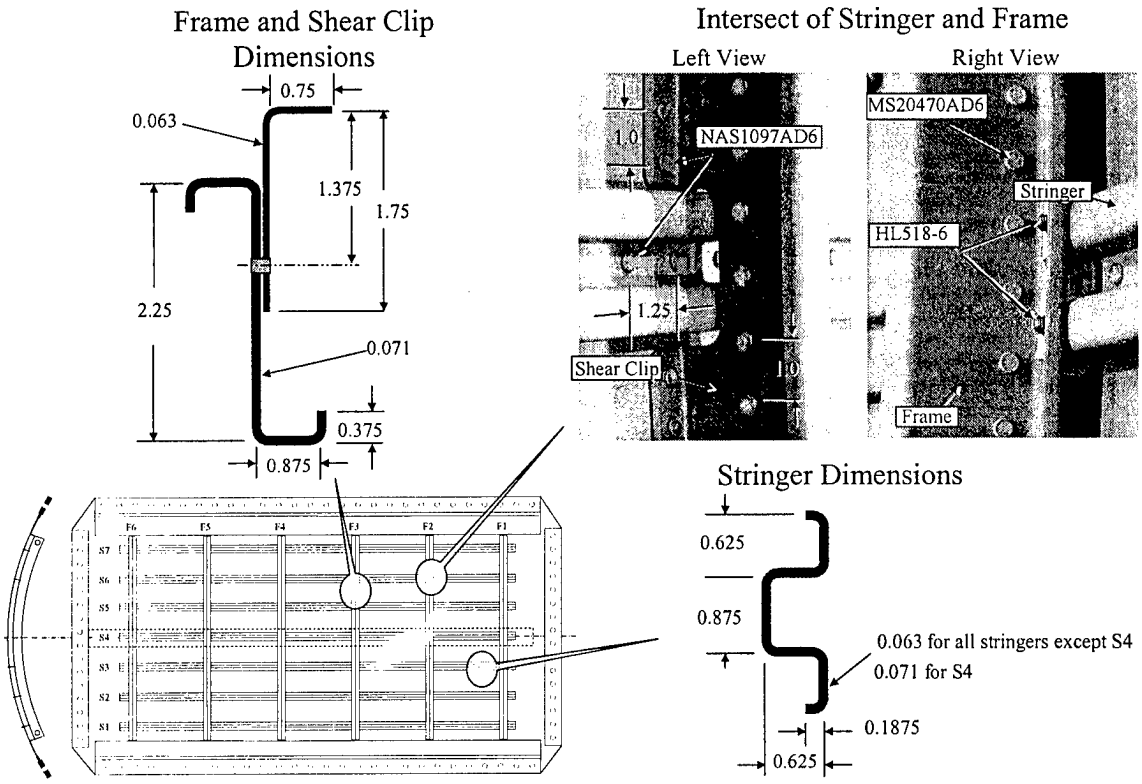


FIGURE 9. DIMENSIONS OF FRAMES, STRINGERS, SHEAR CLIPS, AND INTERSECT OF STRINGER AND FRAME

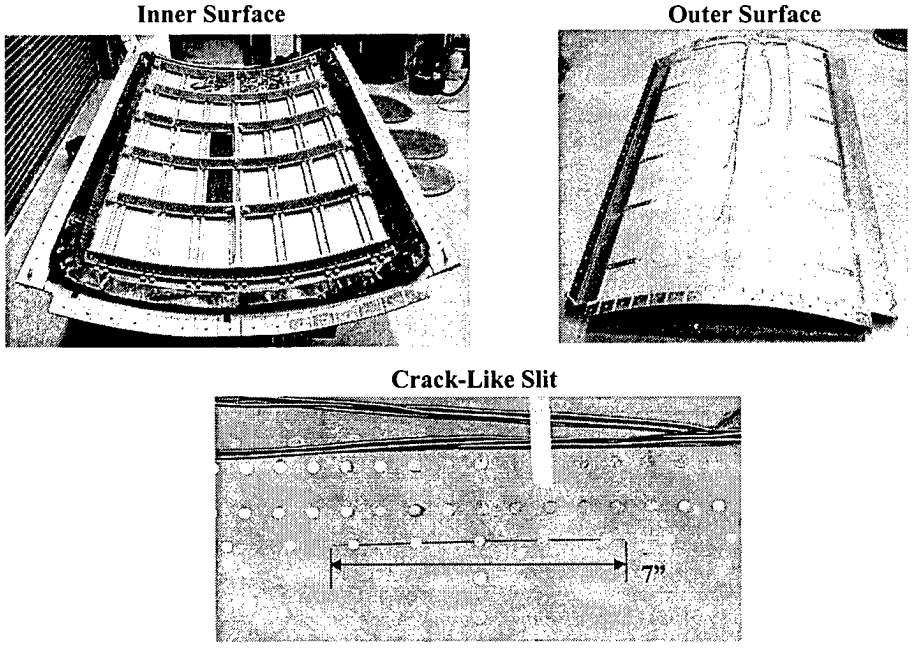


FIGURE 10. PHOTOGRAPHS OF PANEL CVP1 SHOWING THE INNER AND OUTER SURFACES AND THE INITIAL CRACK-LIKE SLIT

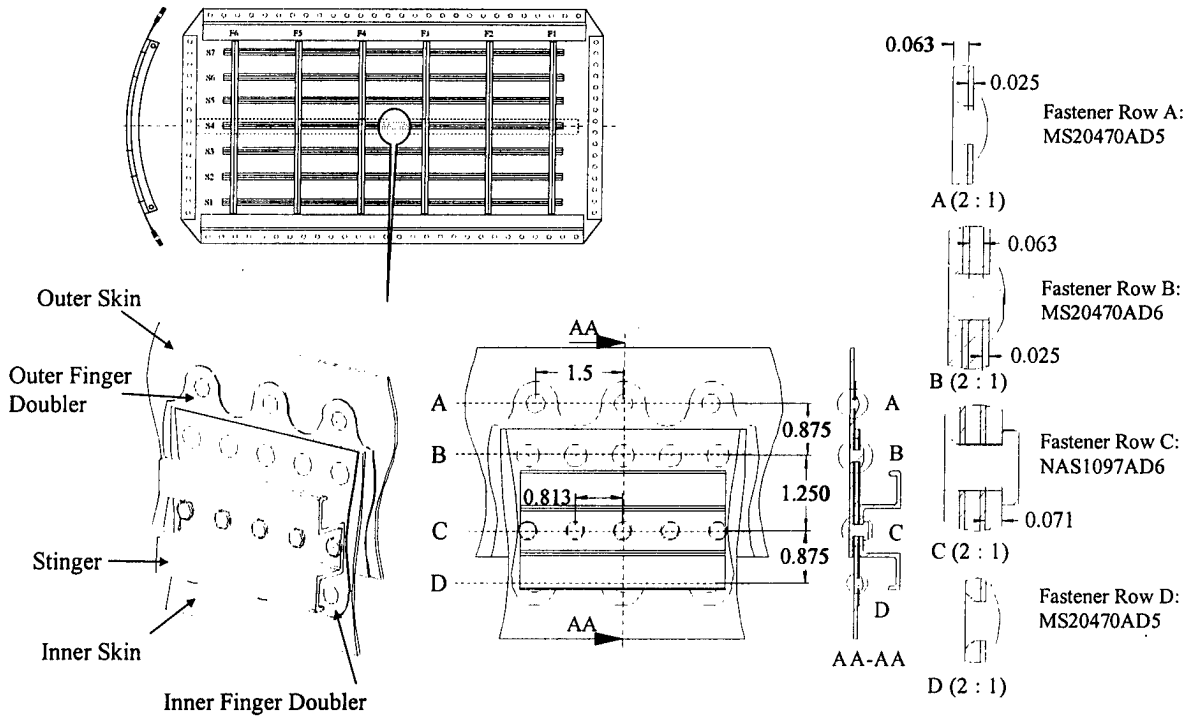


FIGURE 11. JOINT CONFIGURATION FOR PANELS CVP1 AND CVP2

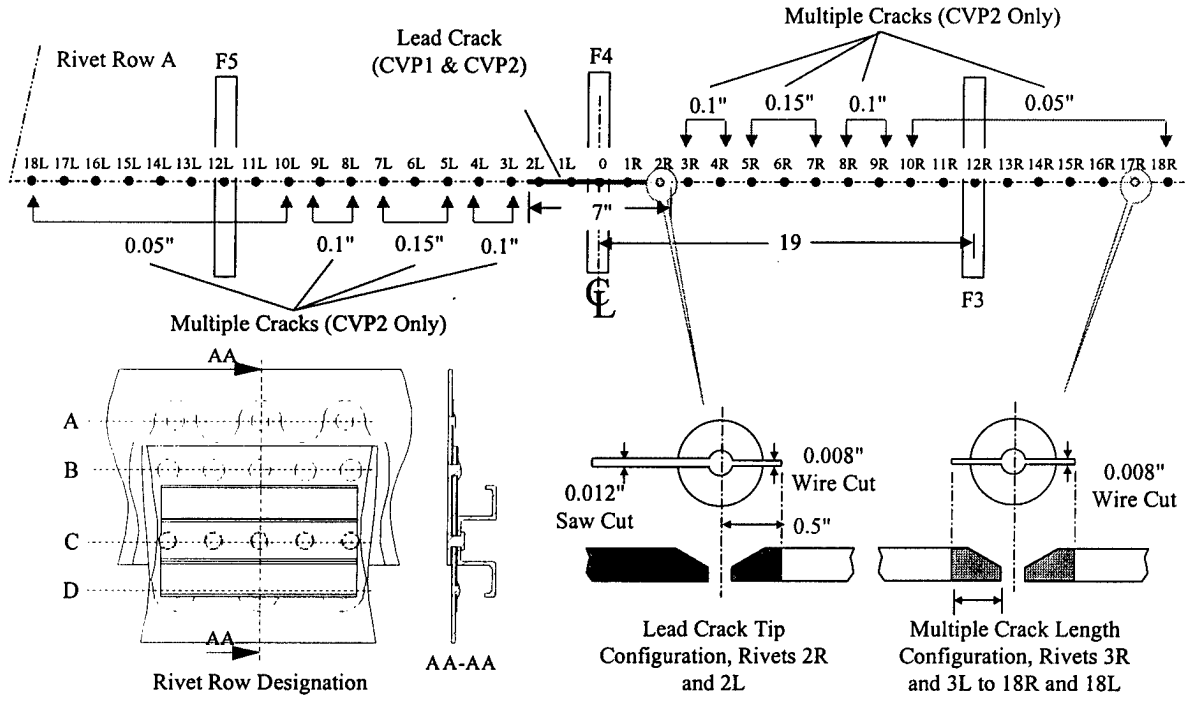


FIGURE 12. INITIAL DAMAGE CONFIGURATIONS FOR PANELS CVP1 AND CVP2

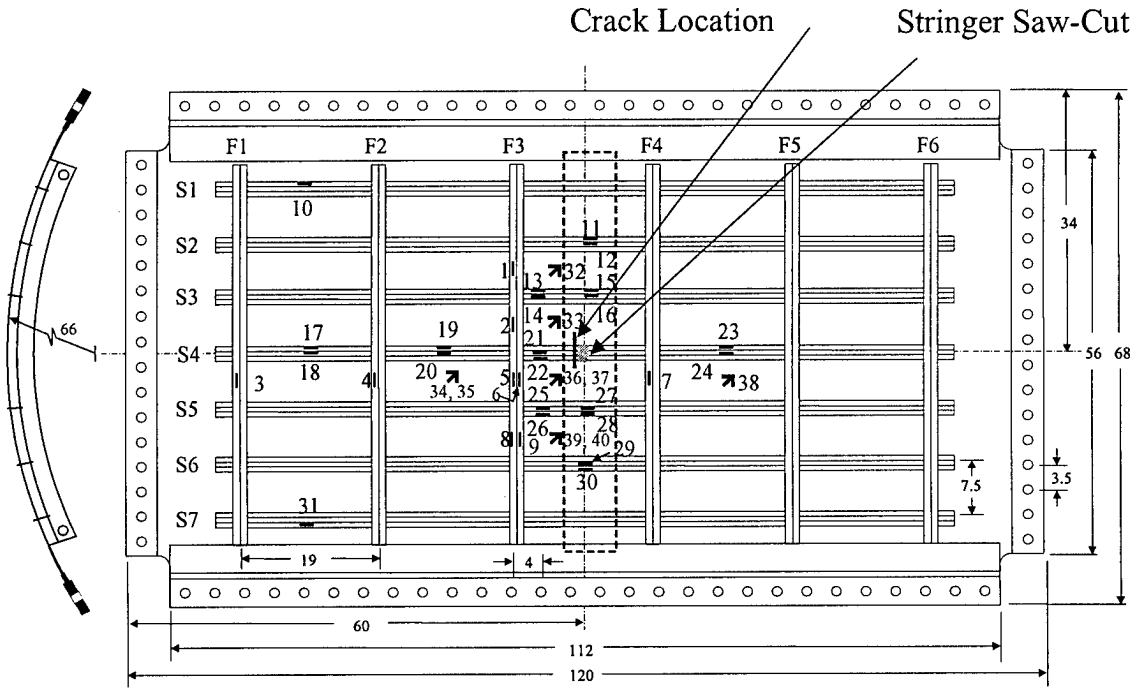


FIGURE 13. CVP3 AND CVP4 PANEL CONFIGURATIONS AND STRAIN GAGE LOCATIONS

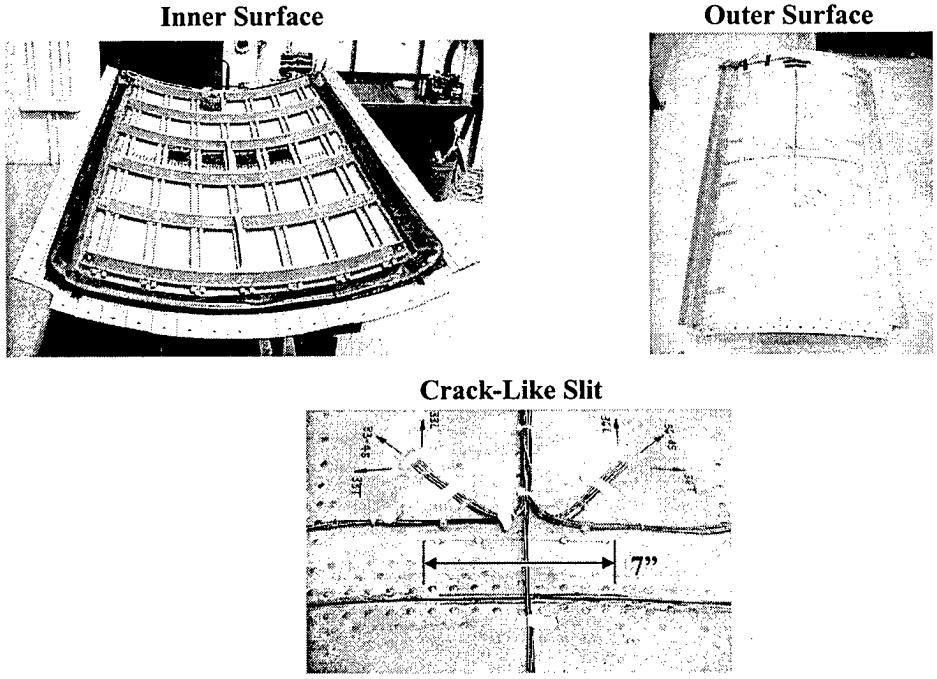


FIGURE 14. PHOTOGRAPHS OF PANEL CVP3 SHOWING THE INNER AND OUTER SURFACES AND THE INITIAL CRACK-LIKE SLIT

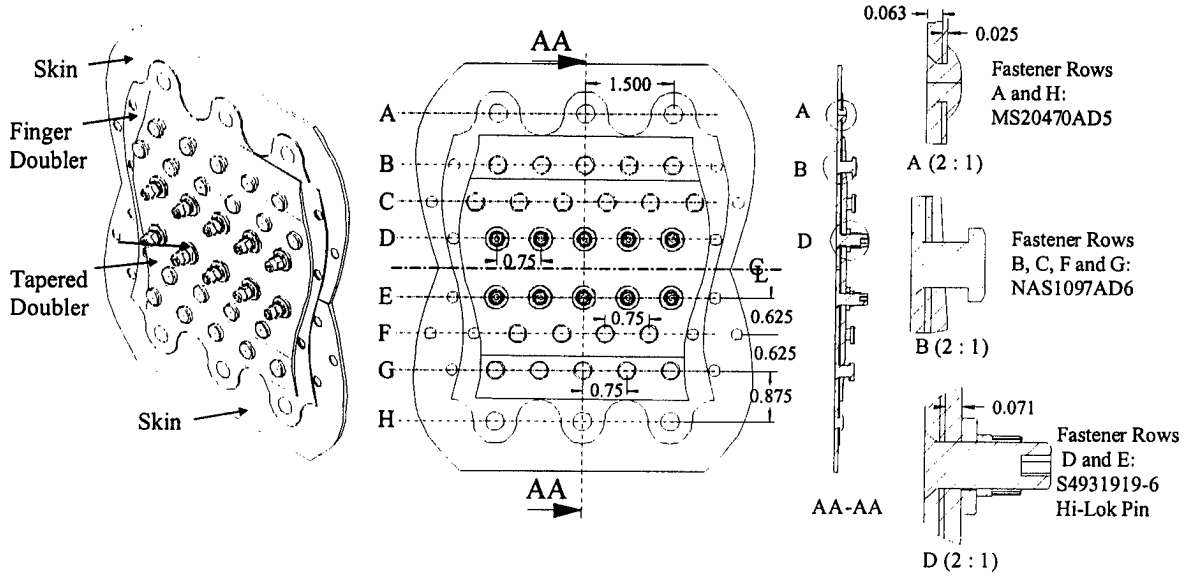


FIGURE 15. JOINT CONFIGURATION FOR PANELS CVP3 AND CVP4

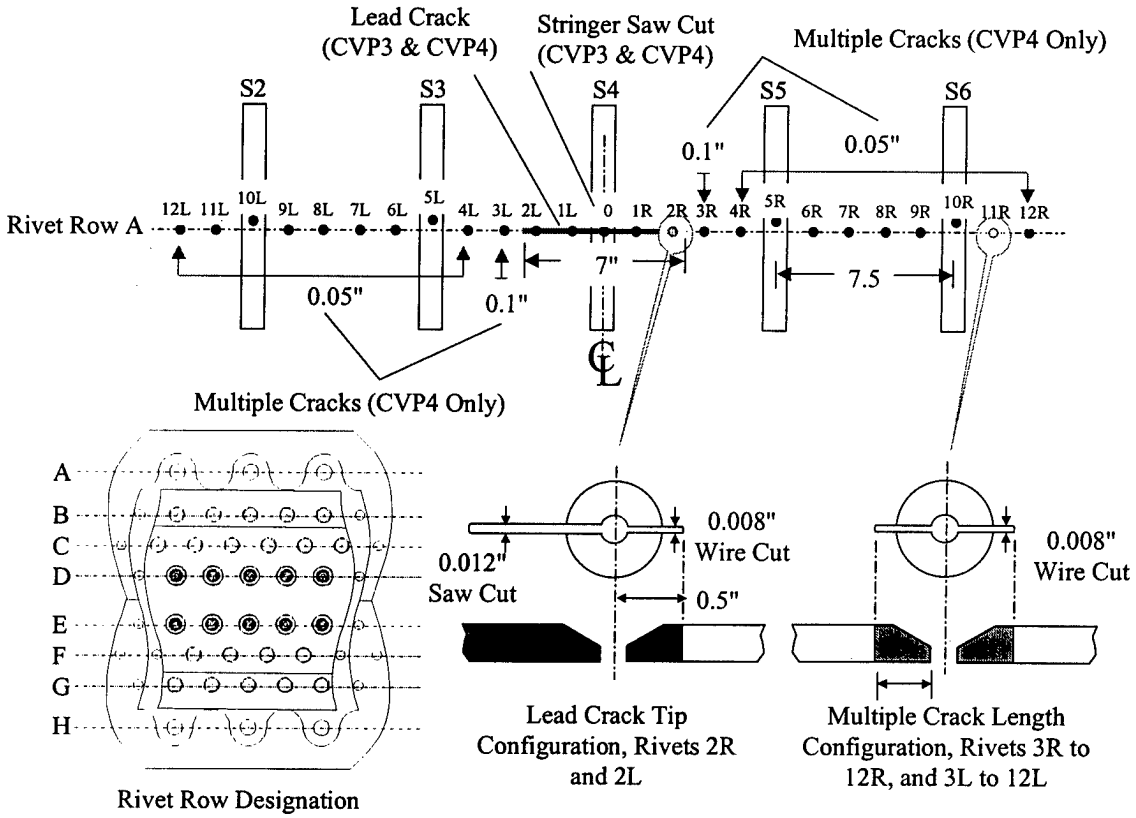


FIGURE 16. INITIAL DAMAGE CONFIGURATIONS FOR PANELS CVP3 AND CVP4

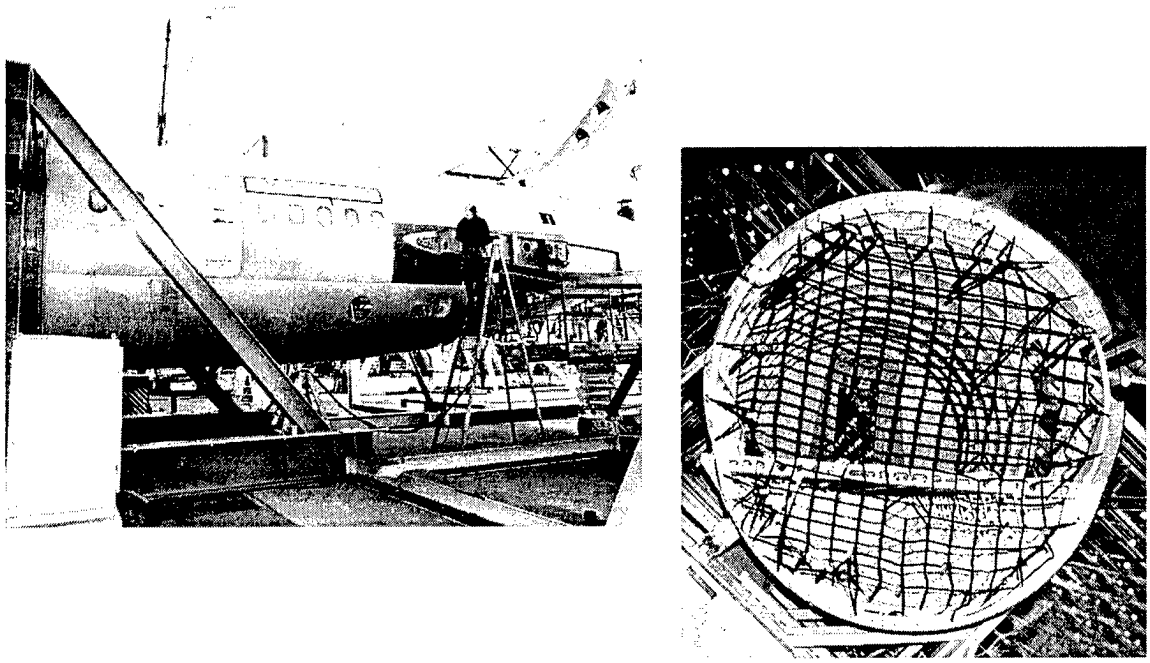


FIGURE 17. BOEING AFT FUSELAGE SECTION TEST ARTICLE

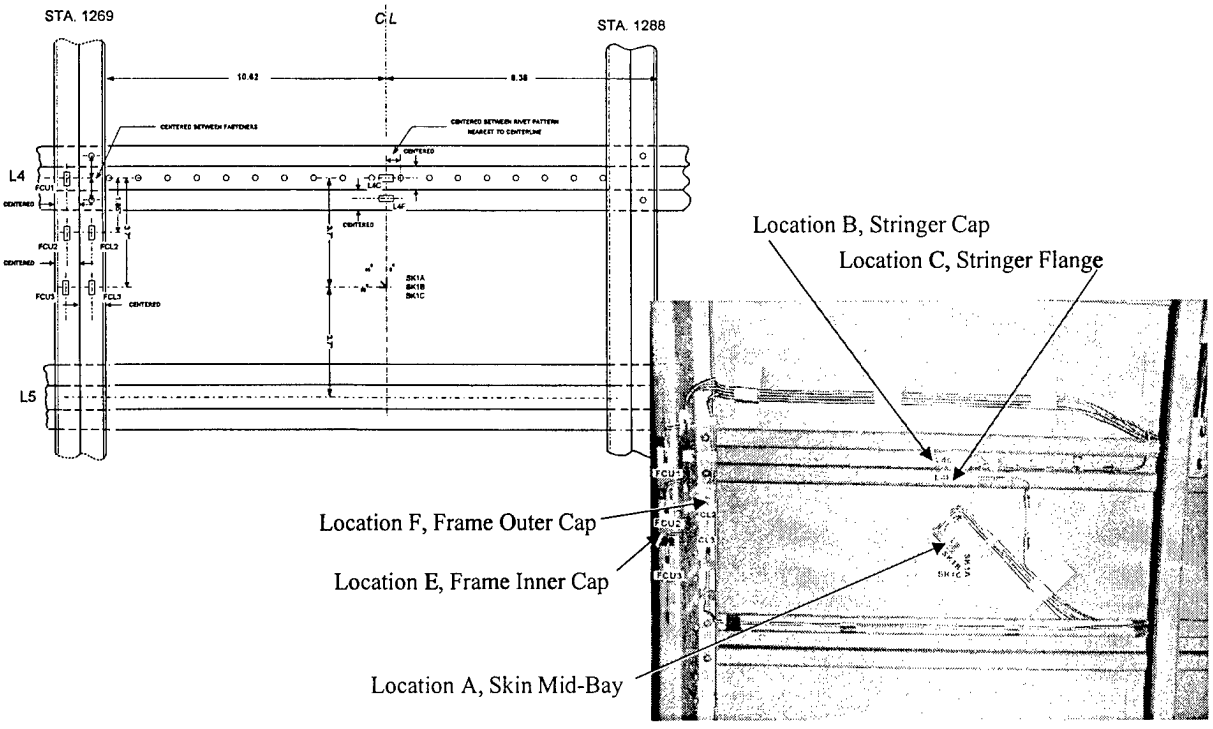


FIGURE 18. LOCATION OF STRAIN GAGES IN AFT FUSELAGE SECTION TEST ARTICLE

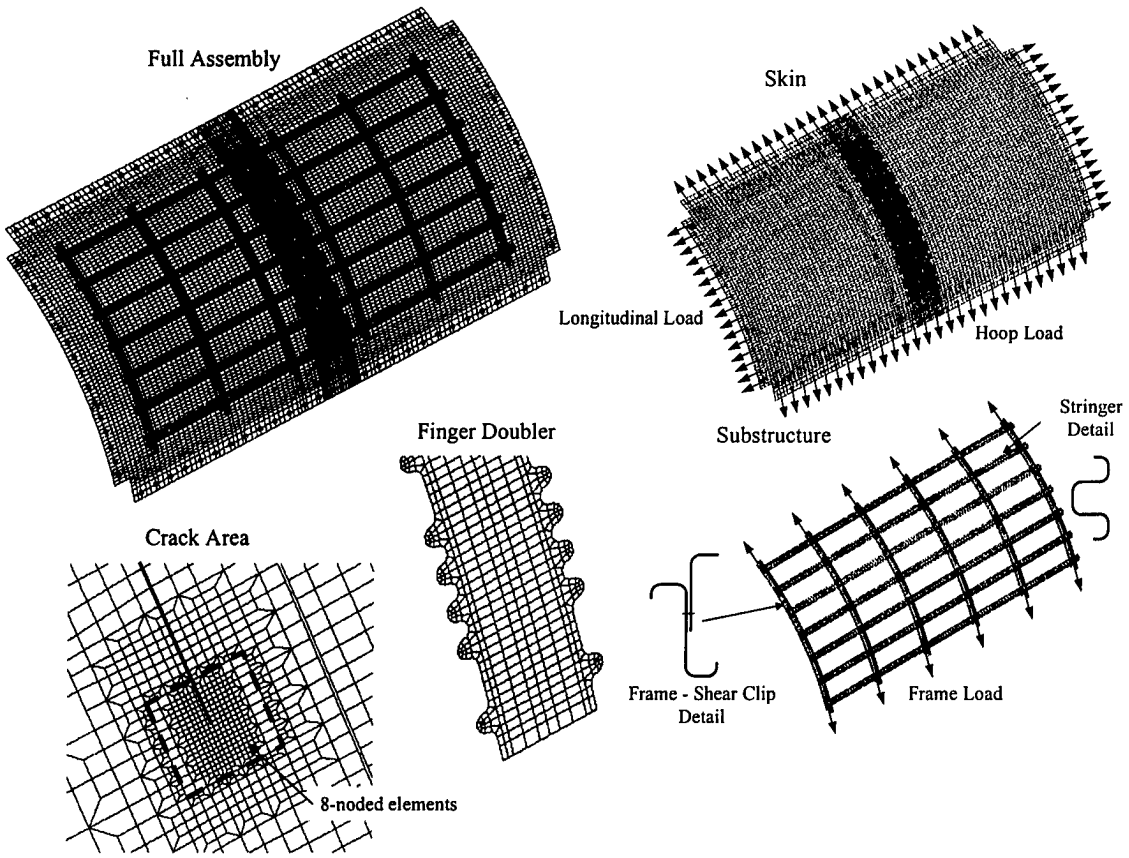


FIGURE 19. FINITE ELEMENT MODEL OF CVP3 SHOWING FULL ASSEMBLY AND SUBSTRUCTURE COMPONENTS

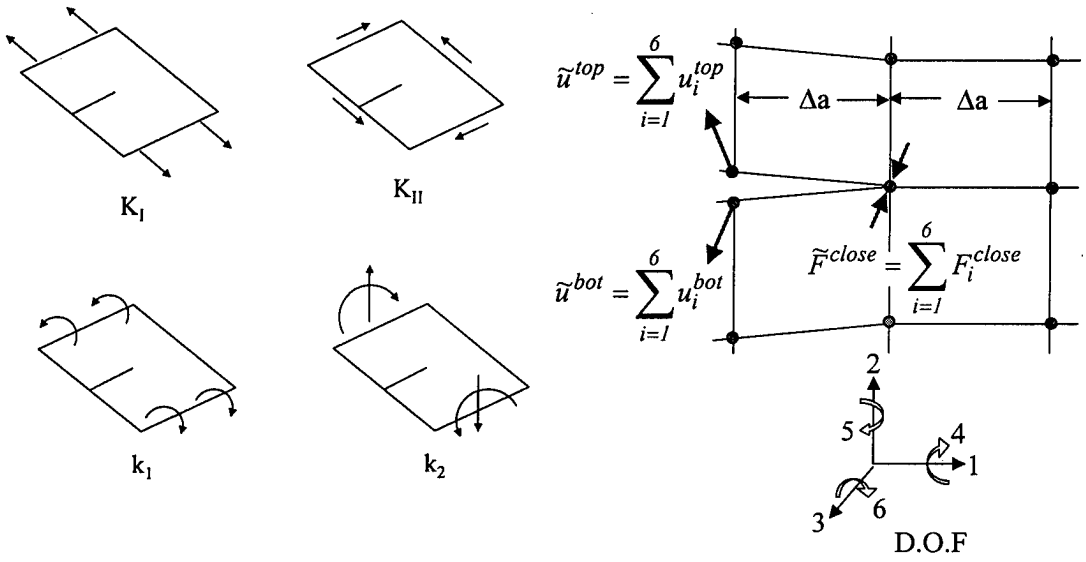


FIGURE 20. DEFINITION OF FOUR STRESS-INTENSITY FACTORS AND CRACK TIP ELEMENTS AND NODES FOR COMPUTING THE RATE OF WORK DONE TO CLOSE A CRACK USING THE MCCI METHOD

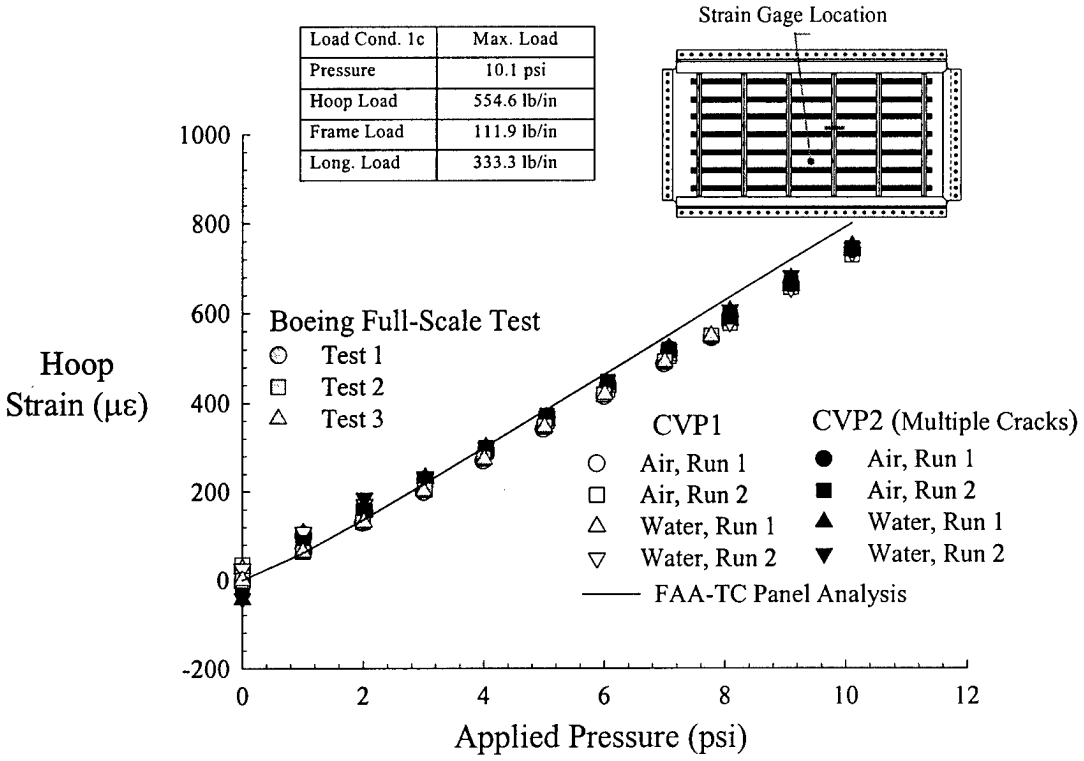


FIGURE 21. HOOP STRAIN IN GAGE LOCATED AT SKIN MID-BAY IN PANELS CVP1 AND CVP2 AND BOEING FULL-SCALE TEST ARTICLE

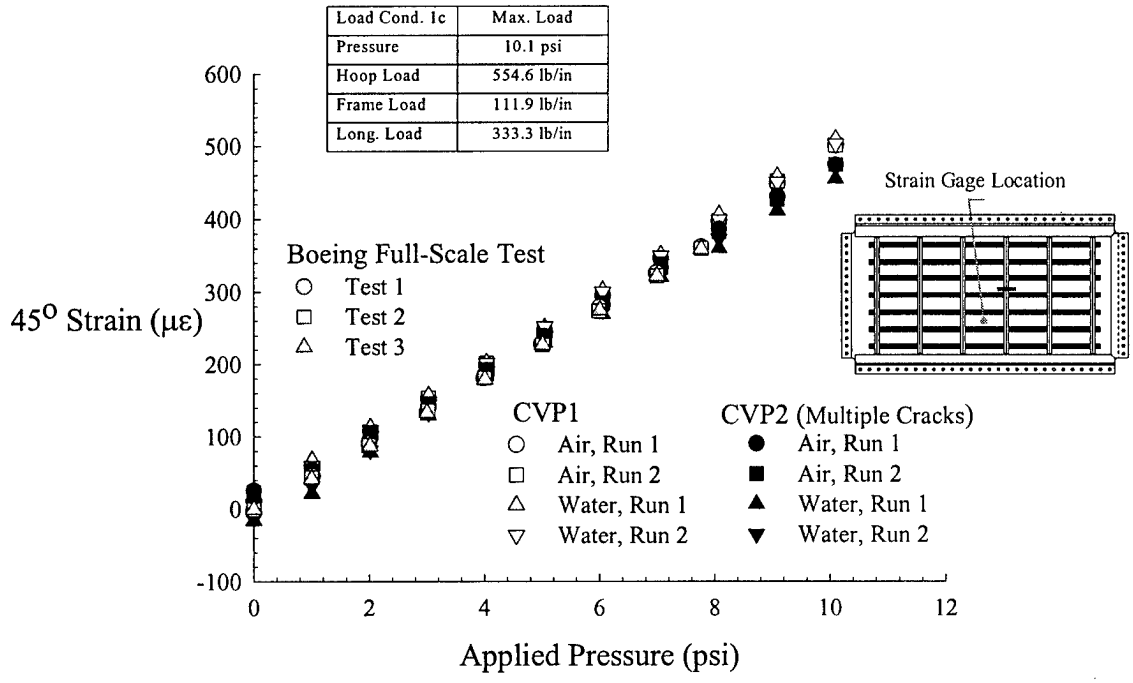


FIGURE 22. FORTY-FIVE DEGREE STRAIN IN GAGE LOCATED AT SKIN MID-BAY IN PANELS CVP1 AND CVP2 AND BOEING FULL-SCALE TEST ARTICLE

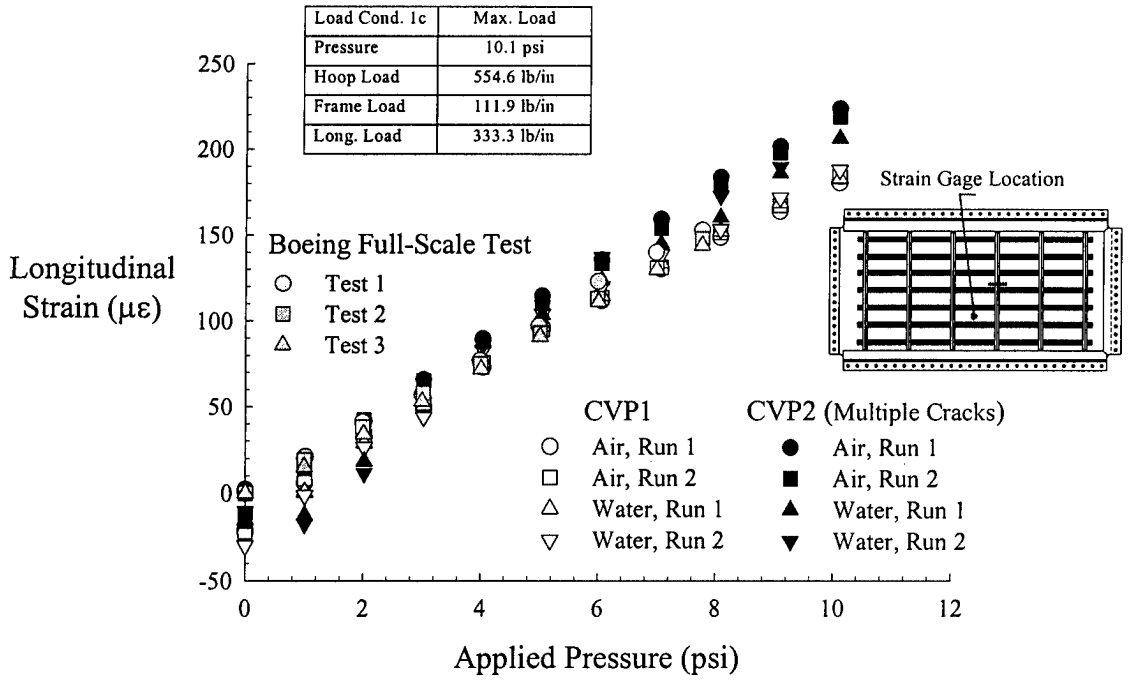


FIGURE 23. LONGITUDINAL STRAIN IN GAGE LOCATED AT SKIN MID-BAY IN PANELS CVP1 AND CVP2 AND BOEING FULL-SCALE TEST ARTICLE

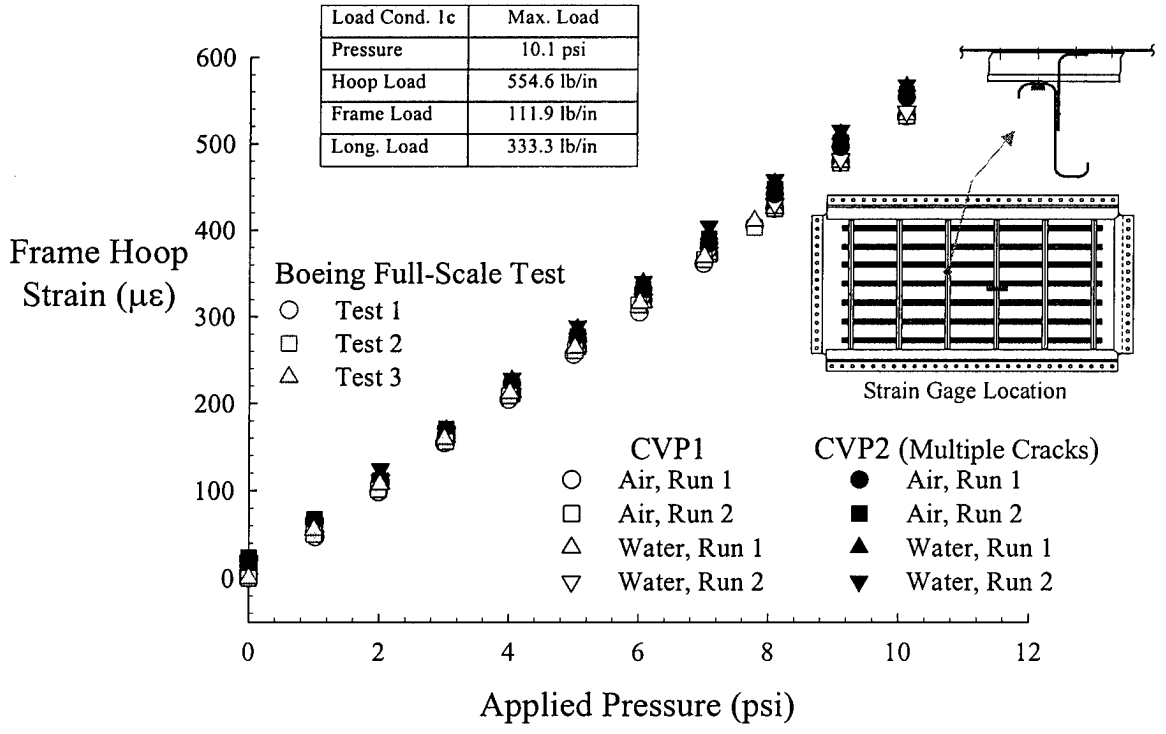


FIGURE 24. HOOP STRAIN AT OUTER CAP OF FRAME IN PANELS CVP1 AND CVP2 AND BOEING FULL-SCALE TEST ARTICLE

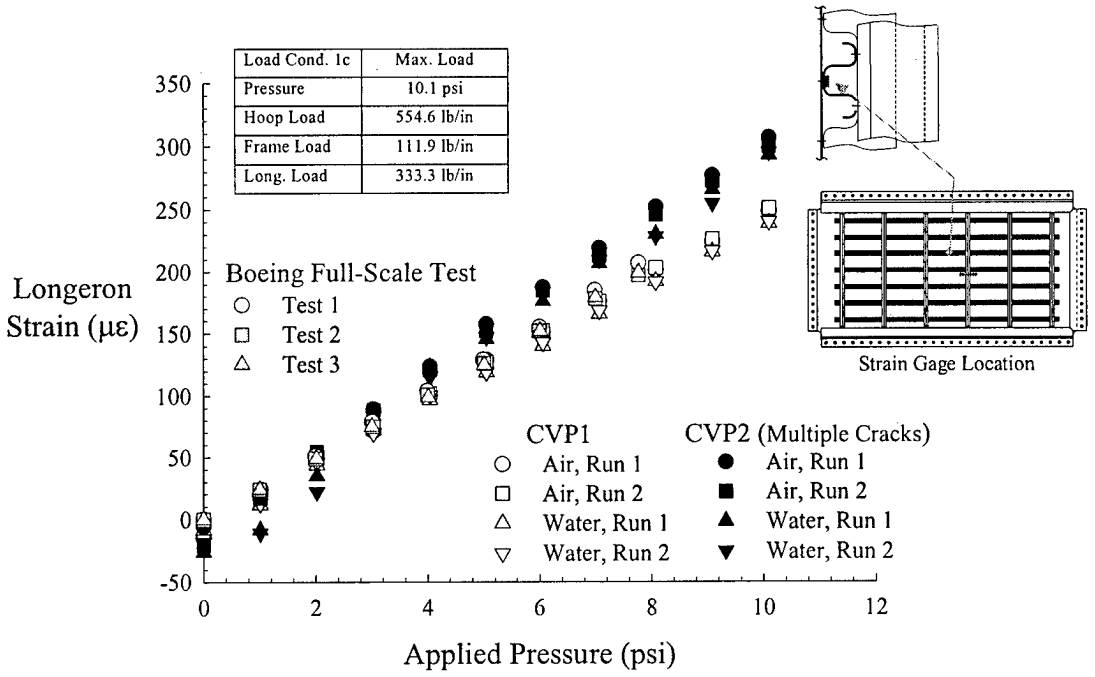


FIGURE 25. LONGITUDINAL STRAIN AT OUTER CAP OF STRINGER IN PANELS CVP1 AND CVP2 AND BOEING FULL-SCALE TEST ARTICLE

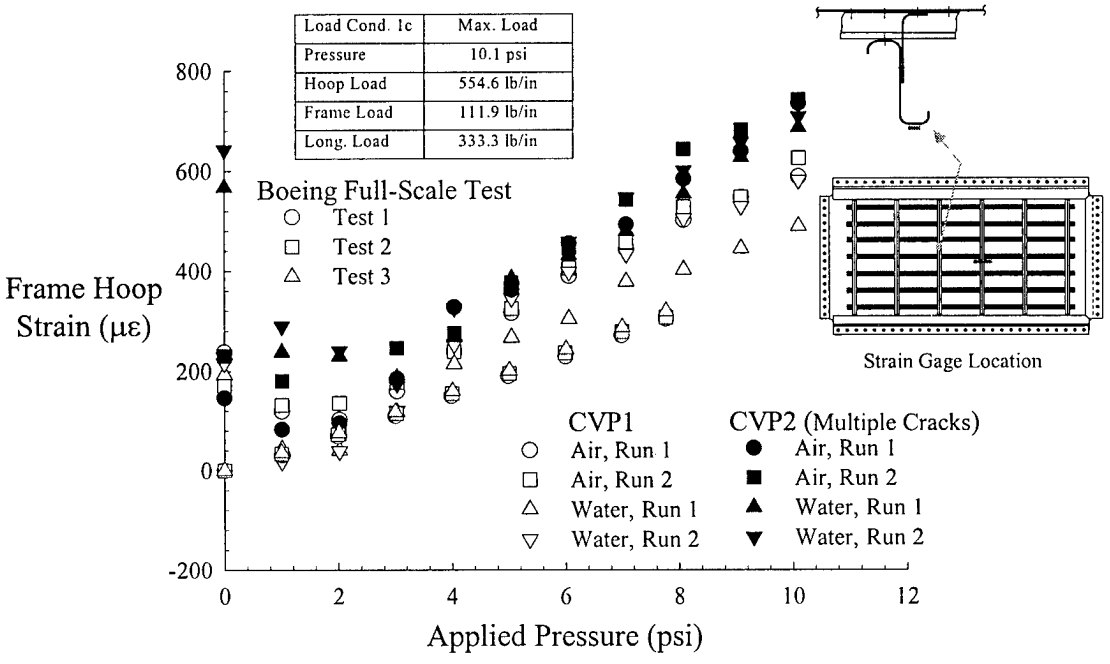


FIGURE 26. HOOP STRAIN AT INNER CAP OF FRAME IN PANELS CVP1 AND CVP2 AND BOEING FULL-SCALE TEST ARTICLE

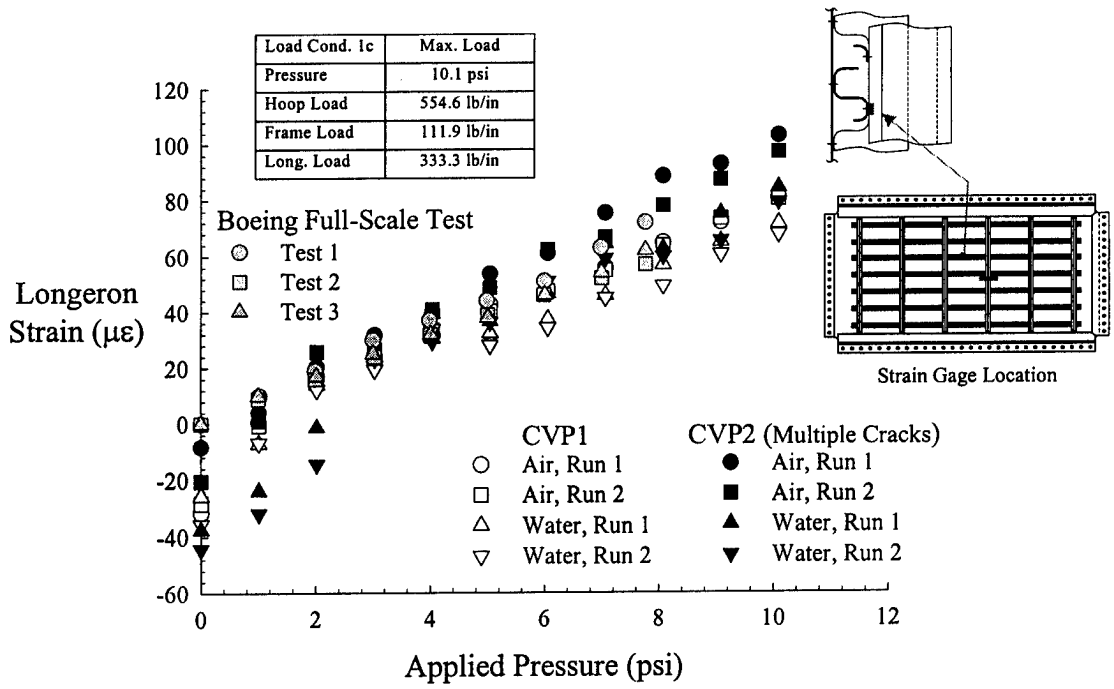


FIGURE 27. LONGITUDINAL STRAIN AT FLANGE OF STRINGER IN PANELS CVP1 AND CVP2 AND BOEING FULL-SCALE TEST ARTICLE

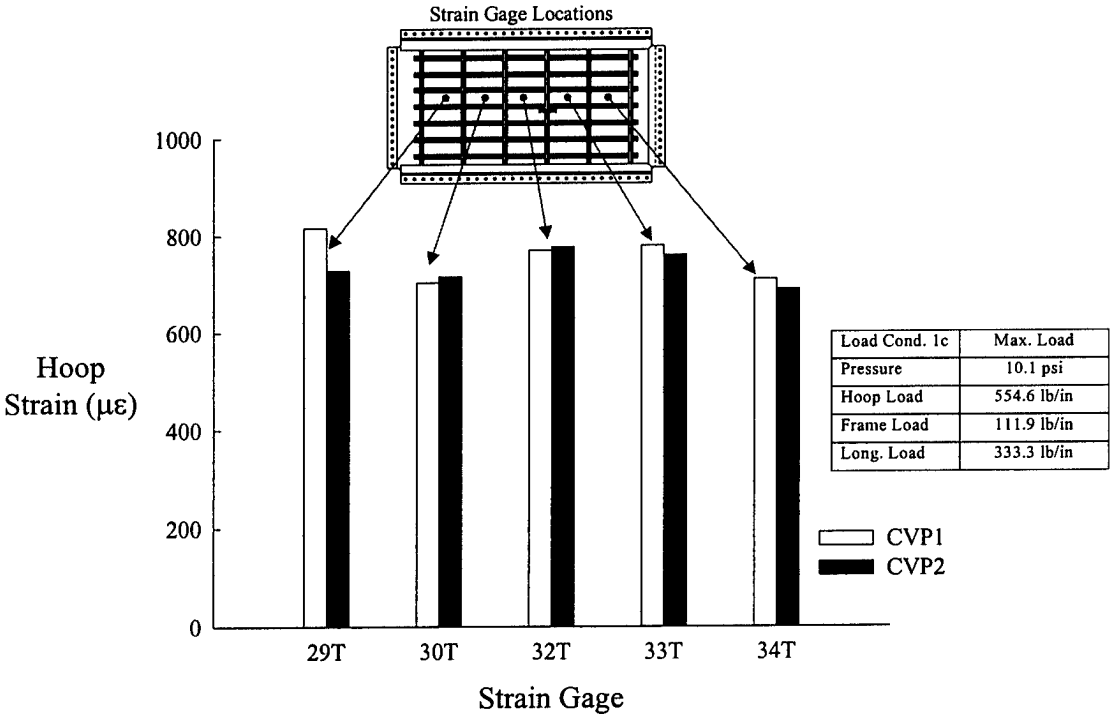


FIGURE 28. HOOP STRAIN DISTRIBUTION IN THE SKIN MID-BAY IN PANELS CVP1 AND CVP2

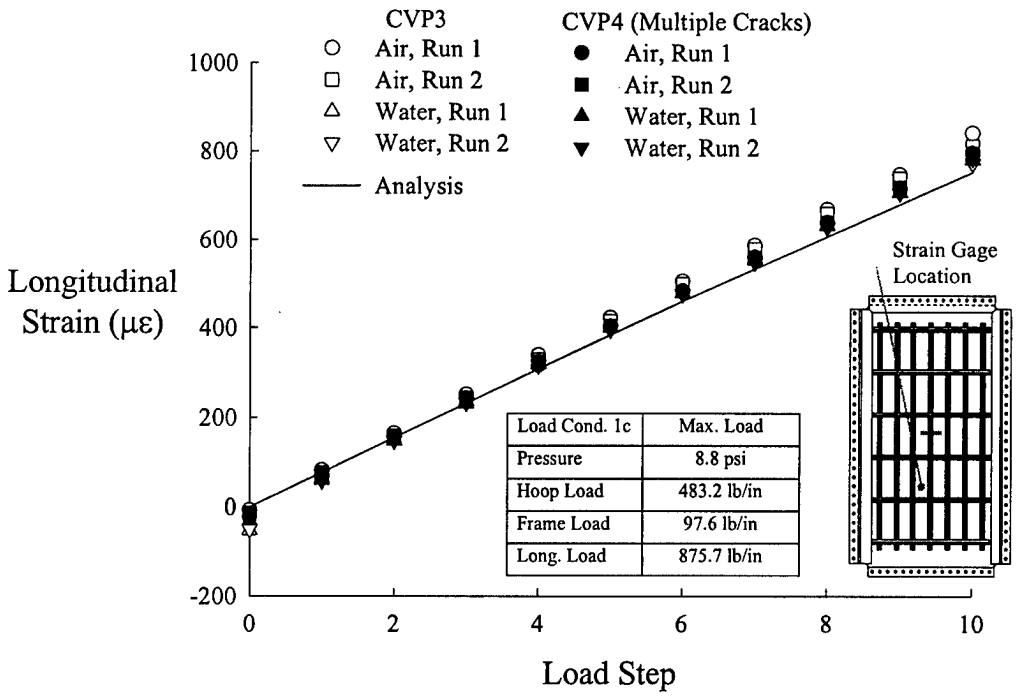


FIGURE 29. LONGITUDINAL STRAIN IN GAGE LOCATED AT SKIN MID-BAY IN PANELS CVP3 AND CVP4

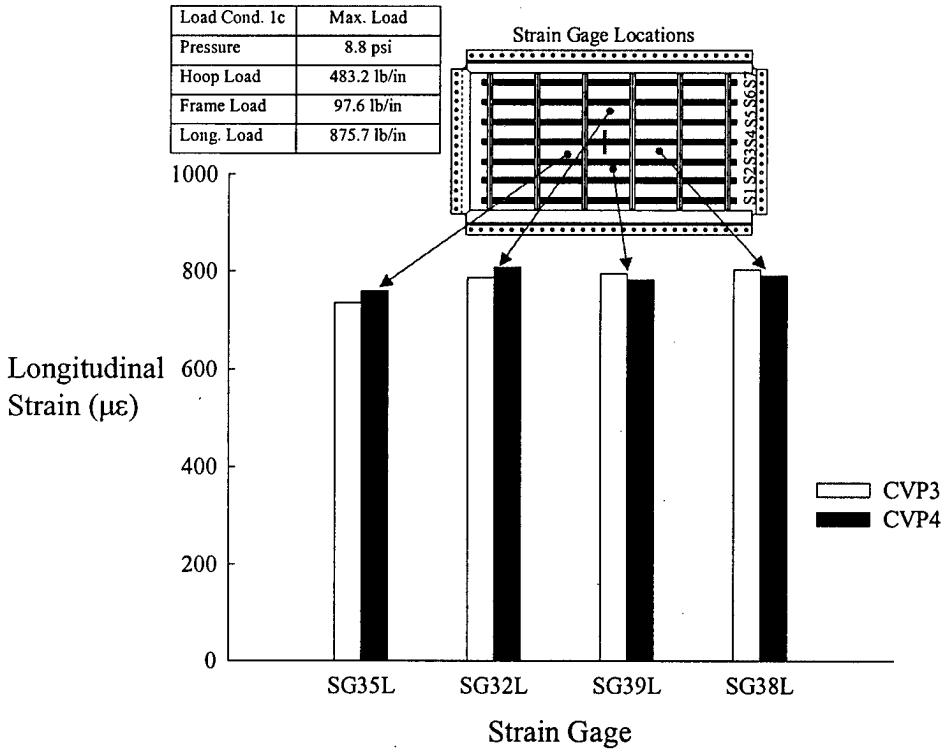


FIGURE 30. LONGITUDINAL STRAIN DISTRIBUTION IN THE SKIN MID-BAY IN PANELS CVP3 AND CVP4

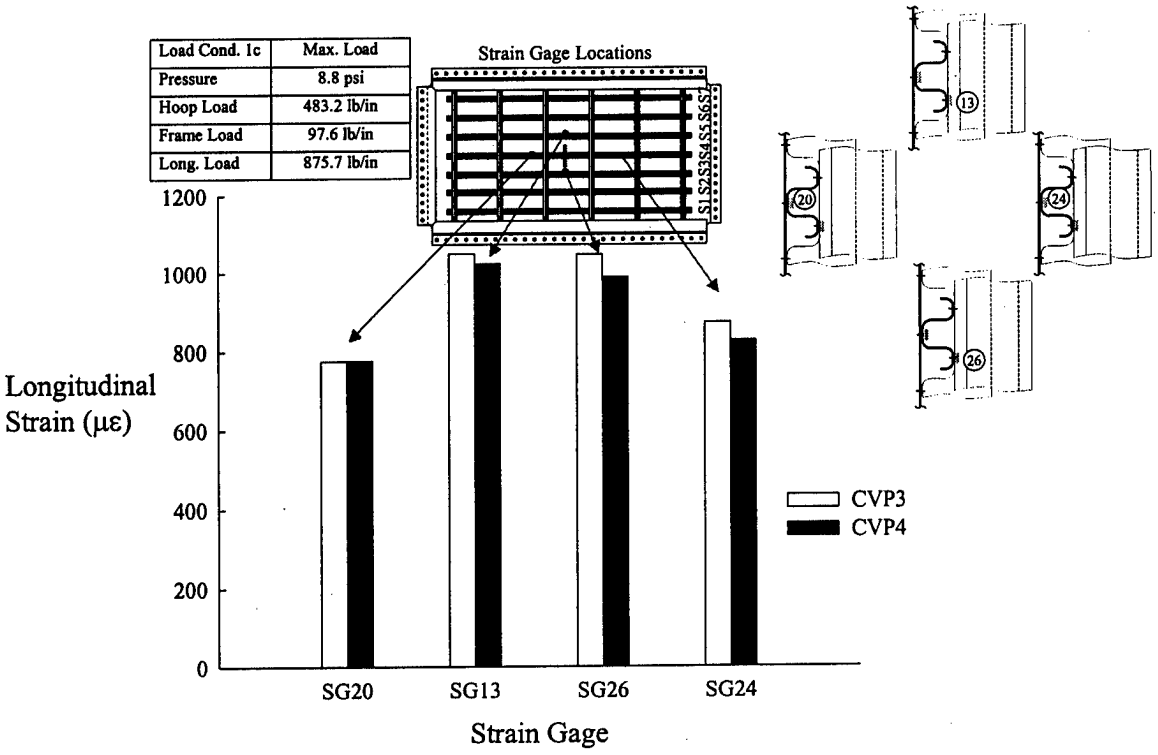


FIGURE 31. LONGITUDINAL STRAIN DISTRIBUTION IN THE STRINGERS OF PANELS CVP3 AND CVP4

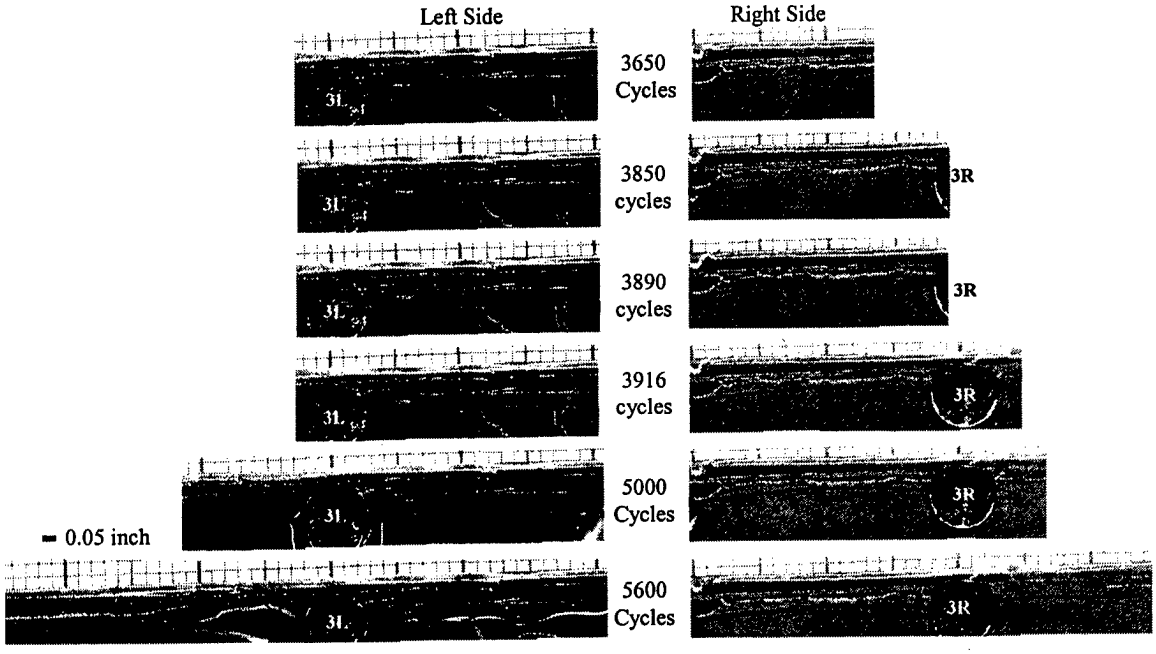


FIGURE 32. PHOTOGRAPHS OF CRACK GROWTH IN CVP1 DURING FATIGUE LOADING USING RCCM SYSTEM

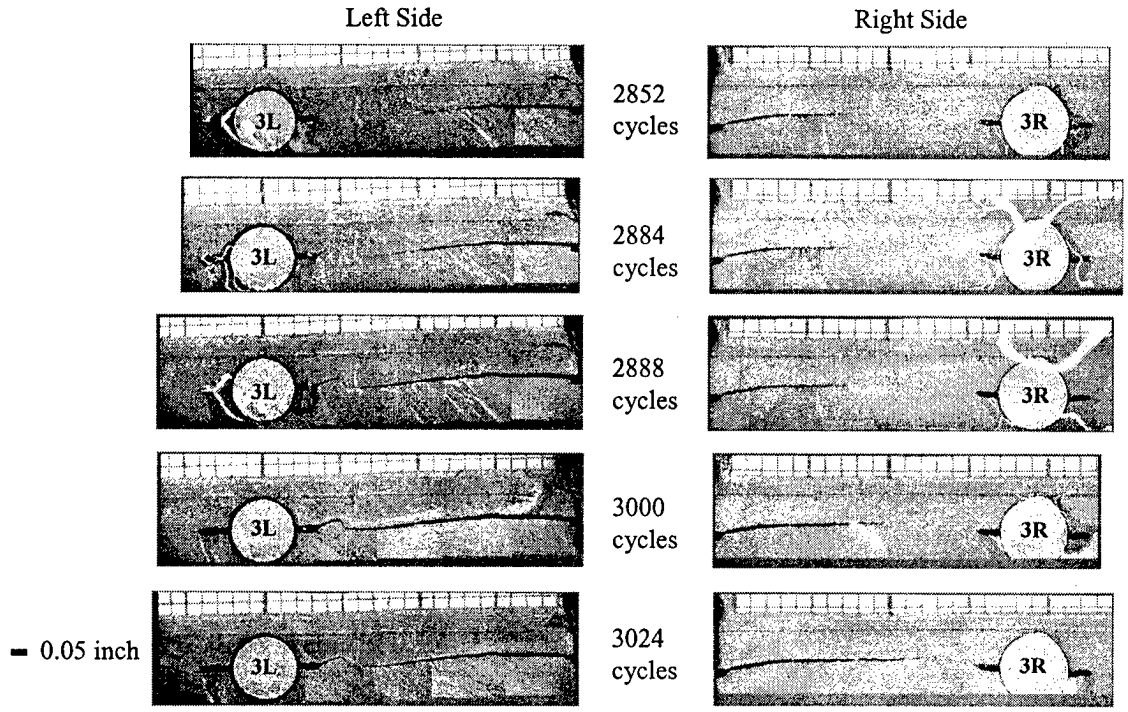


FIGURE 33. PHOTOGRAPHS OF CRACK GROWTH IN PANEL CVP2 DURING FATIGUE LOADING USING RCCM SYSTEM

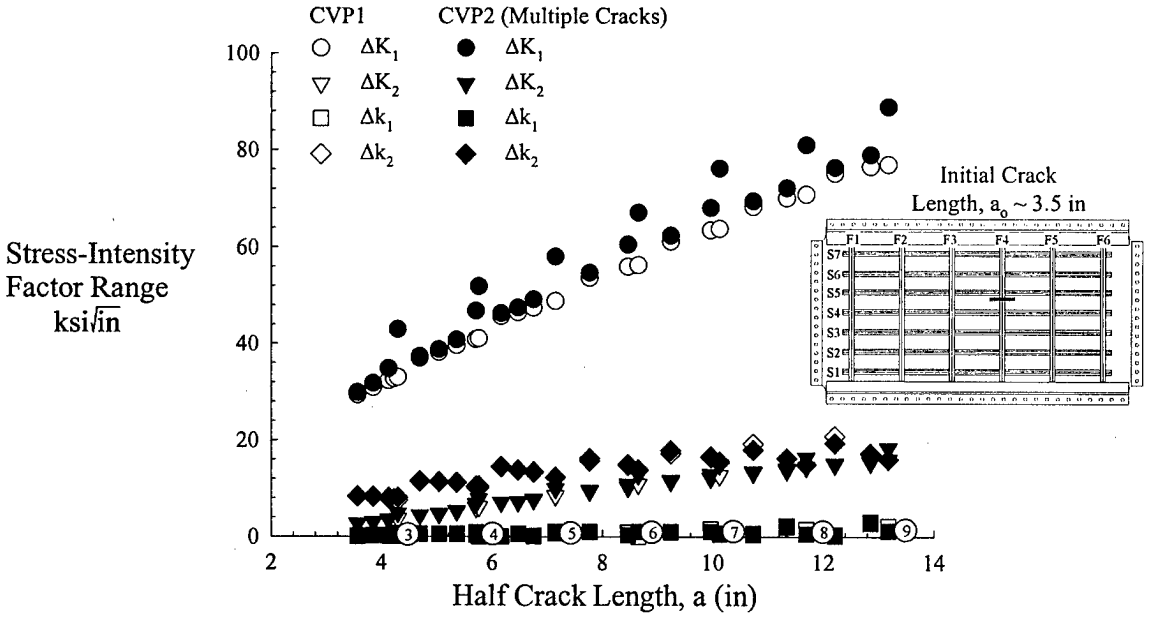


FIGURE 34. STRESS-INTENSITY FACTOR RANGE AS A FUNCTION OF HALF CRACK LENGTH FOR PANELS CVP1 AND CVP2

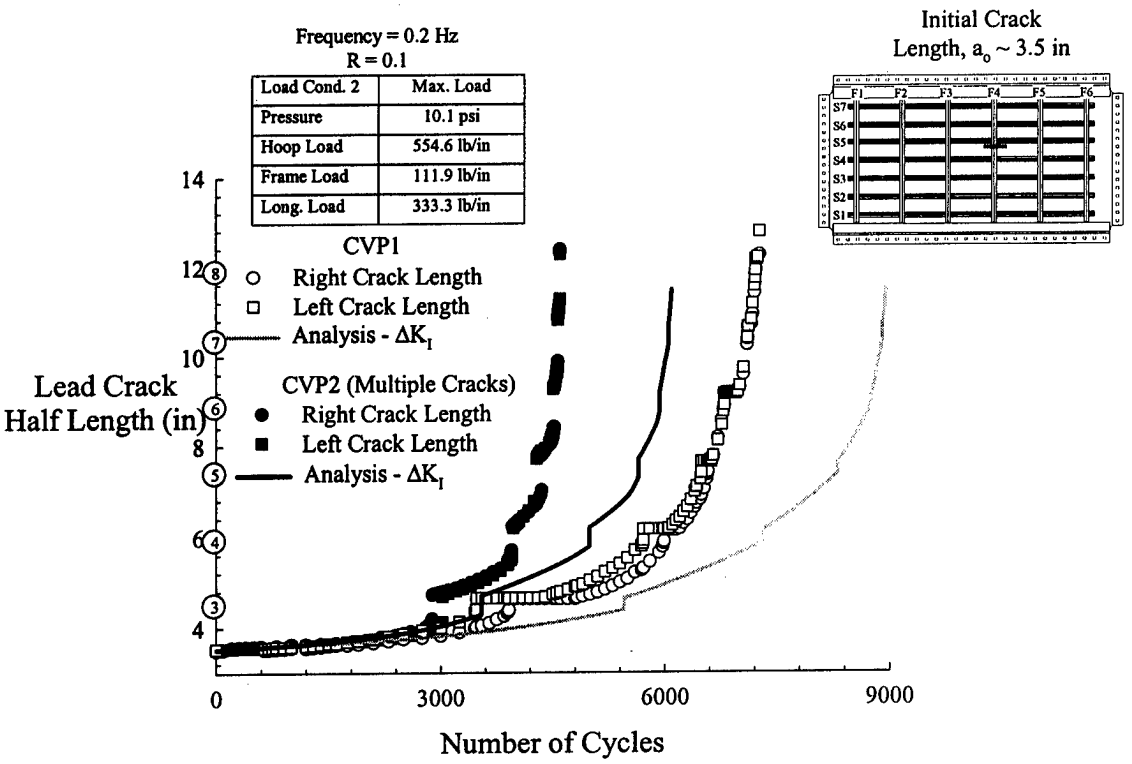


FIGURE 35. HALF LENGTH OF THE LEAD CRACK AS A FUNCTION OF NUMBER OF FATIGUE CYCLES FOR PANELS CVP1 AND CVP2

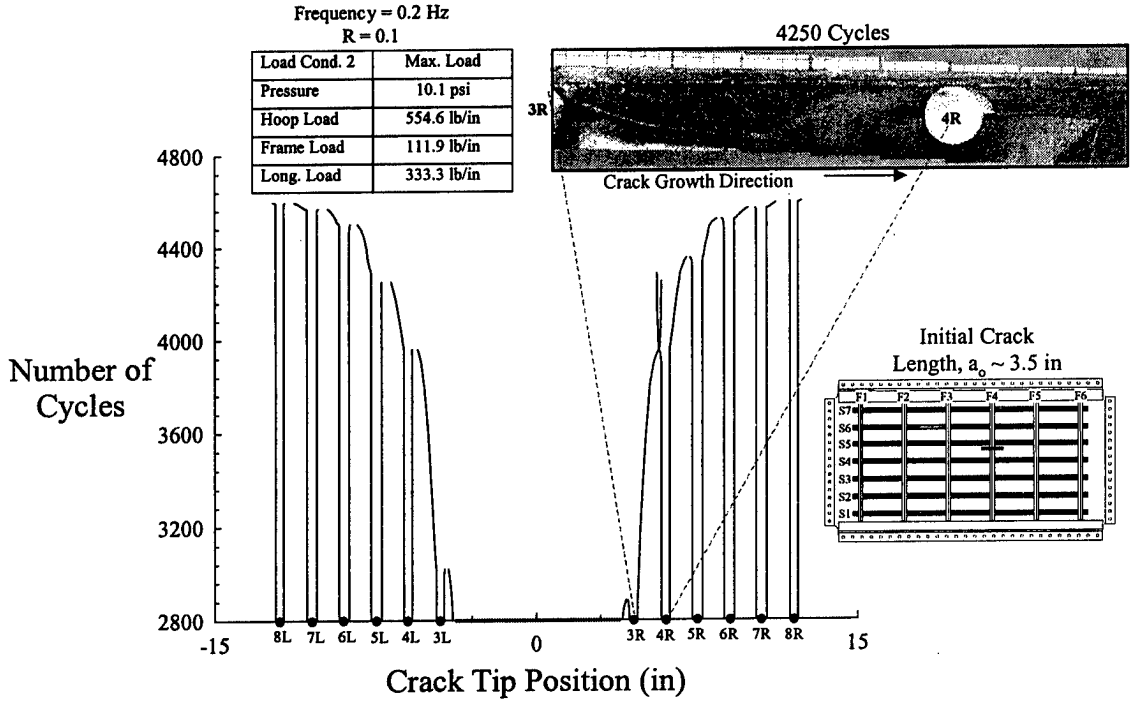


FIGURE 36. CRACK TIP POSITION AS A FUNCTION OF FATIGUE CYCLES FOR PANEL CVP2

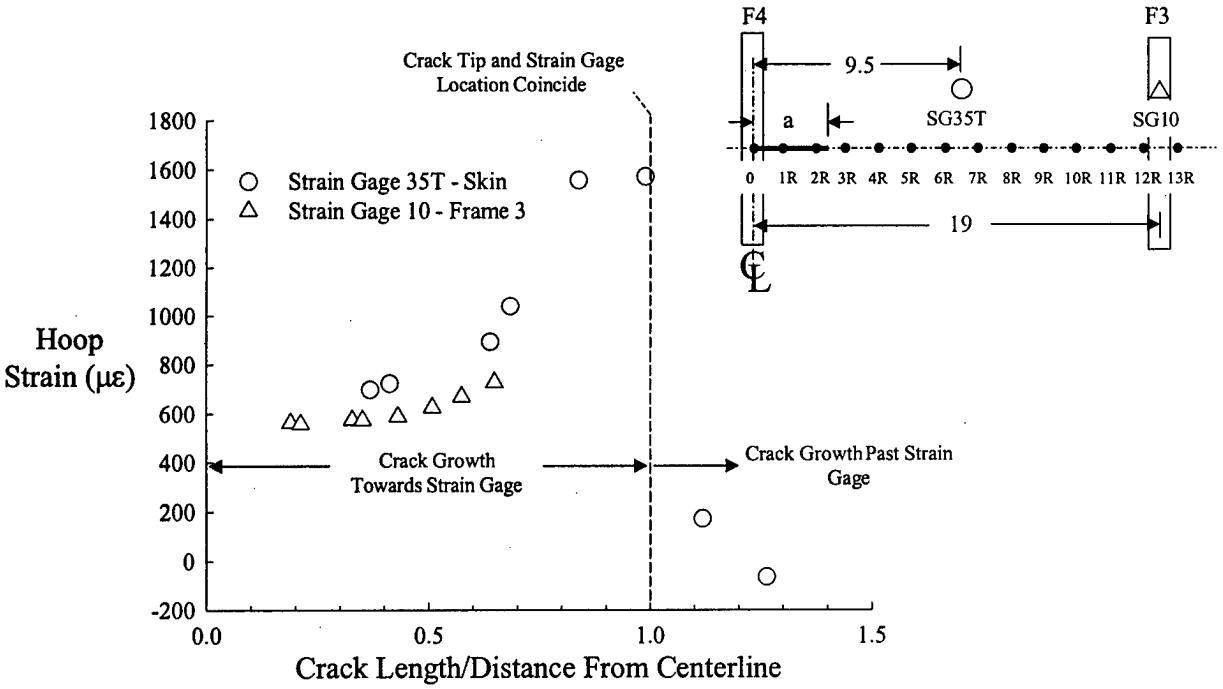


FIGURE 37. STRAIN REDISTRIBUTION IN PANEL CVP2

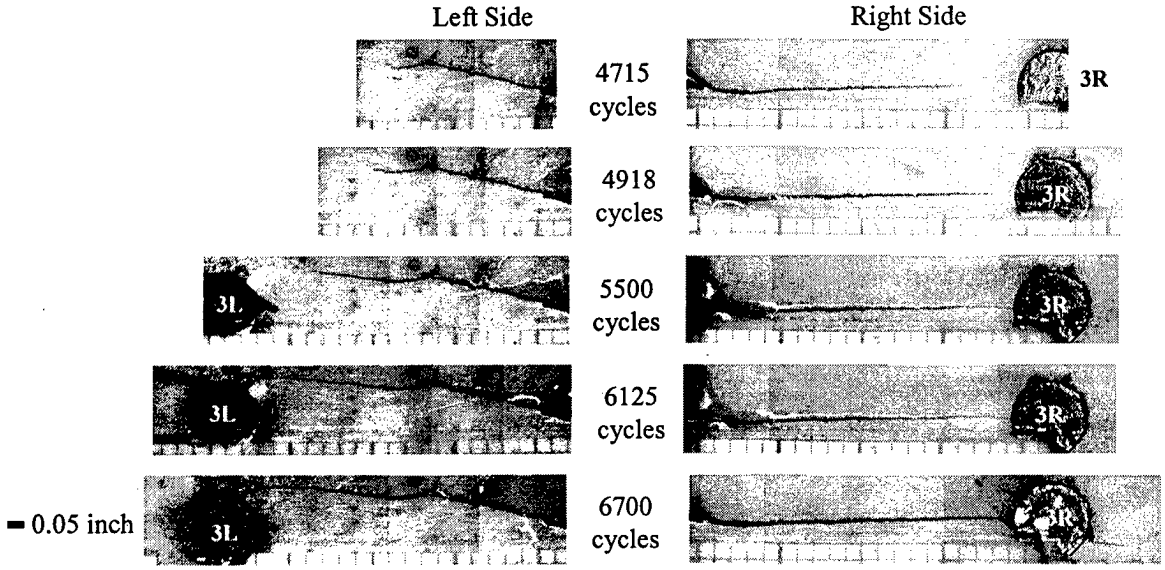


FIGURE 38. PHOTOGRAPHS OF CRACK GROWTH IN PANEL CVP3 DURING FATIGUE LOADING USING RCCM SYSTEM

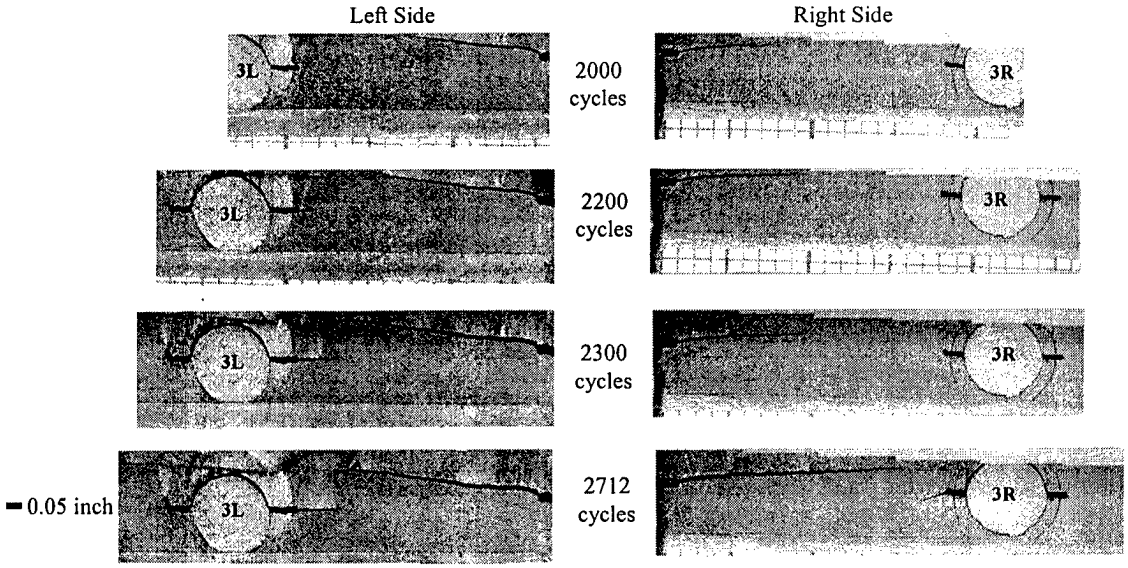


FIGURE 39. PHOTOGRAPHS OF CRACK GROWTH IN PANEL CVP4 DURING FATIGUE LOADING USING RCCM SYSTEM

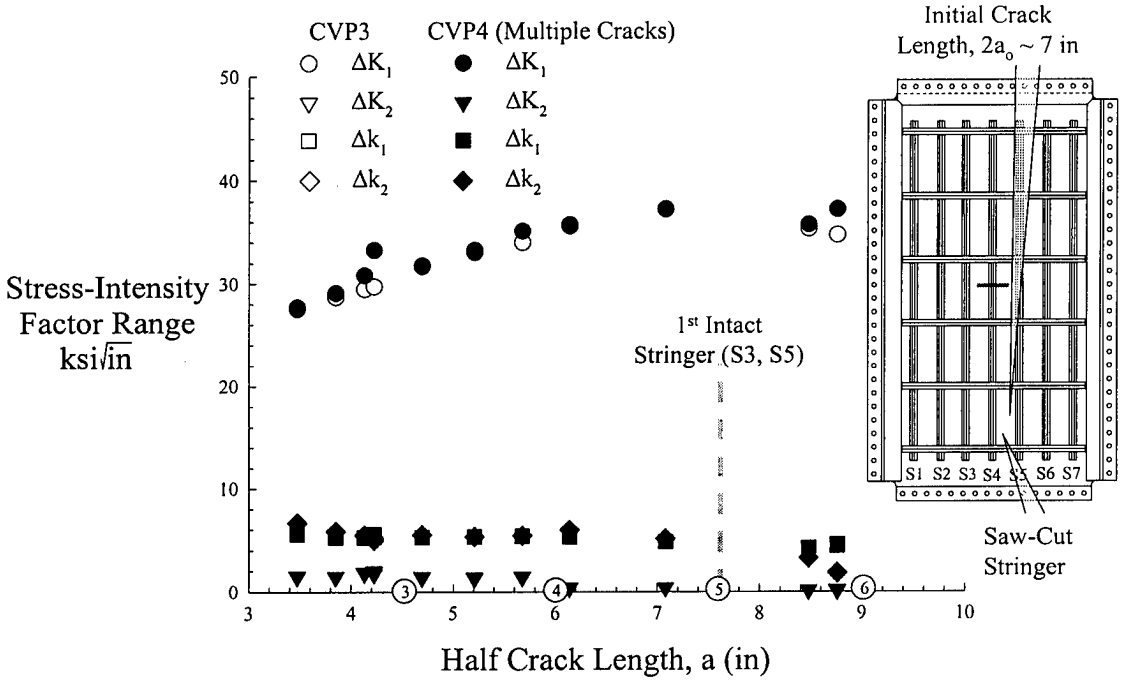


FIGURE 40. STRESS-INTENSITY FACTOR RANGE AS A FUNCTION OF HALF CRACK LENGTH FOR PANELS CVP3 AND CVP4

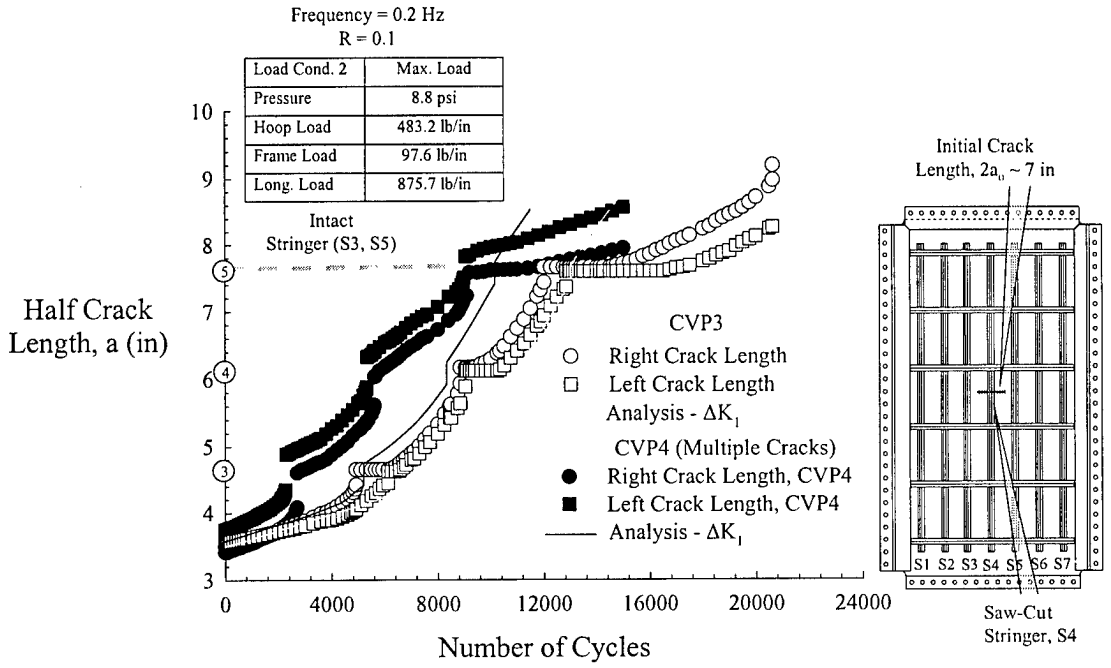


FIGURE 41. HALF CRACK LENGTH AS A FUNCTION OF NUMBER OF FATIGUE CYCLES FOR PANELS CVP3 ANDCVP4

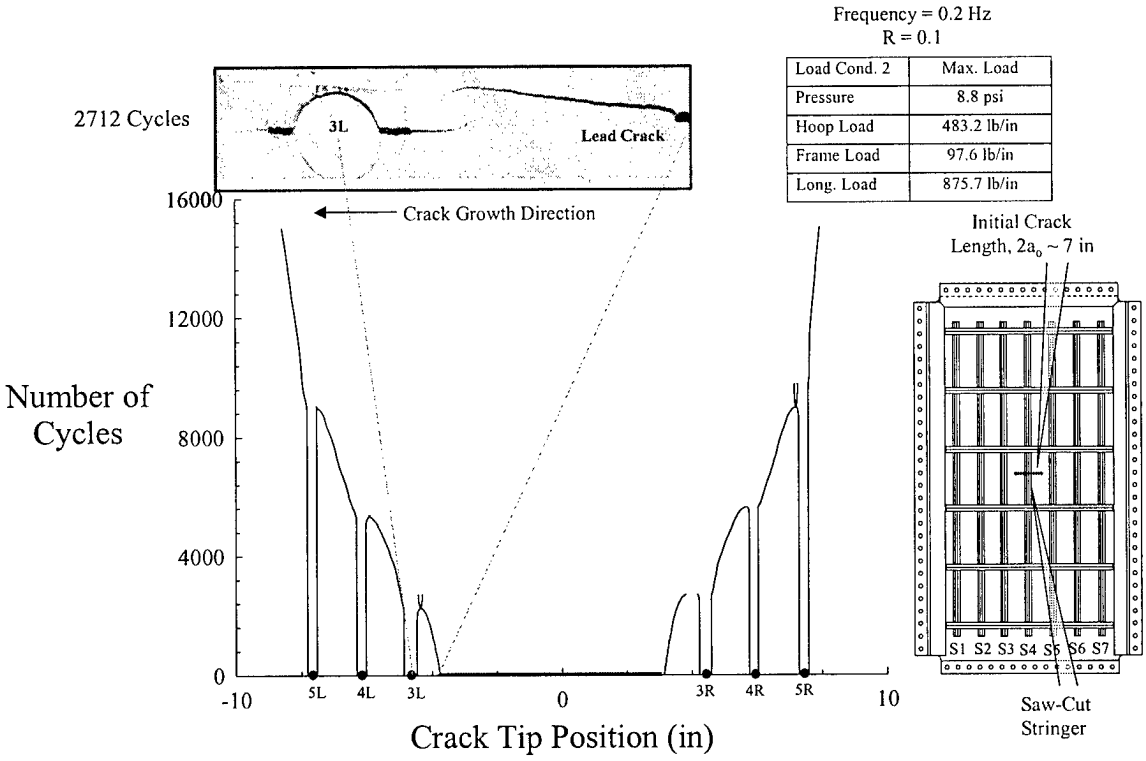


FIGURE 42. CRACK TIP POSITION AS A FUNCTION OF FATIGUE CYCLES FOR PANEL CVP4

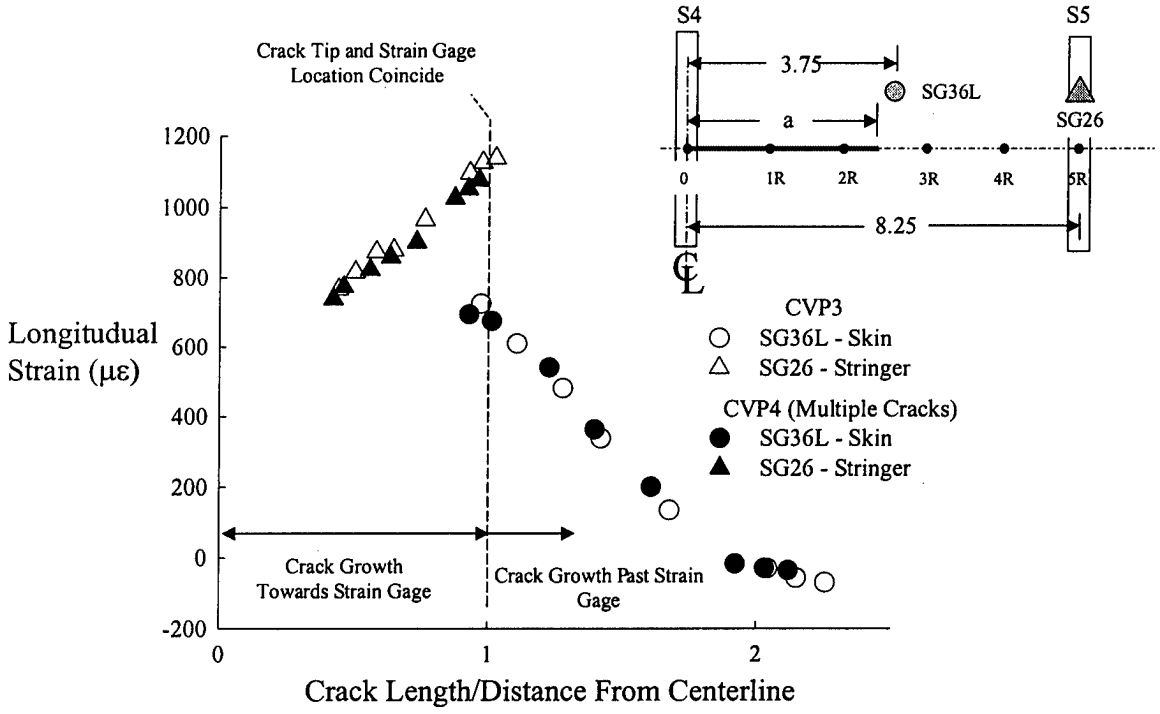


FIGURE 43. STRAIN REDISTRIBUTION IN PANEL CVP4

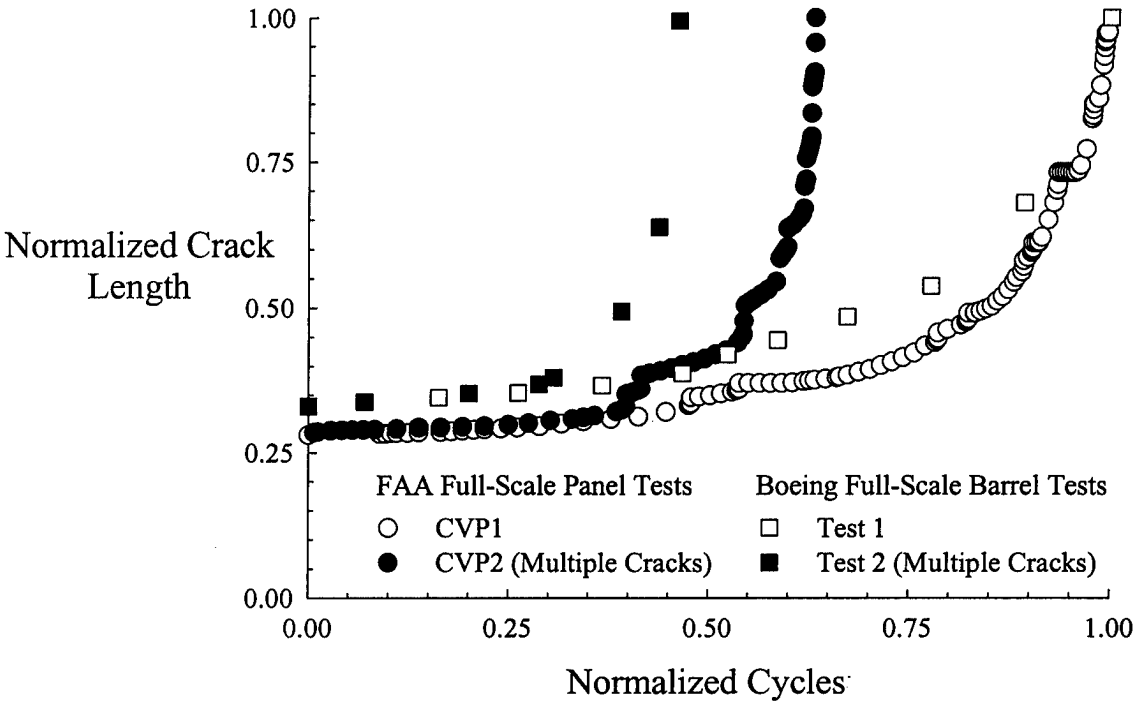


FIGURE 44. COMPARISON OF FATIGUE CRACK GROWTH DATA SHOWING EFFECT OF MULTIPLE CRACKS ON LEAD CRACK GROWTH

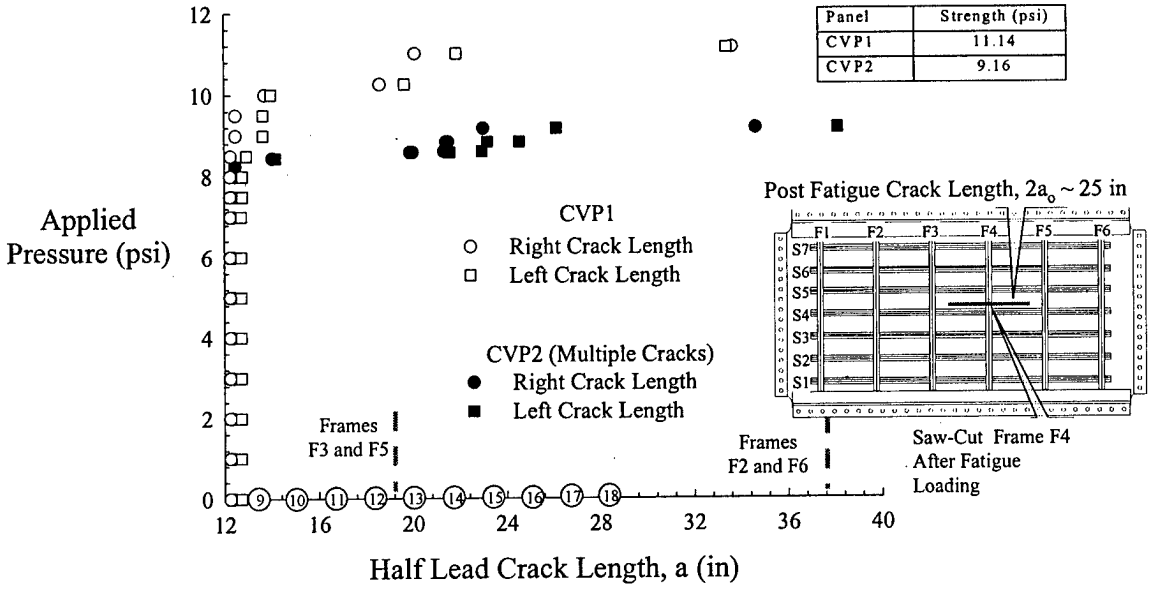


FIGURE 45. CRACK EXTENSION DURING RESIDUAL STRENGTH TESTS FOR PANELS CVP1 AND CVP2

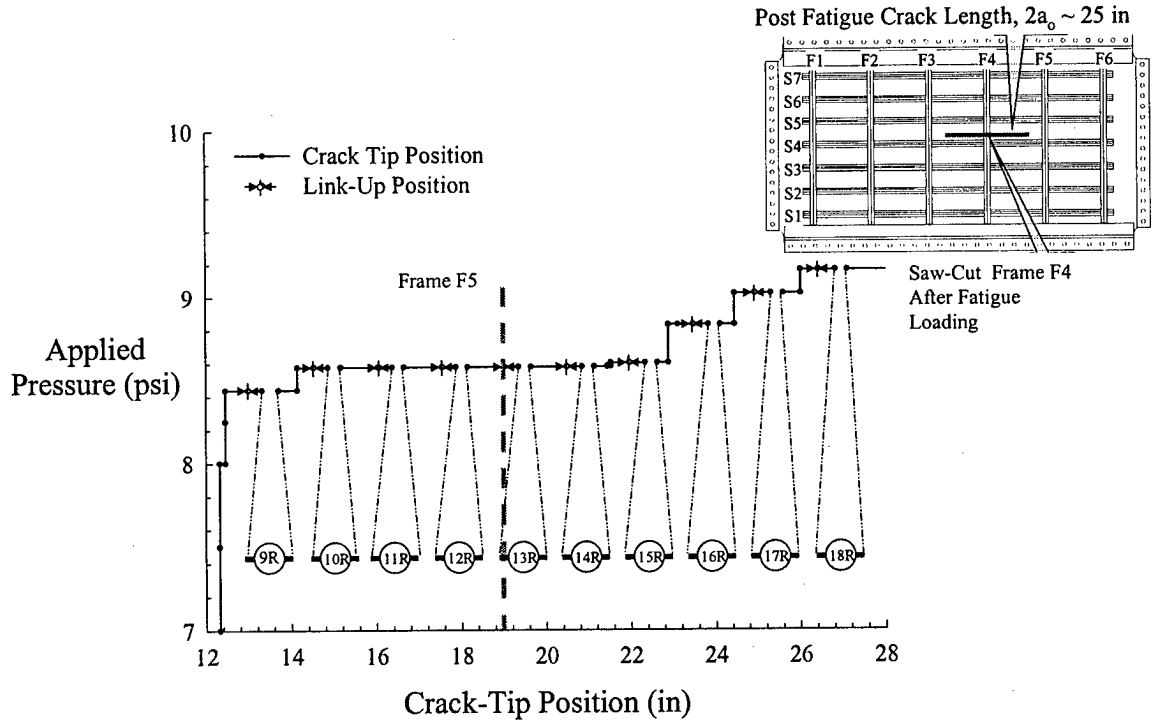


FIGURE 46. CRACK TIP POSITION OF LEAD CRACK AND MULTIPLE CRACKS AS A FUNCTION OF APPLIED PRESSURE FOR RESIDUAL STRENGTH TEST OF CVP2

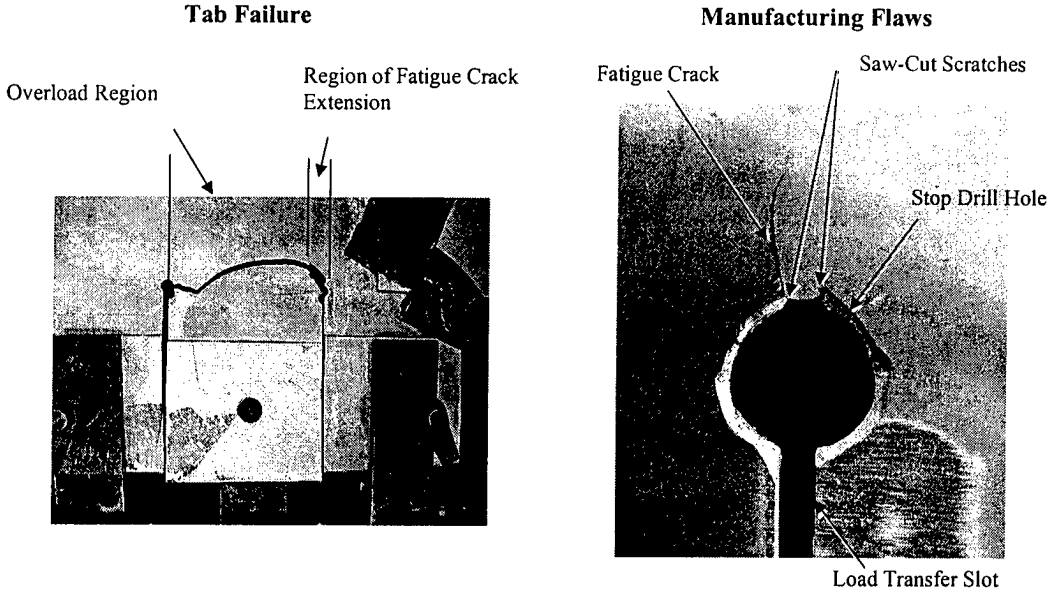


FIGURE 47. PHOTOGRAPHS OF TAB FAILURE AFTER FIRST RESIDUAL STRENGTH ATTEMPT FOR PANEL CVP3

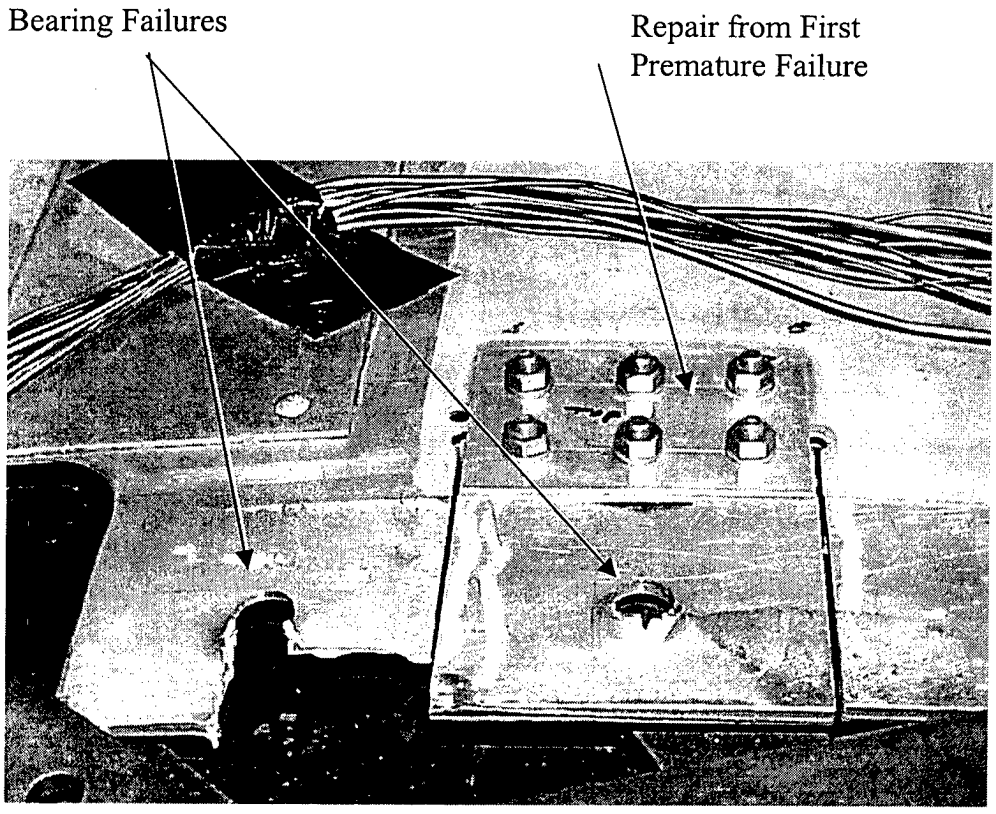


FIGURE 48. PHOTOGRAPHS OF TAB FAILURE AFTER SECOND RESIDUAL STRENGTH ATTEMPT FOR PANEL CVP3

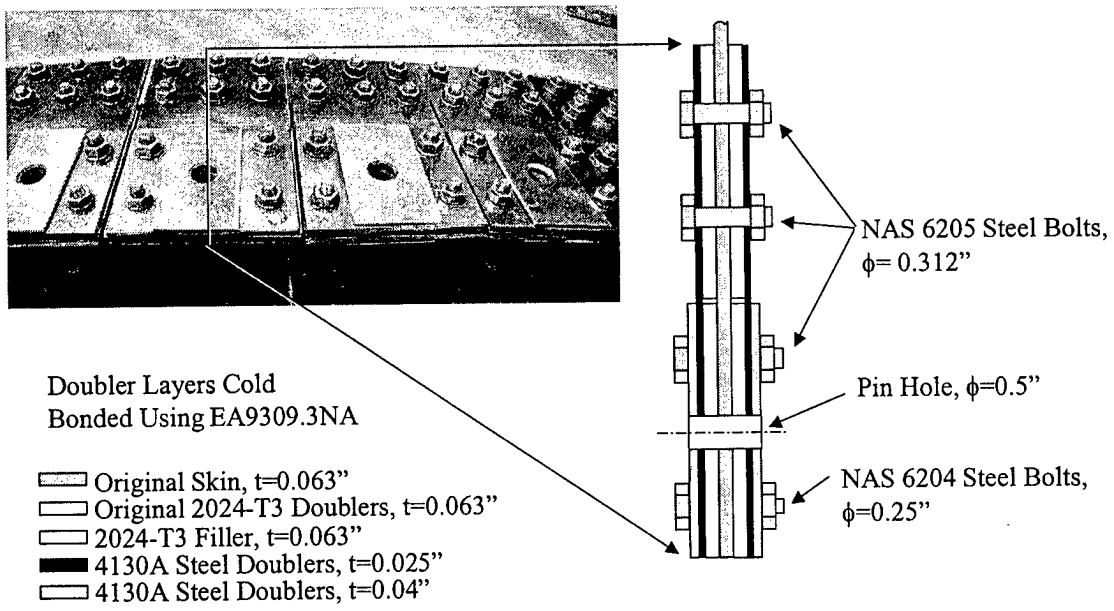


FIGURE 49. PHOTOGRAPHS OF REINFORCEMENTS MADE TO ALL TAB ENDS FOR THE LONGITUDINAL LOAD APPLICATION POINTS FOR PANEL CVP3

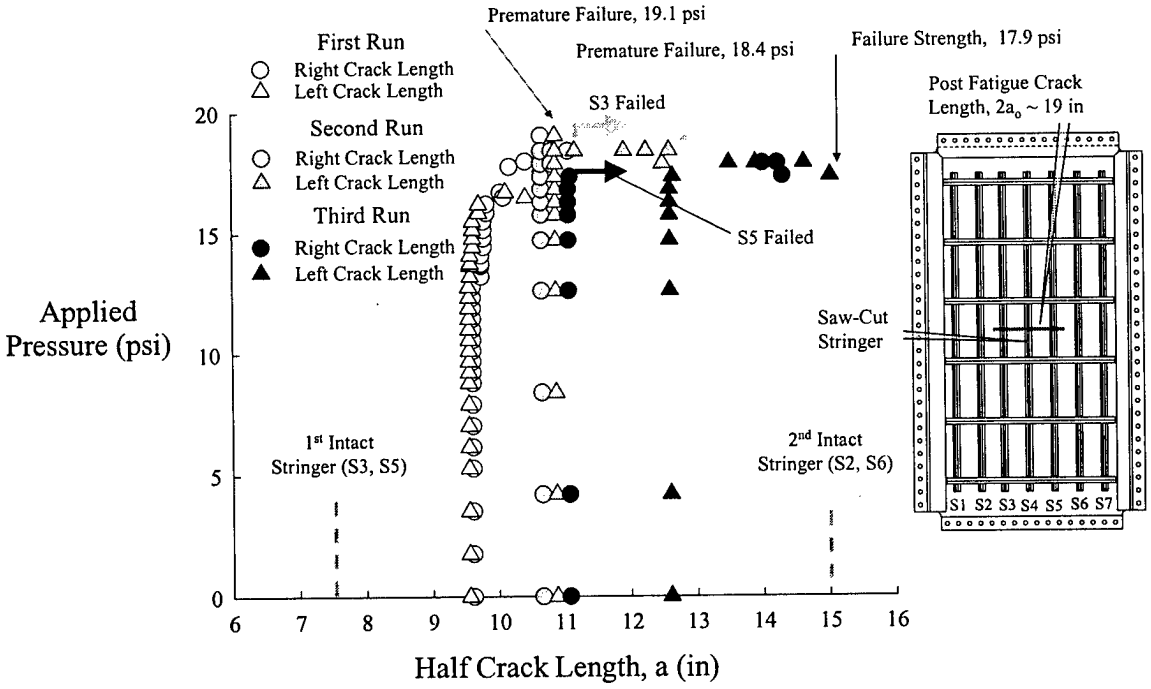


FIGURE 50. CRACK EXTENSION, AS A FUNCTION OF APPLIED PRESSURE, RECORDED FOR RESIDUAL STRENGTH TESTS OF PANEL CVP3

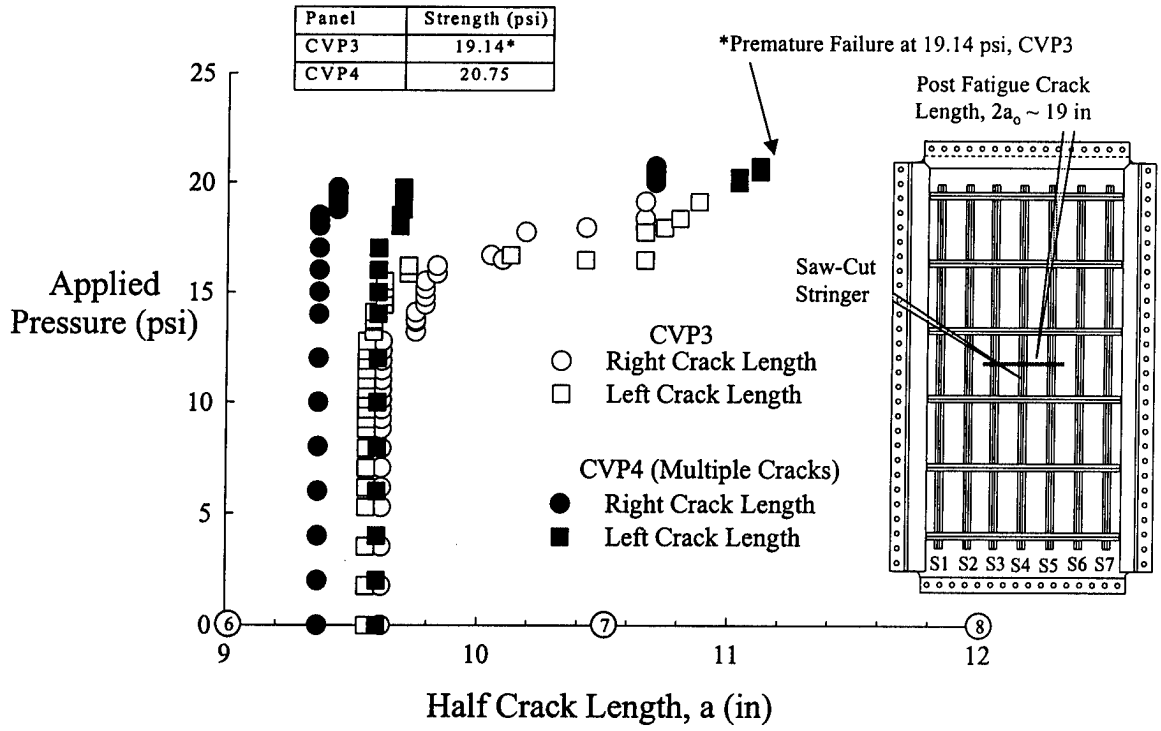


FIGURE 51. CRACK EXTENSION, AS A FUNCTION OF APPLIED PRESSURE, RECORDED FOR RESIDUAL STRENGTH TESTS OF PANELS CVP3 AND CVP4

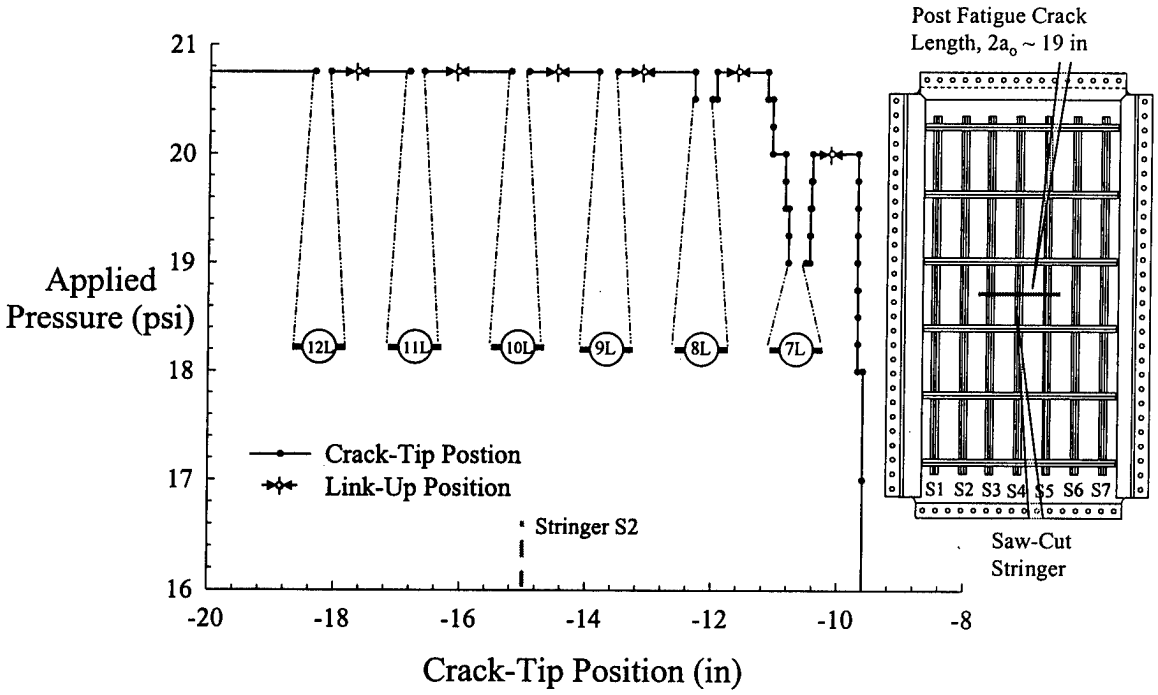


FIGURE 52. CRACK TIP POSITION OF LEAD CRACK AND MULTIPLE CRACKS AS A FUNCTION OF APPLIED PRESSURE FOR RESIDUAL STRENGTH TEST OF CVP4

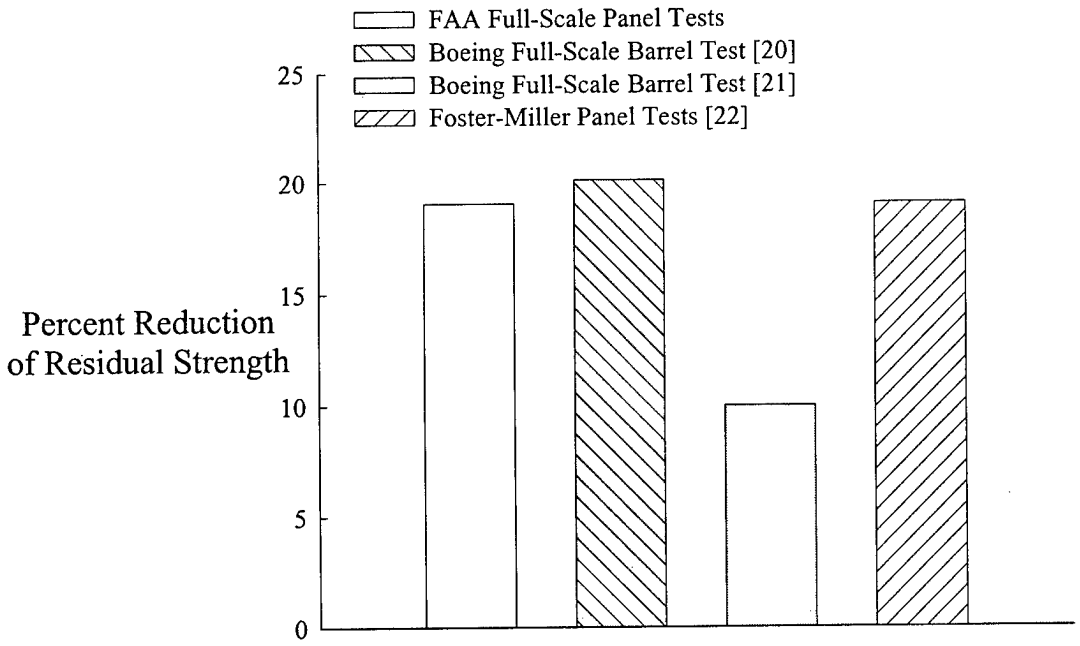


FIGURE 53. COMPARISON OF DATA SHOWING THE EFFECT OF MULTIPLE CRACKS ON THE RESIDUAL STRENGTH

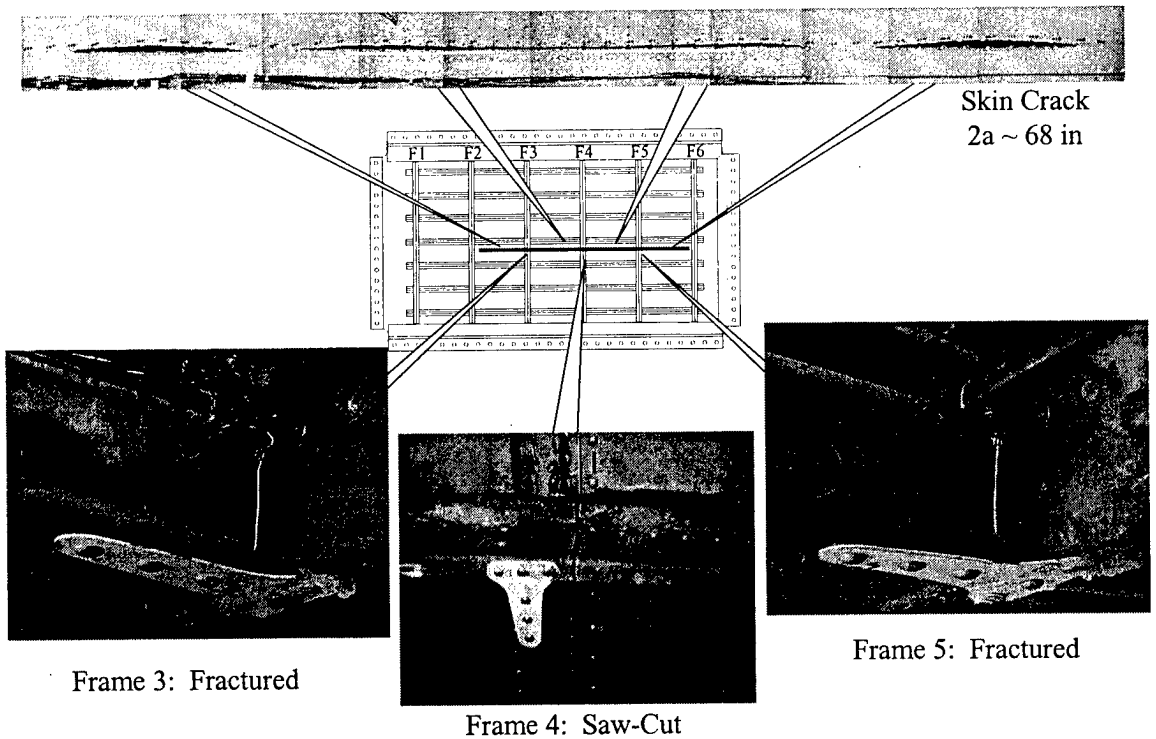
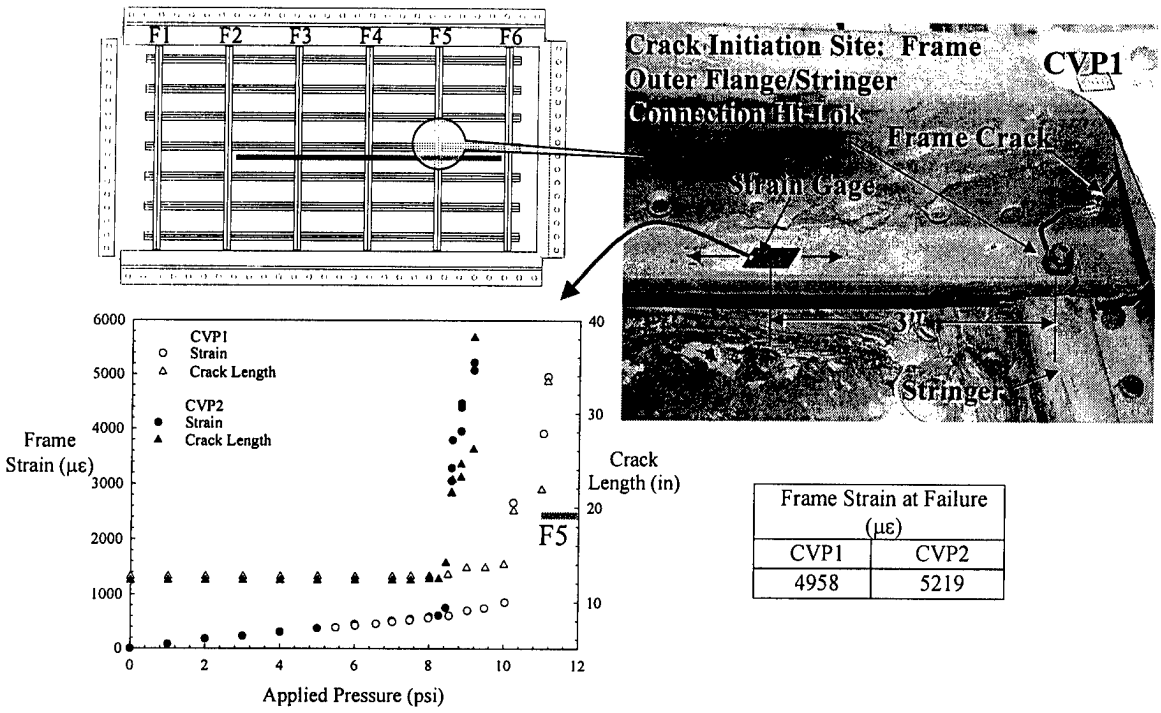


FIGURE 54. PHOTOGRAPHS OF THE FINAL STATE OF DAMAGE SHOWING CRACK BULGING AND DAMAGED FRAMES IN PANEL CVP1



Frame Strain at Failure (με)	
CVP1	CVP2
4958	5219

FIGURE 55. STRAIN IN FRAME F5 PRIOR TO FAILURE OF PANELS CVP1 AND CVP2

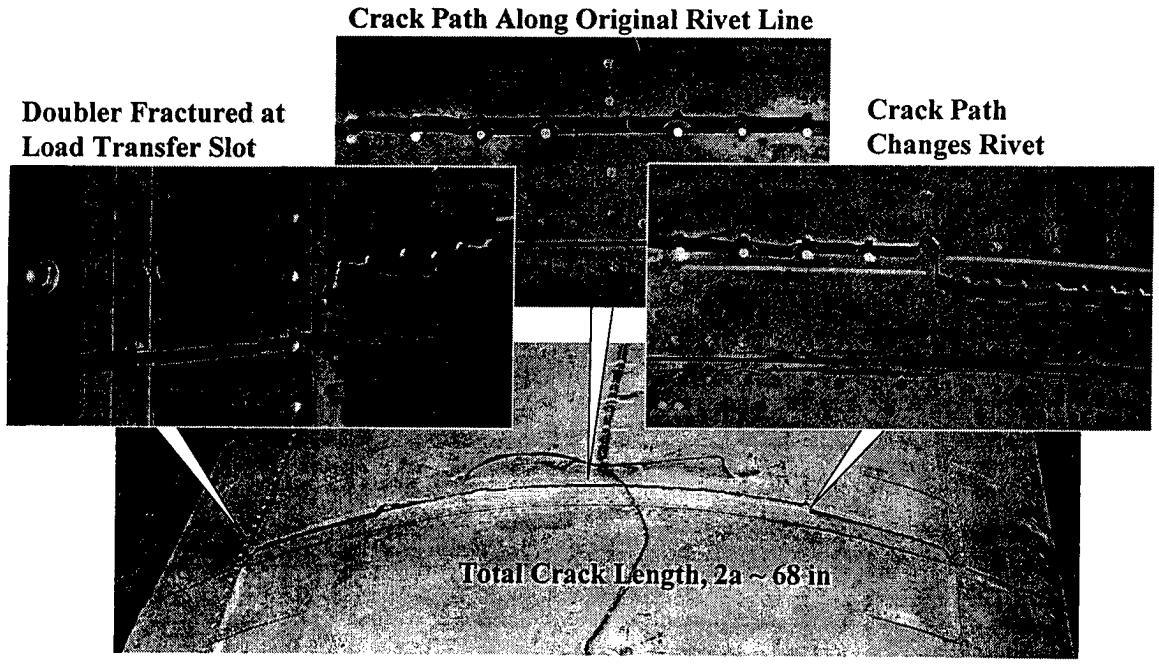


FIGURE 56. PHOTOGRAPHS OF THE FINAL STATE OF DAMAGE IN PANEL CVP3 SHOWING SKIN FAILURE

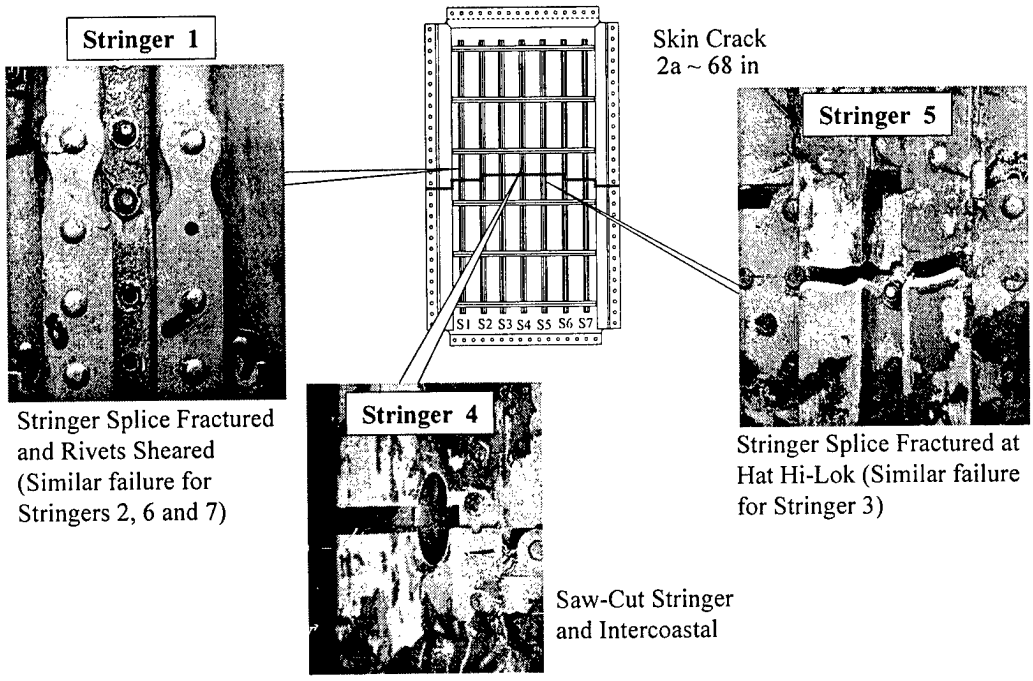
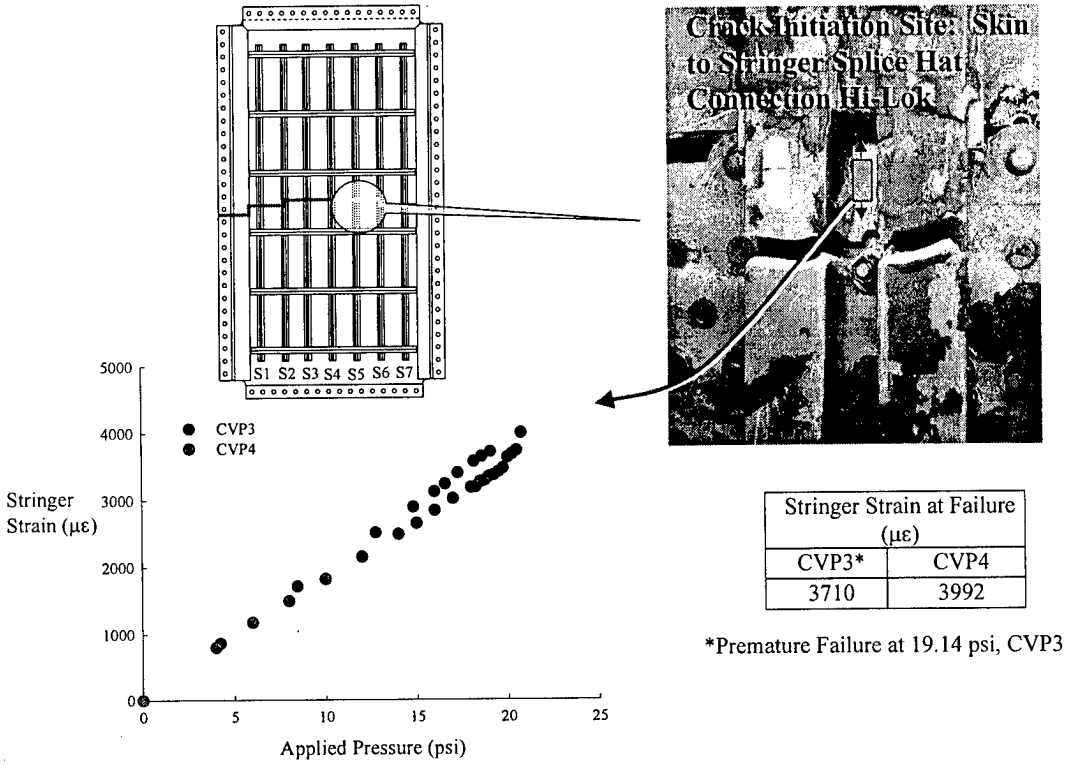


FIGURE 57. PHOTOGRAPHS OF THE FINAL STATE OF DAMAGE IN PANEL CVP3 SHOWING THE SUBSTRUCTURE FAILURE



Stringer Strain at Failure (με)	
CVP3*	CVP4
3710	3992

*Premature Failure at 19.14 psi, CVP3

FIGURE 58. STRAIN IN STRINGER S5 PRIOR OF FAILURE OF PANELS CVP3 AND CVP4

TABLE 1. TEST MATRIX

Specimen	Joint Configuration	Initial Damage	Date Completed
CVP1	Longitudinal Lap Joint	Lead Crack only	August 1999
CVP2	Longitudinal Lap Joint	Lead Crack with Multiple Cracks	February 2000
CVP3	Circumferential Butt Joint	Lead Crack only	July 2000
CVP4	Circumferential Butt Joint	Lead Crack with Multiple Cracks	September 2000

TABLE 2. SEQUENCE OF LOADING CONDITIONS APPLIED TO PANELS CVP1 AND CVP2

Load Condition	Test Type	Maximum Load			
		Pressure (psi)	Hoop (lb/in)	Frame (lb/in)	Long. (lb/in)
1a	Quasi-Static Loading, Strain Survey	10.1	554.6	111.9	0
1b	Quasi-Static Loading, Strain Survey	0	0	0	333.3
1c	Quasi-Static Loading, Strain Survey	10.1	554.6	111.9	333.3
2	Cyclic Fatigue Crack Growth	10.1	554.6	111.9	333.3
3	Quasi-Static, Residual Strength	Internal pressurization with reactive hoop and frame loads plus longitudinal stress 50% less than hoop stress			

TABLE 3. SEQUENCE OF LOADING CONDITIONS APPLIED TO PANELS CVP3 AND CVP4

Load Condition	Test Type	Maximum Load			
		Pressure (psi)	Hoop (lb/in)	Frame (lb/in)	Long. (lb/in)
1a	Quasi-Static Loading, Strain Survey	8.8	483.2	97.6	0
1b	Quasi-Static Loading, Strain Survey	0	0	0	875.7
1c	Quasi-Static Loading, Strain Survey	8.8	483.2	97.6	875.7
2	Cyclic Fatigue Crack Growth	8.8	483.2	97.6	875.7
3	Quasi-Static, Residual Strength	Internal pressurization with reactive hoop and frame load plus longitudinal stress 50% higher than hoop stress			

TABLE 4. STRESS-INTENSITY FACTOR RANGE CALCULATIONS FOR PANELS CVP1 AND CVP2

	CVP1 Baseline ($ksi\sqrt{in}$)				CVP2 Multiple Cracks ($ksi\sqrt{in}$)			
a, in	ΔK_1	ΔK_2	Δk_1	Δk_2	ΔK_1	ΔK_2	Δk_1	Δk_2
3.56	30.19	0.75	0.24	9.76	30.78	0.73	0.30	9.76
3.84	31.68	1.08	0.13	9.89	32.79	1.05	0.03	9.90
4.13	33.30	1.56	0.29	9.35	36.57	1.62	0.02	9.40
4.29	34.11	1.95	0.32	8.38	44.39	2.46	0.66	8.81
4.69	38.13	2.42	0.63	12.45	38.47	2.41	0.68	12.46
5.04	39.52	2.72	0.46	13.08	40.09	2.71	0.44	13.07
5.36	40.91	3.27	0.62	13.01	42.09	3.29	0.88	12.99
5.71	42.23	4.34	0.88	11.86	47.33	4.76	0.34	12.06
5.76	42.46	4.41	0.89	11.66	51.97	5.32	0.03	12.20
6.16	47.09	4.74	0.04	15.36	47.68	4.94	0.33	16.01
6.47	48.07	5.19	0.87	15.52	49.04	5.22	0.89	15.53
6.75	49.14	5.55	0.17	15.17	50.86	5.64	0.32	15.11
7.15	50.56	6.49	0.77	13.85	59.91	7.48	1.06	13.83
7.77	55.41	7.23	0.97	16.88	56.50	7.28	1.03	16.88
8.46	58.06	7.96	0.85	16.26	62.62	8.47	0.34	16.14
8.65	58.43	8.51	0.19	14.98	69.44	9.96	0.92	14.99
9.24	63.13	9.15	0.97	18.44	64.37	9.26	0.86	18.90
9.96	65.54	9.77	1.72	17.36	70.26	10.38	1.20	17.26
10.13	65.78	10.20	0.79	16.18	78.54	12.05	0.48	16.13
10.73	70.57	10.85	0.78	19.98	71.67	11.03	0.47	18.96
11.34	72.26	11.31	2.29	16.98	74.39	11.57	2.07	16.96
11.70	72.93	11.84	1.57	15.58	83.55	13.44	0.53	15.60
12.21	77.37	12.43	0.08	21.66	78.54	12.65	0.44	20.03
12.86	78.40	12.76	3.17	17.95	80.93	13.09	2.95	17.87
13.18	78.90	13.40	2.53	16.62	91.15	15.34	1.52	16.62

TABLE 5. STRESS-INTENSITY FACTOR RANGE CALCULATIONS FOR PANELS CVP3 AND CVP4

	CVP3, Baseline ($ksi\sqrt{in}$)				CVP4, Multiple Cracks $ksi\sqrt{in}$			
a, in	ΔK_1	ΔK_2	Δk_1	Δk_2	ΔK_1	ΔK_2	Δk_1	Δk_2
3.47	27.51	1.49	5.57	6.64	27.69	1.49	5.61	6.68
3.85	28.67	1.46	5.22	5.81	29.07	1.46	5.26	5.83
4.13	29.46	1.80	5.19	5.46	30.79	1.86	5.25	5.47
4.22	29.71	1.75	5.25	5.20	33.24	1.98	5.55	4.95
4.69	31.67	1.41	5.24	5.49	31.76	1.40	5.25	5.49
5.21	33.03	1.34	5.29	5.31	33.23	1.31	5.30	5.31
5.68	33.98	1.42	5.37	5.40	35.08	1.41	5.34	5.42
6.14	35.70	0.34	5.30	5.98	35.57	0.38	5.29	5.95
7.08	37.18	0.38	4.81	5.11	37.22	0.38	4.81	5.11
8.48	35.29	0.09	4.23	3.22	35.69	0.14	4.23	3.21
8.76	34.68	0.08	4.55	1.84	37.17	0.19	4.39	1.78

APPENDIX A—PANEL ENGINEERING DRAWINGS

Detailed engineering drawings for the four panels tested are presented in this appendix. Panels CVP1, CVP2, CVP3, and CVP4 are cross-referenced in the accompanied engineering drawings numbered ZB128403 as configurations –1, –501, –505, and –507, respectively. The selected panel configurations represent generic fuselage structure from a narrow-body aircraft fabricated according to original equipment manufacturing (OEM) specifications. It was decided in this program to test panels that were generic instead of aircraft specific, since the purpose of this study is to provide experimental data to support and verify analysis methodologies to assess the effects of multiple cracks applicable to all aircraft types. The panel size was selected so that the test section will contain large damage such as a two-bay crack with central frame severed. The test section of the panel was sized in order to minimize the effect of the test fixture attachment points along the perimeter.

Typical panel dimensions are 120″ in the longitudinal direction, 68″ in the circumferential direction, with a radius of 66″. For all four panels, the skin was 2024-T3 aluminum with a thickness of 0.063″. Each panel had six frames with a 19″ spacing and seven stringers with a 7.5″ spacing. The frames and shear clips were 7075-T6 aluminum with thickness of 0.071″ and 0.063″, respectively. The stringers were also 7075-T6 aluminum with a thickness of 0.063″, except for S4 where the thickness is 0.071″. The edges of the curved panels, where loads are applied, were reinforced by bonding six layers of 0.045~0.065-inch-thick aluminum alloy doublers to the skin to ensure a uniform load transfer. Along the perimeter of the panel, reinforcing doublers with a length of 112″ on the longitudinal sides and 56″ on the hoop sides were added. Holes with a diameter of 0.5″ were spaced approximately 4″ apart on the longitudinal sides and 3.5″ apart on the hoop sides to attach the whiffle tree assemblies which apply the load. There were 28 load application points on each longitudinal side and 16 load application points on each hoop side. Doublers were also added to the frame ends where they attach to the frame loaders.

ENGINEERING ORDER
NEW RELEASE
DAC 25-1709 (REV 4-91)

Douglas Aircraft Company
MCDONNELL DOUGLAS
CAGE CODE 88277

GRID DWG ☐ YES ☒ NO | CAD DWG ☐ YES ☒ NO | G Class 1XR

TYPE RELEASE: DEVELOPMENT A | PRODUCTION B | NON PROD. C X

NO. PL INPUT SH | NO. NL WORK SH | NO. DWG SH | L No.

ADV DATE

SHEET 1 OF 1

B SIZE | ZB128403 DRAWING NUMBER

TYPE OF DRAWING:
A ☐ SECTION LIST/OPTION CONTROL
J ☐ VARIATION
B ☐ SPEC OR SOURCE CONTROL
C ☐ DAC STANDARD
K ☐ OATP
G ☐ UNDIMENSIONED
S ☐ SERVICE
I ☒ OTHER TEST

COST CHARGE NO. (CCN): D1D0GU01 | RLSE CLASS | CHNG CAT CODE | LEADMAN CODE

MI | BUN | DOG | COE | NLT

TITLE: PANEL ASSEMBLY- CURVED

EWO | WRO | ROUTING CODE | CHNG CLASS

EXITED DOI ☐ Y ☐ N
CORRECTS A DWG/EO WHICH EXITED DOI ☐ Y ☐ N

	DATE		
1	DRAWING CHANGED	DATE	
2	ADVANCED DWG CHNG	DATE	
3	SERIAL EO	DATE	
4	NEW / REVISED RLSE	DATE JUL 31 1997	NEW
5	REISSUE TO REVISE	DATE	R

☐ DWG REPLACES
☐ REPLACED BY NUMBER

COORDINATE DRAWING/EO WITH

SEQ/REWORK INSTR – DESIGN INTENT REQUIRES DRAWING CHANGE
☐ YES ☐ NO EXPECTED INCORP DATE

EO MADE BY	DESIGN APPROVAL	CHECK EO	WEIGHTS	MAINTAINABILITY	PROGRAM ENG'RG	CONFIGURATION MGT
E. HAYMAN 7-18-97	James Lu 7/31/97					
DWG MADE / CHNGD BY	**SPEC COMPLIANCE**	**CHECK DWG**	**STRESS**	**MATERIAL**	**CHANGE CONTROL**	**RELEASE / DATE**
						RELEASED 7-31-97
					CORROSION PREV	**CUSTOMER AUTH**

	1.2 LTR	MODEL	SECTION	WRO EFFECT	EFFECTIVITY	CONFIGURATION	QTY PER ARTICLE NEW	QTY PER ARTICLE FORMER	NEXT ASSEMBLY DRAWING NO.	U CD	
1		CRAD			TEST ONLY	-1	1	0			1
2						-501	1	0			2
3						-503	1	0			3
4						-505	1	0			4
5						-507	1	0			5
6						-509	1	0			

RECORD RELEASE ONLY.

	YES	NO
[illegible]		
[illegible]		
[illegible]		
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[illegible] AFF		
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[illegible] AFF		
[illegible] AFF		
[illegible] AFF		
TEST AFF		

SB / SC No.

KD3 ZB

NAME	DEPT	MAIL CODE	EXTRA EO QTY	DWG & EO QTY	NAME	DEPT	MAIL CODE	EXTRA EO QTY	DWG & EO QTY
J. MECKLENBURG	1-18	0	4						
G. THRASH	KD3 1-18	0	1						
C. CHEN	1XR 71-34	0	1						
J. LO	1XR 71-34	0	1						
C. HSU	1XR 71-34	0	1						
K. CHAN	1XR 71-34	0	1						

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STOP ORDER		/	
SEQ/REWORK		/	
QAEO		/	
VIR		/	
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CONTRACT NO. DTFA03-96-C-00027

P / C	ASD	1 ST ACFT	FAB

Orig at LB
Repro at
CHANGES MUST BE MADE ON ORIGINAL ONLY

DRAWING NUMBER
ZB128403

ENGINEERING ORDER

DAC 25-1709K (Rev. J-91)

Douglas Aircraft Company
MCDONNELL DOUGLAS
CAGE CODE 88277

HANDLING INSTRUCTIONS (HI)

0. INTERCHANGEABILITY NOT AFFECTED. USAGE OF PRIOR CHANGE OPTIONAL.
2. CONFORMANCE REQUIRED AT NOTED EFFECTIVITY.
3. CONFORMANCE REQUIRED AT NOTED EFFECTIVITY. OPTIONAL REPAIR INSTRUCTIONS ARE NOT TO BE INCORPORATED ON PRODUCTION DRAWING GRAPHICS
4. SCRAP.
5. CONFORMANCE REQUIRED AT NOTED EFFECTIVITY UNLESS OTHERWISE NOTED.
6. RETROFIT (DELIVERED ARTICLES).

GRID DWG	CAD DWG	CODE	TYPE RELEASE		NO. PL INPUT SH	NO. NL INPUT SH	NO.
☐ YES ☒ NO	☐ YES ☒ NO	IXR	DEVELOPMENT	A	ADV DATE	B ZB128403	
			PRODUCTION	B		SIZE DRAWING NUMBER	
			NON PROD.	C X	SHEET 1 OF 5		

COST CHARGE NO. (CCN)	RLSE CLASS	CHNG CAT CODE	LEADMAN CODE
DJDØGUØ1			

MI
BUN
DOG
COE
NLT

TITLE: PANEL ASSEMBLY- CURVED

DATE JAN 21 1998	1	DRAWING CHANGED	A
DATE	2	ADVANCED DWG CHNG	
DATE	3	SERIAL EO	
DATE	4	NEW / REVISED RLSE	
DATE	5	REISSUE TO REVISE	R

EWO | WRO | ROUTING CODE | CHNG CLASS

EXITED DOI ☐ Y ☐ N
CORRECTS A DWG/EO WHICH EXITED DOI ☐ Y ☐ N

☐ DWG REPLACES
☐ REPLACED BY ____ NUMBER
COORDINATE DRAWING/EO WITH

EO MADE BY	DESIGN APPROVAL	CHECK EO	WEIGHTS	MAINTAINABILITY	PROGRAM ENGRG	CONFIGURATION MGT
E.L. HAYMAN 1-19-98	[signature] 1-21-98 STRESS					
DWG MADE / CHKD BY	SPEC COMPLIANCE	CHECK DWG	STRESS [signature] 1/21/98	MATERIAL	CHANGE CONTROL	RELEASE DATE (RE) 1-21-98
					CORROSION PREV	CUSTOMER AUTH

SEQ/REWORK INSTR – DESIGN INTENT REQUIRES DRAWING CHANGE
☐ YES ☐ NO ____ EXPECTED INCORP DATE

	1,2 LTR	MODEL	SECTION	HI NO.	WRO EFFECT	EFFECTIVITY	CONFIGURATION	QTY PER ARTICLE NEW	QTY PER ARTICLE FORMER	NEXT ASSEMBLY DRAWING NO.	U CD	
1		CRAD				TEST ONLY	-1	1	1			1
2							-501	1	1			2
3							-503	1	1			3
4							-505	1	1			4
5							-507	1	1			5
6							-509	1	1			6

EXPANDED "SHEET REVISION STATUS" ON SHEET 1.
CONTINUED ON SHEET 2

REASONS: TO CLARIFY DRAWING AND RESULTS OF DETAIL SKIN AND FRAME LOAD ANALYSIS.

INCORPORATES/RELEASES	Y	N	NUMBER
STOP ORDER			
SEQ/REWORK			
QAEO			
VIR			
MII			
MIR			
PII			
PRR			

CONTRACT NO. DTFA03-96-C-00027

P/C	ASD	1 ST ACFT	FAB

Orig at LB
Repro at ____
CHANGES MUST BE MADE ON ORIGINAL ONLY

PRINT DISTRIBUTION	YES	NO	PRINT DISTRIBUTION	YES	NO
SIMULATOR AFF			SEALING AFF		
OAIP AFF			ELEC BONDING AFF		
SCHEMATICS AFF			LUBRICATION AFF		
DAMS & DRAWS AFF			LAB TEST AFF		
VENTILATION AFF					

SB / SC NO.

NAME	DEPT	MAIL CODE	EXTRA EO QTY	DWG & EO QTY
J. MECKLENBURG	KD3	1-18	0	4
C. THRASH	KD3	1-18	0	1
C. CHEN	IXR	71-34	0	1
J. LO	IXR	71-34	0	1
C. HSU	IXR	71-34	0	1
K. CHAN	IXR	71-34	0	1

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DRAWING NUMBER ZB128403

ENGINEERING ORDER

DOUGLAS AIRCRAFT COMPANY
LONG BEACH, CALIFORNIA
MCDONNELL DOUGLAS CORPORATION
CODE IDENT NO. 81877

DAC 25-1709B (REV. 8-86)

SHEET	DRAWING NUMBER
2	ZB128403

DATE JAN 21 1998	1/2	CHANGE LETTER	A
DATE	3	SERIAL EO	
DATE	4	NEW/REVISED RELEASE	
DATE	5	REISSUE TO REVISE	R

REVISE GENERAL NOTE ON SHEET 2;

IS NOW; "ADHESIVE BOND -33, -37, -43, -45, -47, -49, -69, -71 AND -73 DOUBLERS AND -35 FILLER WITH DMS 2169 PER DPS 1.950."

WAS; "METAL BOND -33, -37, -43, -45, -47, -49, -51, -53 DOUBLERS AND -35 FILLER ALSO -55, -57, -59 AND -61 SPACERS WITH DMS 2169 PER DPS 1.950."

ADDED ON SHEET 3;

DETAIL OF -63 DOUBLER TO SHOW LOCATIONS ONLY.

CHANGED ON SHEET 3;

RADIUS OF SKIN CURVATURE,

IS NOW; 65.81 R. (REF.) WAS; 66 R. (REF.)

ADDED TO VIEW A ON SHEET 4;

DETAIL OF -63 DOUBLER TO SHOW LOCATIONS ONLY.

CHANGED IN PROJECTION OF VIEW J-J ON SHEET 7;

9951791-3 INTERCOSTAL ALONG WITH RELATED DETAIL PARTS REDRAWN TO OPPOSITE FLANGE OF -13 LONGERON TO AGREE WITH VIEW F-F ON SHEET 10.

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DOUGLAS AIRCRAFT COMPANY
LONG BEACH, CALIFORNIA
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CORPORATION

DAC 25-1709B (REV. 8-86)

3	ZB128403
SHEET	DRAWING NUMBER

DATE JAN 21 1998	1/2	CHANGE LETTER	A
DATE	3	SERIAL EO	
DATE	4	NEW REVISED RELEASE	
DATE	5	REISSUE TO REVISE	R

CHANGED IN PROJECTION OF VIEW L-L ON SHEET 9;

3913490-1 INTERCOSTAL ALONG WITH RELATED DETAIL PARTS REDRAWN TO OPPOSITE FLANGE OF -9 LONGERON TO AGREE WITH VIEW F-F ON SHEET 10.

ADDED TO VIEW F-F ON SHEET 10;

NOTATION, "℄ L4"

CHANGED IN PROJECTION OF VIEW G-G ON SHEET 12;

3913490-1 INTERCOSTAL ALONG WITH RELATED DETAIL PARTS REDRAWN TO OPPOSITE FLANGE OF -9 LONGERON TO AGREE WITH VIEW F-F ON SHEET 10.

REDESIGNED PANEL ASSEMBLY EDGE DOUBLERS IN VIEW D AND EDGE PROJECTION ON SHEET 13.

CANCELLED -51 AND -53 DOUBLER ALSO -55, -57, -59 AND -61 SPACERS (REMOVED FROM F/D AND P/L).

ADDED -69, -71 AND -73 DOUBLERS (ADDED TO F/D AND P/L).

MODIFY VIEW D TO SHOW SHORTENED LENGTH OF -15 DOUBLER AND FASTENER PATTERN IN -3 AND -5 SKIN AND -17 DOUBLER. CHANGED FASTENERS IN THIS AREA;

IS NOW, LZ | 6F (C 82) WAS, BJ | 6

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DAC 25-1709B (REV. 8-86)

4	ZB128403
SHEET	DRAWING NUMBER

DATE JAN 21 1998	1/2	CHANGE LETTER	A
DATE	3	SERIAL EO	
DATE	4	NEW/REVISED RELEASE	
DATE	5	REISSUE TO REVISE	R

ADDED TO VIEW R ON SHEET 14;

-65 AND -67 DOUBLERS (ADDED TO F/D AND P/L).

CHANGED ON SHEET 15 (-3 SKIN), SHEET 16 (-5 SKIN), AND SHEET 17(-7 SKIN);

RADIUS OF SKIN CURVATURE,

IS NOW;	WAS;
65.81 R.	66 R.

ADDED TO DETAIL OF -23 FRAME ASSEMBLY ON SHEET 23 AND 24;

-63 DOUBLER (ADDED TO F/D AND P/L)

-65 AND -67 (ADDED TO F/D)

NOTE: "ADHESIVE BOND PER DPS 1.950.
USE DPM 3279-3 ADHESIVE."

-5 (ADDED TO -23 ON SHEET 23)

-3 (ADDED TO -23 ON SHEET 24)

BJ/6 5 PLACES (ADDED TO -23 ON SHEET 23)
LOCATE FROM -29

BJ/6 5 PLACES (ADDED TO -23 ON SHEET 24)
LOCATE FROM -31

MCDONNELL DOUGLAS CORPORATION PROPRIETARY INFORMATION - USE OR DISCLOSURE OF THIS INFORMATION IS SUBJECT TO THE RESTRICTION ON THE TITLE PAGE OR ON THE FIRST PAGE OF THIS DOCUMENT.

DRAWING NUMBER ZB128403

ENGINEERING ORDER

DOUGLAS AIRCRAFT COMPANY
LONG BEACH, CALIFORNIA
MCDONNELL DOUGLAS
CODE IDENT NO. 81877 CORPORATION

DAC 25-1709B (REV. 8-86)

5	ZB128403
SHEET	DRAWING NUMBER

DATE JAN 21 1998	1/2	CHANGE LETTER	A
DATE	3	SERIAL EO	
DATE	4	NEW/REVISED RELEASE	
DATE	5	REISSUE TO REVISE	R

ADDED TO DETAIL OF -25 FRAME ASSEMBLY ON SHEET 25 AND 26;

-63 AND -65 (ADDED TO F/D)

NOTE: "ADHESIVE BOND PER DPS 1.950. USE DPM 3279-3 ADHESIVE."

-7 (ADDED TO -25 ON SHEET 25 AND 26)

BJ|6 5 PLACES (ADDED TO -25 ON SHEET 25)
LOCATE FROM -39

BJ|6 5 PLACES (ADDED TO -25 ON SHEET 26)
LOCATE FROM -41

CHANGED ON -15 DOUBLER DETAIL ON SHEET 28;

LENGTH OF -15 DOUBLER,
IS NOW; 98.38 WAS; 120.00

DIMENSION FROM LAST FULL LOLLIPOP TO END OF PART,
IS NOW; 1.19 WAS; .75

ADDED SHEET 29 SHOWING DETAILS OF -63 DOUBLER, -65 DOUBLER AND -67 DOUBLER.

MCDONNELL DOUGLAS CORPORATION PROPRIETARY INFORMATION - USE OR DISCLOSURE OF THIS INFORMATION IS SUBJECT TO THE RESTRICTION ON THE TITLE PAGE OR ON THE FIRST PAGE OF THIS DOCUMENT.

DRAWING NUMBER ZB128403

ENGINEERING ORDER
DAC 25-1709K (REv. 3-91)

Douglas Aircraft Company
MCDONNELL DOUGLAS
CAGE CODE 88277

HANDLING INSTRUCTIONS (HI)
0 INTERCHANGEABILITY NOT AFFECTED USAGE OF PRIOR CHANGE OPTIONAL
2. CONFORMANCE REQUIRED AT NOTED EFFECTIVITY
3 CONFORMANCE REQUIRED AT NOTED EFFECTIVITY. OPTIONAL REPAIR INSTRUCTIONS ARE NOT TO BE INCORPORATED ON PRODUCTION DRAWING GRAPHICS.
4 SCRAP
5. CONFORMANCE REQUIRED AT NOTED EFFECTIVITY UNLESS OTHERWISE NOTED.
6. RETROFIT (DELIVERED ARTICLES).

GRID DWG ☐ YES ☒ NO | CAD DWG ☐ YES ☒ NO | CODE IXR

TYPE RELEASE: DEVELOPMENT A | PRODUCTION B | NON PROD. C X

NO. PL INPUT SH | NO. NL INPUT SH | NO.

B ZB128403 (SIZE / DRAWING NUMBER)

SHEET 1 OF 3

COST CHARGE NO. (CCN): DJDØGGJØ1 | RLSE CLASS | CHNG CAT CODE | LEADMAN CODE

MI | BUN | DOG | COE | NLT

TITLE: PANEL ASSEMBLY-CURVED

EWO | WRO | ROUTING CODE | CHNG CLASS

DATE NOV 11 1998 (1) DRAWING CHANGED B
DATE (2) ADVANCED DWG CHNG
DATE (3) SERIAL EO
DATE (4) NEW / REVISED RLSE
DATE (5) REISSUE TO REVISE R

EXITED DOI ☐ Y ☐ N
CORRECTS A DWG/EO WHICH EXITED DOI ☐ Y ☐ N

☐ DWG REPLACES
☐ REPLACED BY ____ NUMBER
COORDINATE DRAWING/EO WITH

EO MADE BY	DESIGN APPROVAL	CHECK EO 11-11-98	WEIGHTS	MAINTAINABILITY	PROGRAM ENGRG	CONFIGURATION MGT
E.L. HAYMAN 11-98	J. LO DO 11-98	STOLLS				
DWG MADE BY / CHKD BY: E.L. 11-9	QUALITY CONFORMANCE 11-9-98	CHECK DWG 11-11-98 STOLLS	STRESS Chen Hsu 11-10-98	MATERIAL	CHANGE CONTROL	RELEASE (ELB) DATE 11-11-98
					CORROSION PREV	CUSTOMER AUTH

SEQ/REWORK INSTR - DESIGN INTENT REQUIRES DRAWING CHANGE
☐ YES ☐ NO ____ EXPECTED INCORP DATE

	1.2 LTR	MODEL	SECTION	HI NO.	WRO EFFECT	EFFECTIVITY	CONFIGURATION	QTY PER ARTICLE NEW	QTY PER ARTICLE FORMER	NEXT ASSEMBLY DRAWING NO.	U CD	
1		CRAD				TEST ONLY	-1	0	1			1
2							-501	0	1			2
3							-503	0	1			3
4							-505	0	1			4
5							-507	0	1			5
6							-509	0	1			6

ADDED TO SHT. 23; VIEW U-U

REASON: TO PROVIDE CLEARANCE FOR LOAD LINKS, ALSO FOR ADDED GENERICICITY.

INCORPORATES/RELEASES	Y	N	NUMBER
STOP ORDER			
SEQ/REWORK			
OAEO			
VIR			
MII			
MIR			
PII			
PRR			

CONTRACT NO. DTFA03-96-C-00027
P/C | ASD | 1 ST ACFT | FAB
Orig at LB
Repro at ____
CHANGES MUST BE MADE ON ORIGINAL ONLY

PRINT DISTRIBUTION	YES	NO	PRINT DISTRIBUTION	YES	NO
SIMULATOR AFF			SEALING AFF		
OATP AFF			ELEC BONDING AFF		
SCHEMATICS AFF			LUBRICATION AFF		
DAMS & DRAINS AFF			LAB TEST AFF		
VENTILATION AFF					

SB / SC NO.

NAME	DEPT	MAIL CODE	EXTRA EO QTY	DWG & EO QTY
J. MECKLENBURG	KD3	1-18	3	—
C. CHEN	IXR	78-209	1	—
J. LO	IXR	78-209	1	—
C. HSU	IXR	78-209	1	—

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DRAWING NUMBER ZB128403

ENGINEER. ORDER

DOUGLAS AIRCRAFT COMPANY
LONG BEACH, CALIFORNIA
MCDONNELL DOUGLAS
CORPORATION

DAC 25-1709B (REV. 8-86)

2 | ZB128403
SHEET | DRAWING NUMBER

DATE NOV 11 1998	1/2	CHANGE LETTER	B
DATE	3	SERIAL EO	
DATE	4	NEW/REVISED RELEASE	
DATE	5	REISSUE TO REVISE	R

REMOVED ON SHT. 23;

DIMENSION ".700 CONSTANT" FROM -23 FRAME ASSEMBLY

REMOVED ON SHT. 25;

DIMENSION ".700 CONSTANT" FROM -25 FRAME ASSEMBLY

REVIESED ON SHTS. 23, 24, 25 & 26;

ENDS OF -27 FRAME TO SHOW CUTOUT OF FLANGE

REVISED ON SHTS. 20 AND 21;

VIEW N TO ADD -75 DOUBLER

REPLACED ON SHT. 5;

LZ|6F RIVETS WITH ASS|6F RIVETS (ON ℄ LONGERON 4 ONLY)

REPLACED ON SHT. 6;

2 ROWS OF LZ|6F RIVETS WITH XES|6F HI-LOK PINS
(ONE ROW EACH SIDE OF ℄ SYM.)

ADDED ON SHT. 11;

FASTENERS IN FRAME TO SHEAR CLIP ON RIGHT HAND PROJECTION OF VIEW C (FASTENERS PREVIOUSLY OMITTED).

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DRAWING NUMBER ZB128403

ENGINEERING ORDER

DOUGLAS AIRCRAFT COMPANY
LONG BEACH, CALIFORNIA
MCDONNELL DOUGLAS
CODE IDENT NO. 80227 CORPORATION

DAC 25-1709B (REV. 8-86)

		3 SHEET	ZB128403 DRAWING NUMBER
DATE NOV 11 1998	1/2	CHANGE LETTER	B
DATE	3	SERIAL EO	
DATE	4	NEW/REVISED RELEASE	
DATE	5	REISSUE TO REVISE	R

ADDED TO G/N SHT. 2 AND
P/L SHTS. 4 AND 5;

A.SS|6 RIVETS AND XES|6 HI-LOK PINS
NAS1097KE6
S4931919-6
NAS1252-10L WASHER
MS21042-3 NUT

ADDED TO P/L SHT. 4;

-75 DOUBLER MAKE FROM 5936017-27

MCDONNELL DOUGLAS CORPORATION PROPRIETARY INFORMATION - USE OR DISCLOSURE OF THIS INFORMATION IS SUBJECT TO THE RESTRICTION ON THE TITLE PAGE OR ON THE FIRST PAGE OF THIS DOCUMENT.

DRAWING NUMBER ZB128403

ENGINEERING ORDER

DAC 25-1709K (REV. 3-91)

Douglas Aircraft Company
MCDONNELL DOUGLAS
CAGE CODE 88277

GRID DWG ☐ YES ☒ NO | CAD DWG ☐ YES ☒ NO | CODE IXR | TYPE RELEASE: DEVELOPMENT A, PRODUCTION B, NON PROD. C X | NO. PL INPUT SH | NO. NL INPUT SH | NO.

B ZB128403 (SIZE / DRAWING NUMBER)

SHEET 1 OF 2

HANDLING INSTRUCTIONS (HI)

0. INTERCHANGEABILITY NOT AFFECTED. USAGE OF PRIOR CHANGE OPTIONAL.
2. CONFORMANCE REQUIRED AT NOTED EFFECTIVITY.
3. CONFORMANCE REQUIRED AT NOTED EFFECTIVITY. OPTIONAL REPAIR INSTRUCTIONS ARE NOT TO BE INCORPORATED ON PRODUCTION DRAWING GRAPHICS.
4. SCRAP.
5. CONFORMANCE REQUIRED AT NOTED EFFECTIVITY UNLESS OTHERWISE NOTED.
6. RETROFIT (DELIVERED ARTICLES).

COST CHARGE NO. (CCN): DJDØGJØ1 | RLSE CLASS | CHNG CAT CODE | LEADMAN CODE

MI | BUN | DOG | COE | NLT

TITLE: PANEL ASSEMBLY-CURVED

EWO | WRO | ROUTING CODE | CHNG CLASS | EXITED DOI ☐ Y ☐ N | CORRECTS A DWG/EO WHICH EXITED DOI ☐ Y ☐ N

1	DRAWING CHANGED		DATE			
2	ADVANCED DWG CHNG		DATE			
3	SERIAL EO	001	DATE DEC 07 1998			
4	NEW / REVISED RLSE		DATE			
5	REISSUE TO REVISE	R	DATE			

☐ DWG REPLACES
☐ REPLACED BY ____ NUMBER
COORDINATE DRAWING/EO WITH

EO MADE BY	DESIGN APPROVAL	CHECK EO	WEIGHTS	MAINTAINABILITY	PROGRAM ENGRG	CONFIGURATION MGT
E.L. HAYMAN 11-11-98	[illegible] 11-10-98	STOUT				
DWG MADE / CHNGD BY	**QUAL COMPLIANCE**	**CHECK DWG**	**STRESS**	**MATERIAL**	**CHANGE CONTROL**	**RELEASE DATE**
			Chuj Hsu 10/2/98			MB 1/20
					CORROSION PREV	CUSTOMER AUTH

SEQ/REWORK INSTR – DESIGN INTENT REQUIRES DRAWING CHANGE
☐ YES ☐ NO ____ EXPECTED INCORP DATE

	1.2 LTR	MODEL	SECTION	HI NO.	WRO EFFECT	EFFECTIVITY	CONFIGURATION	QTY PER ARTICLE NEW	QTY PER ARTICLE FORMER	NEXT ASSEMBLY DRAWING NO.	U CD	
1		CRAD				TEST ONLY	-1-001	1	0			1
2		CRAD				TEST ONLY	-501-001	1	0			2
3												3
4												4
5												5

SEE SHT. 2

REASON: TO SIMULATE A SEVERED SHEAR CLIP ADJACENT TO LEAD CRACK.

INCORPORATES/RELEASES	Y	N	NUMBER
STOP ORDER			
SEQ/REWORK			
QAEO			
VIR			
MII			
MIR			
PII			
PRR			

PRINT DISTRIBUTION	YES	NO	PRINT DISTRIBUTION	YES	NO
SIMULATOR AFF			SEALING AFF		
OATP AFF			ELEC BONDING AFF		
SCHEMATICS AFF			LUBRICATION AFF		
DAMS & DRAINS AFF			LAB TEST AFF		
VENTILATION AFF					

SB / SC NO.

NAME	DEPT	MAIL CODE	EXTRA EO QTY	DWG & EO QTY
J. MECKLENBURG	KD3	1-18	3	—
C. CHEN	IXR	78-209	1	—
J. LO	IXR	78-209	1	—
C. HSU	IXR	78-209	1	—

CONTRACT NO. DTFA03-96-C-00027

P/C	ASD	1 ST ACFT	FAB

Orig at LB
Repro at ____
CHANGES MUST BE MADE ON ORIGINAL ONLY

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DRAWING NUMBER ZB128403

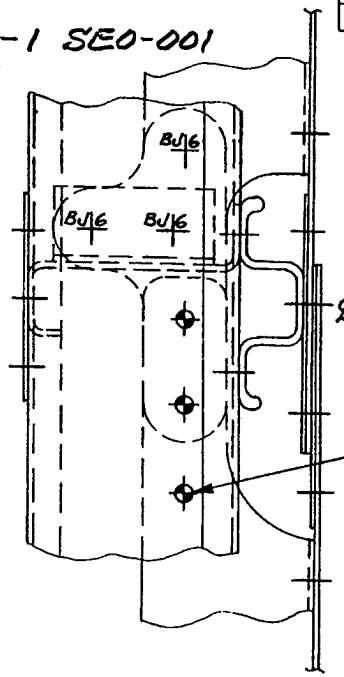
ENGINEERING ORDER

DOUGLAS AIRCRAFT COMPANY
LONG BEACH, CALIFORNIA
MCDONNELL DOUGLAS
CODE IDENT NO. 81877 CORPORATION

DAC 25-1709B (REV. 8-86)

		2 SHEET	ZB128403 DRAWING NUMBER
DATE	1/2	CHANGE LETTER	
DATE DEC 07 1998	3	SERIAL EO	001
DATE	4	NEW-REVISED RELEASE	
DATE	5	REISSUE TO REVISE	R

MODIFY -1 AND -501 PANEL ASSEMBLIES AS SHOWN BELOW
REIDENTIFY AS ZB128403-1 SEO-001 AND ZB128403-501 SEO-001



INDICATES OMIT OR REMOVE FASTENERS AT THESE LOCATIONS (3 PLACES) ON FRAME F4 ONLY.

VIEW F-F

SEE SHT. 5

MCDONNELL DOUGLAS CORPORATION PROPRIETARY INFORMATION - USE OR DISCLOSURE OF THIS INFORMATION IS SUBJECT TO THE RESTRICTION ON THE TITLE PAGE OR ON THE FIRST PAGE OF THIS DOCUMENT.

DRAWING NUMBER ZB128403

ENGINEERING ORDER DAC 25-1709K (REV.)

Douglas Aircraft Company
MCDONNELL DOUGLAS
CAGE CODE 88277

GRID DWG ☐ YES ☒ NO | CAD DWG ☐ YES ☒ NO | IXR

TYPE RELEASE: DEVELOPMENT A ☐ | PRODUCTION B ☐ | NON PROD. C ☒

NO. PL INPUT SH | NO. NL INPUT SH

ADV DATE | SHEET 1 OF 2

B | ZB128403 | SIZE | DRAWING NUMBER

HANDLING INSTRUCTIONS (HI)

0. INTERCHANGEABILITY NOT AFFECTED. USAGE OF PRIOR CHANGE OPTIONAL.
2. CONFORMANCE REQUIRED AT NOTED EFFECTIVITY.
3. CONFORMANCE REQUIRED AT NOTED EFFECTIVITY. OPTIONAL REPAIR INSTRUCTIONS ARE NOT TO BE INCORPORATED ON PRODUCTION DRAWING GRAPHICS
4. SCRAP
5. CONFORMANCE REQUIRED AT NOTED EFFECTIVITY UNLESS OTHERWISE NOTED.
6. RETROFIT (DELIVERED ARTICLES).

COST CHARGE NO. (CCN): D1D0GS01 | RLSE CLASS | CHNG CAT CODE | LEADMAN CODE

MI | BUN | DOG | COE | NLT

TITLE: PANEL ASSEMBLY- CURVED

EWO | WRO | ROUTING CODE | CHNG CLASS

EXITED DOI ☐ Y ☐ N

CORRECTS A DWG/EO WHICH EXITED DOI ☐ Y ☐ N

1	DATE		DRAWING CHANGED				
2	DATE		ADVANCED DWG CHNG				
3	DATE JUN 03 1999		SERIAL EO	005			
4	DATE		NEW / REVISED RLSE				
5	DATE		REISSUE TO REVISE	R			

☐ DWG REPLACES
☐ REPLACED BY _____ NUMBER

COORDINATE DRAWING/EO WITH

EO MADE BY	DESIGN APPROVAL	CHECK EO	WEIGHTS	MAINTAINABILITY	PROGRAM ENGRG	CONFIGURATION MGT
HAYMAN 5-28-99	James LO 5/28/99	STOLLS 6-3-99				
DWG MADE BY	**SPEC COMPLIANCE**	**CHECK DWG**	**STRESS**	**MATERIAL**	**CHANGE CONTROL**	**RELEASE DATE**
E. L. 5-28-99		STOLLS 6-3-99	CHSU 5/28/99			6-3-99
					CORROSION PREV	CUSTOMER AUTH

SEO/REWORK INSTR – DESIGN INTENT REQUIRES DRAWING CHANGE
☐ YES ☐ NO _____ EXPECTED INCORP DATE

	1.2 LTR	MODEL	SECTION	HI NO.	WRO EFFECT	EFFECTIVITY	CONFIGURATION	QTY PER ARTICLE NEW	QTY PER ARTICLE FORMER	NEXT ASSEMBLY DRAWING NO.	U CD	
1		CRAD				TEST ONLY	-501-005	1	0			1
2		〃				〃	-503-005	1	0			2
3							-507-005	1	0			3
4		CRAD				TEST ONLY	-509-005	1	0			4
5												5

SEE SHT. 2

NOTE: PANEL ASSY. -1 AND -505 WAS MODIFIED BY CUSTOMER.

REASON: TO PROVIDE INCREASED CLEARANCE FOR FRAME LOADER LINKAGE.

INCORPORATES/RELEASES	Y	N	NUMBER
STOP ORDER			
SEO/REWORK			
QAEO			
VIR			
MII			
MIR			
PII			
PRR			

PRINT DISTRIBUTION	YES	NO	PRINT DISTRIBUTION	YES	NO
SIMULATOR AFF		〃	SEALING AFF		〃
OATP AFF		〃	ELEC BONDING AFF		〃
SCHEMATICS AFF		〃	LUBRICATION AFF		〃
DAMS & DRAINS AFF		〃	LAB TEST AFF		〃
VENTILATION AFF					

SB / SC NO.

NAME	DEPT	MAIL CODE	EXTRA EO QTY	DWG & EO QTY
J. MECKLENBURG	KD3	1-18	3	—
C. CHEN	IXR	78-209	1	—
J. LO	IXR	78-209	1	—
C. HSU	IXR	78-209	1	—

CONTRACT NO. DTFA03-96-C-00027

P / C	ASD	1 ST ACFT	FAB

Orig at LB
Repro at _____

CHANGES MUST BE MADE ON ORIGINAL ONLY

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DRAWING NUMBER ZB128403

ENGINEERING ORDER

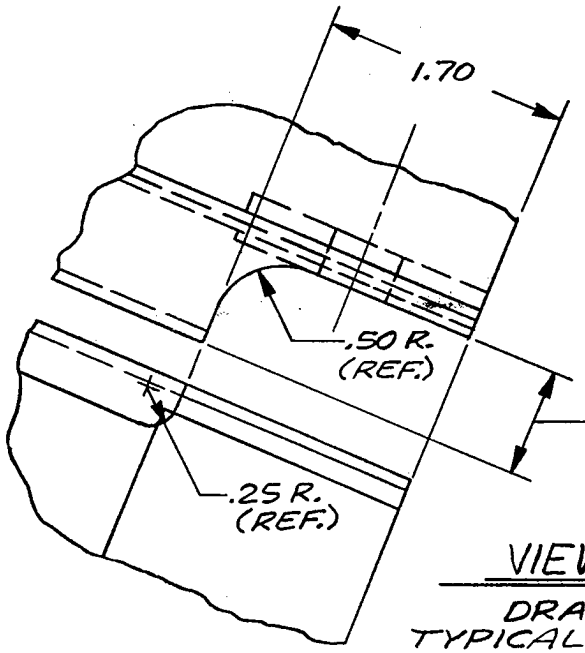
DOUGLAS AIRCRAFT COMPANY
LONG BEACH, CALIFORNIA
MCDONNELL DOUGLAS CORPORATION

DAC 25-1709B (REV. 8-86)

2 SHEET | ZB128403 DRAWING NUMBER

DATE	1/2	CHANGE LETTER	
DATE JUN 03 1999	3	SERIAL EO	005
DATE	4	NEW/REVISED RELEASE	
DATE	5	REISSUE TO REVISE	R

CHANGED CUTOUT IN -27 FRAMES AS SHOWN IN VIEW U-U ON SHT. 23
WAS: 1.50 IS NOW 1.70

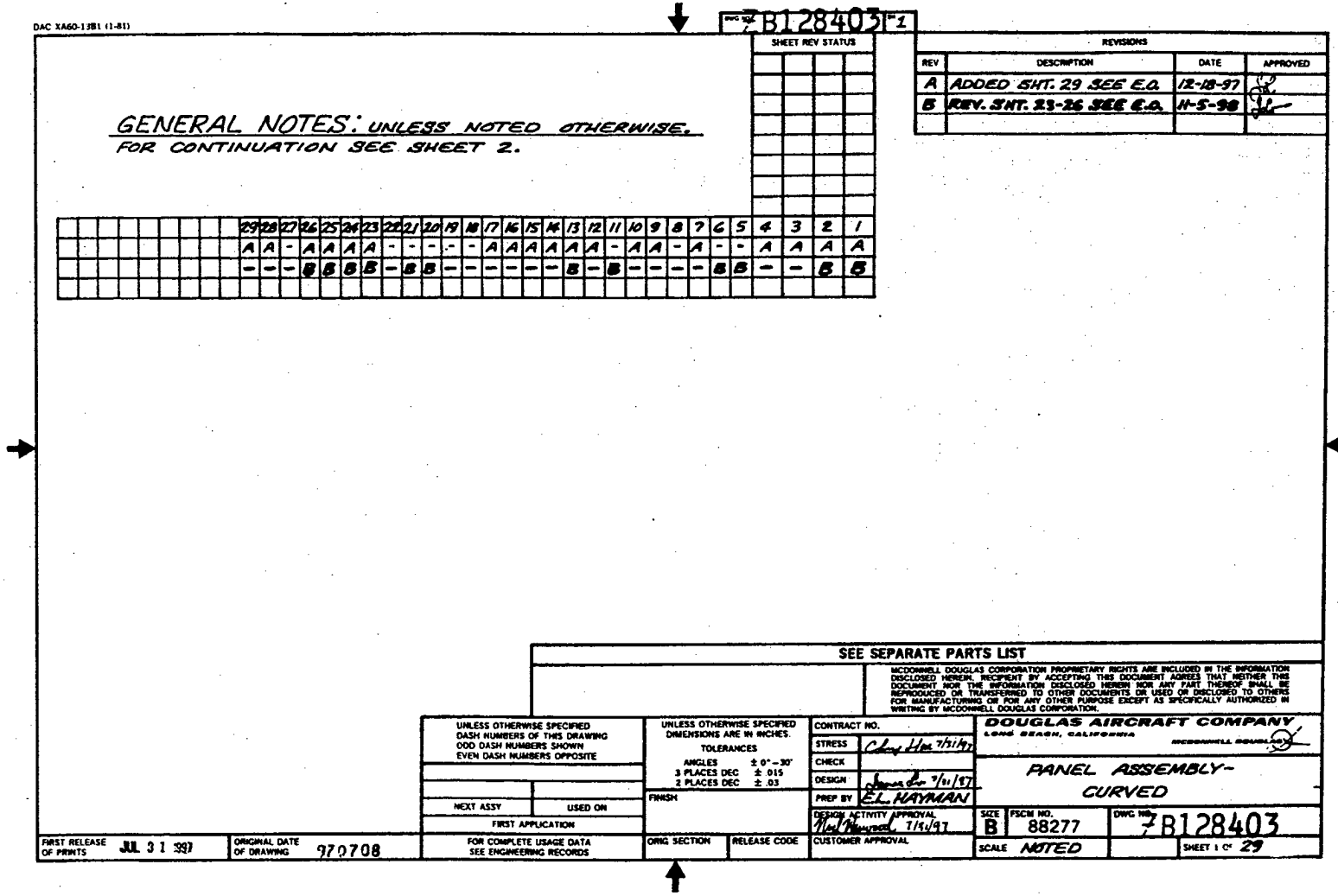


VIEW U-U

DRAWN FULL SIZE
TYPICAL FOR EACH END OF -27 FRAME

MCDONNELL DOUGLAS CORPORATION PROPRIETARY INFORMATION - USE OR DISCLOSURE OF THIS INFORMATION IS SUBJECT TO THE RESTRICTION ON THE TITLE PAGE OR ON THE FIRST PAGE OF THIS DOCUMENT.

DRAWING NUMBER ZB128403


DAC XA60-13B1 (1-81)
DWG NO. 7B128403 SH 1
SHEET REV STATUS
REVISIONS
REV | DESCRIPTION | DATE | APPROVED
A | ADDED SHT. 29 SEE E.O. | 12-18-97
B | REV. SHT. 23-26 SEE E.O. | 11-5-98
GENERAL NOTES: UNLESS NOTED OTHERWISE.
FOR CONTINUATION SEE SHEET 2.
29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
A A - A A A A - - - - - A A A A A A - A A - A - - A A A A
- - - B B B B - B B - - - - - - B - B - - - - B B - - B B
SEE SEPARATE PARTS LIST
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UNLESS OTHERWISE SPECIFIED DASH NUMBERS OF THIS DRAWING OOD DASH NUMBERS SHOWN EVEN DASH NUMBERS OPPOSITE
NEXT ASSY
USED ON
FIRST APPLICATION
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES
ANGLES ± 0°-30'
3 PLACES DEC ± .015
2 PLACES DEC ± .03
FINISH
CONTRACT NO.
STRESS
CHECK
DESIGN
PREP BY E.L. HAYMAN
DESIGN ACTIVITY APPROVAL 7/31/97
CUSTOMER APPROVAL
DOUGLAS AIRCRAFT COMPANY
LONG BEACH, CALIFORNIA
PANEL ASSEMBLY-
CURVED
SIZE B
FSCM NO. 88277
DWG NO. 7B128403
SCALE NOTED
SHEET 1 OF 29
FIRST RELEASE OF PRINTS JUL 31 1997
ORIGINAL DATE OF DRAWING 970708
FOR COMPLETE USAGE DATA SEE ENGINEERING RECORDS
ORIG SECTION
RELEASE CODE

DWG 7B128403 SH 2

GENERAL NOTES: UNLESS NOTED OTHERWISE.

CENTERLINES AND/OR SURFACES SHOWN AS PERPENDICULAR OR PARALLEL ARE TO BE .50 WITHIN .030 IN WIDTH OR LENGTH OF PART.
SURFACE TEXTURE PER ANSI B46.1-1978.
FABRICATION STANDARDS PER DPS 4.710.
ASSEMBLY SHOP PRACTICE PER DPS 270-2.
IDENTIFY PER DPS 3.02.
HOLES PER DPS 3.67-22.
INSTALL RIVETS PER BS07626O.
INSTALL HI-LOK PINS PER ST933654
STANDARD INTERFERENCE FITS APPLY UNLESS OTHERWISE INDICATED BY SYMBOL DESIGNATION.
FASTENERS INDICATED THUS:

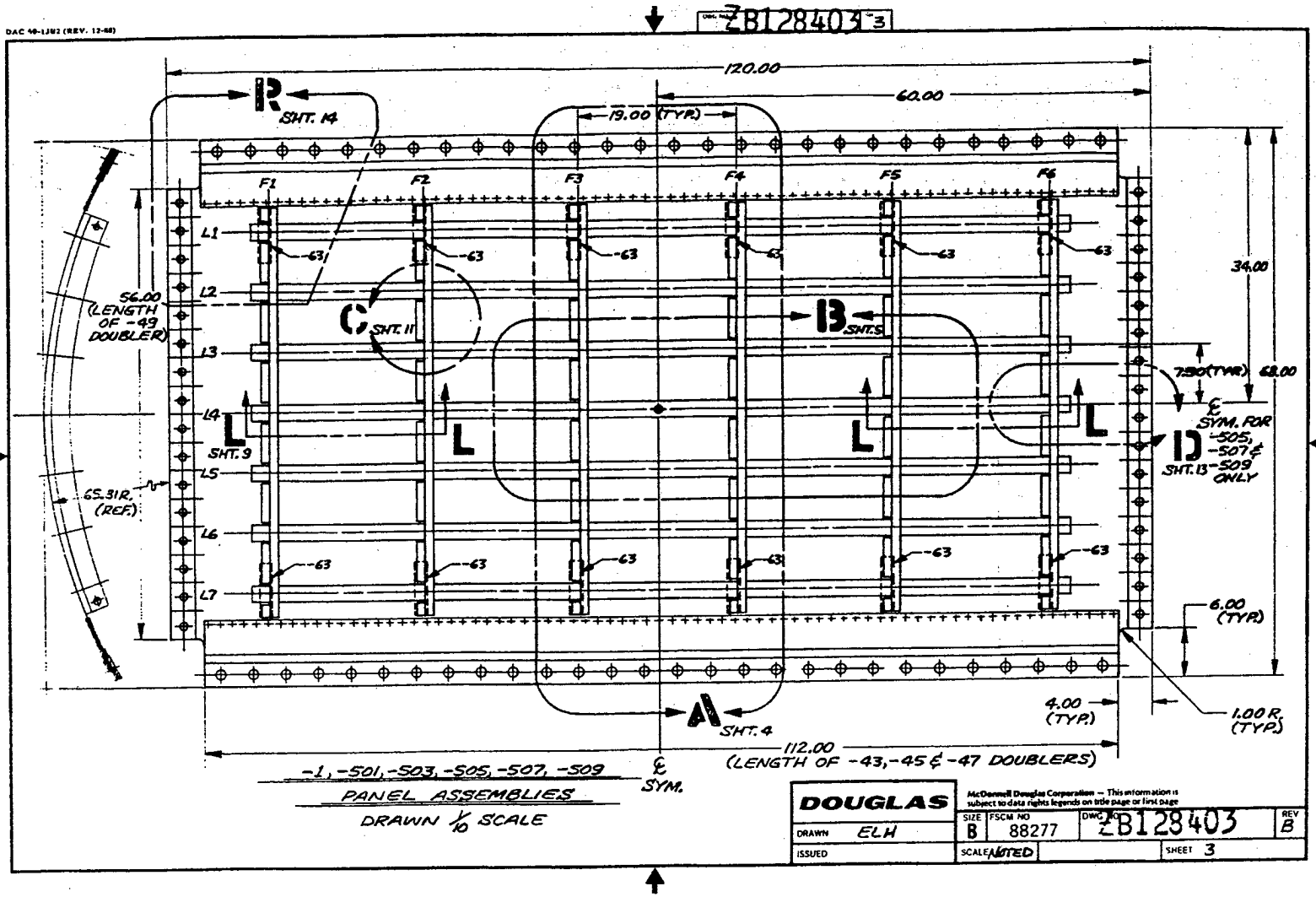
- B/S — ARE MS20470AD5 RIVET
- B/6 — ARE MS20470AD6 RIVET
- L2/6 — ARE NAS1097AD6 RIVET
- B — ARE 3D0009-6 PIN, BH00601-3 NUT
- XHW/6 — ARE 2D0009-6 PIN, 3D0007-3 NUT ASSY.

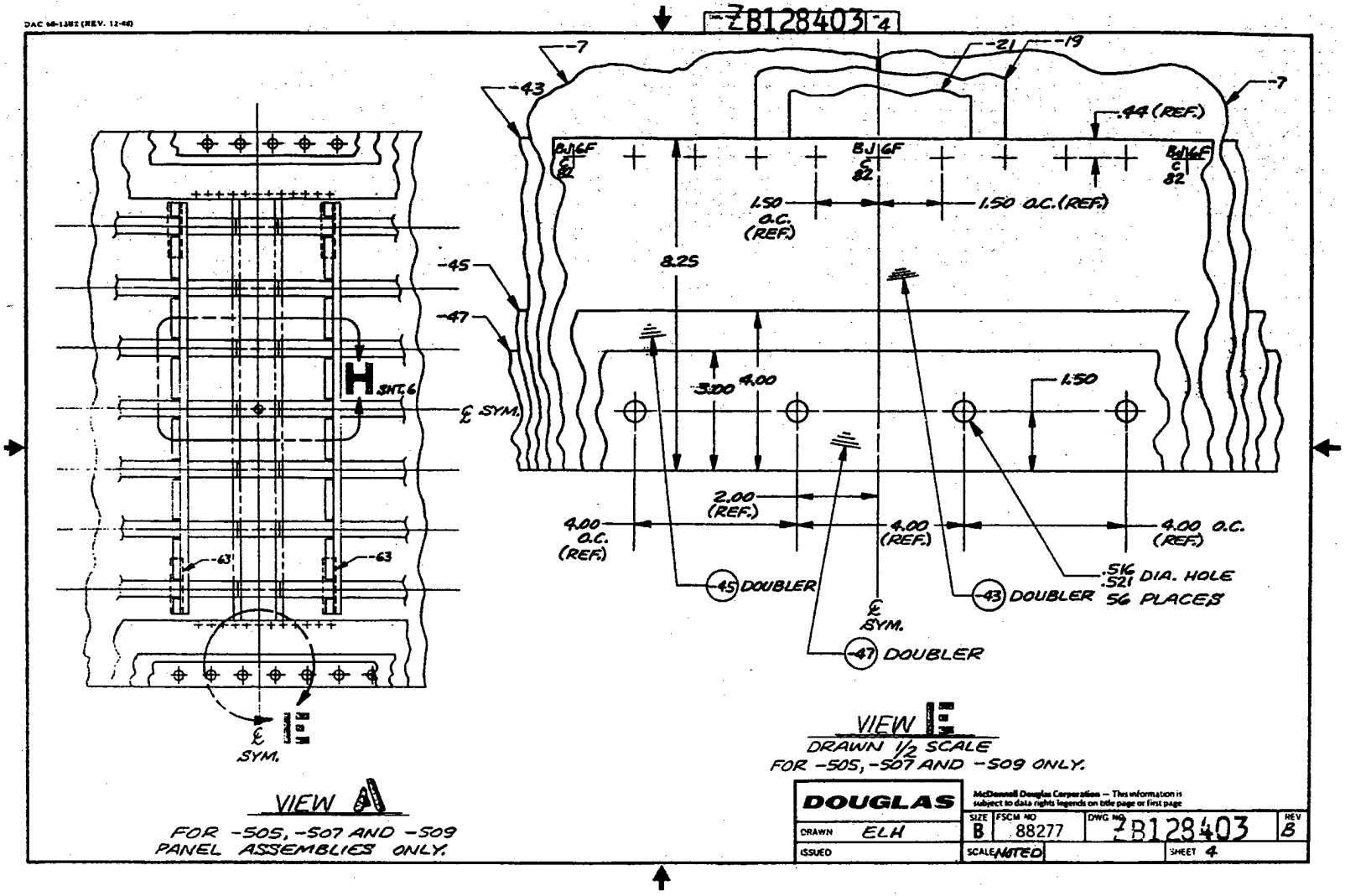
ADHESIVE BOND -33, -37, -43, -45, -47, -49, -69, -71 AND -73 DOUBLERS AND -35 FILLER WITH DMS 2169 PER DPS 1.950.

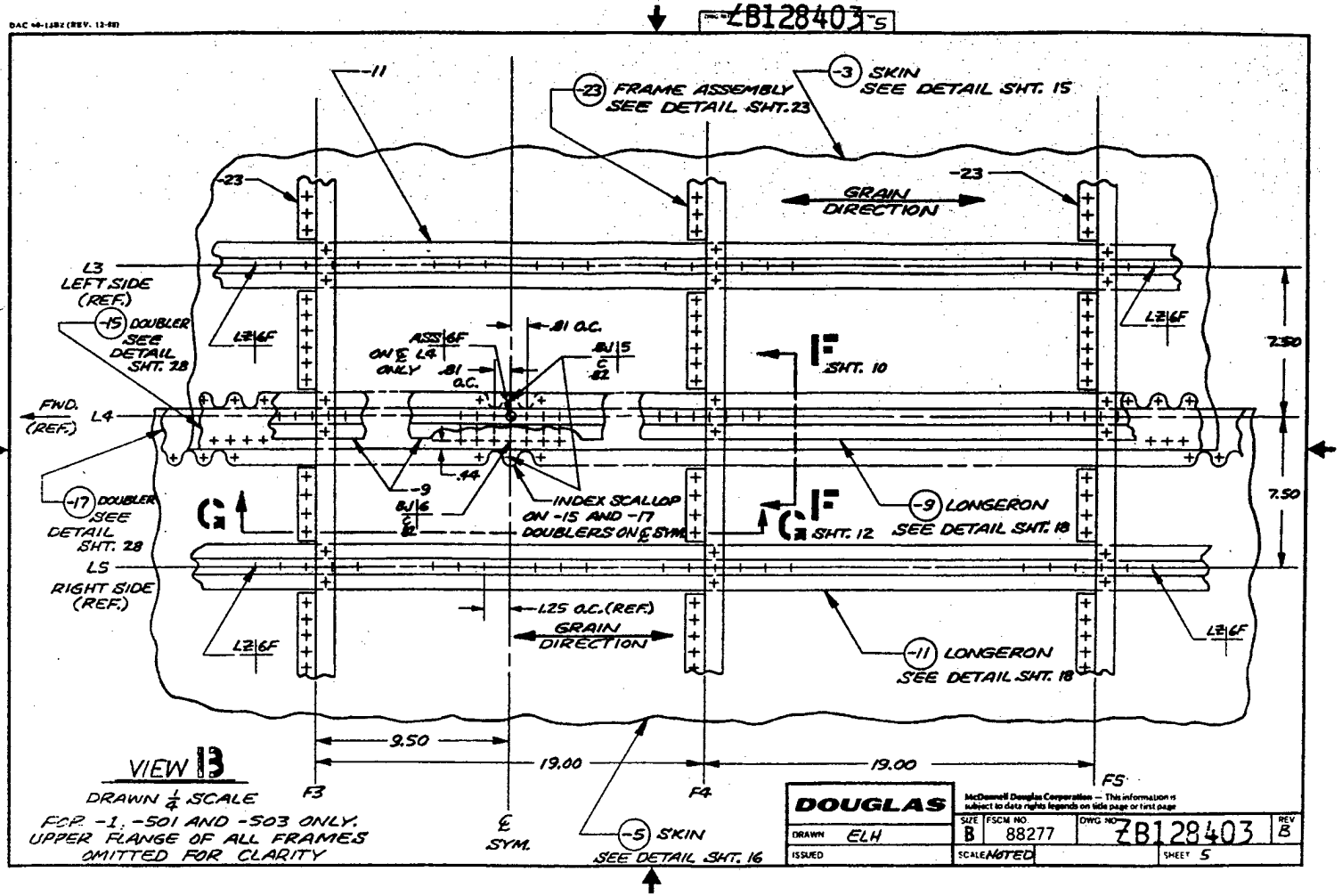
ALL DETAIL PARTS (EXCEPT THOSE TO BE ADHESIVE BONDED) SHALL BE CC OR MC COATED PER DPS 9.45 AND FR PRIMED WITH DMS 1786 PER DPS 4.50-36.
SEAL FAYING SURFACES USING DPM 2292-6 (IF ASSEMBLED WITHIN 6 HOURS) OR DPM 2082 (IF ASSEMBLED WITHIN 2 HOURS) PER DPS 2.590-2 (REF. FIG. 4.2.12).
FILL GAP IN SKINS ON -505, -507 AND -509 ASSEMBLIES WITH DMS 1919.
FASTENERS INDICATED THUS:

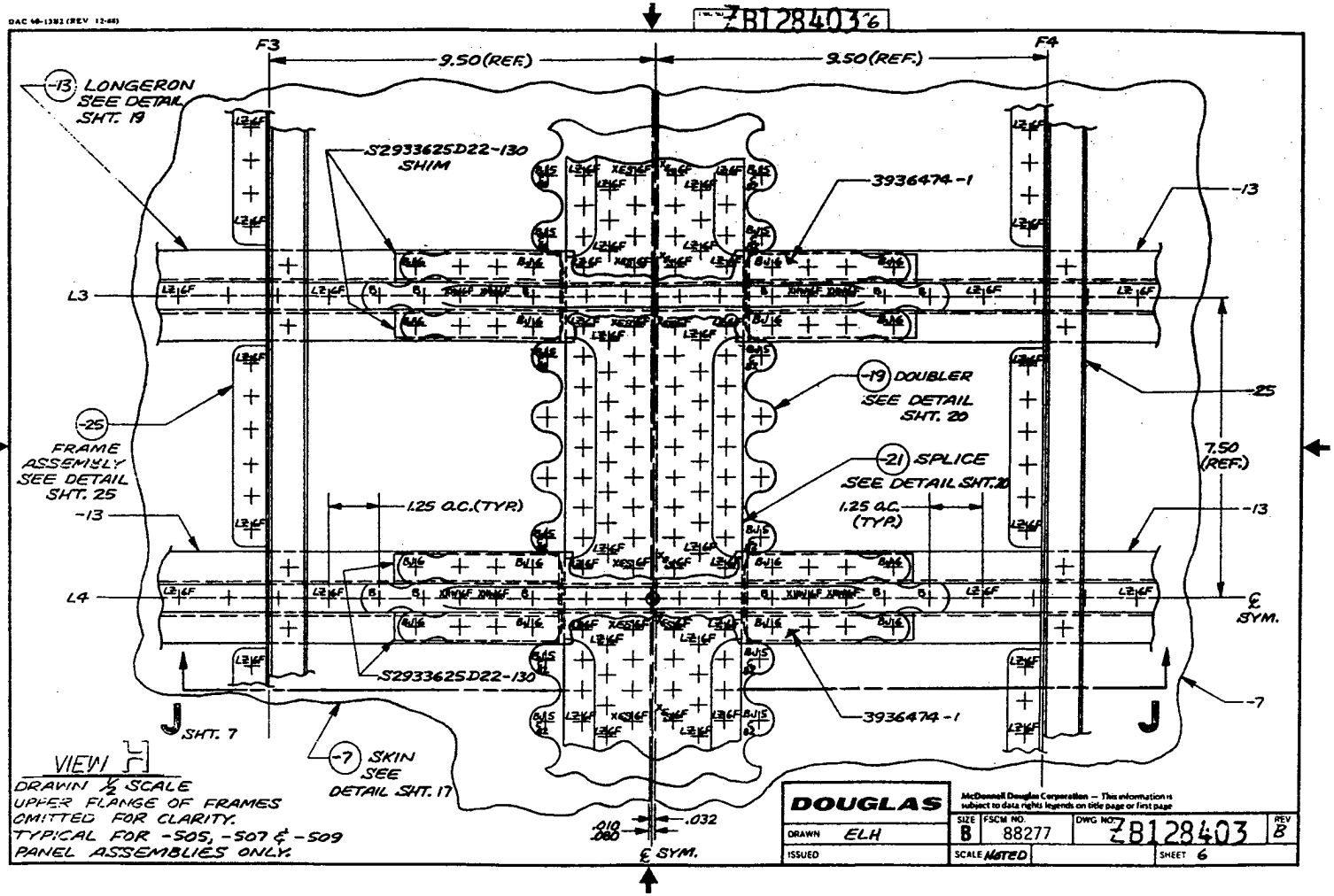
- AS8/6 — ARE NAS1097KE6 RIVETS
- XE8/6 — ARE ST4931919-6 HI-LOK PINS, USE NAS1252-10L WASHERS AND MS21042-3 NUTS.

DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO 88277	DWG NO 7B128403	REV B
ISSUED	SCALE NOTED		SHEET 2	

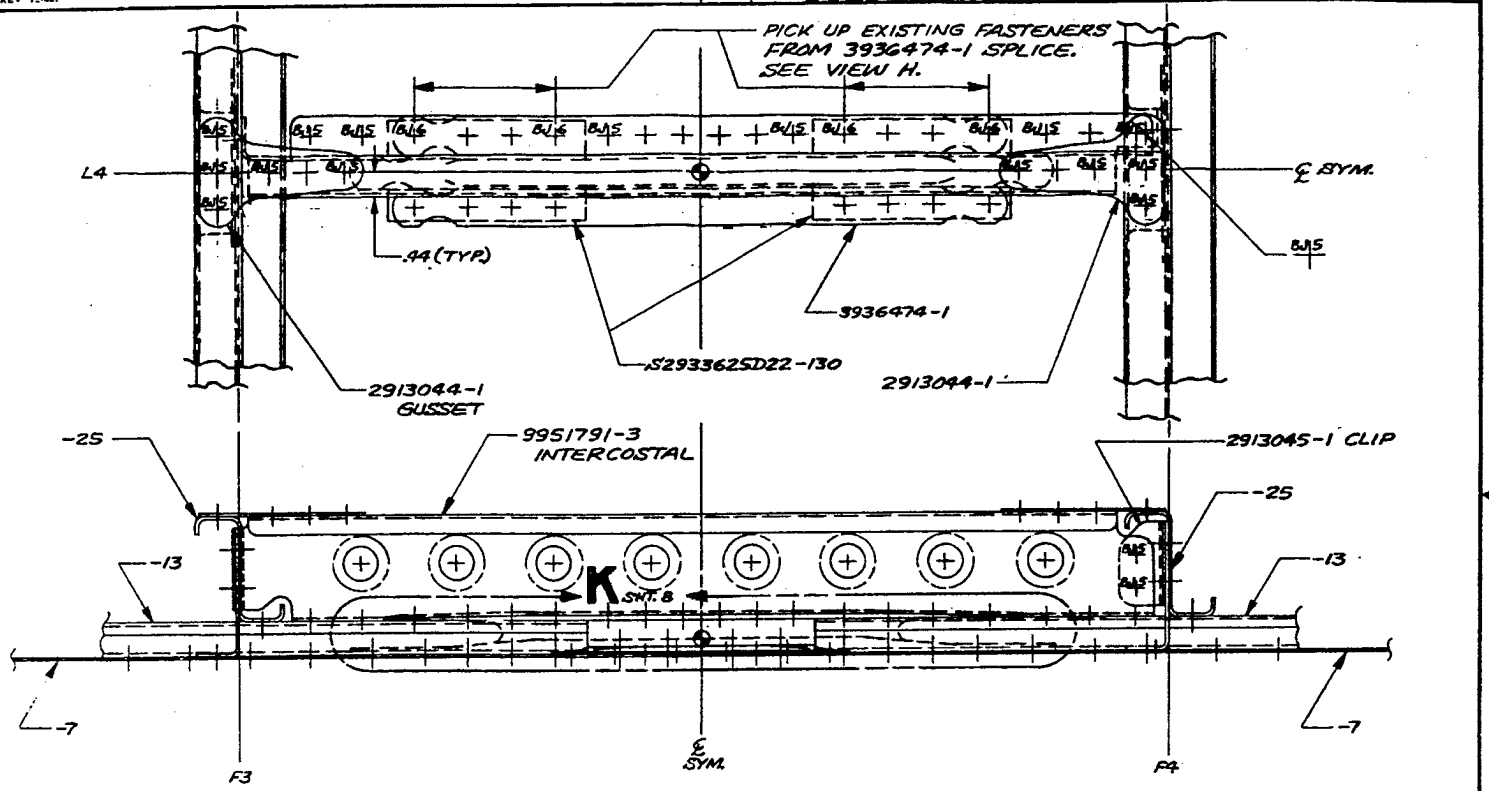

DAC 40-1202 (REV. 12-68)
DWG NO. ZB128403 SH 3
120.00
60.00
19.00 (TYP.)
F1
F2
F3
F4
F5
F6
L1
L2
L3
L4
L5
L6
L7
-63
56.00 (LENGTH OF -49 DOUBLER)
65.31 R. (REF.)
34.00
7.50 (TYP.)
68.00
6.00 (TYP.)
4.00 (TYP.)
1.00 R. (TYP.)
SHT. 14
SHT. 11
SHT. 5
SHT. 9
SHT. 13
SHT. 4
℄ SYM. FOR -505, -507 & -509 ONLY
112.00 (LENGTH OF -43, -45 & -47 DOUBLERS)
-1, -501, -503, -505, -507, -509 PANEL ASSEMBLIES
DRAWN 1/10 SCALE
℄ SYM.
DOUGLAS
McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page
DRAWN ELH
ISSUED
SIZE B
FSCM NO 88277
DWG NO ZB128403
REV B
SCALE NOTED
SHEET 3


7B128403 -4
-7
-21
-19
-43
-7
.44 (REF.)
BJ/GF
82
BJ/GF
82
BJ/GF
82
1.50 O.C. (REF.)
1.50 O.C. (REF.)
8.25
-45
-47
H SHT. 6
℄ SYM.
3.00
4.00
1.50
2.00 (REF.)
4.00 O.C. (REF.)
4.00 O.C. (REF.)
4.00 O.C. (REF.)
.516 .521 DIA. HOLE 56 PLACES
-45 DOUBLER
-43 DOUBLER
℄ SYM.
-47 DOUBLER
-63
-63
℄ SYM.
VIEW
FOR -505, -507 AND -509 PANEL ASSEMBLIES ONLY.
VIEW
DRAWN 1/2 SCALE
FOR -505, -507 AND -509 ONLY.
DOUGLAS
McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page
DRAWN ELH
ISSUED
SIZE B
FSCM NO 88277
DWG NO 7B128403
REV B
SCALE NOTED
SHEET 4


ZB128403 S
-11
-23 FRAME ASSEMBLY SEE DETAIL SHT. 23
-3 SKIN SEE DETAIL SHT. 15
-23
-23
GRAIN DIRECTION
L3 LEFT SIDE (REF.)
-15 DOUBLER SEE DETAIL SHT. 28
L2 6F
L2 6F
ASS 6F ON ℄ L4 ONLY
.81 O.C.
.81 O.C.
BJ 5 ℄ -82
F SHT. 10
7.50
FWD. (REF.)
L4
-9
BJ 6 ℄ -82
.44
INDEX SCALLOP ON -15 AND -17 DOUBLERS ON ℄ SYM
G
G
F SHT. 12
-9 LONGERON SEE DETAIL SHT. 18
7.50
-17 DOUBLER SEE DETAIL SHT. 28
L5 RIGHT SIDE (REF.)
1.25 O.C. (REF.)
GRAIN DIRECTION
L2 6F
-11 LONGERON SEE DETAIL SHT. 18
L2 6F
9.50
19.00
19.00
F3
F4
F5
VIEW B
DRAWN 1/4 SCALE
FOR -1, -501 AND -503 ONLY. UPPER FLANGE OF ALL FRAMES OMITTED FOR CLARITY
℄ SYM.
-5 SKIN SEE DETAIL SHT. 16
DOUGLAS
McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page
DRAWN ELH
ISSUED
SIZE B
FSCM NO. 88277
DWG NO. ZB128403
REV B
SCALE NOTED
SHEET 5


DAC 66-1382 (REV 12-68)
ZB128403 6
F3
F4
9.50 (REF.)
9.50 (REF.)
-13 LONGERON SEE DETAIL SHT. 19
S293362SD22-130 SHIM
3936474-1
-13
L3
-19 DOUBLER SEE DETAIL SHT. 20
-25
-25 FRAME ASSEMBLY SEE DETAIL SHT. 25
-13
-21 SPLICE SEE DETAIL SHT. 21
1.25 O.C. (TYP.)
1.25 O.C. (TYP.)
7.50 (REF.)
-13
L4
℄ SYM.
S293362SD22-130
3936474-1
-7
J SHT. 7
J
-7 SKIN SEE DETAIL SHT. 17
VIEW
DRAWN 1/2 SCALE
UPPER FLANGE OF FRAMES OMITTED FOR CLARITY.
TYPICAL FOR -505, -507 & -509 PANEL ASSEMBLIES ONLY.
.010
.080
.032
℄ SYM.
DOUGLAS
McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page
DRAWN ELH
ISSUED
SIZE B
FSCM NO. 88277
DWG NO. ZB128403
REV B
SCALE NOTED
SHEET 6

ZB128403 7



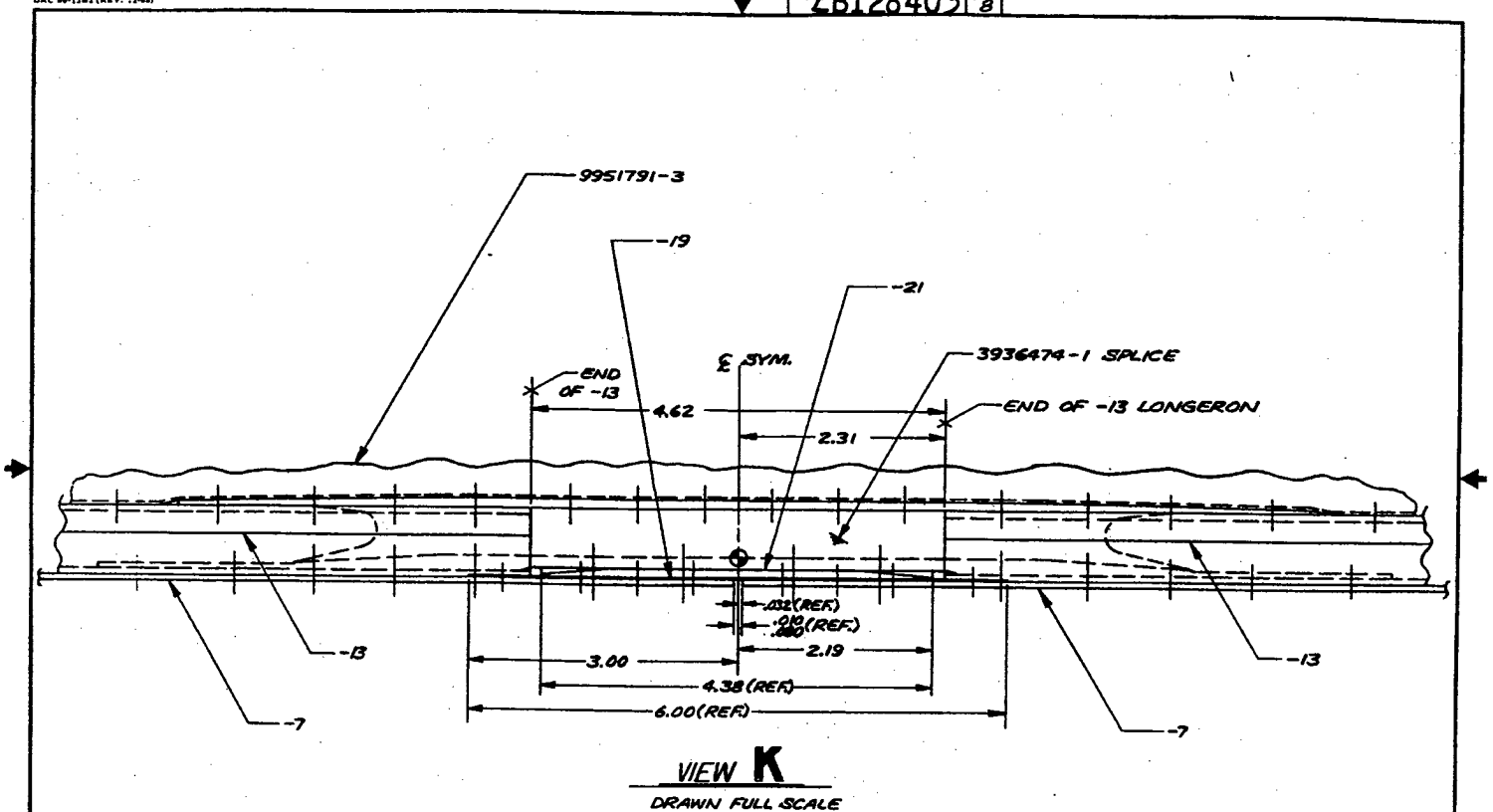
VIEW J - J

DRAWN ½ SCALE
TYPICAL FOR -505, -507 & -509 PANEL ASSEMBLIES ONLY.

DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO. 88277	DWG NO. ZB128403	REV B
ISSUED	SCALE NOTED		SHEET 7	

DAC 60-1382 (REV. 12-88)

7B128403 B



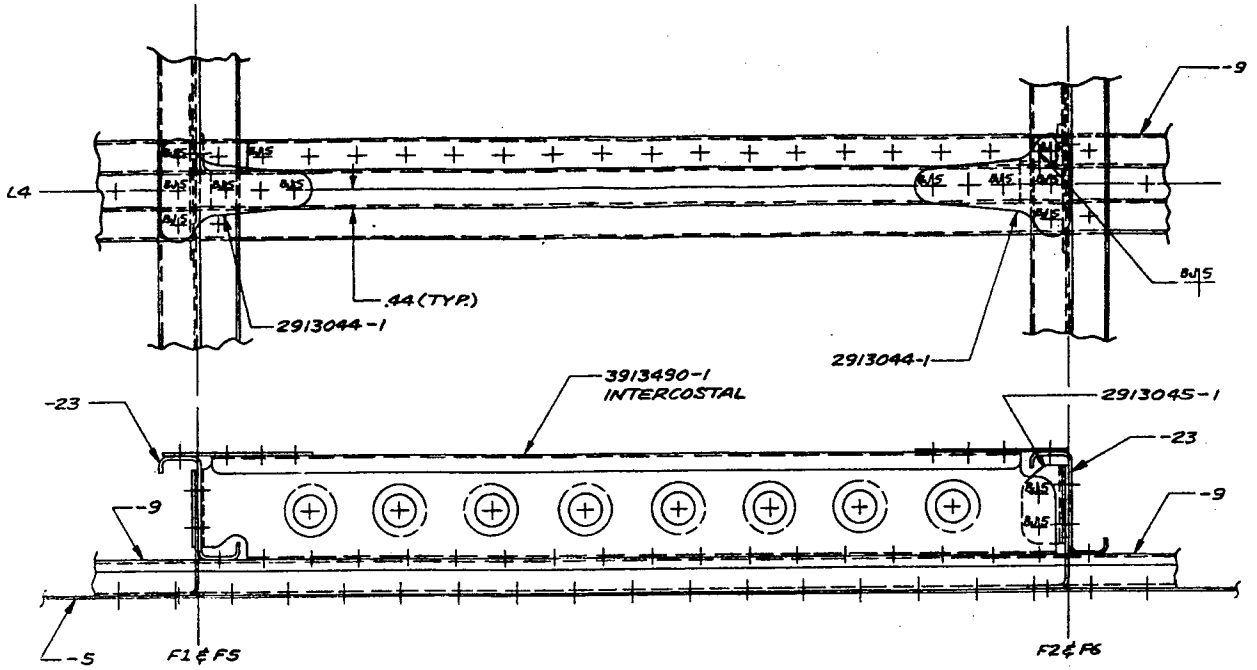
VIEW K

DRAWN FULL SCALE

DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO. 88277	DWG NO. 7B128403	REV B
ISSUED	SCALE NOTED			SHEET 8

DAC 60-1382 (REV. 12-68)

ZB128403 -9



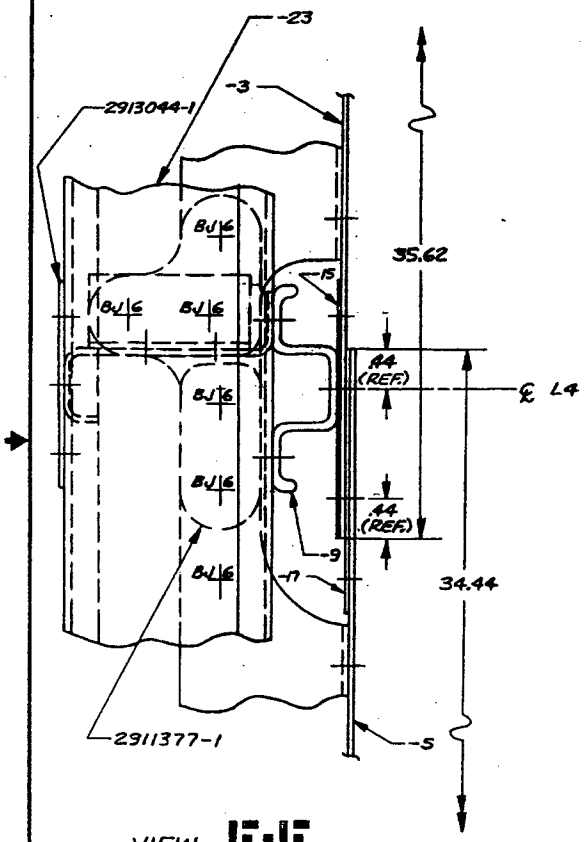
VIEW L-L

DRAWN ½ SCALE
TYPICAL FOR -1, -501, -503, -505, -507 & -509
PANEL ASSEMBLIES.

DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO. 88277	DWG NO. ZB128403	REV B
ISSUED	SCALE		SHEET 9	

DAC 60-1182 (REV. 12-68)

ZB128403 10

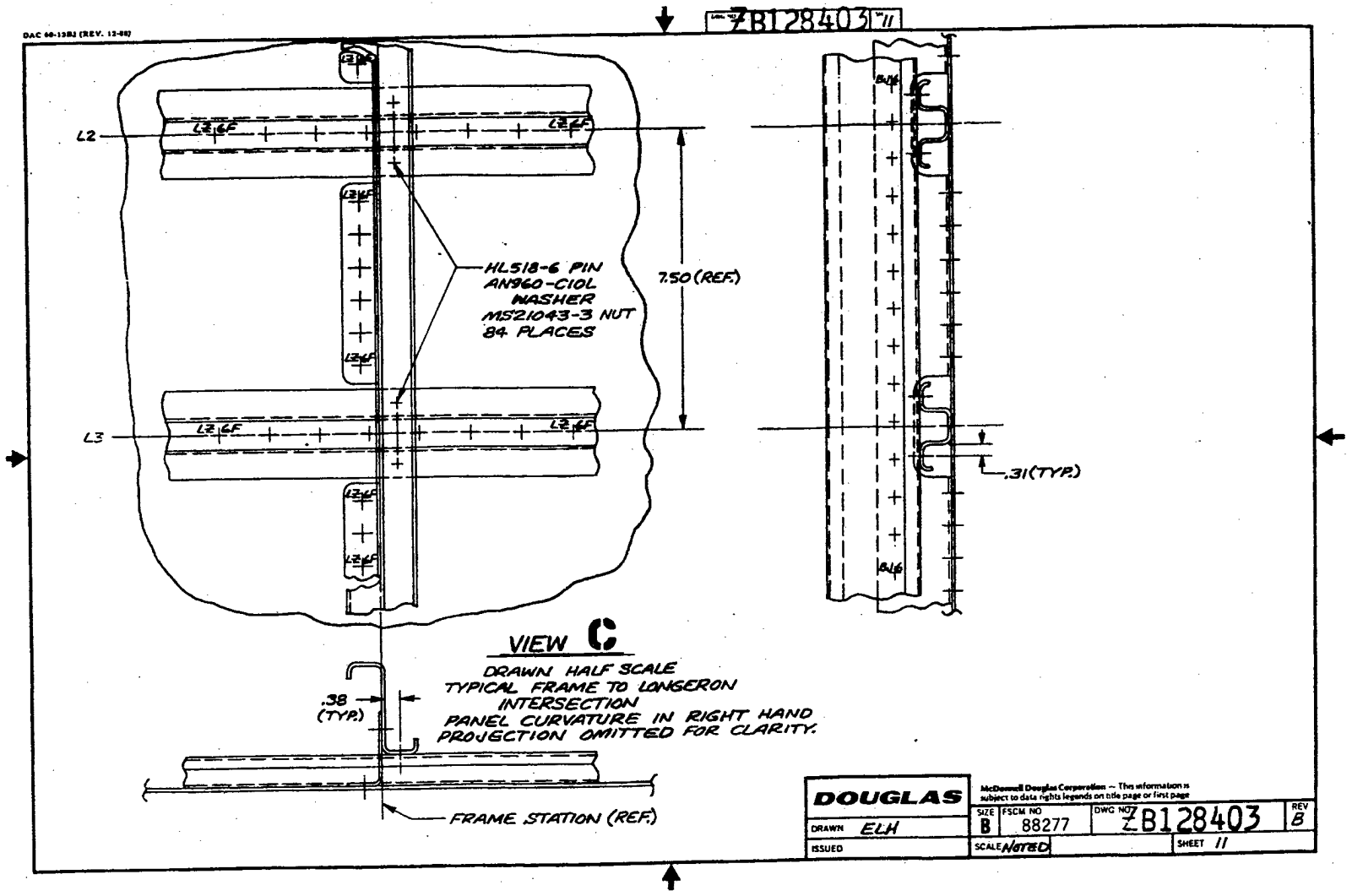


VIEW F-F

DRAWN FULL SCALE

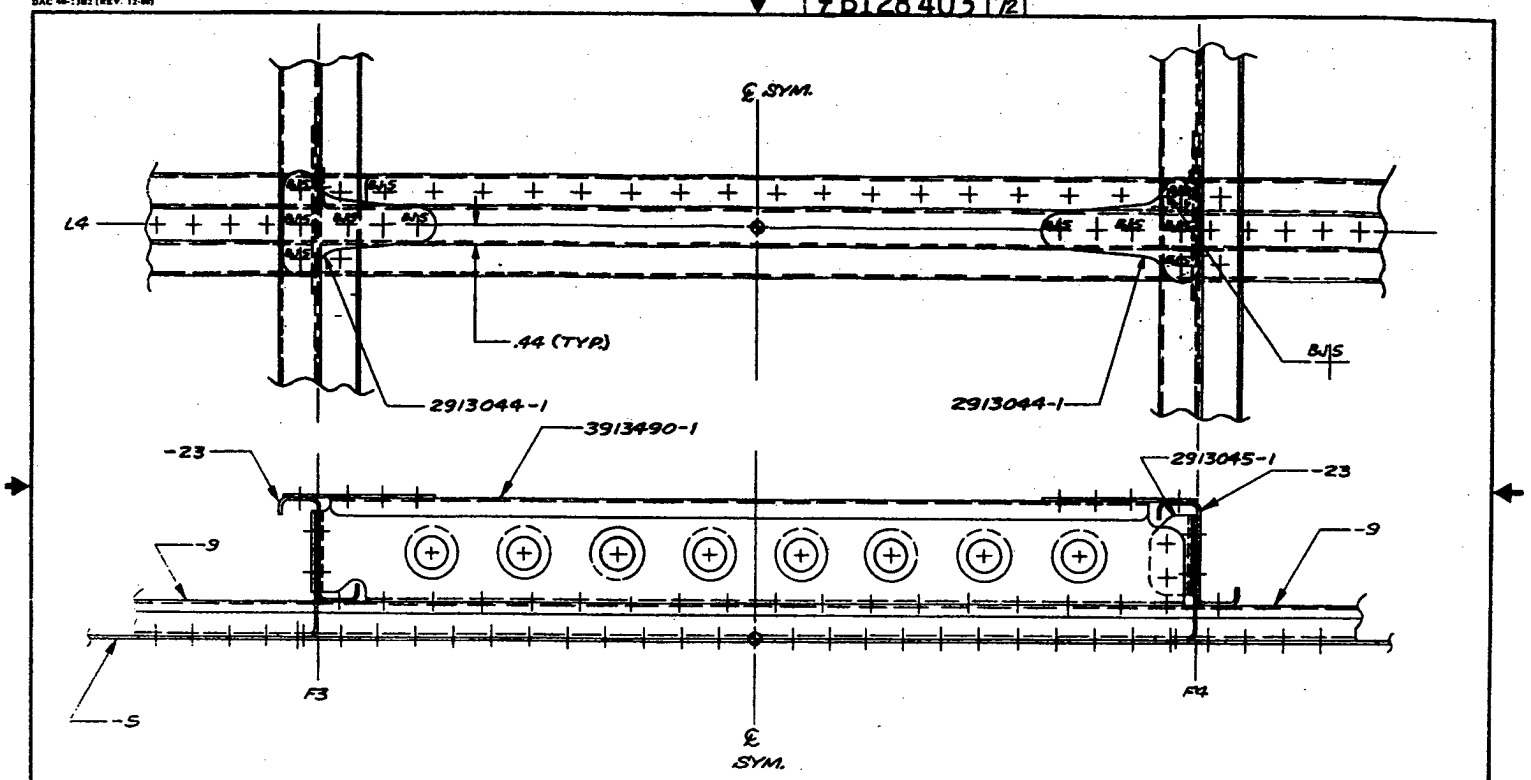
PANEL CURVATURE OMITTED FOR CLARITY

DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO. 88277	DWG NO. ZB128403	REV B
ISSUED	SCALE NOTED		SHEET 10	


ZB128403 11
L2
L3
HL518-6 PIN
AN960-C10L
WASHER
MS21043-3 NUT
84 PLACES
7.50 (REF.)
.31 (TYP.)
VIEW C
DRAWN HALF SCALE
TYPICAL FRAME TO LONGERON
INTERSECTION
PANEL CURVATURE IN RIGHT HAND
PROJECTION OMITTED FOR CLARITY.
.38
(TYP.)
FRAME STATION (REF.)
DOUGLAS
DRAWN ELH
ISSUED
SIZE B
FSCM NO 88277
DWG NO ZB128403
REV B
SCALE NOTED
SHEET 11

DAC 66-1382 (REV. 12-68)

7B128403 72

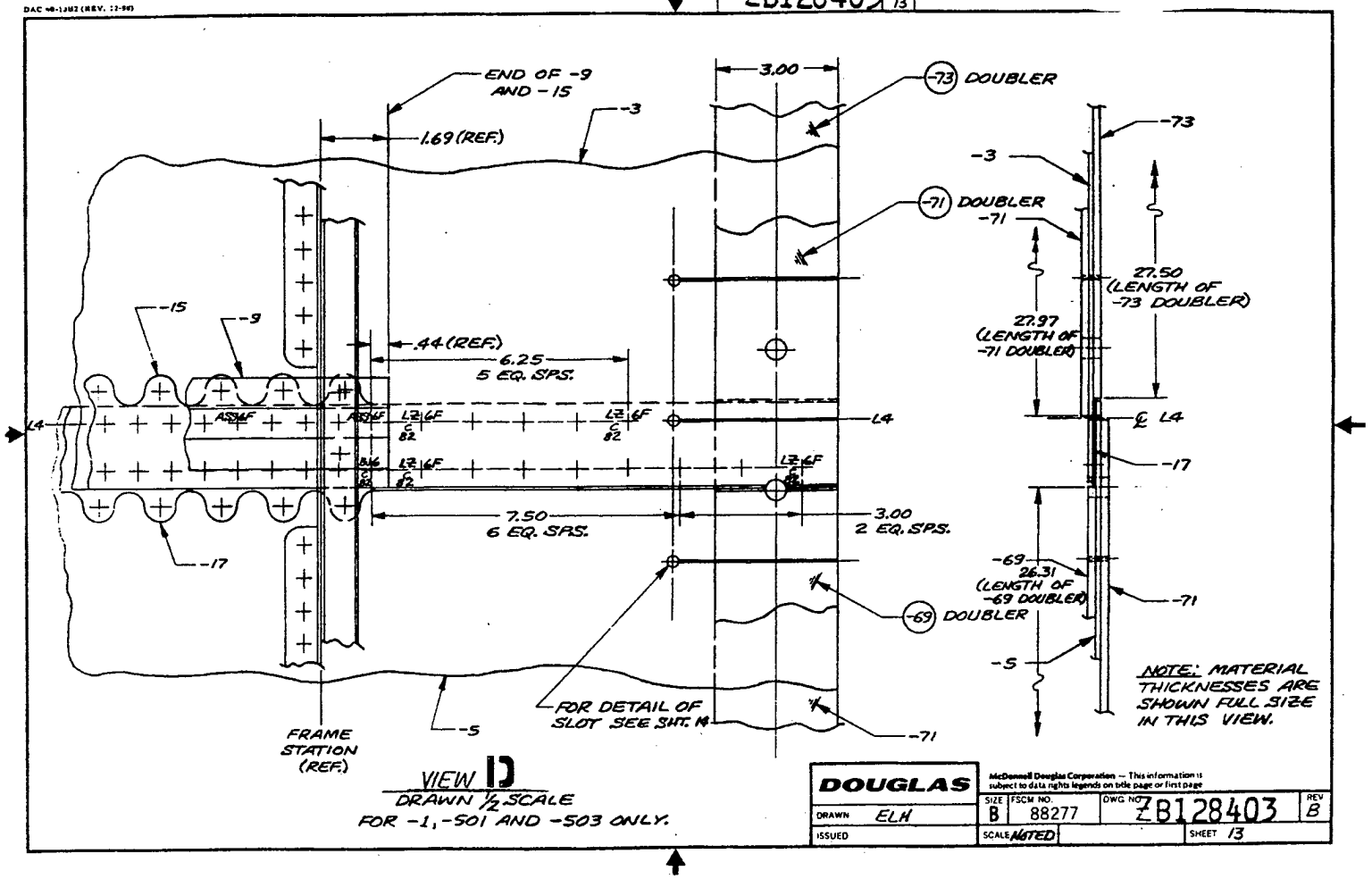


VIEW G-G

DRAWN ½ SCALE
FOR -1, -501 AND -503
PANEL ASSEMBLIES ONLY.

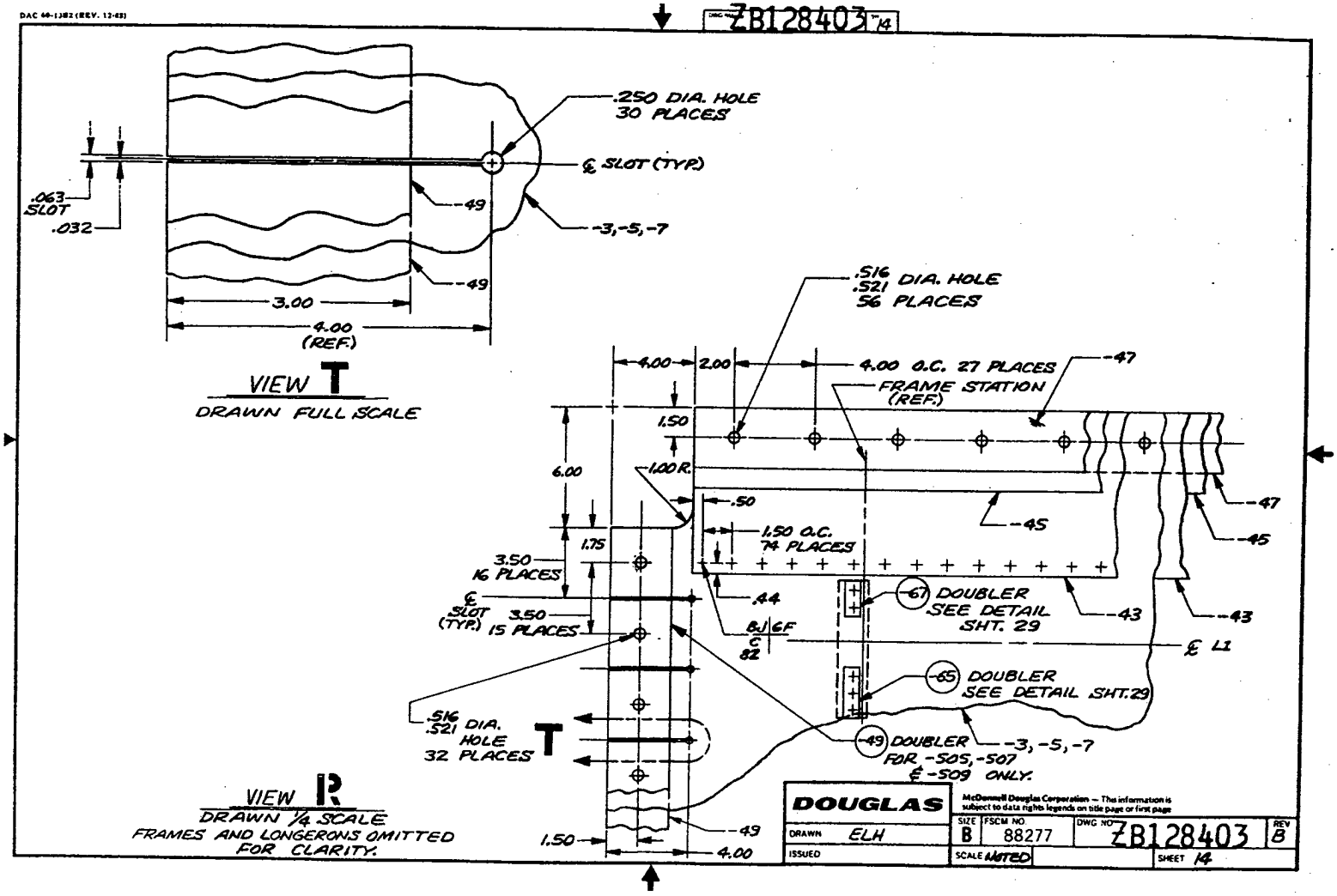
DOUGLAS				
DRAWN ELH	SIZE B	FSCM NO. 88277	DWG NO 7B128403	REV B
ISSUED	SCALE NOTED		SHEET 12	

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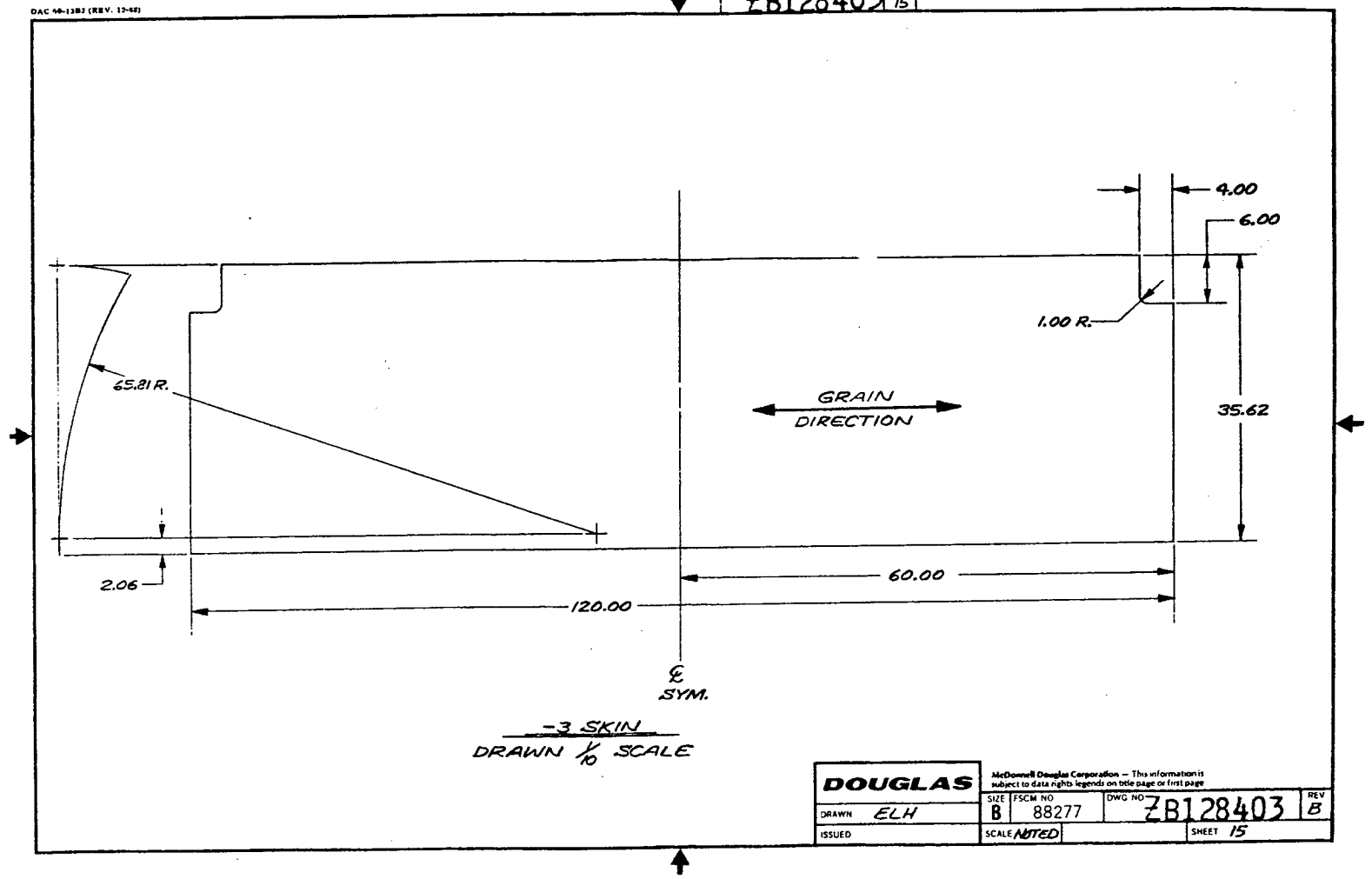
VIEW D
DRAWN 1/2 SCALE
FOR -1, -501 AND -503 ONLY.

DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO. 88277	DWG NO. ZB128403	REV B
ISSUED	SCALE NOTED		SHEET 13	


DAC 66-1382 (REV. 12-69)
ZB128403 14
.250 DIA. HOLE
30 PLACES
℄ SLOT (TYP.)
.063
SLOT
.032
-49
-3,-5,-7
-49
3.00
4.00
(REF.)
VIEW T
DRAWN FULL SCALE
.516
.521
DIA. HOLE
56 PLACES
4.00
2.00
4.00 O.C. 27 PLACES
-47
FRAME STATION
(REF.)
1.50
6.00
1.00 R.
.50
-47
-45
-45
1.50 O.C.
74 PLACES
1.75
3.50
16 PLACES
.44
-67
DOUBLER
SEE DETAIL
SHT. 29
-43
-43
℄ SLOT
(TYP.)
3.50
15 PLACES
BJ
BF
℄
82
℄ L1
-65
DOUBLER
SEE DETAIL SHT. 29
.516
.521
DIA.
HOLE
32 PLACES
T
-49
DOUBLER
FOR -505, -507
℄ -509 ONLY.
-3, -5, -7
VIEW R
DRAWN 1/4 SCALE
FRAMES AND LONGERONS OMITTED
FOR CLARITY.
1.50
-49
4.00
DOUGLAS
McDonnell Douglas Corporation — The information is subject to data rights legends on title page or first page
DRAWN ELH
ISSUED
SIZE B
FSCM NO. 88277
DWG NO. ZB128403
REV 8
SCALE NOTED
SHEET 14

DAC 98-1382 (REV. 12-68)

ZB128403 15



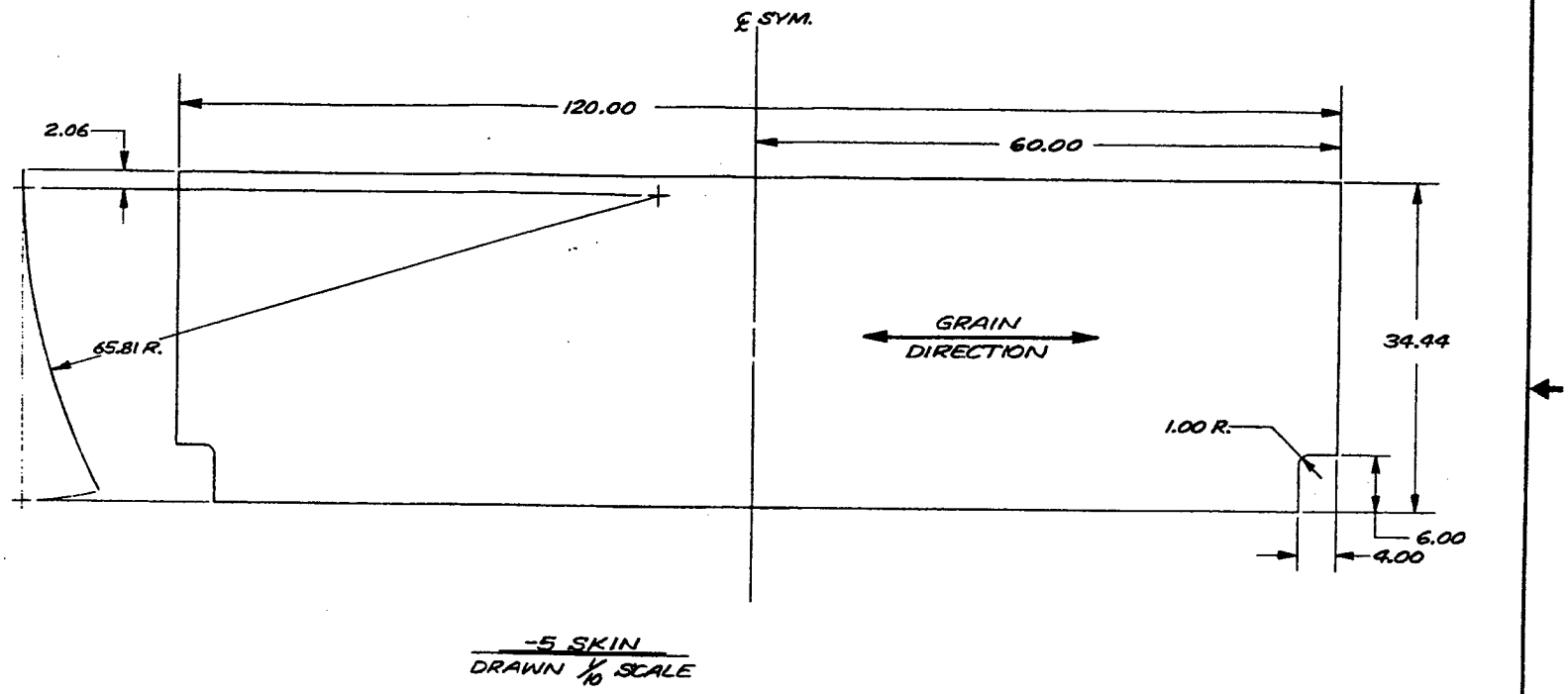
-3 SKIN

DRAWN 1/10 SCALE

DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO 88277	DWG NO ZB128403	REV B
ISSUED	SCALE NOTED		SHEET 15	

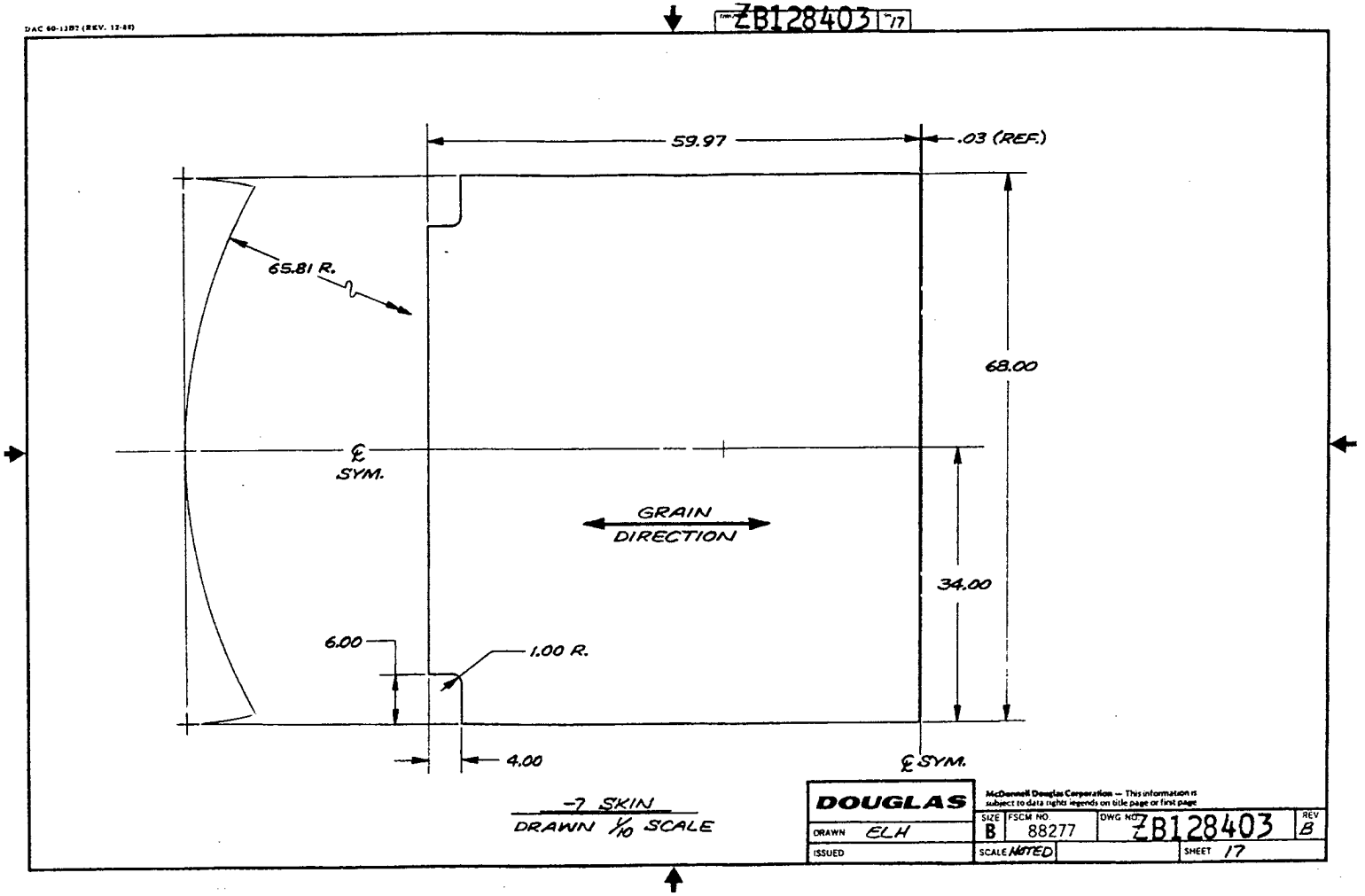
DAC 66-1382 (REV. 12-68)

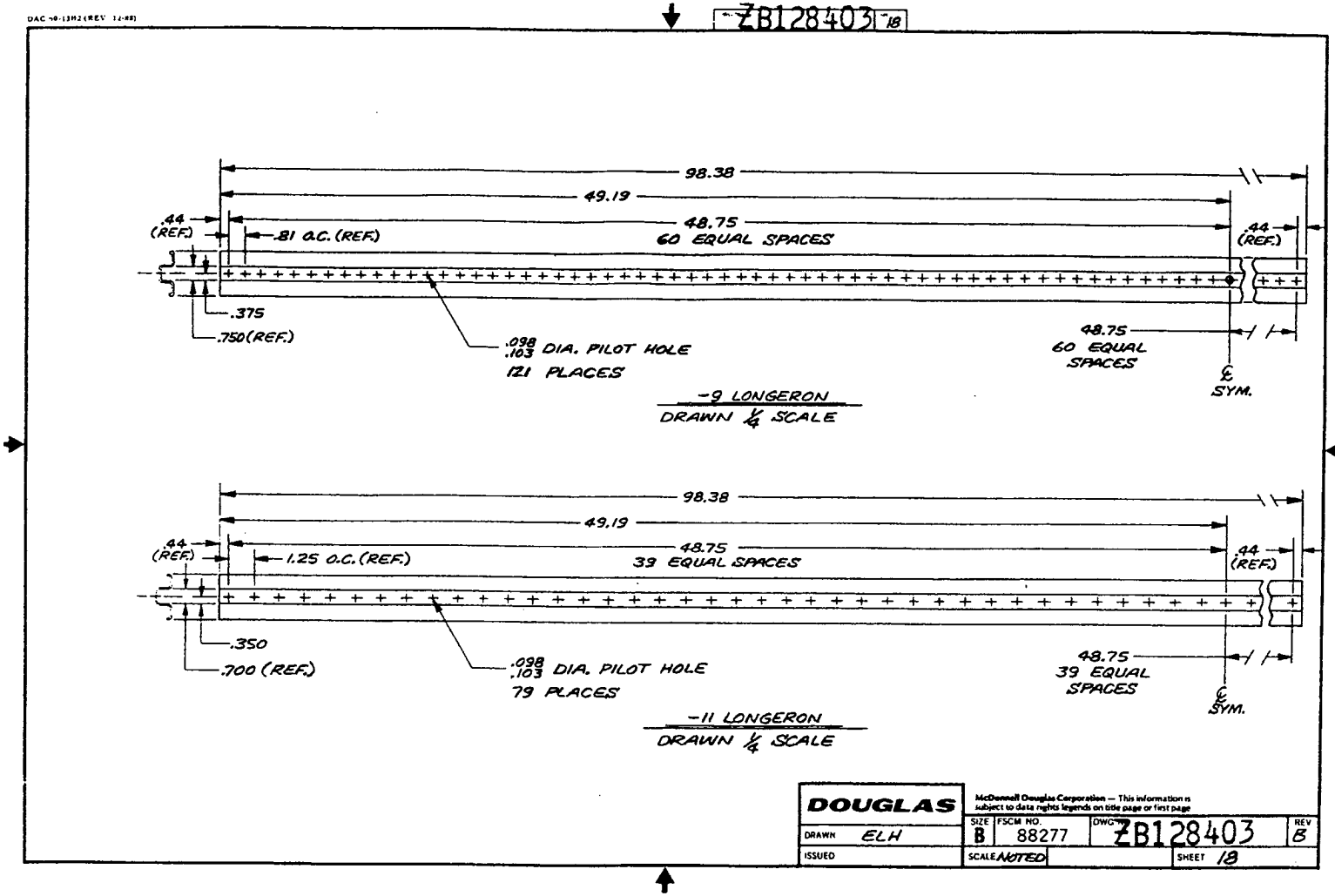
ZB128403 16



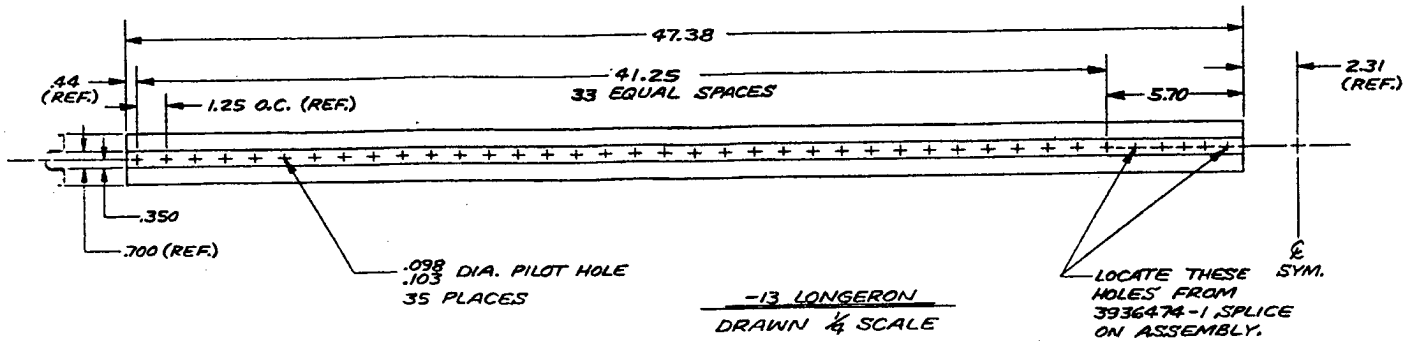
-5 SKIN
DRAWN 1/10 SCALE

DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO. 88277	DWG NO ZB128403	REV B
ISSUED	SCALE NOTED		SHEET 16	


ZB128403 -7
59.97
.03 (REF.)
65.81 R.
68.00
℄ SYM.
GRAIN DIRECTION
34.00
6.00
1.00 R.
4.00
℄ SYM.
-7 SKIN
DRAWN 1/10 SCALE
DOUGLAS
McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page
DRAWN ELH
ISSUED
SIZE B
FSCM NO. 88277
DWG NO. -7 ZB128403
REV B
SCALE NOTED
SHEET 17


ZB128403 18
98.38
49.19
.44 (REF.)
.81 O.C. (REF.)
48.75
60 EQUAL SPACES
.44 (REF.)
.375
.750 (REF.)
.098 .103 DIA. PILOT HOLE
121 PLACES
48.75
60 EQUAL SPACES
℄ SYM.
-9 LONGERON
DRAWN 1/4 SCALE
98.38
49.19
.44 (REF.)
1.25 O.C. (REF.)
48.75
39 EQUAL SPACES
.44 (REF.)
.350
.700 (REF.)
.098 .103 DIA. PILOT HOLE
79 PLACES
48.75
39 EQUAL SPACES
℄ SYM.
-11 LONGERON
DRAWN 1/4 SCALE
DOUGLAS
McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page
DRAWN ELH
ISSUED
SIZE B
FSCM NO. 88277
DWG ZB128403
REV B
SCALE NOTED
SHEET 18

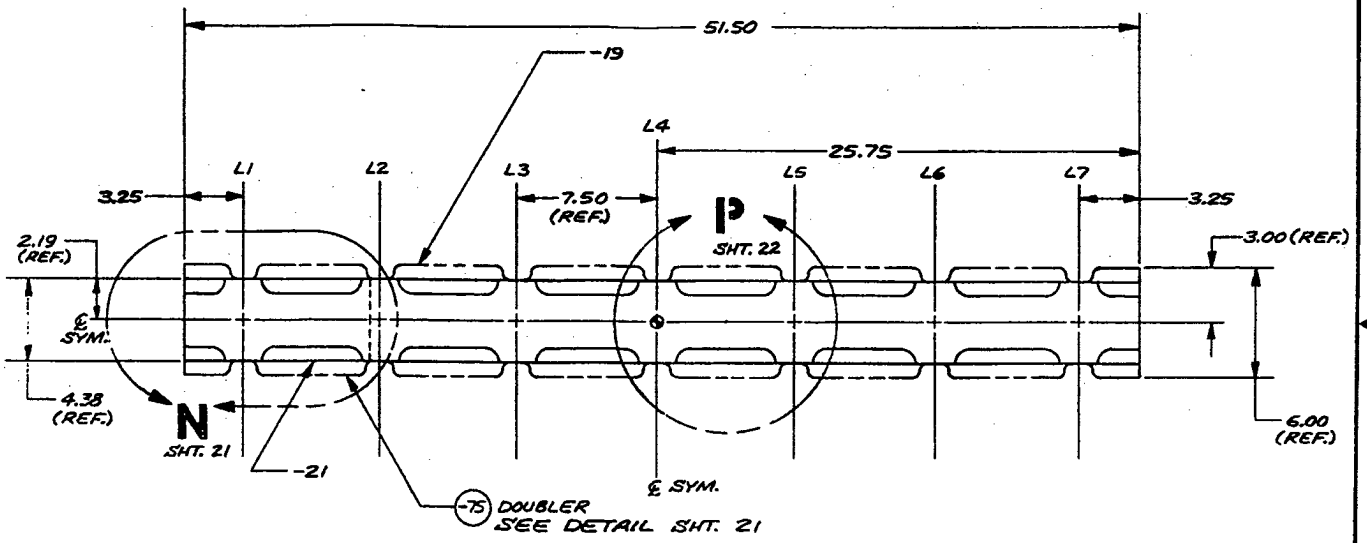
DAC 60-13M2 (REV. 12-68)



-13 LONGERON

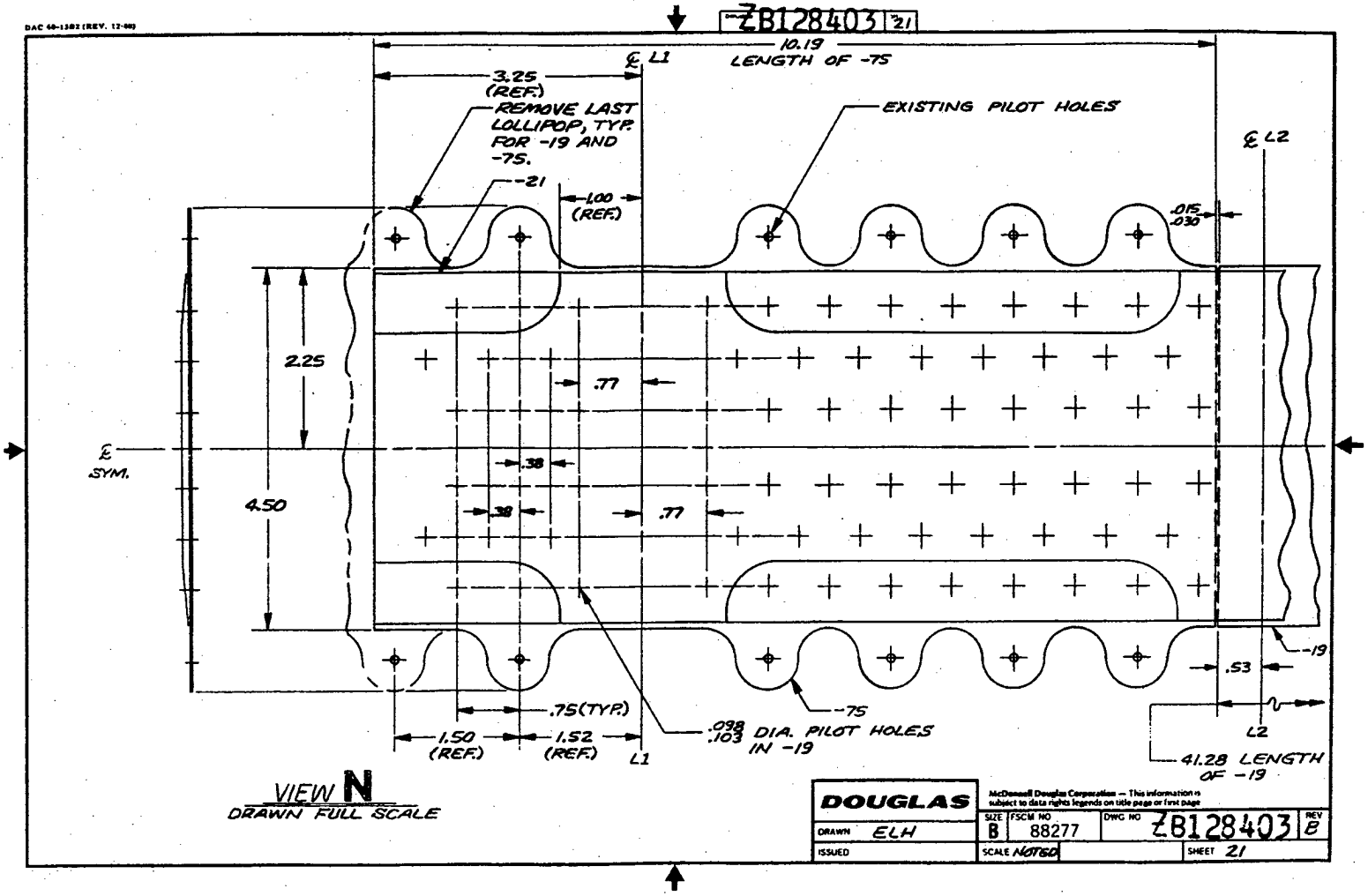
DRAWN ¼ SCALE

DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO 88277	DWG NO ZB128403	REV B
ISSUED	SCALE NOTED		SHEET 19	



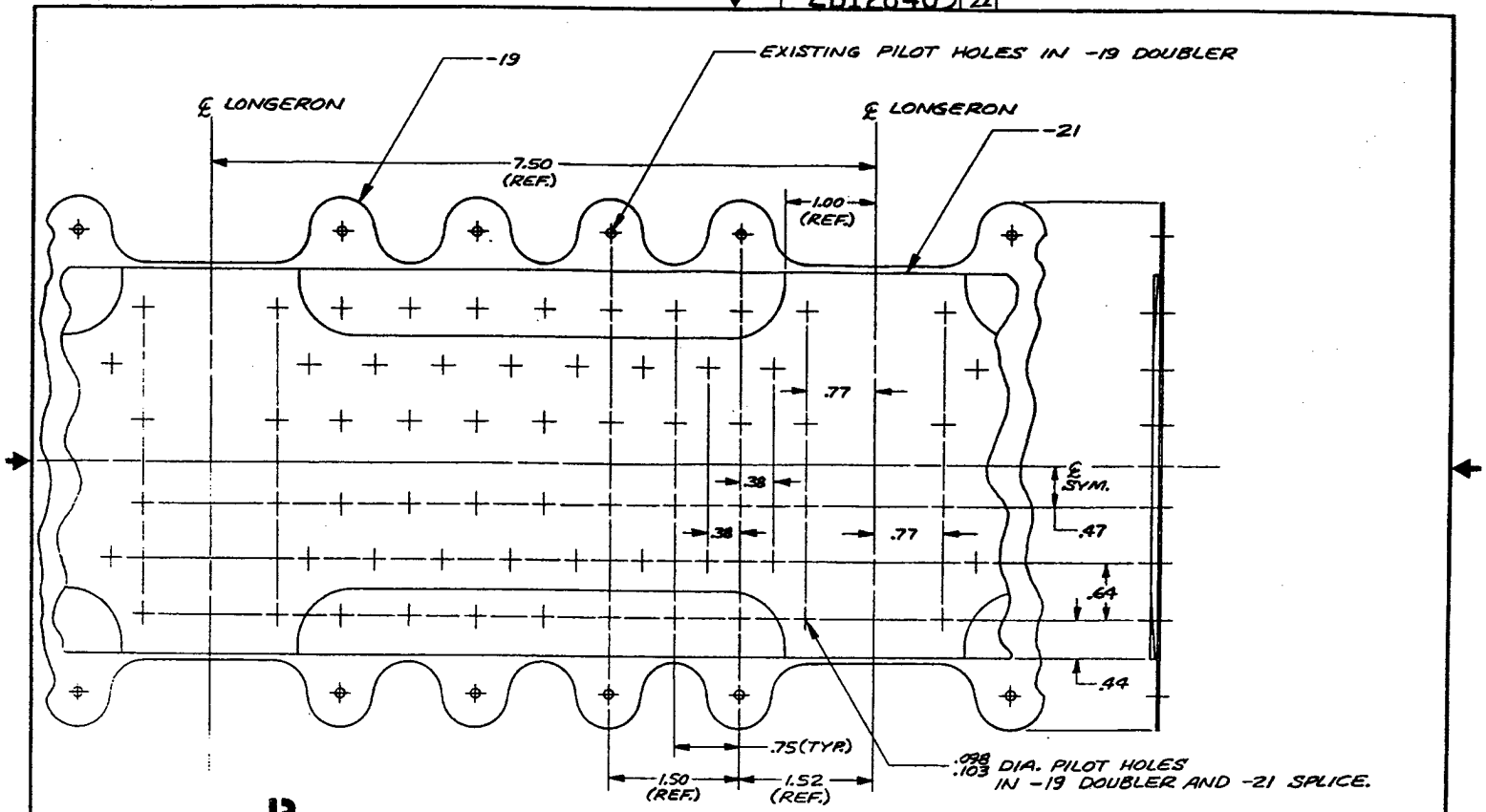
-19 & -75 DOUBLER AND -21 SPLICE
DRAWN 1/5 SCALE

DOUGLAS	McDonnell Douglas Corporation — The information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO. 88277	DWG NO ZB128403	REV B
ISSUED	SCALE NOTED		SHEET 20	


ZB128403 21
10.19
LENGTH OF -75
℄ L1
3.25
(REF.)
REMOVE LAST
LOLLIPOP, TYP.
FOR -19 AND
-75.
-21
EXISTING PILOT HOLES
℄ L2
1.00
(REF.)
.015
.030
2.25
.77
℄
SYM.
.38
4.50
.38
.77
-19
.53
-75
.75(TYP.)
.098
.103 DIA. PILOT HOLES
IN -19
1.50
(REF.)
1.52
(REF.)
L1
L2
41.28 LENGTH
OF -19
VIEW N
DRAWN FULL SCALE
DOUGLAS
McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page
DRAWN ELH
ISSUED
SIZE B
FSCM NO 88277
DWG NO ZB128403
REV B
SCALE NOTED
SHEET 21

DAC 60-1382 (REV. 12-68)

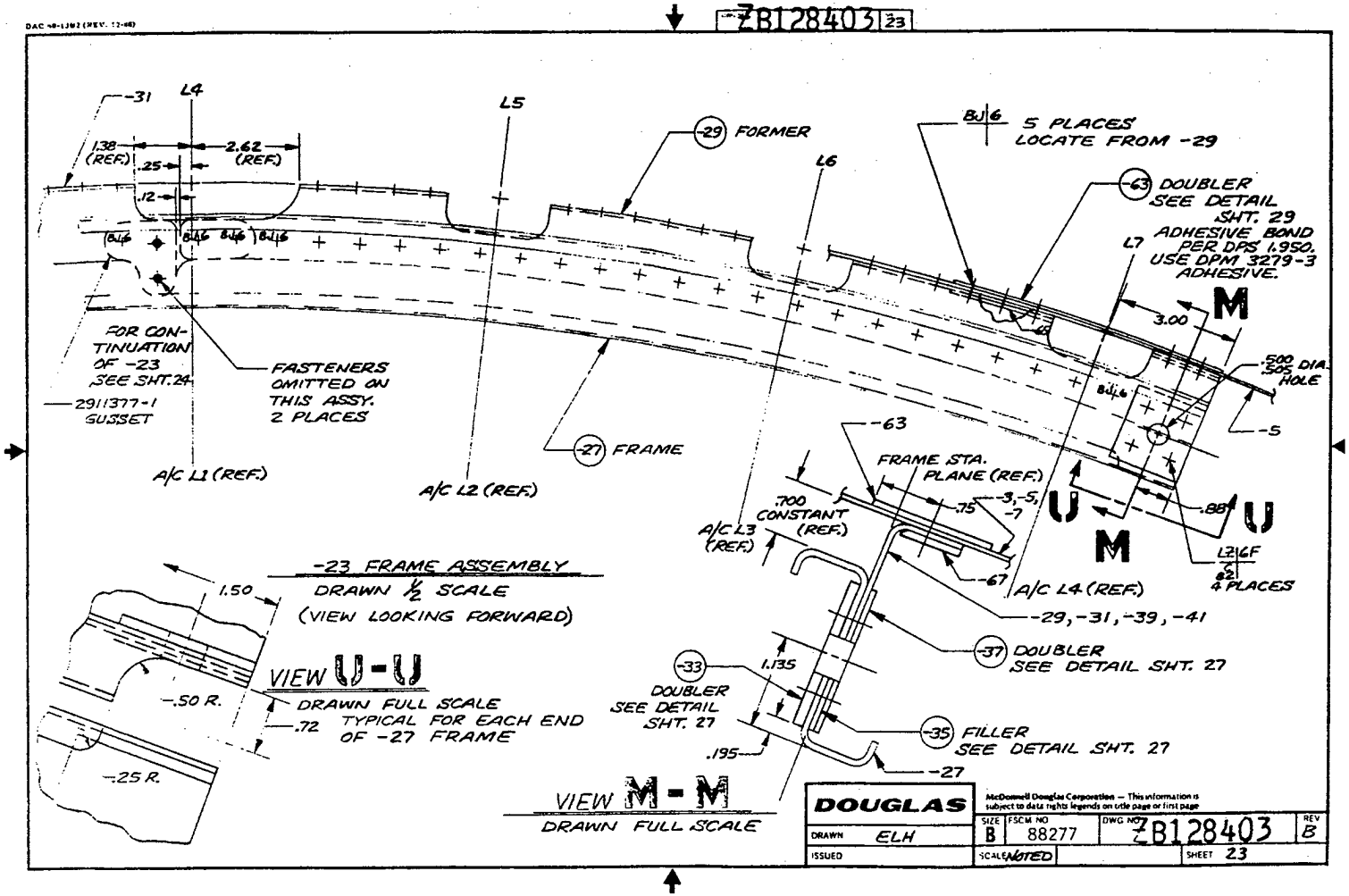
DWG ZB128403 22



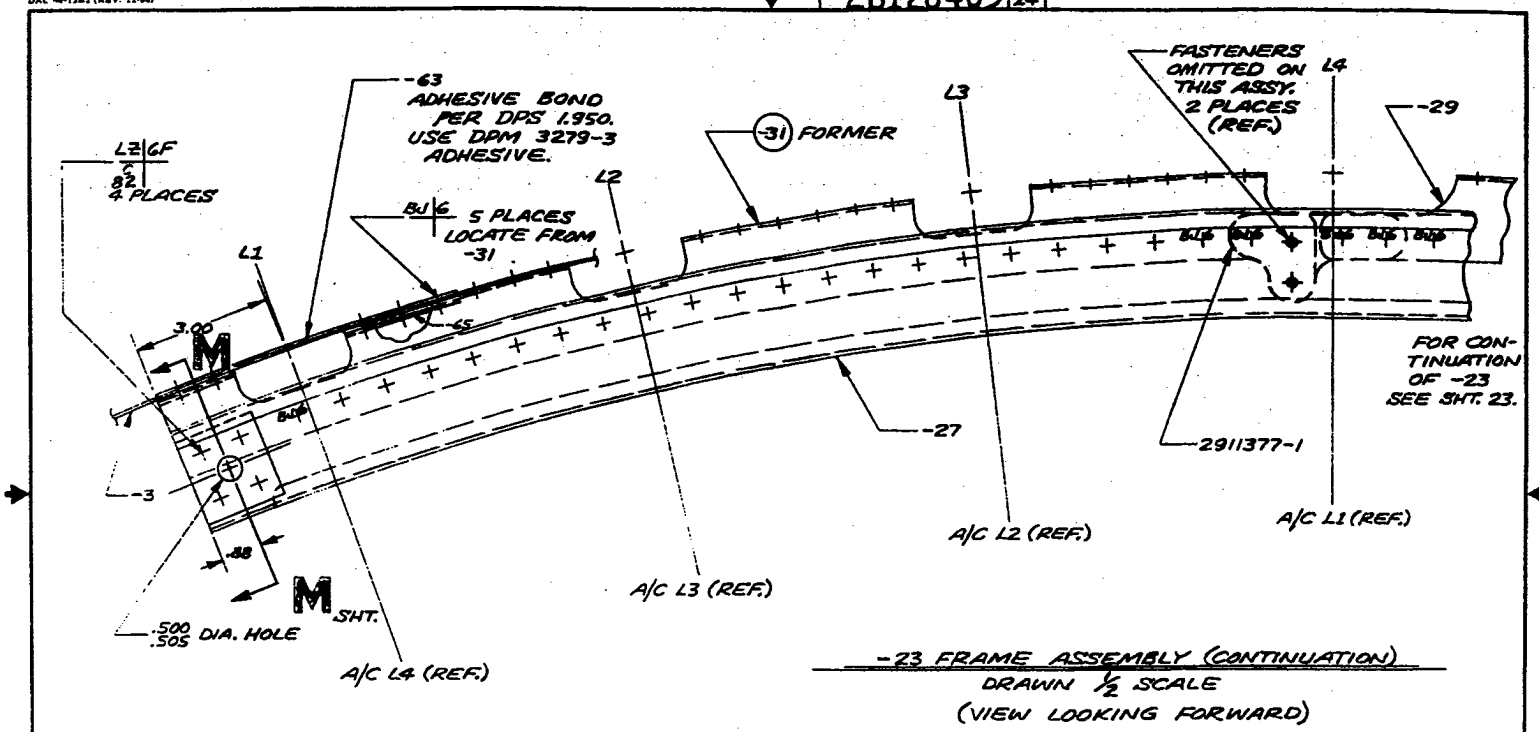
VIEW P
DRAWN FULL SCALE
TYPICAL 6 PLACES FROM LONGERONS L1 TO L7

DOUGLAS				
DRAWN ELH	SIZE B	FSCM NO. 88277	DWG NO ZB128403	REV E
ISSUED	SCALE NOTED		SHEET 22	

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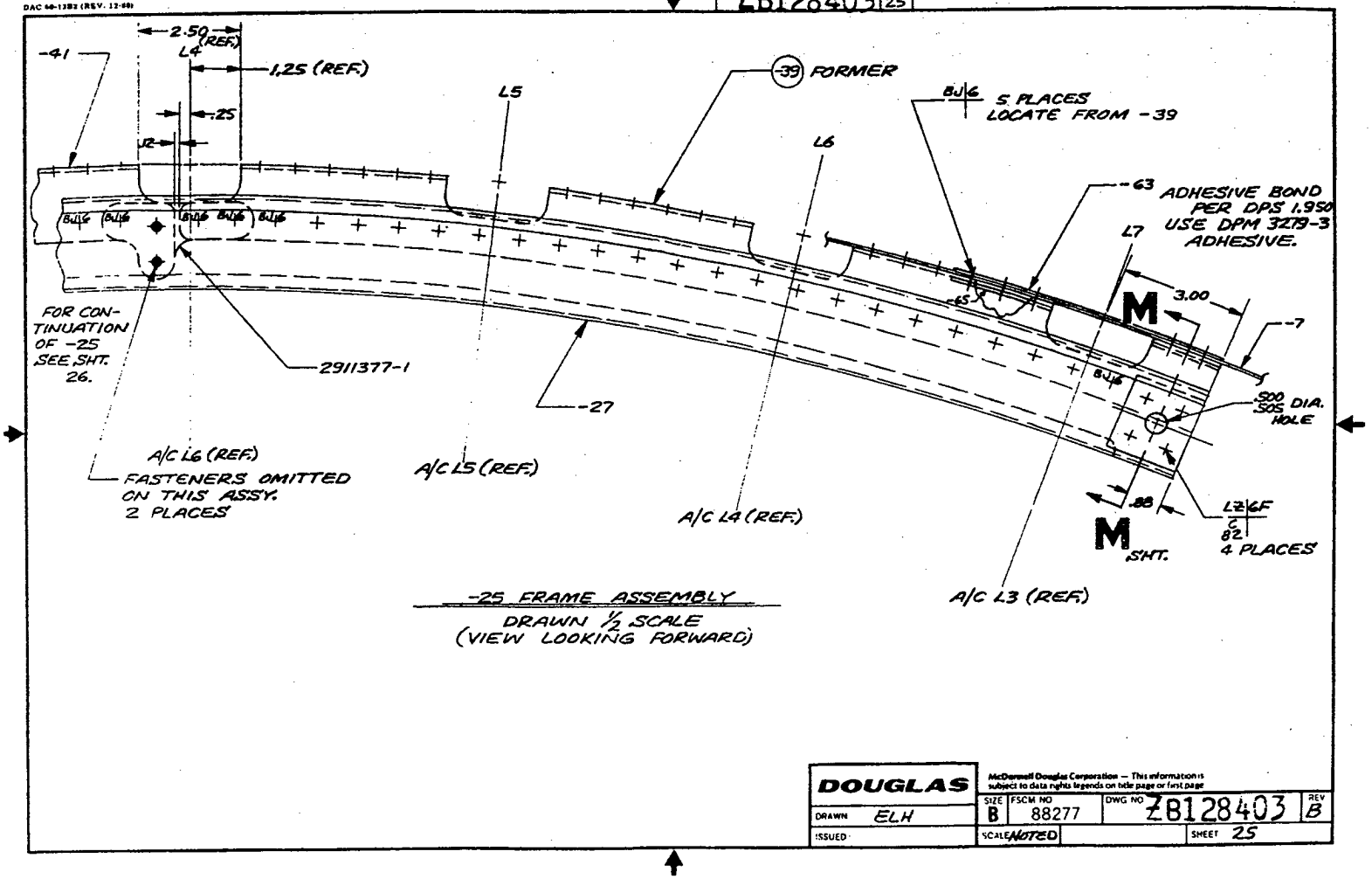


DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO 88277	DWG NO ZB128403	REV B
ISSUED	SCALE NOTED		SHEET 23	



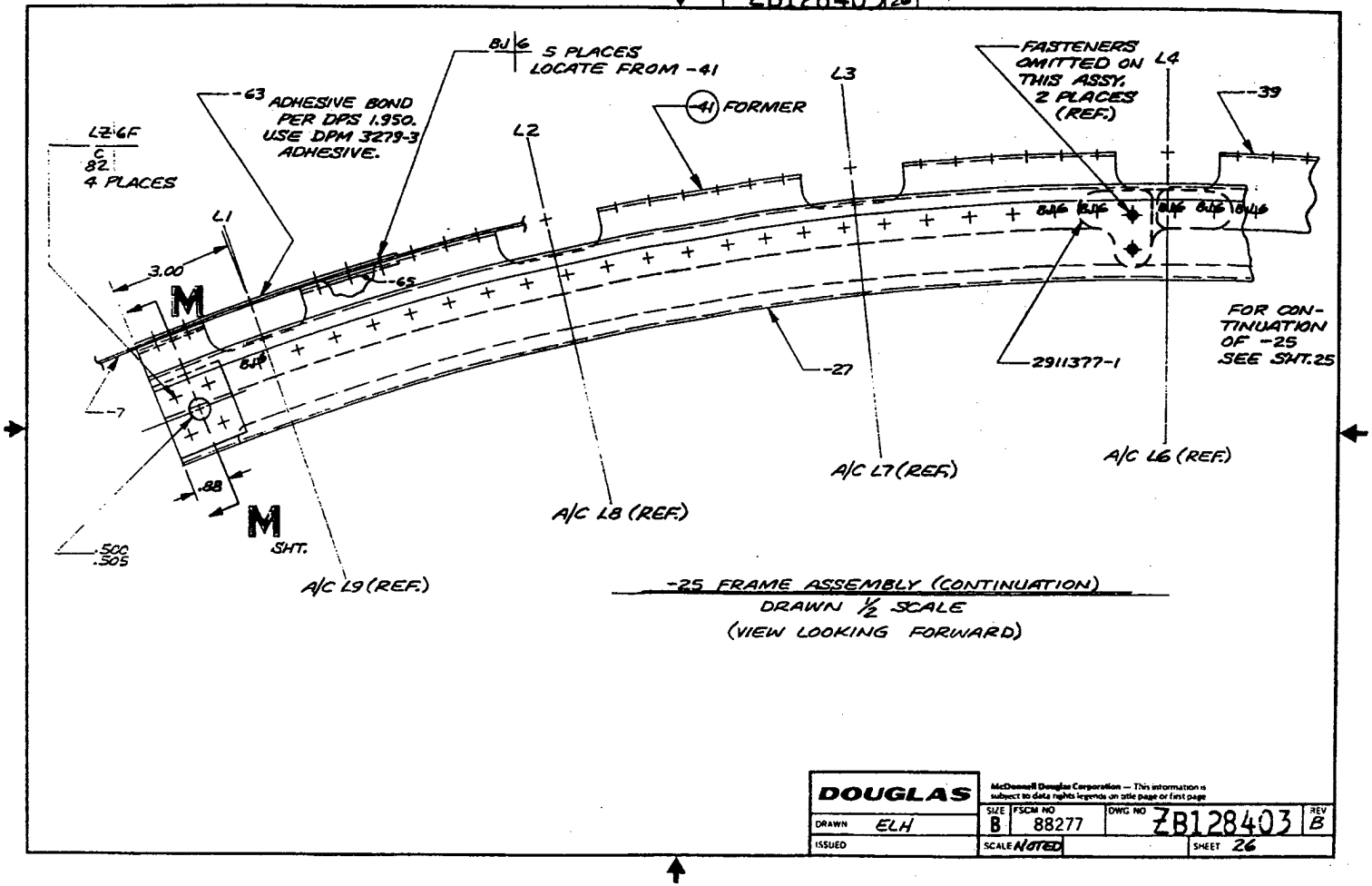
-23 FRAME ASSEMBLY (CONTINUATION)
DRAWN ½ SCALE
(VIEW LOOKING FORWARD)

DOUGLAS	McDonnell Douglas Corporation -- This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO 88277	DWG NO ZB128403	REV B
ISSUED	SCALE NOTED		SHEET 24	



-25 FRAME ASSEMBLY
DRAWN ½ SCALE
(VIEW LOOKING FORWARD)

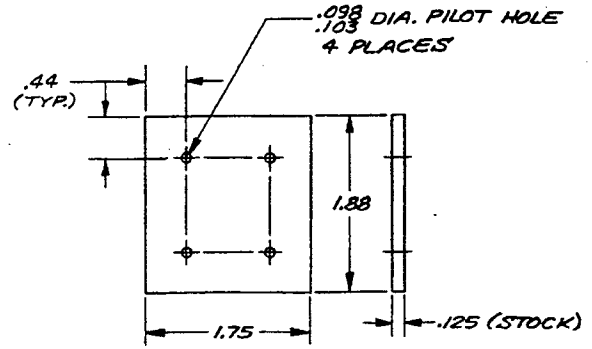
DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO 88277	DWG NO ZB128403	REV B
ISSUED	SCALE NOTED		SHEET 25	



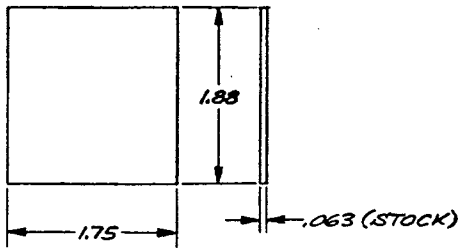
-25 FRAME ASSEMBLY (CONTINUATION)
DRAWN 1/2 SCALE
(VIEW LOOKING FORWARD)

DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO 88277	DWG NO ZB128403	REV B
ISSUED	SCALE NOTED		SHEET 26	

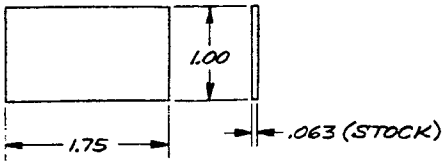
DAC 49-13W2 (REV. 12-88)



-33 DOUBLER
DRAWN FULL SCALE

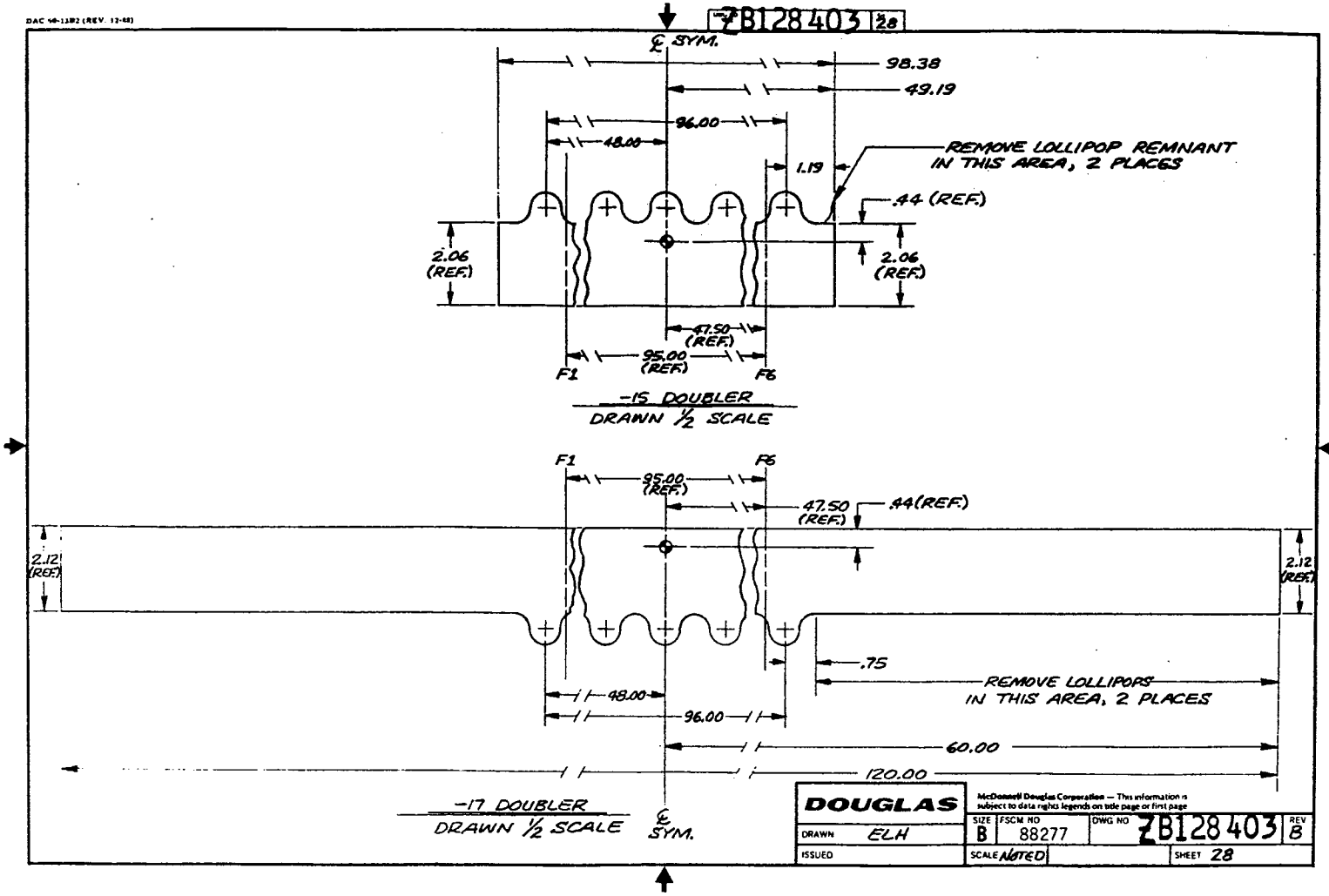


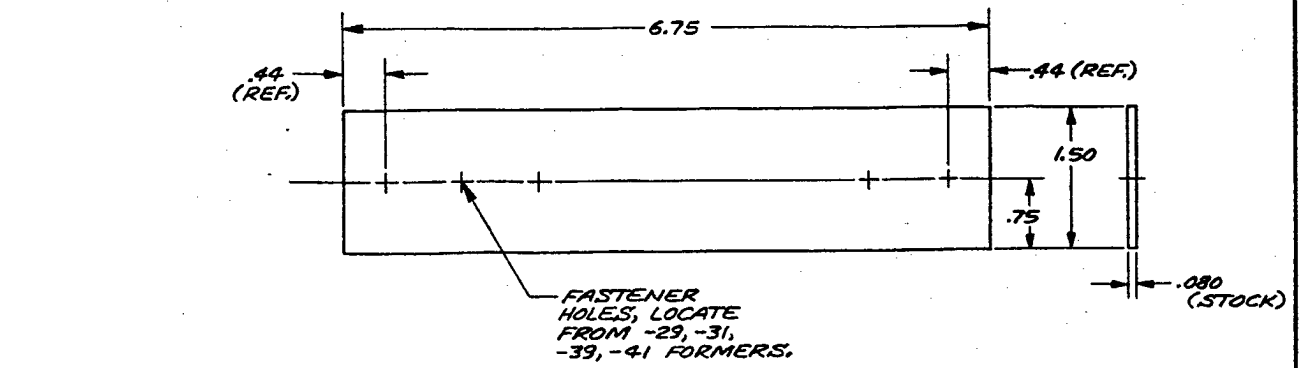
-37 DOUBLER
DRAWN FULL SCALE



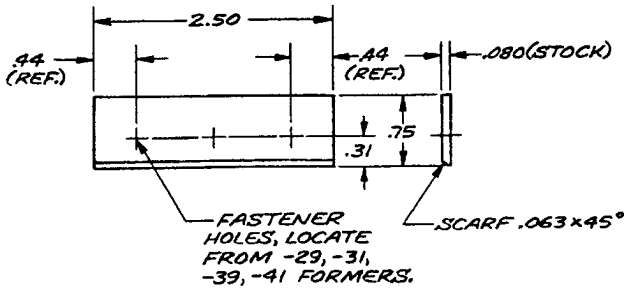
-35 FILLER
DRAWN FULL SCALE

DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page			
DRAWN ELH	SIZE B	FSCM NO 88277	DWG NO ZB128403	REV B
ISSUED	SCALE NOTED		SHEET 27	

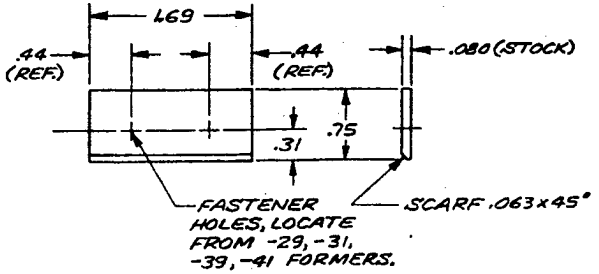

7B128403 28
℄ SYM.
98.38
49.19
96.00
48.00
1.19
REMOVE LOLLIPOP REMNANT
IN THIS AREA, 2 PLACES
.44 (REF.)
2.06
(REF.)
2.06
(REF.)
47.50
(REF.)
95.00
(REF.)
F1
F6
-15 DOUBLER
DRAWN ½ SCALE
F1
F6
95.00
(REF.)
47.50
(REF.)
.44(REF.)
2.12
(REF.)
2.12
(REF.)
.75
REMOVE LOLLIPORS
IN THIS AREA, 2 PLACES
48.00
96.00
60.00
120.00
-17 DOUBLER
DRAWN ½ SCALE
℄ SYM.
DOUGLAS
DRAWN ELH
ISSUED
SIZE B
FSCM NO 88277
DWG NO 7B128403
REV 8
SCALE NOTED
SHEET 28



-63 DOUBLER
DRAWN FULL SCALE



-65 DOUBLER
DRAWN FULL SCALE



-67 DOUBLER
DRAWN FULL SCALE

DOUGLAS	McDonnell Douglas Corporation — This information is subject to data rights legends on title page or first page				
DRAWN ELH	SIZE B	FSCM NO. 88277	DWG NO ZB128403	REV B	
ISSUED	SCALE NOTED		SHEET 29		

DRAWING PARTS LIST

BOEING (MCDONNELL DOUGLAS) — CAGE CODE 81277

C/C CONTROL CODE

B	BULK MATL	P1	PURCH DAC PART–SUP MATL
C	CUST FURN CUST INSTL	P2	PURCH DAC PART–DAC MATL
D	CUST FURN DAC INSTL	R	REWORK OR REPAIR PART
F	CUST FURN INSTL CHECK	S	DAC STANDARD PART
G	GOVT OR IND STANDARD	V	SUPPLIER ITEM–SPEC CONT
L	COMML SHELF ITEM	X	PROCESS REQD BY SCN
M	'MAKE FROM' ITEM	Z	REF DOCUMENT
M–	'MAKE FROM' DAC ITEM	–	DAC DRAWING NOT STD PART

QUANTITY REQUIRED PER NOTED DASH NUMBER

NOTE: DRAWING CONFIGURATIONS ARE INDICATED THUS * OTHER DASH NUMBERS ASSEMBLE INTO DRAWING CONFIGURATIONS AS NOTED.

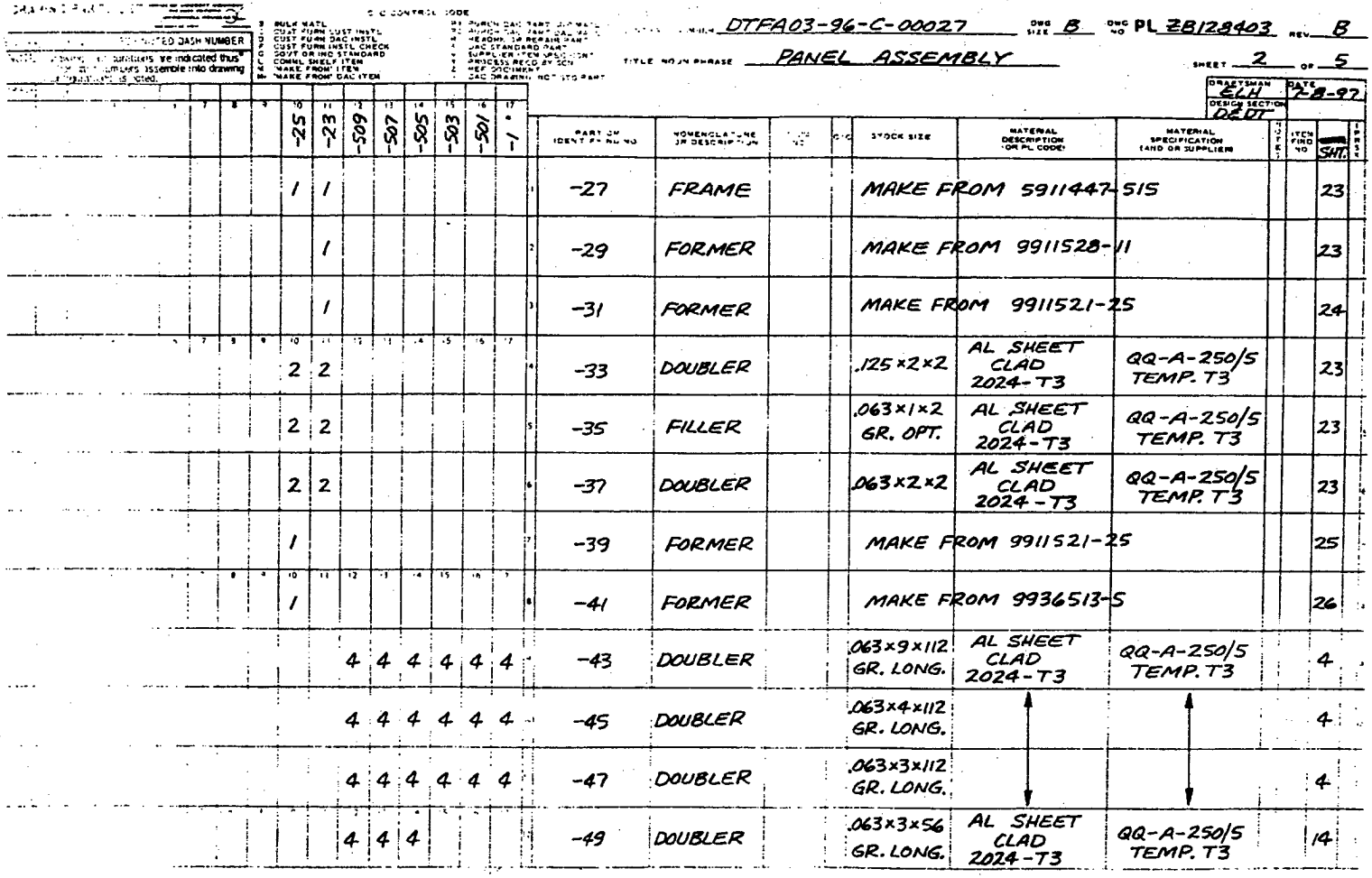
CONTRACT NUMBER DTFA03-96-C-00027 DWG SIZE B DWG NO. PL ZB128403 REV B

TITLE (NOUN PHRASE) PANEL ASSEMBLY SHEET 1 OF 5

ENGINEER/DRAFTSMAN E.L. HAYMAN DATE 7-8-97

DESIGN GROUP ATAS D&DT

*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	CAGE NO.	C/C	STOCK SIZE	PARTS LIST CODE OR (MATERIAL DESCRIPTION)	MATERIAL SPECIFICATION (AND/OR SUPPLIER)	NOTES	ITEM FIND NO.	SHT.	LASER
										-25	-23	-509	-507	-505	-503	-501	-1												
															1	1	1	1	-3	SKIN			.063×36×120 GR. LONG.	AL SHEET CLAD 2024-T3	QQ-A-250/5 TEMP. T3			5	
															1	1	1	2	-5	SKIN			.063×35×120 GR. LONG.	AL SHEET CLAD 2024-T3	QQ-A-250/5 TEMP. T3			5	
												2	2	2				3	-7	SKIN			.063×60×68 GR. XWISE	AL SHEET CLAD 2024-T3	QQ-A-250/5 TEMP. T3			6	
															1	1	1	4	-9	LONGERON			MAKE FROM S00067-10000					5	
															6	6	6	5	-11	LONGERON			MAKE FROM S2777922-6-10000					5	
												14	14	14				6	-13	LONGERON			MAKE FROM S2777922-6-5000					6	
															1	1	1	7	-15	DOUBLER			MAKE FROM S00056-3-12000					5	
															1	1	1	8	-17	DOUBLER			MAKE FROM S00056-10-12000					5	
												1	1	1				9	-19	DOUBLER			MAKE FROM 5936017-27					6	
												1	1	1				10	-21	SPLICE			MAKE FROM 5936017-25					6	
															6	6	6	11	-23	FRAME ASSEMBLY								5	
												6	6	6				12	-25	FRAME ASSEMBLY								6	



DTFA03-96-C-00027 DWG SIZE B DWG NO PL ZB129403 REV B

TITLE NOUN PHRASE PANEL ASSEMBLY

SHEET 2 OF 5

DRAFTSMAN EJH DATE 2-8-97

DESIGN SECTION D20T

-25	-23	-509	-507	-505	-503	-501	* -1	PART OR IDENT. NO.	NOMENCLATURE OR DESCRIPTION	STOCK SIZE	MATERIAL DESCRIPTION (OR PL CODE)	MATERIAL SPECIFICATION (AND OR SUPPLIER)	ITEM FIND NO	SHT.
1	1							-27	FRAME	MAKE FROM 5911447-515				23
	1							-29	FORMER	MAKE FROM 9911528-11				23
	1							-31	FORMER	MAKE FROM 9911521-25				24
2	2							-33	DOUBLER	.125×2×2	AL SHEET CLAD 2024-T3	QQ-A-250/5 TEMP. T3		23
2	2							-35	FILLER	.063×1×2 GR. OPT.	AL SHEET CLAD 2024-T3	QQ-A-250/5 TEMP. T3		23
2	2							-37	DOUBLER	.063×2×2	AL SHEET CLAD 2024-T3	QQ-A-250/5 TEMP. T3		23
1								-39	FORMER	MAKE FROM 9911521-25				25
1								-41	FORMER	MAKE FROM 9936513-5				26
		4	4	4	4	4	4	-43	DOUBLER	.063×9×112 GR. LONG.	AL SHEET CLAD 2024-T3	QQ-A-250/5 TEMP. T3		4
		4	4	4	4	4	4	-45	DOUBLER	.063×4×112 GR. LONG.	↕	↕		4
		4	4	4	4	4	4	-47	DOUBLER	.063×3×112 GR. LONG.	↕	↕		4
		4	4	4				-49	DOUBLER	.063×3×56 GR. LONG.	AL SHEET CLAD 2024-T3	QQ-A-250/5 TEMP. T3		14

DRAWING PARTS LIST

DOUGLAS AIRCRAFT COMPANY
MCDONNELL DOUGLAS
CAGE CODE 81277

DAC 25-4608-4D (REV 2-93)

C/C CONTROL CODE

B	BULK MATL	P1	PURCH DAC PART--SUP MATL
C	CUST FURN CUST INSTL.	P2	PURCH DAC PART--DAC MATL
D	CUST FURN DAC INSTL	R	REWORK OR REPAIR PART
F	CUST FURN INSTL CHECK	S	DAC STANDARD PART
G	GOVT OR IND STANDARD	V	SUPPLIER ITEM--SPEC CONT
L	COMML SHELF ITEM	X	PROCESS RECD BY SCN
M	'MAKE FROM' ITEM	Z	INSP DOCUMENT
M-	'MAKE FROM' DAC ITEM	-	DAC DRAWING NOT STD PART

CONTRACT NUMBER DTFA03-96-C-00027 DWG SIZE B DWG NO. PL 28128403 REV B

TITLE (NOUN PHRASE) PANEL ASSEMBLY SHEET 3 OF 5

ENGINEER/DRAFTSMAN E.L. HAYMAN DATE 7-8-97

DESIGN GROUP ATAS D&DT

QUANTITY REQUIRED PER NOTED DASH NUMBER

NOTE: DRAWING CONFIGURATIONS ARE INDICATED THUS* OTHER DASH NUMBERS ASSEMBLE INTO DRAWING CONFIGURATIONS AS NOTED.

-25	-23	-509	-507	-505	-503	-501	-1		PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	CAGE NO.	C/C	STOCK SIZE	PARTS LIST CODE OR (MATERIAL DESCRIPTION)	MATERIAL SPECIFICATION (AND/OR SUPPLIER)	NOTE	ITEM FIND NO.	SHEET SHT.	REV
								1	-51	CANCELLED									
								2	-53	CANCELLED									
								3	-55	CANCELLED									
								4	-57	CANCELLED									
								5	-59	CANCELLED									
								6	-61	CANCELLED									
		12	12	12	12	12	12	7	-63	DOUBLER			.080 x 2 x 7 GR. LONG.	AL SHEET CLAD 2024-T3	QQ-A-250/5 TEMP. T3			23	
		12	12	12	12	12	12	8	-65	DOUBLER			.080 x 1 x 3 GR. OPT.	↑	↑			14	
		12	12	12	12	12	12	9	-67	DOUBLER			.080 x 1 x 2 GR. OPT.	↕	↕			14	
					2	2	2	10	-69	DOUBLER			.080 x 3 x 27 GR. LONG.	↕	↕			13	
					4	4	4	11	-71	DOUBLER			.080 x 3 x 28 GR. LONG.	↓	↓			13	
					2	2	2	12	-73	DOUBLER			.080 x 3 x 28 GR. LONG.	AL SHEET CLAD 2024-T3	QQ-A-250/5 TEMP. T3			13	

DRAWING PARTS LIST

DOUGLAS AIRCRAFT COMPANY
MCDONNELL DOUGLAS
CAGE CODE 81777

DAC 25-4828-4D REV 2-92A

QUANTITY REQUIRED PER NOTED DASH NUMBER

NOTE: DRAWING CONFIGURATIONS ARE INDICATED THUS* OTHER DASH NUMBERS ASSEMBLE INTO DRAWING CONFIGURATIONS AS NOTED.

C/C CONTROL CODE

B	BULK MATL	P1	PURCH DAC PART–SUP MATL
C	CUST FURN CUST INSTL	P2	PURCH DAC PART–DAC MATL
D	CUST FURN DAC INSTL	R	REWORK OR REPAIR PART
F	CUST FURN INSTL CHECK	S	DAC STANDARD PART
G	GOVT OR IND STANDARD	V	SUPPLIER ITEM–SPEC CONT
L	COMMIL SHELF ITEM	X	PROCESS REQD BY SCN
M	*MAKE FROM* ITEM	Z	REF DOCUMENT
M–	*MAKE FROM* DAC ITEM	–	DAC DRAWING NOT STD PART

CONTRACT NUMBER DTFA03-96-C-00027 DWG SIZE B DWG NO. PLZB128403 REV B

TITLE (NOUN PHRASE) PANEL ASSEMBLY SHEET 4 OF 5

ENGINEER/DRAFTSMAN DATE 7-8-97

DESIGN GROUP ATAS DEDT

ITEM	1	2	3	4	5	6	7	8	9	10 -25	11 -23	12 -509	13 -507	14 -505	15 -503	16 -501	17 -1	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	CAGE NO.	C/C	STOCK SIZE	PARTS LIST CODE OR (MATERIAL DESCRIPTION)	MATERIAL SPECIFICATION (AND/OR SUPPLIER)	NOTES	ITEM FIND NO.	SHT.	INDEX
1										1	1							2911377-1	GUSSET								23	
2												6	6	6	6	6	6	2913044-1	GUSSET								7	
3												2	2	2	3	3	3	3913490-1	INTERCOSTAL								9	
4												3	3	3	3	3	3	2913045-1	CLIP								7	
5												1	1	1				9951791-3	INTERCOSTAL								7	
6												7	7	7				3936474-1	SPLICE								8	
7												28	28	28				S2933625 D22-130	SHIM								6	
8																												
9												1	1	1				-75	DOUBLER			MAKE FROM 5936017-27					20	
10																												
11												120	120	120				NAS1252-10L	WASHER									
12												120	120	120				MS21042-3	NUT									

DRAWING PARTS LIST

DOUGLAS AIRCRAFT COMPANY
MCDONNELL DOUGLAS
CAGE CODE 80007

DAC 25-4888-40 (REV 2-93)

C/C CONTROL CODE

B	BULK MATL	P1	PURCH DAC PART–BLP MATL
C	CUST FURN CUST INSTL	P2	PURCH DAC PART–DAC MATL
D	CUST FURN DAC INSTL	R	REWORK OR REPAIR PART
F	CUST FURN INSTL CHECK	S	DAC STANDARD PART
G	GOVT OR IND STANDARD	V	SUPPLIER ITEM–SPEC CONT
L	COMML SHELF ITEM	X	PROCESS RECD BY SCN
M	'MAKE FROM' ITEM	Z	REF DOCUMENT
M-	'MAKE FROM' DAC ITEM	–	DAC DRAWING NOT STD PART

CONTRACT NUMBER DTFA03-96-C-00027 DWG SIZE B DWG NO. PL78128403 REV B

TITLE (NOUN PHRASE) PANEL ASSEMBLY SHEET 5 OF 5

ENGINEER/DRAFTSMAN E.L. HAYMAN DATE 7-8-97

DESIGN GROUP ATAS D&DT

QUANTITY REQUIRED PER NOTED DASH NUMBER

NOTE: DRAWING CONFIGURATIONS ARE INDICATED THUS' OTHER DASH NUMBERS ASSEMBLE INTO DRAWING CONFIGURATIONS AS NOTED.

ITEM	-25	-23	-509	-507	-505	-503	-501	-1	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	CAGE NO.	C/C	STOCK SIZE	PARTS LIST CODE OR (MATERIAL DESCRIPTION)	MATERIAL SPECIFICATION (AND/OR SUPPLIER)	NOTES	ITEM FIND NO.	ZONE	ISSUE
1			A/R	A/R	A/R	A/R	A/R	A/R	MS20470AD5	RIVET			INDICATED THUS		BJ 5				
2	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	MS20470AD6	RIVET			INDICATED THUS		BJ 6				
3	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	NAS1097AD6	RIVET			INDICATED THUS		LZ 6				
4			70	70	70				3D0009-6	PIN			INDICATED THUS		B				
5			28	28	28				2D0009-6	PIN			INDICATED THUS		XHW 6				
6			84	84	84	84	84	84	HLS18-6	PIN									
7			84	84	84	84	84	84	AN960-C10L	WASHER									
8			84	84	84	84	84	84	MS21043-3	NUT									
9			70	70	70				BH00601-3	NUT									
10			28	28	28				3D0007-3	NUT ASSY.									
11						A/R	A/R	A/R	NAS1097KE6	RIVET			INDICATED THUS		ASS 6				
12			120	120	120				S4931919-6	PIN			INDICATED THUS		XES 6				

APPENDIX B—LOCATION OF STRAIN GAGES

Strain gages were placed on the all four panels to monitor the strain distribution and to ensure proper load introduction. The type and location of the strain gages used are provided in the tables and figures of this appendix. All strain gages were 350 Ohms with a Constantan foil alloy. A three conductor, Teflon-coated twisted cable was used for connection to the strain gages. Boeing Aircraft Company, Long Beach, CA, installed all strain gages to panels CVP1 and CVP3. The Federal Aviation Administration William J. Hughes Technical Center, Atlantic City International Airport, NJ installed all strain gages to panels CVP2 and CVP4.

The strain gage, coating, cable, and adhesive types for each panel are listed in table B-1. A full description of the Micro-Measurement (MM) products is provided in MM Catalog A-110-8 and MM Catalog 500. These catalogs can be obtained from:

Micro-Measurements Division
Measurements Group
P.O. Box 27777
Raleigh, North Carolina 27611
Phone: (919) 365-3800

The location of the strain gages for the longitudinal lap joint panels, CVP1 and CVP2, is provided in table B-2 and figures B-1 through B-4. In these panels, 20 axial strain gages were located on both the inner and outer flanges of the frames. The stringers were instrumented with eight axial strain gages on the flange and hat section. The skin was instrumented with eight strain gage rosettes. At one location on the skin, two back-to-back 45° strain gage rosettes (gages 31 and 32) were installed to provide a measure of bending of the skin.

The location of the strain gages for the circumferential lap joint panels, CVP3 and CVP4, is provided in table B-3 and figures B-5 through B-11. In these panels, nine axial strain gages were located on both the inner and outer flanges of the frames. The stringers were instrumented with 22 axial strain gages on the flange and hat section. The skin was instrumented with nine strain gage rosettes (45°) in the skin and 31 axial strain gages in the frames and stringers. At two locations on the skin, namely at gages 36 and 37 and at gages 39 and 40, two back-to-back 45° strain gage rosettes were installed to provide a measure of bending of the skin.

TABLE B-1. GENERAL STRAIN GAGE INFORMATION

Panel	CVP1	CVP2	CVP3	CVP4
No. Gages Axial	28	28	31	31
Gage No. Axial	1-28	1-28	1-31	1-31
Micro-Measurement Part No., Axial	EA-13-062AQ-350	CEA-13-062UW-350	EA-13-062AQ-350	CEA-13-062UW-350
No. Gages, Rosette	8	8	9	9
Gage No. Rosette	29-36	29-36	32-40	32-40
Micro-Measurement Part No., Axial	EA-13-120WR-350	CEA-13-125UR-350	EA-13-120WR-350	CEA-13-125UR-350
Micro-Measurement Part No., Coatings	3140 RTV	M Coat J	3140 RTV	M Coat J
Micro-Measurement Part No., Cable	330-FFE	330-FTE	330-FFE	330-FTE
Micro-Measurement Part No., Adhesive	M-Bond AE-10	M-Bond 200	M-Bond AE-10	M-Bond 200

TABLE B-2. STRAIN GAGE LOCATIONS FOR PANELS CVP1 AND CVP2

Strain Gage No. (View)	Location	
	Name and P/N	Dimensional
1 (C)	Outside of Frame Flange F2	Midway Between L3 and L4 (3.75), Center of Flange (0.46)
2 (C)	Inside of Frame Flange F2	Midway Between L3 and L4 (3.75), Center of Flange (0.39)
3 (C)	Outside of Frame Flange F3	Midway Between L3 and L4 (3.75), Center of Flange (0.46)
4 (C)	Inside of Frame Flange F3	Midway Between L3 and L4 (3.75), Center of Flange (0.39)
5 (C)	Outside of Frame Flange F4	Midway Between L3 and L4 (3.75), Center of Flange (0.46)
6 (C)	Inside of Frame Flange F4	Midway Between L3 and L4 (3.75), Center of Flange (0.39)
7 (C)	Outside of Frame Flange F5	Midway Between L3 and L4 (3.75), Center of Flange (0.46)
8 (C)	Inside of Frame Flange F5	Midway Between L3 and L4 (3.75), Center of Flange (0.39)
9 (C)	Outside of Frame Flange F3	Midway Between L4 and L5 (3.75), Center of Flange (0.46)
10 (C)	Inside of Frame Flange F3	Midway Between L4 and L5 (3.75), Center of Flange (0.39)
11 (C)	Outside of Frame Flange F4	Midway Between L4 and L5 (3.75), Center of Flange (0.46)
12 (C)	Inside of Frame Flange F4	Midway Between L4 and L5 (3.75), Center of Flange (0.39)
13 (C)	Outside of Frame Flange F5	Midway Between L4 and L5 (3.75), Center of Flange (0.46)
14 (C)	Inside of Frame Flange F5	Midway Between L4 and L5 (3.75), Center of Flange (0.39)
15 (C)	Outside of Frame Flange F3	Midway Between L6 and L7 (3.75), Center of Flange (0.46)
16 (C)	Inside of Frame Flange F3	Midway Between L6 and L7 (3.75), Center of Flange (0.39)
17 (C)	Outside of Frame Flange F4	Midway Between L6 and L7 (3.75), Center of Flange (0.46)
18 (C)	Inside of Frame Flange F4	Midway Between L6 and L7 (3.75), Center of Flange (0.39)
19 (C)	Outside of Frame Flange F5	Midway Between L6 and L7 (3.75), Center of Flange (0.46)

TABLE B-2. STRAIN GAGE LOCATIONS FOR PANELS CVP1 AND CVP2 (Continued)

Strain Gage No. (View)	Location	
	Name and P/N	Dimensional
20 (C)	Inside of Frame Flange F5	Midway Between L6 and L7 (3.75), Center of Flange (0.39)
21 (D)	Outside of Longeron Flange L2	Aft of Frame F3 (8.88), Center of Flange (0.37)
22 (D)	Inside of Longeron Hat L2	Aft of Frame F3 (8.88), Center of Hat (0.35)
23 (D)	Outside of Longeron Flange L3	Aft of Frame F3 (8.88), Center of Flange (0.37)
24 (D)	Inside of Longeron Hat L3	Aft of Frame F3 (8.88), Center of Hat (0.35)
25 (D)	Outside of Longeron Flange L4	Aft of Frame F3 (9.09), Center of Flange (0.37)
26 (D)	Inside of Longeron Hat L4	Aft of Frame F3 (9.09), Center of Hat (0.38)
27 (D)	Outside of Longeron Flange L5	Aft of Frame F3 (8.88), Center of Flange (0.37)
28 (D)	Inside of Longeron Hat L5	Aft of Frame F3 (8.88), Center of Hat (0.35)
29L (E) 29-45, 29T	Exterior Surface of Skin	Midway Between Frames F1 and F2 (9.50) and Longerons L3 and L4 (3.75)
30L (E) 30-45, 30T	Exterior Surface of Skin	Midway Between Frames F2 and F3 (9.50) and Longerons L3 and L4 (3.75)
31L (E) 31-45, 31T	Interior Surface of Skin	Midway Between Frames F3 and F4 (9.50) and Longerons L3 and L4 (3.75)
32L (E) 32-45, 32T	Exterior Surface of Skin	Midway Between Frames F3 and F4 (9.50) and Longerons L3 and L4 (3.75)
33L (E) 33-45 33T	Exterior Surface of Skin	Midway Between Frames F4 and F5 (9.50) and Longerons L3 and L4 (3.75)
34L (E) 34-45 34T	Exterior Surface of Skin	Midway Between Frames F5 and F6 (9.50) and Longerons L3 and L4 (3.75)
35L (E) 35-45 35T	Exterior Surface of Skin	Midway Between Frames F3 and F4 (9.50) and Longerons L4 and L5 (3.75)
36L (E) 36-45 36T	Exterior Surface of Skin	Midway Between Frames F3 and F4 (9.50) and Longerons L5 and L6 (3.75)

TABLE B-3. STRAIN GAGE LOCATIONS FOR PANELS CVP3 AND CVP4

Strain Gage No. (View)	Location	
	Name and P/N	Dimensional
1 (F)	Outside of Frame Flange F3	Midway Between L2 and L3 (3.75), Center of Flange (0.46)
2 (F)	Outside of Frame Flange F3	Midway Between L3 and L4 (3.75), Center of Flange (0.46)
3 (F)	Outside of Frame Flange F1	Midway Between L4 and L5 (3.75), Center of Flange (0.46)
4 (F)	Outside of Frame Flange F2	Midway Between L4 and L5 (3.75), Center of Flange (0.46)
5 (F)	Outside of Frame Flange F3	Midway Between L4 and L5 (3.75), Center of Flange (0.46)
6 (F)	Inside of Frame Flange F3	Midway Between L4 and L5 (3.75), Center of Flange (0.39)
7 (F)	Outside of Frame Flange F4	Midway Between L4 and L5 (3.75), Center of Flange (0.46)
8 (F)	Inside of Frame Flange F3	Midway Between L5 and L6 (3.75), Center of Flange (0.39)
9 (F)	Outside of Frame Flange F3	Midway Between L4 and L5 (3.75), Center of Flange (0.46)
10 (M)	Outside of Longeron Flange L1	FWD. of F2 (8.87), on Center of Flange (0.37)
11 (G)	Outside of Splice Flange L2	FWD. of C_L Sym. (2.25), on Center of Flange (0.43)
12 (G)	Inside of Splice Hat L2	FWD. of C_L Sym. (2.25), on Center of Hat (0.26)
13 (H)	Outside of Longeron Flange L3	FWD. of C_L Sym. (7.50), on Center of Flange (0.37)
14 (H)	Inside of Longeron Hat L3	FWD. of C_L Sym. (7.50), on Center of Hat (0.35)
15 (G)	Outside of Splice Flange L3	FWD. of C_L Sym. (2.25), on Center of Flange (0.43)
16 (G)	Inside of Splice Hat L3	FWD. of C_L Sym. (2.25), on Center of Hat (0.26)
17 (M)	Inside of Longeron Hat L4	FWD. of F2 (8.87), on Center of Hat (0.35)
18 (M)	Outside of Longeron Flange L4	FWD. of F2 (8.87), on Center of Flange (0.37)
19 (M)	Outside of Longeron Flange L4	FWD. of F3 (9.12), on Center of Flange (0.37)

TABLE B-3. STRAIN GAGE LOCATIONS FOR PANELS CVP3 AND CVP4 (Continued)

Strain Gage No. (View)	Location	
	Name and P/N	Dimensional
20 (M)	Inside of Longeron Hat L4	FWD. of F3 (9.12), on Center of Hat (0.35)
21 (H)	Inside of Longeron Hat L4	FWD. of C_L Sym. (7.50), on Center of Hat (0.35)
22 (H)	Outside of Longeron Flange L4	FWD. of C_L Sym. (7.50), on Center of Flange (0.37)
23 (M)	Outside of Longeron Flange L4	Aft of F4 (9.12), on Center of Flange (0.37)
24 (M)	Inside of Longeron Hat L4	Aft of F4 (9.12), on Center of Hat (0.35)
25 (H)	Inside of Longeron Hat L5	FWD. of C_L Sym. (7.50), on Center of Hat (0.35)
26 (H)	Outside of Longeron Flange L5	FWD. of C_L Sym. (7.50), on Center of Flange (0.37)
27 (G)	Inside of Splice Hat L5	FWD. of C_L Sym. (2.25), on Center of Flange (0.26)
28 (G)	Outside of Splice Flange L5	FWD. of C_L Sym. (2.25), on Center of Flange (0.43)
29 (G)	Inside of Splice Hat L6	FWD. of C_L Sym. (2.25), on Center of Hat (0.26)
30 (G)	Outside of Splice Flange L6	FWD. of C_L Sym. (2.25), on Center of Flange (0.43)
31 (M)	Outside of Longeron Flange L7	FWD. of F2 (8.87), on Center of Flange (0.37)
32L (J) 32-45 32T	Exterior Surface of Skin	FWD. of C_L Sym. (6.25), Midway Between Longerons L2 and L3 (3.75)
33L (J) 33-45 33T	Exterior Surface of Skin	FWD. of C_L Sym. (6.25), Midway Between Longerons L3 and L4 (3.75)
34L (L) 34-45 34T	Exterior Surface of Skin	Midway Between Frames F2 and F3 (9.50) and Longerons L4 and L5 (3.75)
35L (L) 35-45 35T	Interior Surface of Skin	Midway Between Frames F2 and F3 (9.50) and Longerons L4 and L5 (3.75)
36L (K) 36-45 36T	Exterior Surface of Skin	FWD. of C_L Sym. (6.25), Midway Between Longerons L4 and L5(3.75)

TABLE B-3. STRAIN GAGE LOCATIONS FOR PANELS CVP3 AND CVP4 (Continued)

Strain Gage No. (View)	Location	
	Name	Dimensional
37L (K) 37-45 37T	Interior Surface of Skin	FWD. of C_L Sym. (6.25), Midway Between Longerons L4 and L5 (3.75)
38L (L) 38-45 38T	Exterior Surface of Skin	Midway Between Frames F4 and F5 (9.50) and Longerons L4 and L5 (3.75)
39L (K) 39-45 39T	Exterior Surface of Skin	FWD. of C_L Sym. (6.25), Midway Between Longerons L5 and L6 (3.75)
40L (K) 40-45 40T	Interior Surface of Skin	FWD. of C_L Sym. (6.25), Midway Between Longerons L5 and L6 (3.75)

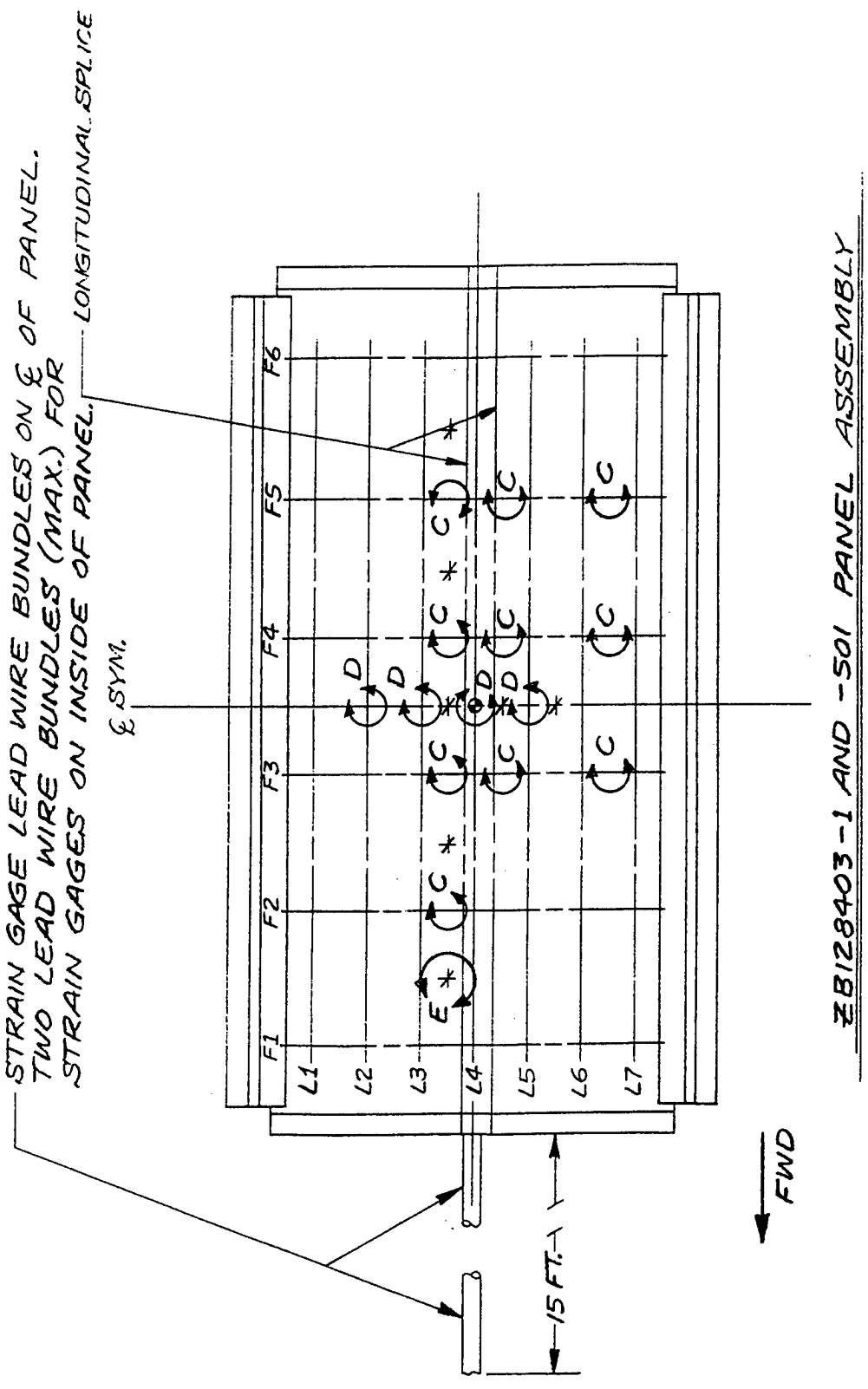


FIGURE B-1. SECTION VIEWS FOR PANELS CVP1 AND CVP2

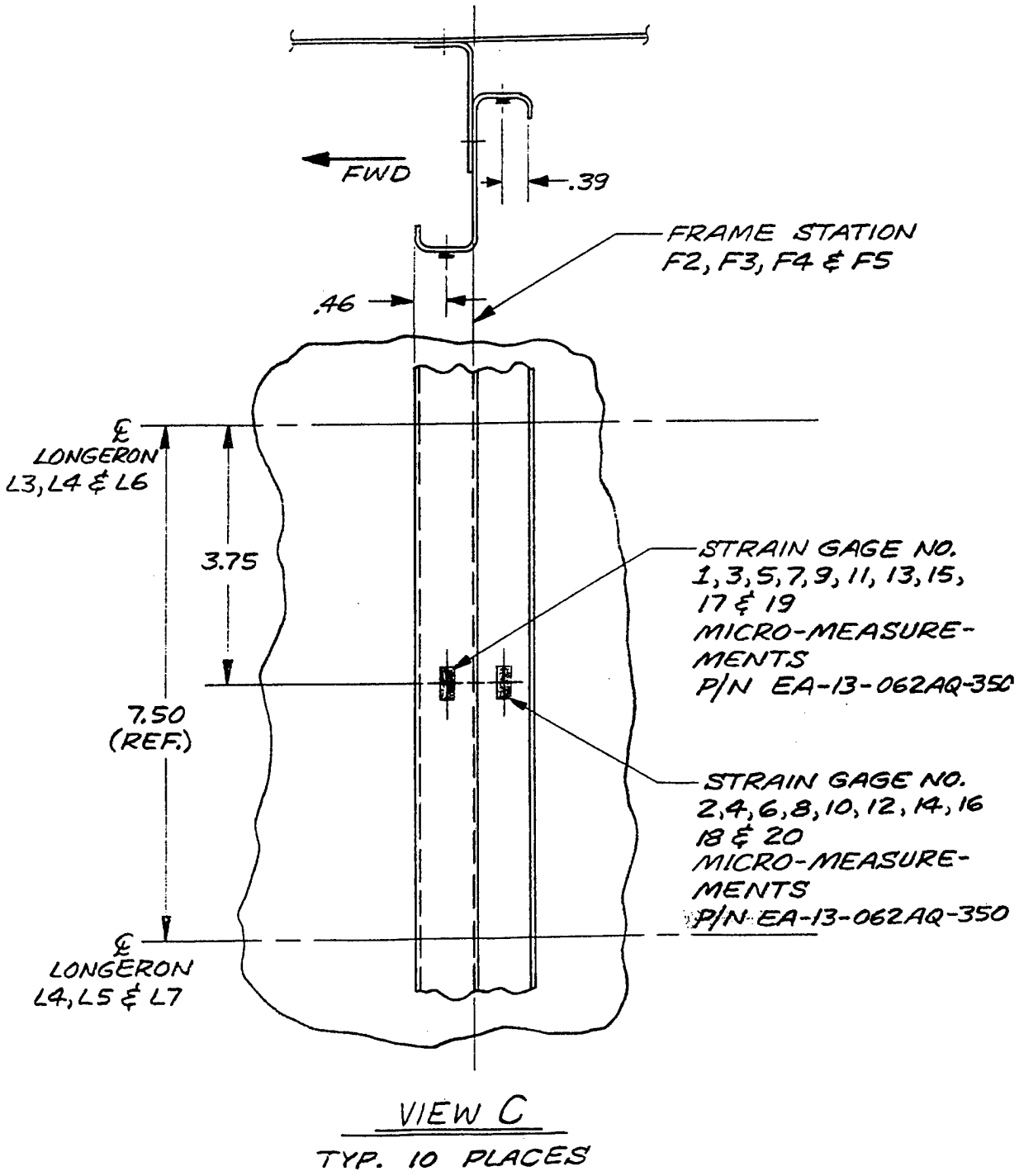


FIGURE B-2. PLACEMENT OF AXIAL GAGES AT THE INNER AND OUTER CAP OF THE FRAMES IN PANELS CVP1 AND CVP2

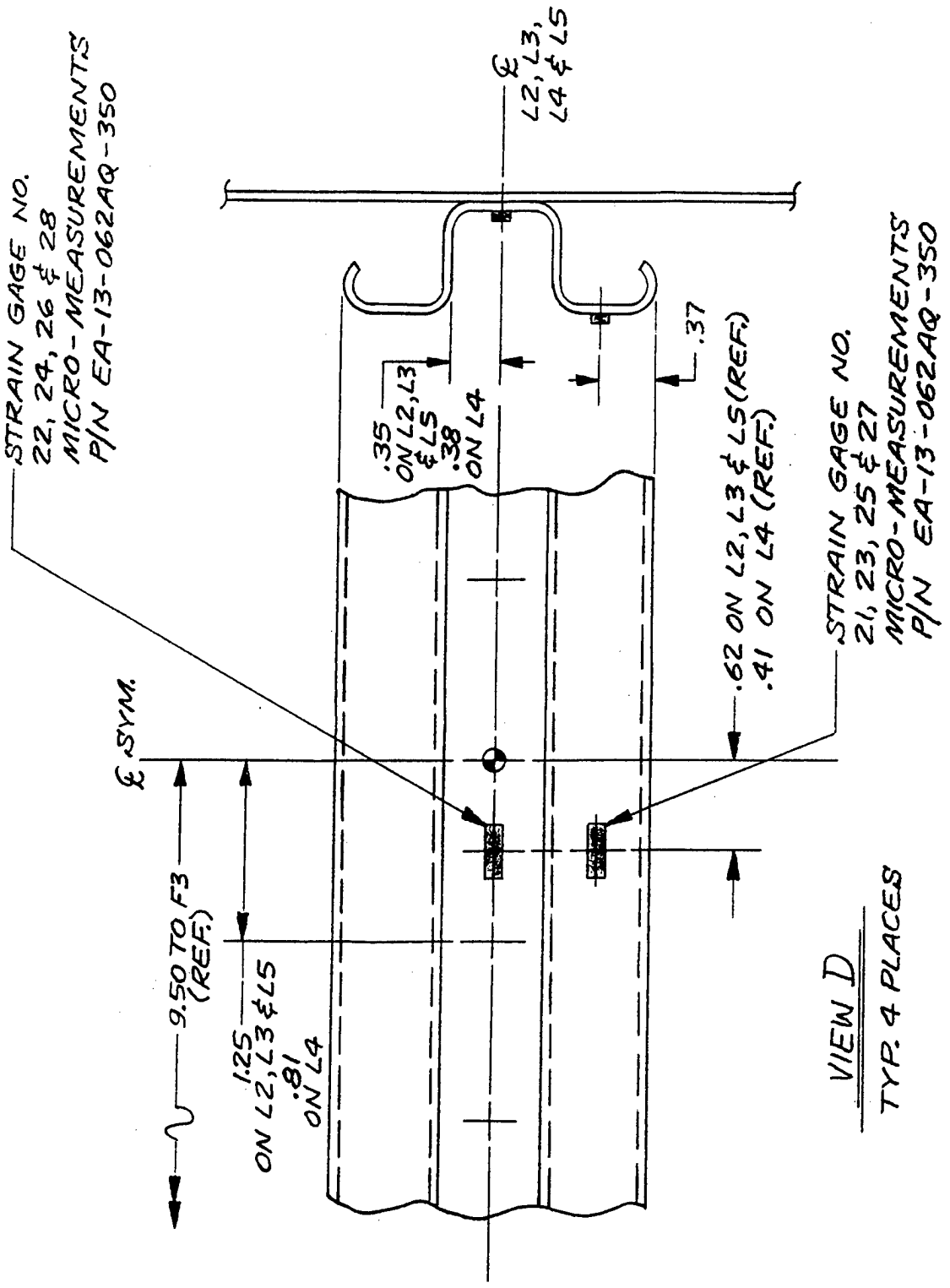


FIGURE B-3. PLACEMENT OF AXIAL GAGES AT THE CAP AND FLANGE OF THE STRINGERS (LONGERONS) OF PANELS CVP1 AND CVP2

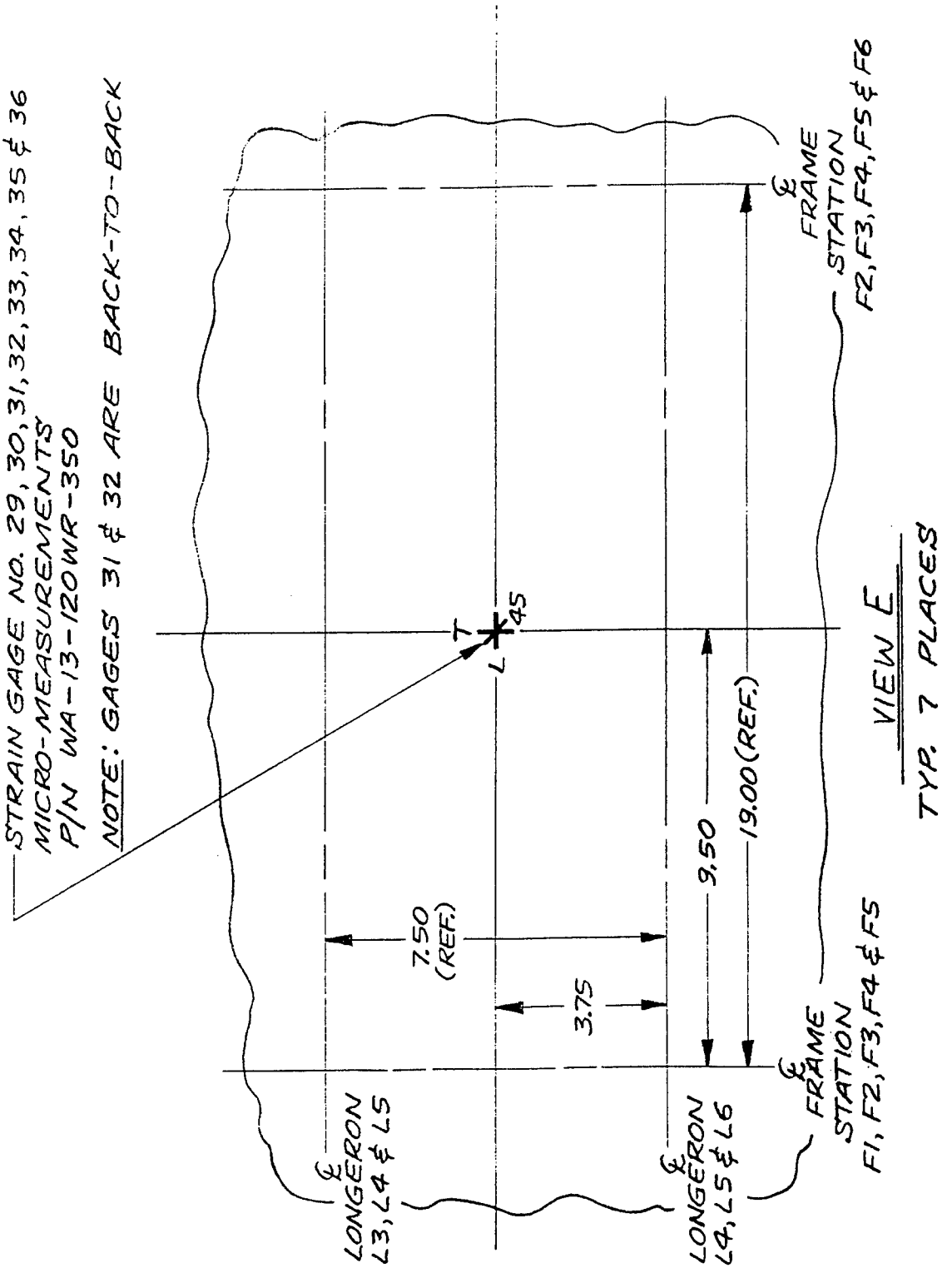


FIGURE B-4. PLACEMENT OF ROSETTE GAGES AT THE SKIN MID-BAY LOCATION IN PANELS CVP1 AND CVP2

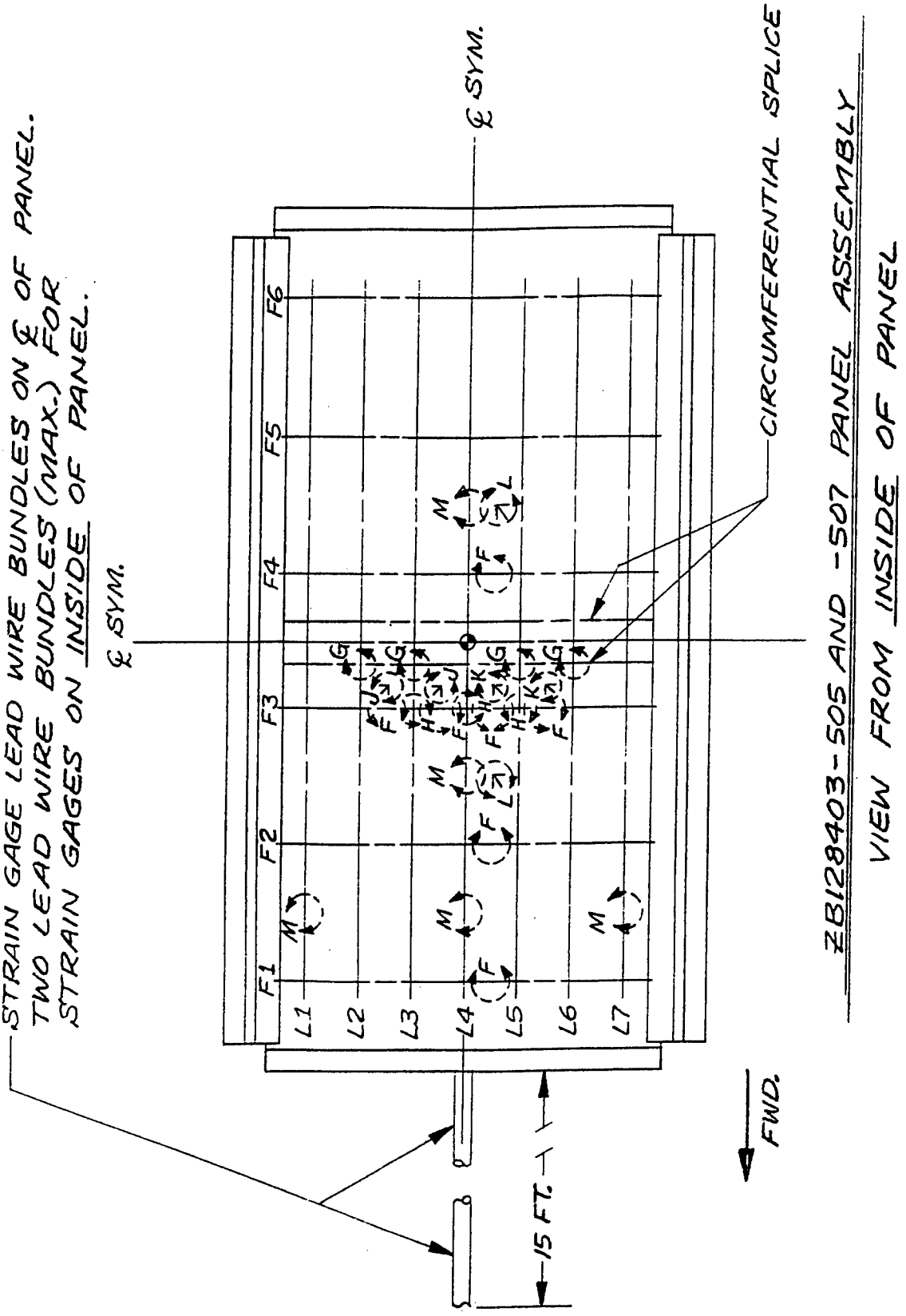


FIGURE B-5. SECTION VIEWS FOR PANELS CVP3 AND CVP4

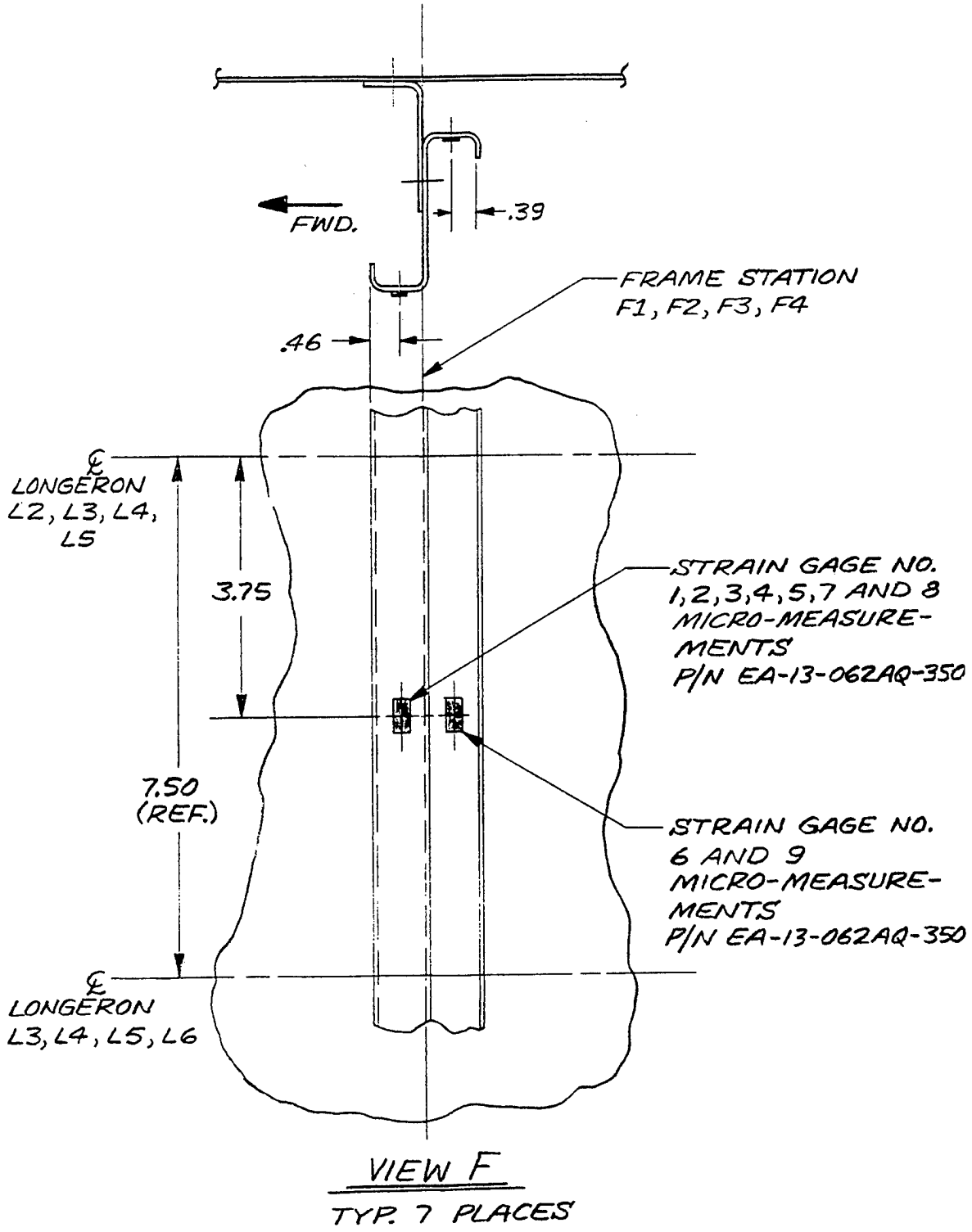


FIGURE B-6. PLACEMENT OF AXIAL GAGES AT THE INNER AND OUTER CAP OF THE FRAMES IN PANELS CVP3 AND CVP4

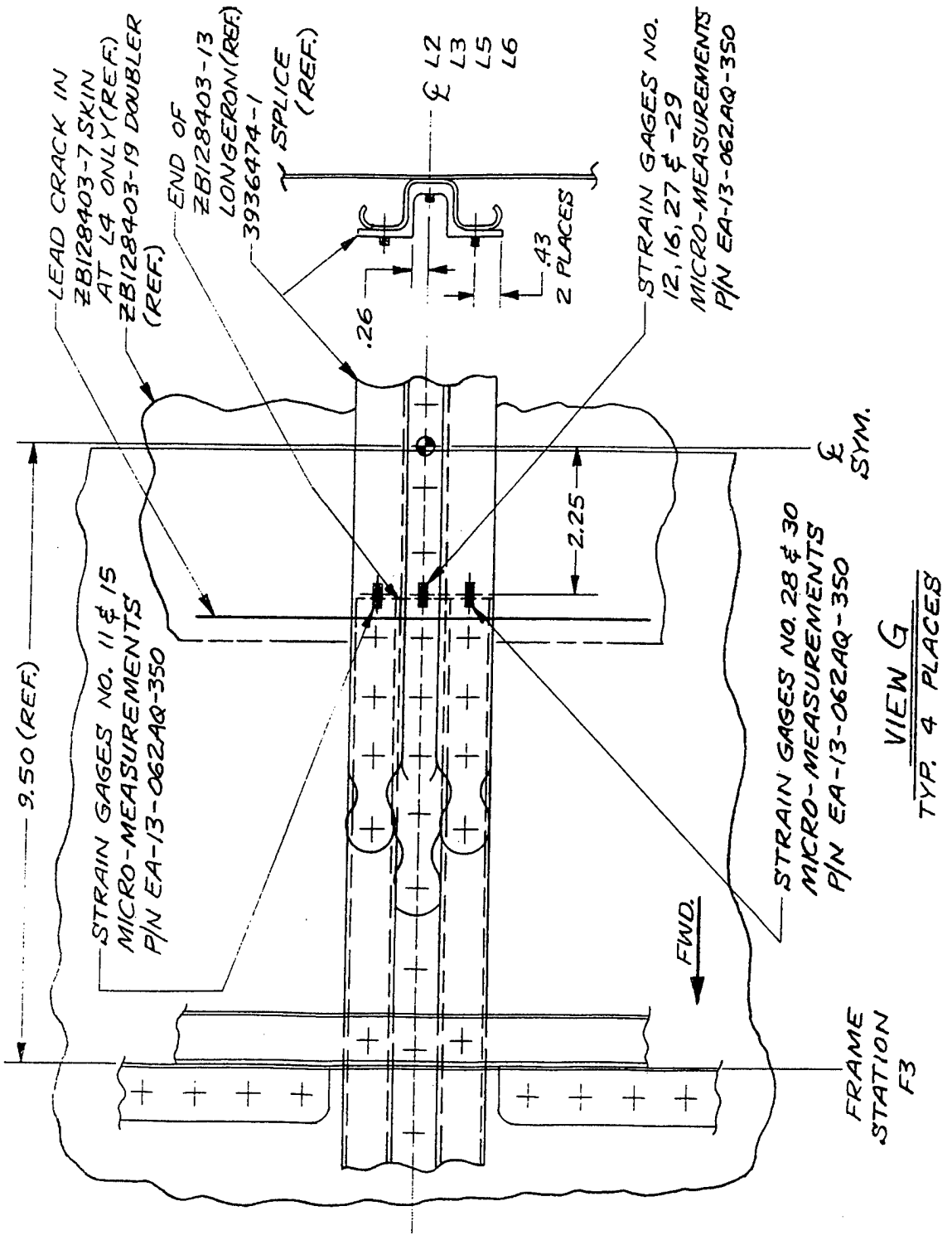


FIGURE B-7. PLACEMENT OF AXIAL GAGES AT THE CAP AND FLANGE OF THE STRINGERS (LONGERONS) SPLICE REGION OF THE BUTT JOINT OF PANELS CVP3 AND CVP4

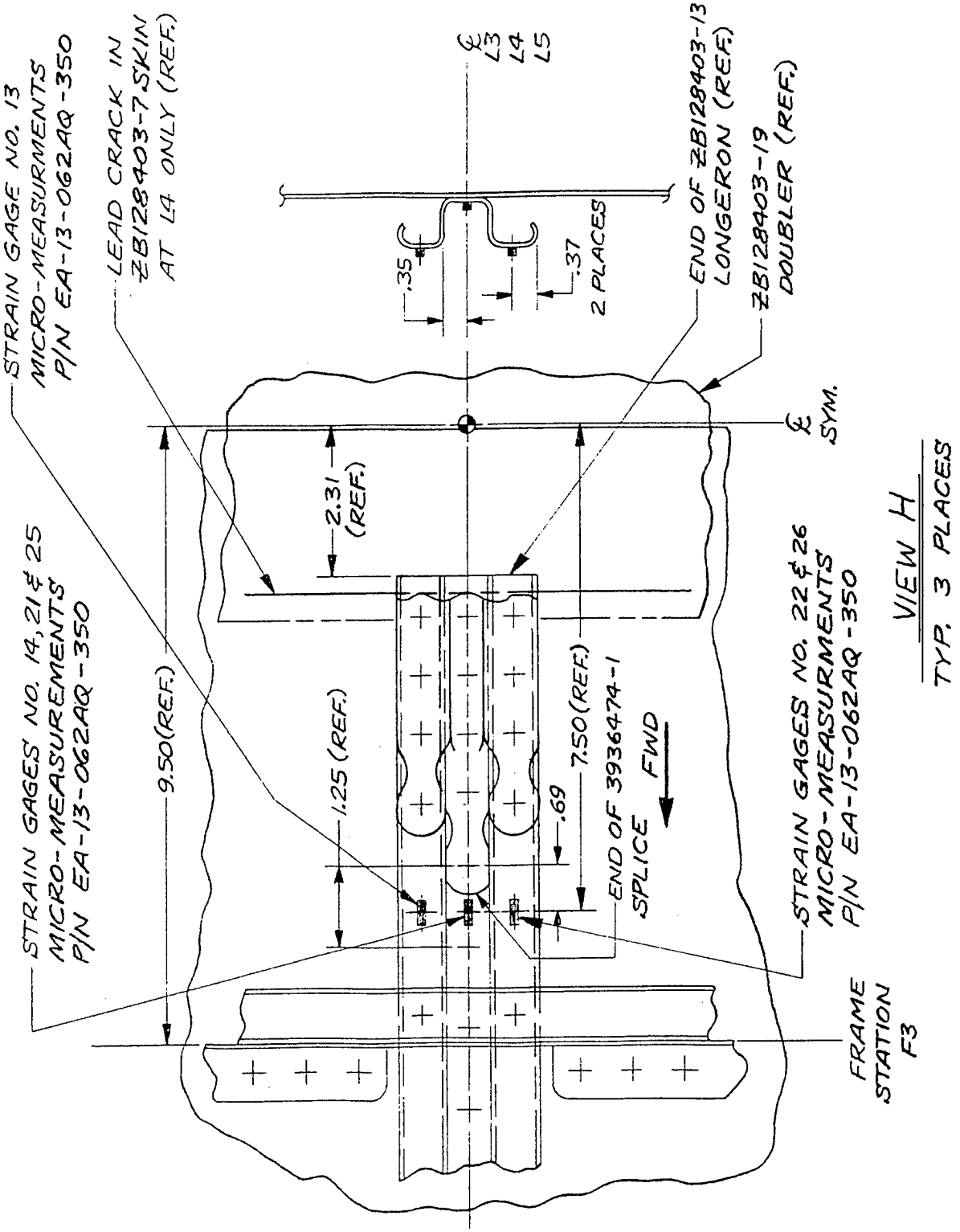


FIGURE B-8. PLACEMENT OF AXIAL GAGES AT THE CAP AND FLANGE OF THE STRINGERS (LONGERONS) NEAR THE BUTT JOINT OF PANELS CVP3 AND CVP4

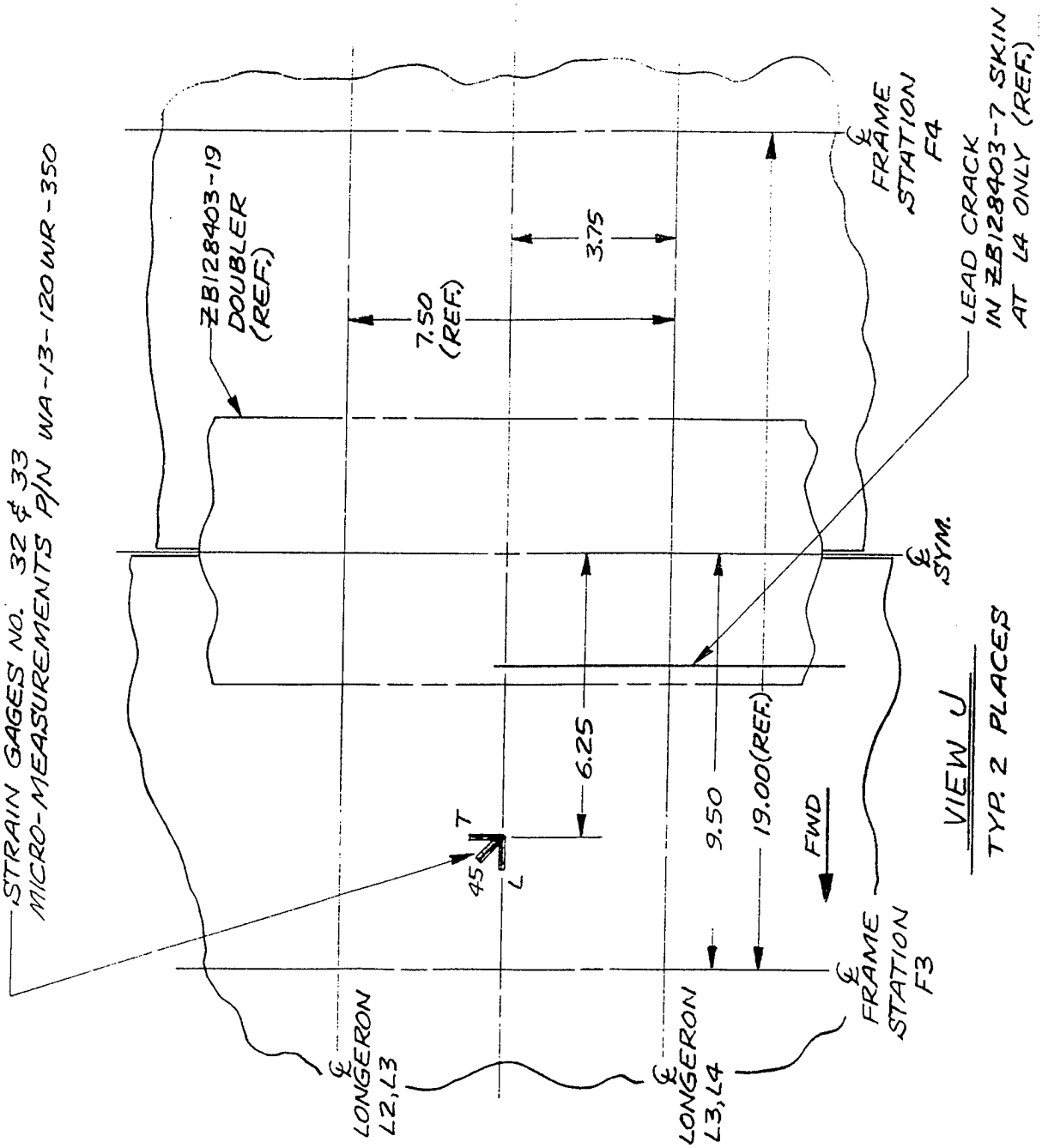


FIGURE B-9. PLACEMENT OF ROSETTE GAGES AT THE SKIN BUTT JOINT LOCATION IN PANELS CVP3 AND CVP4

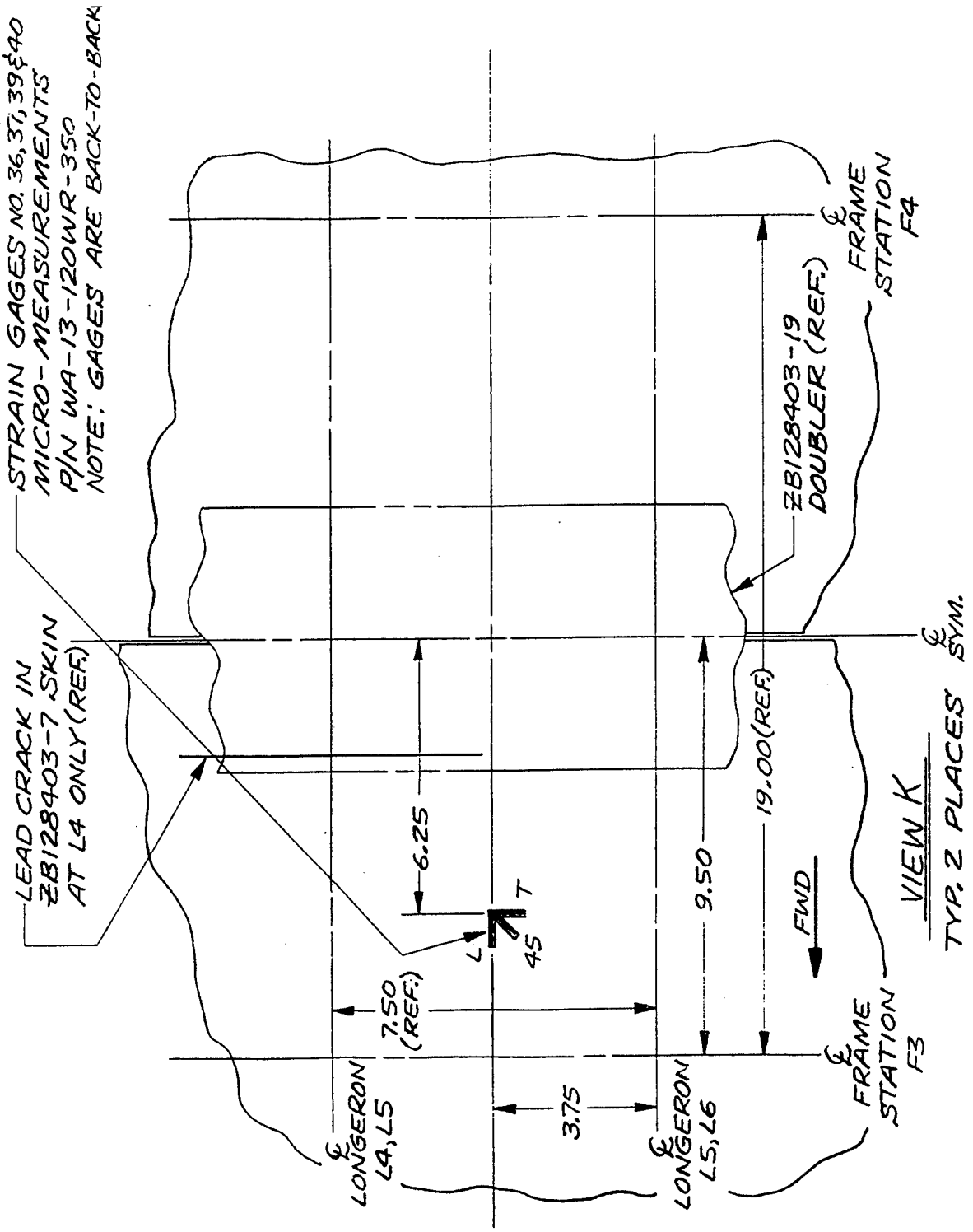


FIGURE B-9. PLACEMENT OF ROSETTE GAGES AT THE SKIN BUTT JOINT LOCATION IN PANELS CVP3 AND CVP4 (Continued)

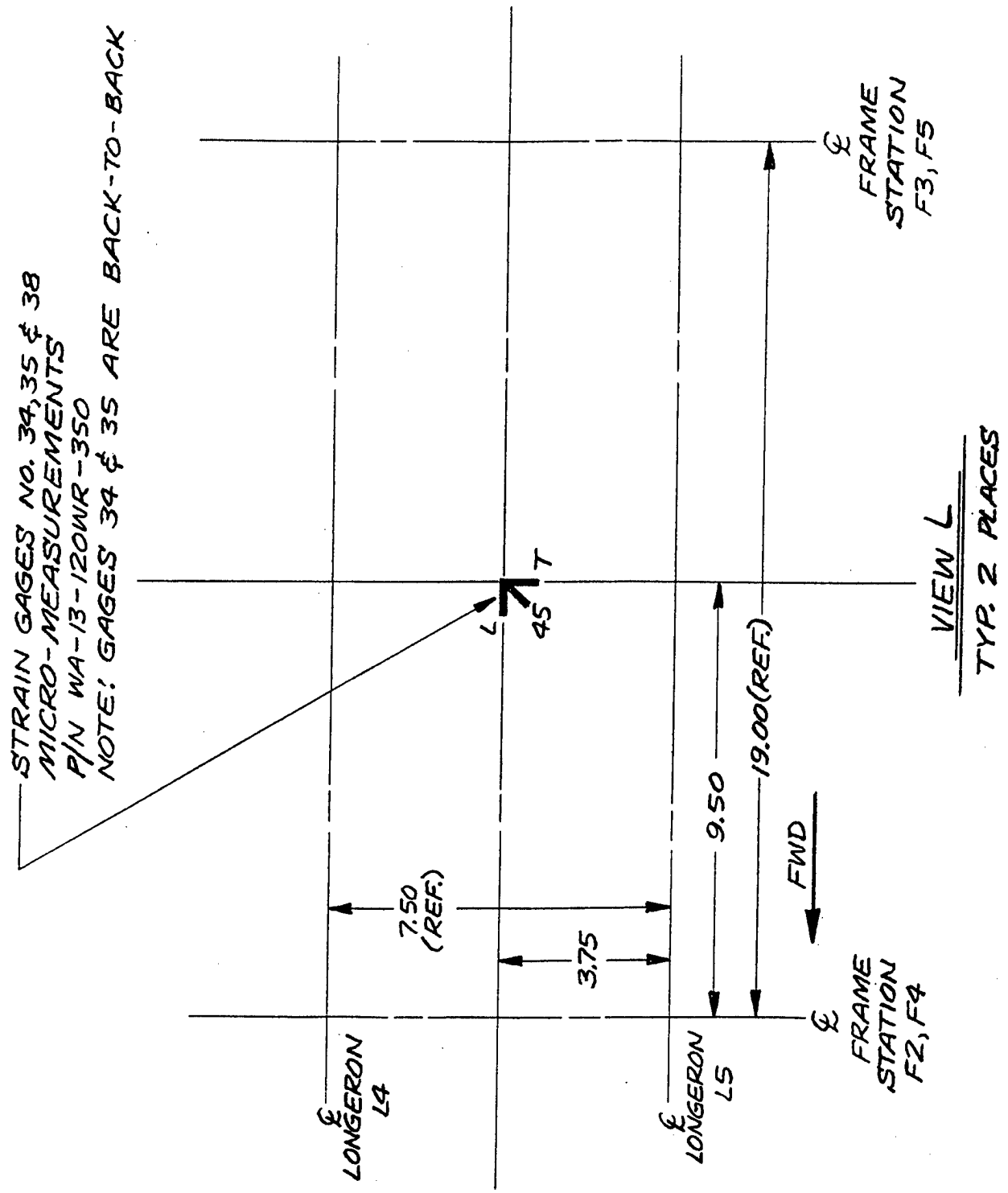


FIGURE B-10. PLACEMENT OF ROSETTE GAGES AT THE SKIN MID-BAY LOCATION IN PANELS CVP3 AND CVP4

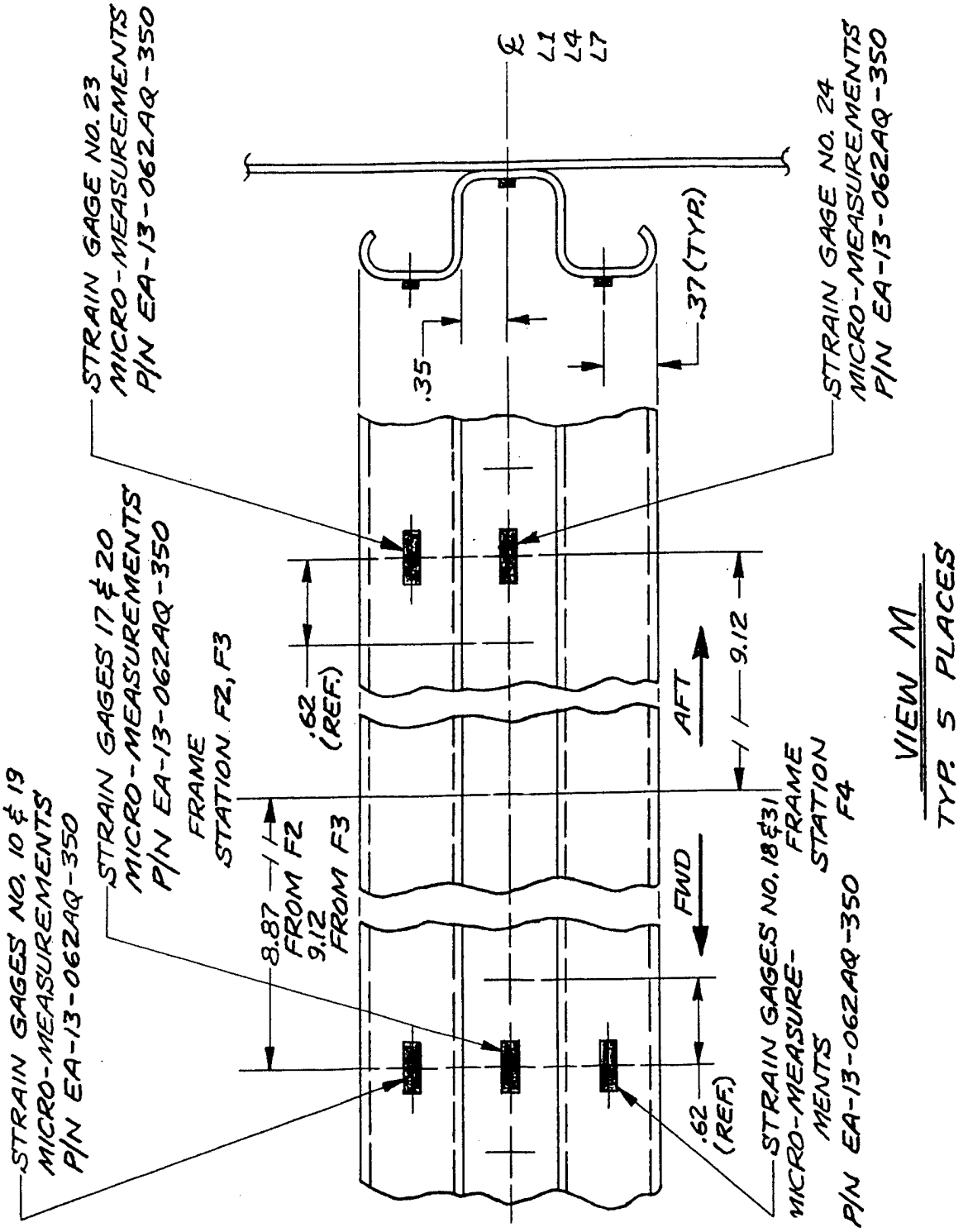


FIGURE B-11. PLACEMENT OF AXIAL GAGES AT THE CAP AND FLANGE OF THE STRINGERS (LONGERONS) OF PANELS CVP3 AND CVP4

APPENDIX C—BOEING FULL-SCALE STRAIN SURVEY TEST RESULTS

To help verify test results generated using the FASTER facility, results from a full-scale test conducted on an aft fuselage section of an actual narrow-body aircraft by Boeing Aircraft Company, in Long Beach, CA, were compared with results from the FASTER facility. The aft fuselage test article is shown in figure C-1. The test article was mounted on a strong-back fixture and pressurized quasi-statically from 0 to 7.8 psi for three tests, tests 1 to 3. A section of aircraft, from frame station 1269 to 1288 and stringer L4 to L5, was instrumented with strain gages as shown in figure C-2. In this section, the aft fuselage test article closely resembles the four curved panels in this test program, having similar radius, skin thickness, and substructure details. A 45° rosette gage was placed near a skin mid-bay, location A, and uniaxial gages were placed in the cap and flange of stringer L4, locations B and C, and the inner and outer frame cap at frame station 1269, locations E and F. The strain gage data from the three tests are listed in the tables C-1 through C-3 of this appendix.

TABLE C-1. STRAIN GAGE RESULTS FROM TEST 1, ALL STRAIN GAGE DATA IN με

Pressure	A Skin Mid-Bay			B Stringer Cap	C Stringer Flange	D Frame Inner Cap			E Frame Outer Cap	
(psi)	SK1A	SK1B	SK1C	L4C	L4F	FCL2	FCL3	FCU1	FCU2	FCU3
0.00	0	0	0	0	0	0	0	0	0	0
1.02	66	46	21	24	10	50	47	29	31	31
1.99	130	90	41	51	19	104	98	63	68	69
3.00	199	134	57	79	30	163	154	100	107	110
3.99	269	181	77	104	37	216	204	136	146	150
4.99	341	228	97	129	44	272	256	171	184	190
6.00	415	279	123	155	51	324	305	205	221	229
6.99	488	326	140	185	63	384	361	242	262	271
7.77	546	362	153	207	72	431	405	271	293	304

TABLE C-2. STRAIN GAGE RESULTS FROM TEST 2, ALL STRAIN GAGE DATA IN με

Pressure	A Skin Mid-Bay			B Stringer Cap	C Stringer Flange	D Frame Inner Cap			E Frame Outer Cap	
(psi)	SK1A	SK1B	SK1C	L4C	L4F	FCL2	FCL3	FCU1	FCU2	FCU3
0.00	0	0	0	0	0	0	0	0	0	0
1.00	64	44	19	24	9	54	50	31	33	34
1.99	131	88	38	49	16	108	101	66	71	73
3.02	204	136	58	75	24	166	156	105	113	115
4.00	275	181	75	101	32	222	209	140	150	155
5.01	347	227	93	126	39	278	261	176	189	195
5.99	419	274	113	152	46	333	314	213	230	236
7.00	493	322	131	178	52	389	366	249	268	278
7.77	550	360	148	197	57	430	403	276	297	307

TABLE C-3. STRAIN GAGE RESULTS FROM TEST 3, ALL STRAIN GAGE DATA IN με

Pressure	A Skin Mid-Bay			B Strin. Cap	C Strin. Flange	D Frame Inner Cap			E Frame Outer Cap	
(psi)	SK1A	SK1B	SK1C	L4C	L4F	FCL2	FCL3	FCU1	FCU2	FCU3
0.00	0	0	0	0	0	0	0	0	0	0
1.00	64	42	15	24	10	58	55	33	35	36
2.01	131	87	34	49	17	113	107	70	75	76
3.00	202	133	53	75	25	168	159	108	116	118
4.01	273	179	72	99	32	225	212	145	155	160
5.01	346	227	91	125	38	280	264	183	196	201
6.01	419	275	111	152	46	335	316	220	236	243
7.00	492	322	130	179	54	393	369	258	276	287
7.77	549	359	144	199	62	437	411	287	308	319

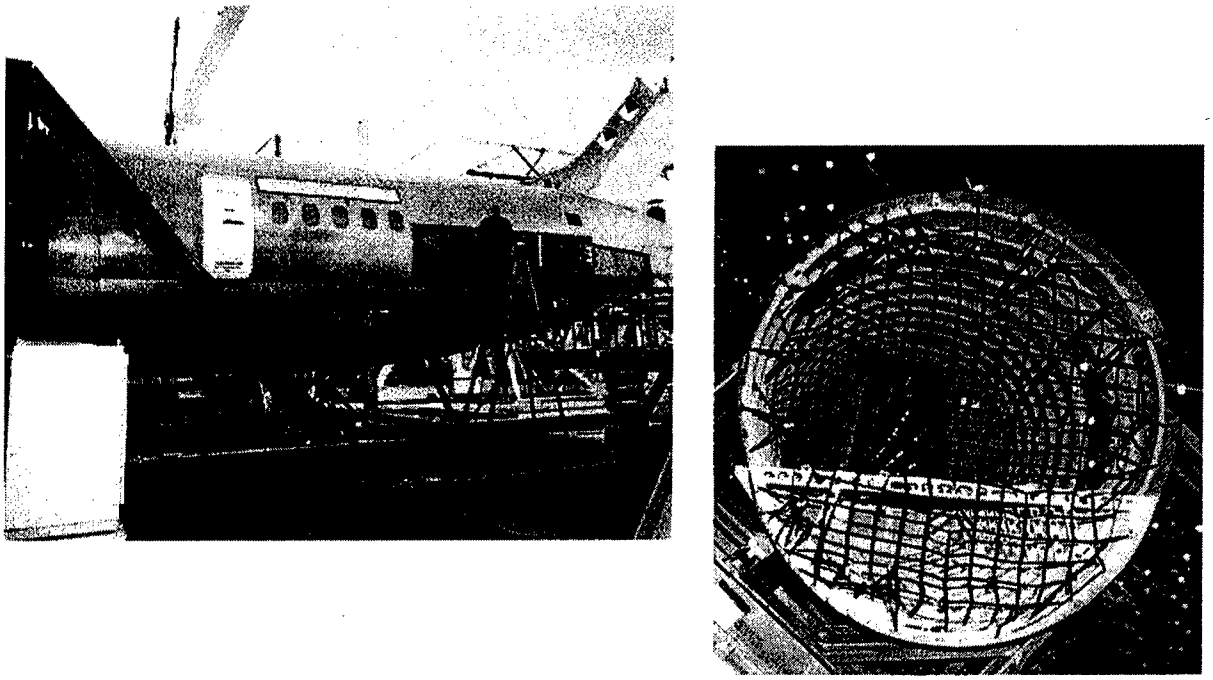


FIGURE C-1. BOEING AFT FUSELAGE TEST ARTICLE

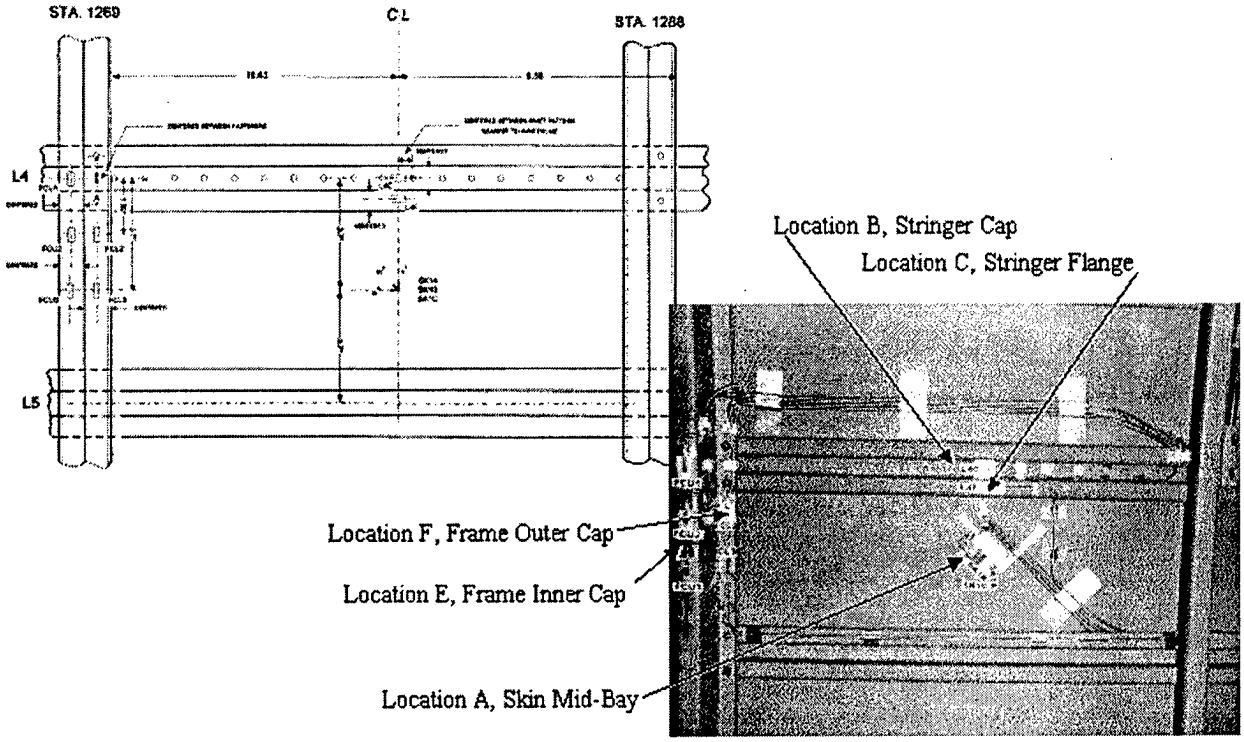


FIGURE C-2. LOCATION OF STRAIN GAGES IN TEST ARTICLE

APPENDIX D—ANALYSIS OF FULL-SCALE PANELS

SUMMARY

Analysis to support the full-scale testing of four curved fuselage panels was conducted using the Airframe Computational Modeling (ACM) facility. Emphasis was placed on assessing the effect of multiple cracking on the fatigue crack growth behavior for two joint configurations: a longitudinal lap joint and a circumferential butt joint. Geometric nonlinear finite element analyses were conducted on the two joint configurations to determine strain distributions and fracture parameters governing crack formation and growth. Comparisons with strain gage data verified the finite element models. Fatigue crack growth predictions were made using a cycle-by-cycle crack growth algorithm and the corresponding mixed mode stress-intensity factor (SIF) ranges calculated using the Modified Crack Closure Integral (MCCI) method. Results include comparisons of strain distributions and fatigue crack growth characteristics for the two joint configurations.

DESCRIPTION OF PANELS

Four panels were tested in this study: (1) panel CVP1 contains a longitudinal lap splice with a lead crack, (2) panel CVP2 has the same configuration and lead crack as CVP1 with the addition of multiple small cracks emanating from rivet holes ahead of the lead crack, (3) panel CVP3 has a circumferential butt joint with a lead crack, and (4) panel CVP4 has the same configuration and lead crack as panel CVP3, with the addition of multiple small cracks emanating from rivet holes ahead of the lead crack.

The panel configuration represents a generic fuselage structure from a narrow-body aircraft fabricated according to original equipment manufacturing (OEM) specifications. Figures D-1 and D-2 show a schematic of the longitudinal lap joint and the circumferential butt joint panels, respectively, including the dimensions and location of the strain gages. Details of the panel configurations and locations of the strain gages can be found in appendices A and B, respectively, of this report. A brief description is provided herein.

For the longitudinal lap joint panels CVP1 and CVP2, a lap joint was located along stringer S4 as shown in figure D-1. The joint consisted of two layers of the 2024-T3 panel skin with a thickness of 0.063″ and two layers of 2024-T3 finger doublers with a thickness of 0.025″. Four rows of fasteners, A, B, C, and D were used to connect the skin and doublers. A crack-like slit representing a lead crack was placed symmetrically across frame F4, machined in the skin along the critical fastener row A in the longitudinal lap splice. The total length of the lead crack was 7.0″. For panel CVP2, additional small cracks were machined in the fasteners ahead of the lead crack in row A.

For panels CVP3 and CVP4, a circumferential butt joint was located between frames F3 and F4 as shown in figure D-2. The joint consisted of two layers of the 2024-T3 panel skin with a thickness of 0.063″, a 2024-T3 finger doubler with a thickness of 0.025″, and a tapered doubler with a maximum thickness of 0.08″, which tapered to a thickness of 0.025″ along the edge. Eight rows of fasteners, A through H, were used to connect the skin and doublers. A crack-like slit representing a lead crack was placed symmetrically across stringer S4, machined in the skin

along the critical fastener row A in the circumferential butt joint. Stringer S4 was cut to simulate a broken stringer. The total length of the lead crack was 7.0″. For panel CVP4, additional small cracks were machined in the fasteners ahead of the lead crack in row A.

These panels were subjected to a sequence of three load conditions: (1) strain survey under quasi-static loading, (2) fatigue test loading under constant-amplitude loading, and (3) residual strength test under quasi-static loading up to fracture. Geometric nonlinear finite element analyses were conducted to support the full-scale testing of the four fuselage panels for the strain survey and the fatigue crack growth tests.

DESCRIPTION OF AIRFRAME COMPUTATIONAL MODELING FACILITY

Analysis to support the full-scale testing of four curved fuselage panels was conducted using the Airframe Computational Modeling (ACM) facility. With advances in commuter technology, computational modeling offers a cost-effective supplement to full-scale testing which can be extremely expensive. The ACM facility has an in-house capability, at the Federal Aviation Administration William J. Hughes Technical Center, Atlantic City International Airport, NJ, to conduct high fidelity modeling and analysis of aircraft structures. The facility consists of three UNIX-based Silicon Graphics Incorporated (SGI) computers interfaced in a local area network (LAN) and running under IRIX 6.5 operating system. Two workstations are equipped with dual 250-MHz R10000 processors, 512 Mbytes of main memory, and 36 GBytes of hard disk space. The third computer, a high-end server, is equipped with four 400-MHz MIPS R12000 processors, 1 Gbyte of main memory, and 180 GBytes of hard disk space.

Several commercial and government-developed software tools are used in the ACM facility. The commercial tools include PATRAN, a pre- and postprocessor used for model development and data reduction, and ABAQUS, a general-purpose finite element analysis package. The government developed software tools tailored for fracture mechanics studies, including finite element alternating method (FEAM), FRANC2D, and STAGS. In addition, a probabilistic-based analysis tool, Transport Risk Assessment Containing Multiple Site Damage (TRACMSD), is available to assess the effect of a variety of factors on the overall risk of aircraft under conditions of aging. The ACM facility allows the FAA to develop and evaluate highly sophisticated methods, which may be used by industry for airframe designs and maintenance and inspection procedures. The ACM facility was used in this study to conduct analysis to support the full-scale testing of the four curved panels.

ANALYTICAL PROCEDURE

The strain distributions and fracture parameters governing crack formation and growth were determined for each panel using geometric nonlinear finite element analyses. The mixed mode stress-intensity factors calculated using the MCCI method were used in a cycle-by-cycle crack growth analysis program to predict the fatigue crack growth in the panels tested.

DESCRIPTION OF FINITE ELEMENT MODELS.

Geometric nonlinear finite element analyses were conducted using the commercial finite element code ABAQUS 5.8 [D-1] in the ACM facility. Analyses of the strain survey and fatigue crack

growth were conducted for panels tested. As shown in figures D-3 through D-6, the finite element models contained the major geometric details of the panels including the cross-section properties and dimensions of the substructure (frames, stringers, shear-clip, and intercostals), the finger doublers, the load attachment doublers, and reaction links. Table D-1 lists the components of the model and the corresponding thickness, and material properties.

Figures D-3 and D-4 show the global view of typical finite element models for the longitudinal lap joint and circumferential butt joint panels, respectively. Models were developed for each of the four panels tested using general-purpose, two-dimensional shell elements with each node having six degrees of freedom. The shell elements used account for finite membrane strains and are suitable for large-strain analysis. Reduced integration was used to form the element stiffness. In general, four-node shell elements were used throughout to model the skin, doublers, frames, shear clip, stringers, and intercostals, except near the crack tips. In the immediate vicinity of the crack tips, eight-node shell elements were used in forming an orthogonal mesh, where the size of the elements were at least 1/40 of the lead crack length, as shown in figures D-5 and D-6, for the longitudinal lap and circumferential butt joint panels, respectively. Skin, stringer, shear-clip, frame, and finger doublers were modeled with a uniform thickness. Tapered doublers and attachment doublers were modeled using shell elements with increased stepped uniform thickness in the ranges specified in table D-1.

At the end of each frame, stainless steel reaction links, 1″ wide, 0.5″ thick, and 4″ long are attached in order to prevent rigid motion in the radial direction, as shown in figures D-5 and D-6. These reaction links are modeled as grounded springs fixed on one end and provide a stiffness in the radial direction. The value of stiffness used is based on the stainless steel properties and the dimensions of the link.

Beam elements were used to model the fasteners that connected the substructures with the skin and the substructures to one another. To simplify the global panel modeling, the fastener holes were not modeled. Figure D-7 shows a schematic cross section of a lap joint with four layers with thicknesses of t_1 through t_4 and the corresponding finite element representation. The layers were modeled using shell elements having the same thickness and mid-plane location. A single fastener that connects all four layers was modeled using three beams, designated "a," "b," and "c," aligned sequentially connecting each layer. The length of each beam was the distance between the mid-planes of two adjacent shells. For example, for beam element "a," the length was $(t_1 + t_2)/2$.

For the strain survey analysis, the elements used to calculate values of strain were approximately the same size and at the same location as the actual strain gages. The average characteristic length of the elements used to calculate the strain was 0.125″. As illustrated in figure D-8, the strain gages were categorized in seven groups, according to similar gage locations with common structural details and the measured strain directions: (1) frame outer cap location measuring strains in the hoop direction; (2) frame inner cap location measuring strains in the hoop direction; (3) stringer cap location measuring strains in the longitudinal direction; (4) stringer flange location measuring strains in the longitudinal direction; (5) skin mid-bay location measuring strains in the hoop direction; (6) skin mid-bay location measuring strains in the longitudinal direction; and (7) skin mid-bay location measuring strains in the 45° direction.

MATERIAL PROPERTIES.

Mechanical Properties: Table D-1 lists the mechanical properties used for the shell elements to model components including the skin, doublers, frames, shear-clip, stringers, and intercostals. Mechanical properties were referenced from MIL-HDBK-5H [D-2].

Fastener Shear Stiffness: The empirical equation developed by Swift [D-3], shown below, was used to calculate the fastener shear stiffness of the beam elements as:

$$k_{shear} = \frac{E'd}{A + B\left(\frac{d}{t_1} + \frac{d}{t_2}\right)} \tag{1}$$

where E' is the effective modulus, d is the fastener diameter, and t_1 and t_2 are the thickness of the two layers, and A and B are empirical constants based on the fastener material. Tables D-2 and D-3 show the properties and data used to model fasteners in the longitudinal lap joint and circumferential butt joint panels, respectively. Values of the fastener shear stiffness for the beam elements connecting the layers in each of the fastener rows (see figures D-1 and D-2) are listed along with the beam elements connecting the skin to stringer and skin to shear clip designated Y and Z, respectively.

Reaction Link Stiffness: The value of stiffness used for the grounded spring elements is based on the stainless steel properties and the dimensions of the link by:

$$k_{link} = \frac{EtW}{L} = \frac{(30 \times 10^6)(0.5)(1.0)}{4.0} = 3{,}750{,}000 \text{ lb/in} \tag{2}$$

where E is the link modulus of elasticity, and t, W, and L are the link thickness, width, and gage length, respectively.

Fatigue Crack Growth Properties: Three sets of fatigue crack growth data [D-4 through D-6] for 2024-T3 aluminum were compiled, as shown in figure D-9, with varying R-ratios and used in the fatigue crack growth analysis. The data shown by the black symbols generated by Phillips [D-4] is in the region of slow crack growth and near the threshold conditions. The data shown by the open symbols (generated by Hudson [D-5]) is in the straight line Paris region, and the data shown by the gray symbols (by Dubensky [D-6]) is in the rapid unstable crack growth region. For a given stress-intensity factors (SIF) range, the crack growth rate increases with increase in the R-ratio.

CRACK CONFIGURATIONS.

The crack configurations of the panels were simulated using pairs of coincident nodes along the shared edges of two rows of elements, as shown in the exploded view in figure D-10. In the immediate vicinity of the crack tips, eight-node shell elements were used in forming an orthogonal mesh where the size of the elements were at least 1/40 of the lead crack length, as

shown in figures D-5 and D-6, for the longitudinal lap and circumferential butt joint panels, respectively. For the fatigue crack growth analysis, the lead crack length was increased in separate finite element runs from the initial length to the final length. Tables D-4 through D-7 describe the crack length, the number of nodes, the number of elements for each element type, and the crack tip element size for the finite element runs conducted for each panel. The number of finite element runs conducted was 26 and 11 for each of the longitudinal lap joint panels and the circumferential butt joint panels, respectively. Typical finite element models for the longitudinal lap joint panels consist of 62,600 elements and 11,4600 nodes and for the circumferential butt joint panels, 33,000 elements and 42,800 nodes.

TEST CONDITIONS.

The load conditions for the strain survey and fatigue crack growth tests are specified in tables D-8 and D-9 for the longitudinal lap joint and circumferential butt joint panels, respectively. For each type of panel, three quasi-static loadings were applied to assess the strain distribution and reproducibility of the strain data. In load condition 1a, each panel was subjected to an internal pressure, and the hoop and frame loads were applied as reactive loads to balance the internal pressure. In load condition 1b, load was applied in the longitudinal direction along the edges of the panels only. Load condition 1c is the superposition of load conditions 1a and 1b. For the hoop load, 16.8% was applied on the six frames and the remaining load was applied on 28 loading points along the edge of the panel. The longitudinal load was applied on 16 loading points along the edge of the panel. No load was applied directly on the stringers.

For longitudinal lap joint panels CVP1 and CVP2, load condition 1c simulates the cylindrical pressurization that a section of the fuselage along the neutral axis would experience. Therefore, the average hoop stress should be twice as much as the longitudinal stress. For these two panels, a maximum internal pressure of 10.1 psi was used, resulting in a maximum load of 2218.4 lb. for each loading point along the edge in the hoop direction and a maximum load of 2090.5 lb. for each frame. The corresponding maximum load applied on each loading point along the longitudinal edges was 1166.6 lb.

For circumferential butt joint panels CVP3 and CVP4, load condition 1c simulates a fuselage down-bending condition that a fuselage section along the crown of the aircraft would experience, where the longitudinal stress is 50% higher than the hoop stress. For these two panels, a maximum internal pressure of 8.8 psi was used, resulting in a maximum load of 1927.3 lb. for each loading point along the edge in the hoop direction and a maximum load of 1816.2 lb. for each frame. The corresponding maximum load applied on each loading point along the longitudinal edges was 3065.0 lb.

In load condition 2, the same loads as in load condition 1c were applied at constant-amplitude and a frequency of 0.2 Hz with an R-ratio (minimum to maximum load) of 0.1 for all load components except for the longitudinal load, which was 0.3.

MODEL BOUNDARY CONDITIONS.

For the hoop, frame, and longitudinal loads, nodal point forces (listed in tables D-8 and D-9) were applied at the load application points in the actual test, as shown by the arrows in figures

D-3 and D-4, for the longitudinal lap and circumferential butt joint panels, respectively. Internal pressure was applied to the inner surface of the skin elements. For the hoop load, 28 nodal forces were applied along each edge; for the longitudinal load, 16 nodal forces were applied in each end; and for the frame load, 12 nodal forces were applied to the ends of the frames. For the strain survey analysis, the loads were applied incrementally in a ramp function up to the maximum values for load conditions 1a, 1b, and 1c specified in tables D-8 and D-9. For the fatigue crack growth analysis, load condition 2 (specified in tables D-8 and D-9) was applied incrementally in a ramp function in two steps, each up to the minimum and maximum applied loads as shown schematically in figure D-11. In this figure, time can be regarded as a dummy variable denoting the value in the applied load.

To eliminate rigid-body motion, two node points located in the middle of each end were fixed in the hoop direction and two nodes located in the middle of each edge were fixed in the longitudinal direction, as shown in figures D-3 and D-4.

THE MODIFIED CRACK CLOSURE INTEGRAL (MCCI) METHOD

For fatigue crack growth predictions, the corresponding mixed mode SIF were calculated using the MCCI method [D-7 through D-9]. In the MCCI approach, it is assumed that the energy released during crack extension is the same as the work that would be needed to close the crack and that the energy released can be related to the four components of SIF. The four components of SIF are the Mode I SIF caused by tensile load, K_1, the Mode II SIF cause by in-plane shear load, K_2, the SIF due to symmetric bending loads, k_1, and the SIF due to out-of-plane shear and twist loads, k_2, as shown in figure D-12.

The MCCI method approximates the rate of work needed to close a crack using the local crack tip displacements and forces. The displacements and forces at the nodes of the four elements surrounding the crack tip were obtained from the finite element results for each crack length, as shown in figure D-12. The work (W_i) done to close a crack of length Δa for each nodal degree of freedom (DOF) is given by [D-9]:

$$W_i = \frac{1}{2t\Delta a}\left[F_i^{Close}\left(u_i^{top} - u_i^{bot}\right)\right], i = 1,\cdots,6 \tag{3}$$

where t is the thickness of the panel, F is the force needed to close the crack surfaces, u is the displacement component on each surface of the crack, and i denotes the DOF. The total amount of work done to close a crack of length Δa is numerically equal to the total amount of strain energy released during a crack growth increment of Δa, and the components of strain energy release rate:

$$G_1 = W_2 + W_6 \tag{4}$$

$$G_2 = W_1 \tag{5}$$

$$G_3 = W_3 \tag{6}$$

$$G_4 = W_4 \tag{7}$$

$$G_5 = W_5 \tag{8}$$

The strain energy release rates can be related to the stress-intensity factors as:

$$G_1 = \frac{K_1^2}{E} \tag{9}$$

$$G_2 = \frac{K_2^2}{E} \tag{10}$$

$$G_4 = \frac{k_1^2 \pi}{3E}\left(\frac{1+\nu}{3+\nu}\right) \tag{11}$$

$$G_3 + G_5 = \frac{k_2^2 \pi}{3E}\left(\frac{1+\nu}{3+\nu}\right) \tag{12}$$

where E = 10500 ksi and ν = 0.33 are the modulus of elasticity and Poison's ratio of the panel skin material, and K_1, K_2, k_1, and k_2 are the SIF described earlier. Only the Mode I SIF, K_1, was used to predict the fatigue crack growth behavior because, as will be shown, it was found to be the dominant SIF.

CRACK GROWTH ALGORITHM.

The SIF range and the crack growth data for 2024-T3 aluminum were used in a cycle-by-cycle crack growth analysis program to predict the fatigue crack growth in panels tested. The algorithm used is illustrated in figure D-13. All parameters are initialized in step 1, including the counter i, the initial cycle number, and crack length. The algorithm then enters a loop in step 2 where, for a given crack length, a_i, the SIF range, $(\Delta K)_i$, is determined from linear interpolation of tabular SIF versus crack length data obtained from the finite element analysis. For the calculated SIF, $(\Delta K)_i$, and given R-ratio, the corresponding crack growth rate, $(da/dN)_i$, is determined in step 3 from experimental tabular data at various R-ratios using linear interpolation. In step 4, the crack length, a_{i+1}, and cycle, N_{i+1}, are updated, assuming the incremental crack extension, Δa_i, is equal to the crack growth rate, $(da/dN)_i$, in a cycle-by-cycle analysis with ΔN_i equal to 1. A check is made in step 5 to terminate the algorithm in step 9 if the updated crack length, a_{i+1}, is greater than or equal to the final crack length, a_{final}. If not, a check is made in step 6 to determine if linkup occurred between the lead crack and multiple-site damage (MSD) or between the lead crack and rivet hole. If no linkup occurs, the increment counter is increased in step 8 and the algorithm returns to step 2. If a linkup event occurs, then step 7 increases the crack length. For the case of MSD linkup, the crack length, a_{i+1}, is instantaneously increased by the length of the two MSD cracks, $2a_{msd}$, and the diameter of the rivet hole, d_{riv}. For the case of rivet hole linkup, the crack length, a_{i+1}, is instantaneously increased by the diameter of the rivet hole, d_{riv}. The increment counter is increased in step 8 and the algorithm returns to step 2. This process is repeated until the crack length is equal to or greater than the final crack length where the algorithm terminates at step 9.

RESULTS

Results from the analysis to study the strain distribution and fatigue crack growth for both joint configurations are presented.

STRAIN DISTRIBUTIONS.

The strain distributions were predicted at equal load increments up to the maximum values for load conditions 1a through 1c in table D-8 for the longitudinal lap joint panels and for load conditions 1a through 1c in table D-9 for the circumferential butt joint panels. A preliminary analysis revealed that small multiple cracks had no effect on the calculated strains at the strain gage locations for both joint configurations. Therefore, only one analysis was conducted for each joint configuration for the strain distribution calculation.

The predicted strains at the strain gage locations are provided in tables D-10 through D-12 for the longitudinal lap joint panels and in tables D-13 through D-15 for the circumferential butt joint panels. The locations of strain gages are shown schematically in figures D-1 and D-2. For each loading condition, the applied loads and calculated strains at equal load increments up to the maximum loads are listed. Ten load increments were used for the longitudinal lap joint panels, and five load increments were used for the circumferential butt joint panels. The pressure applied to the inner surface of the skin is in units of psi, the frame loads applied to each of the 12 frame ends are in units of lbs., the hoop loads applied at the 28 locations along each side of the panel are in units of lbs., and the longitudinal load applied at the 16 locations along each end of the panel are in units of lbs. The strains calculated at the gage locations are in units of $\mu\varepsilon$.

The measured and predicted strain data were categorized in seven groups, as illustrated in figure D-8, according to similar gage locations in common structural details and the measured strain directions. Comparisons between the measured and predicted strains of the seven groups for each load condition are shown in figures D-14 through D-34 for longitudinal lap panels, CVP1 and CVP2, and in figures D-35 through D-55 for the circumferential butt joint panels CVP3 and CVP4. For the longitudinal lap joint panel, results for load conditions 1a, 1b, and 1c are shown in figures D-14 through D-20, figures D-21 through D-27, and figures D-28 through D-34, respectively. For the circumferential butt joint panels, results for load conditions 1a, 1b, and 1c are shown in figures D-35 through D-41, figures D-42 through D-48, and figures D-49 through D-55, respectively. For each panel, four sets of experimental results are plotted, two using air and two using water as the pressurization media.

As shown in figures D-14 through D-55, there was more scatter in the experiments for strains measured farthest from the skin: group 2, frame inner cap, and group 4, stringer flange. In general, good agreement was obtained between experiments and analysis for strains measured in the principle loading direction for gages closest to the skin; group 1, frame outer cap; group 3, stringer cap; group 5, skin hoop; group 6, skin longitudinal; and group 7, skin 45°.

The strain at the maximum load predicted by finite element analysis was compared with the experimental data. For load condition 1a, each panel was subjected to an internal pressure, while hoop and frame loads were applied as reactive loads from the internal pressure. Even though load was not applied in the longitudinal direction, longitudinal strain still developed in the skin

and stringers, as the result of Poisson's effect and difference in stiffness between the skin and stringers. The magnitude of the longitudinal strain, however, was in general much smaller compared to that in the hoop direction.

Table D-16 shows the comparison for panel CVP1 subjected to loading condition 1a. The test results obtained from two air runs and two water runs were averaged first, and then compared with that of analysis. The standard deviation of the test results for each gage is also listed in the table, serving as an indication of the consistency of the test data. In addition, according to their locations and directions, the gages were grouped into seven groups, two for frame gages, two for stringer gages, and three for skin gages. For each group, a group percentage error, defined by the following equation, was also calculated

$$Group\,\%\,Error = \frac{\sqrt{\sum \left(e_i^{ave} - a_i\right)^2}}{\sqrt{\sum \left(e_i^{ave}\right)^2}} \times 100\% \tag{12}$$

where e_i^{ave} is the averaged experimental data of the i^{th} gage and a_i is the corresponding analysis result.

As indicated in table D-16, for strain gages located in the substructure, good agreement (a 13.2% group error) was obtained between the measurement and predictions for frame gages located at outer cap region, group 1, which is closest to the skin. For the gages located at the frame inner cap region, group 2, that is farthest from the skin, the agreement was not as good. This may be attributed to the experimental data being less consistent, as indicated by their relatively high standard deviations. The agreement for gages located at stringers was relatively poor (93.7% for stringer hat gages, group 3 and 26.8% for stringer flange gages, group 4). However, the magnitude of strain generally was much smaller since the measurement was in the direction normal to the loading direction.

Also shown in table D-16, for strain gages located on the skin, an excellent agreement, i.e., a 9.0% group error was obtained between measurement and prediction for strain component in the hoop direction, group 5, measuring strain in the principle loading direction. A good agreement was also obtained for the 45-degree strain component (a 12.6% group error). The agreement was not as good for the longitudinal strain component, group 7 (a 39.3% group error), but the magnitude of strain in that direction was much smaller because it is normal to the loading direction. It should be noted that the high percentage error for the longitudinal strain component, group 6, was mainly due to gage SG35L, which has unusually low experimental results.

Table D-17 shows the comparison for panel CVP1 subjected to loading condition 1b, longitudinal load applied on the edges of the skin only. Load was not applied directly on the stringers, although they tended to deform with the skin in the longitudinal direction. The hoop strain on the skin and frames was the result of Poisson's effect and differences in stiffness between the skin and frames. Only two test results using water as the pressure media were recorded. For the substructure, excellent agreement (a 2.2% group error) was obtained for gages located at the stringer hat region (closest to the skin). For the gages located at the stringer flange

region (farthest from the skin), the agreement was not as good (a 35.0% group error). For the gages located at frames, which were aligned in the direction normal to the loading, the agreement, as expected, was relatively poor (35.4% for outer cap gages and 26.5% for inner cap gages). For strain gages located on the skin, an excellent agreement (a 7.5% group error) was obtained between measurement and prediction for strain component in the longitudinal (loading) direction. The agreement was almost as good for the hoop strain (a 8.1% group error) and was fair for the 45-degree strain (a 16.6% group error).

Table D-18 shows the comparison for panel CVP1 subjected to loading condition 1c, a cylindrical pressurization of a fuselage along the neutral axis. Therefore, the hoop direction can be considered as the primary loading direction, while the longitudinal direction is considered the secondary loading direction. For the skin gages, excellent agreement was obtained for the strain components in the primary loading (hoop) direction (10.3%) and 45-degree direction (7.8%). In the secondary loading direction, the agreement was not as good (17.2%), but the magnitude of strain was small. For the substructure, the comparison for the frame gage locations (in the primary loading direction) was better than those on the stringers, and the comparison for gages located closest to the skin also fared better than those that were farthest from the skin.

In summary, for panel CVP1, excellent agreement was obtained between measured and predicted strain for skin mid-bay gages in the primary loading direction, with the average percentage error ranging from 7.5% to 10.3%. In the direction normal to the primary loading, the percentage error ranged from 8.1% to 39.3%, but the magnitude of strain was generally much smaller. For the substructure, the gages located closest to the skin and aligned in the direction of primary loading also compared very well with average percentage error ranging from 2.2% to 13.2%. Gages that were aligned normal to the primary loading direction or located farthest from the skin typically compared poorly.

A similar trend was observed for panel CVP2 subjected to the same load conditions as CVP1. The results of comparison are listed in tables D-19 through D-22.

For the circumferential butt joint panels CVP3 and CVP4, the comparisons for load conditions 1a, 1b, and 1c, as shown in table D-9, are given in tables D-23 through D-27. It is noted that for these two panels, load condition 1c simulates a fuselage down-bending condition that a fuselage section along the crown of the aircraft would experience. Therefore, the longitudinal stress is 50% higher than the hoop stress. Consequently, the longitudinal direction was considered as the primary loading direction, while the hoop direction is considered the secondary loading direction. For panel CVP3, the average percentage error for skin mid-bay gage locations in the primary loading direction ranged from 10.9% to 16.9%. For gages on substructure that aligned in the primary loading direction and located closest to the skin, the average percentage error ranged from 11.9% to 12.1%. For panel CVP4, the corresponding average percentage errors were from 10.1% to 15.0 % and from 7.7% to 38.9%, respectively.

Table D-28 summaries the group percentage errors for all four panels subjected to the three load conditions. In general, good agreement was obtained between experiments and analysis for strains measured in the principle loading direction for gages closest to the skin: group 1, frame outer cap; group 3, stringer cap; group 5, skin hoop; group 6, skin longitudinal; and group 7, skin

45°. The agreement was not as good for strains measured in the secondary loading direction, particularly for the gages located farthest from the skin: group 2, frame inner cap and group 4, the stringer flange.

DEFORMATION FIELDS.

Numerical simulations of the deformation process at several crack lengths are shown in figure D-56 for the longitudinal lap joint panels CVP1 and CVP2. In this figure, the displaced meshes are shown at the maximum applied load for load condition 2 in table D-8. The displacements have been scaled by 25. The inset shows the local crack-tip deformation in each of the two panels. As indicated, crack-bulging deformation occurred. As the crack length increased, the distance between the crack edges increased indicating Mode I crack deformation. Mode III crack deformation also occur where out-of-plane (bulging) deflection of one of the crack faces occurred opposite to the lap joint. There was little deflection of the crack face reinforced by the lap joint.

For the circumferential butt joint panels CVP3 and CVP4, the numerical simulation of the deformation process is shown in figure D-57, at several crack lengths. In this figure the displacement meshes are shown at the maximum applied load for load condition 2 in table D-9. The displacements have been scaled by 40. The inset shows the local crack-tip deformation in each of the two panels. Unlike the longitudinal lap joint panel, little crack-bulging deformation occurred for the circumferential butt joint panels. As the shown in the figure, as the crack length increased, the distance between the crack edges increased, indicating primarily Mode I crack deformation.

STRESS-INTENSITY FACTOR SOLUTIONS.

The predicted SIF ranges for the lead crack in panels CVP1 and CVP2 are listed in table D-29 and shown in figure D-58. The numbers inside the circles along the x axis represent the location of rivets. As shown in the figure, ΔK_I, which governs Mode I crack growth, is the dominant SIF range. The next highest SIF range, Δk_2, which would cause Mode III crack growth, was not significant. Thus, only the Mode I SIF was used to predict the crack growth. As the lead crack tip approached the rivet directly ahead, the SIF increased more for CVP2 compared to CVP1 due to the small cracks at the rivet hole.

The predicted stress-intensity factor ranges for the lead crack in panels CVP3 and CVP4 are listed in table D-30 and shown in figure D-59. The numbers inside the circles along the x axis represent the location of rivets. As shown in the figure, ΔK_I, which governs Mode I crack growth, is the dominant SIF range. The next highest SIF ranges, Δk_I and Δk_2, which would cause crack-bulging deflections, were not significant. Thus, as for the longitudinal lap joint panels, the Mode I SIF was used to predict the crack growth. As the lead crack tip approached the rivet directly ahead, the SIF increased more for CVP4 compared to CVP3 due to the small cracks at the rivet hole. In both panels, for crack lengths longer than the stringer spacing of 7.5″, the SIF ranges decreased slightly due to the stiffening of stringers bridging the crack.

FATIGUE CRACK GROWTH.

The half length of the lead crack, as a function of number of fatigue cycles, is shown in figure D-60 for panels CVP1 and CVP2. The initial half-crack length prior to loading was 3.5″. In the figure, the circular and square symbols represent the measured crack lengths at the left and the right crack tips, respectively, for each panel. The numbers inside the circles along the y axis represent the location of rivets. For panel CVP1, indicated by the open symbols, the vertical jumps indicate crack extension across a rivet hole. When this happened, the crack length increased instantaneously by the diameter of the rivet hole. The rate of crack growth increased as the crack tip approached the rivet hole. The horizontal segments shown in the plot indicate the number of cycles before the crack reformed on the opposite side of the rivet hole. As the crack length increased, the delay in crack reformation (incubation period) decreased due to the larger crack driving force. For panel CVP2, which contained multiple cracks, the vertical jumps in the experimental data indicate linkup of the lead crack and a small multiple crack. When this happened, the crack length increased instantaneously by the diameter of the rivet hole plus the lengths of the small cracks at that rivet. There was no crack reformation. The length of the lead crack front instantaneously grew the length of the small cracks located in the rivets directly ahead. As a result, the number of cycles needed to grow the lead crack to the final length (~12.5inches) in panel CVP2 was approximately 37% less than that in panel CVP1.

The Mode I SIF range, ΔK_I, (figure D-58) and crack growth data for 2024-T3 aluminum (figure D-9) were used in a cycle-by-cycle crack growth analysis program to predict the fatigue crack growth in panels CVP1 and CVP2, also shown in figure D-60. For panel CVP1, crack growth across rivet hole, indicated by the vertical jumps in the curve, was modeled by instantaneously increasing the length of the crack by the diameter of the rivet hole when the lead crack reached the rivet. For panel CVP2, crack growth at the rivet was modeled by instantaneously increasing the length of the crack by the diameter of the rivet plus the length of the small cracks at the rivet when the lead crack reached the first small crack. It is important to note that only ΔK_I was used to predict crack growth since it was the dominant SIF. There were indications of Mode III loading as indicated by Δk_2 values shown in figure D-58 and crack-bulging deflection observed during the test. Mode III crack growth was not included in the crack growth analysis due to the lack of experimental crack growth data. Good agreement was obtained between experiments and predictions relying on ΔK_I. For CVP2, the growth of the small multiple crack in the rivet ahead of the lead crack was not modeled for in the analysis.

The fatigue crack growth behavior of panels CVP3 and CVP4 is shown in figure D-61. The initial half-crack length prior to loading was approximately 3.5″. In the figure, the circular and square symbols represent the measured crack lengths of the left and the right crack and CVP4 tips, respectively, from both panels. The numbers inside the circles along the y axis indicates the locations of the rivets. For panel CVP3, crack growth across a rivet hole is indicated by a vertical jump in the data, where the crack length instantaneously increased by a length equal to the hole diameter. The horizontal segments shown in the plot indicate the incubation period or the number of cycles for the crack to reform on the opposite side of the rivet hole. For panel CVP4, which contained multiple cracks, the vertical jumps in the experimental data indicate the point when the lead crack and small multiple crack linked up. When this happened, the crack length increased instantaneously by the diameter of the rivet hole plus the lengths of the small

cracks at that rivet. There was no crack reformation required. The small crack at the rivet hole on the opposite side became the new lead crack front. As a result, the number of cycles to grow the lead crack to the third rivet hole in panel CVP4 was approximately 27%, less than that in panel CVP3. At the third rivet hole on either side, 5R and 5L, the crack had just reached the first intact stringers (S3 and S5). The additional stiffness added by the stringers increased the incubation period for panel CVP3 and decreased the subsequent crack growth rate for both panels.

The Mode I SIF range, ΔK_I, (figure D-59) and the crack growth data for 2024-T3 aluminum (figure 9) were used in a cycle-by-cycle crack growth analysis program to predict the fatigue crack growth in panels CVP3 and CVP4, also shown in figure D-61. The analysis based on ΔK_I was in good agreement with the test data for crack growth in both panels until the crack reached the intact stringer. Little crack bulging was observed during the test, indicating that the crack growth was primarily due to Mode I loading.

CONCLUDING REMARKS

Geometric nonlinear finite element analyses were conducted to determine strain distributions and fracture parameters governing crack formation and growth. In general, for the strain distributions, good agreement was obtained between experiments and analysis for strains measured in the principle loading direction for gages closest to the skin. The agreement was not as good for strains measured in the secondary loading direction, particularly for the gages located farthest from the skin.

For fatigue crack growth predictions, the corresponding mixed mode stress-intensity factors were calculated using the Modified Crack Closure Integral (MCCI) method. The Mode I stress-intensity factor (SIF) range was used in a cycle-by-cycle crack growth analysis program to predict the fatigue crack growth in the panels tested. Reasonable agreement was obtained between experimental fatigue crack growth data and predictions relying on the Mode I SIF calculated using finite element analyses. The Mode I SIF was dominate compared to the other modes. The number of cycles to grow a fatigue crack to a predetermined length was reduced by approximately 37% due to the presence of multiple cracks for the longitudinal lap joint panels and 27% for the circumferential butt joint panels.

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TABLE D-1. MECHANICAL PROPERTIES REFERENCED FROM MIL-HDBK-5H [D-2]

Component	Material	Thickness (in)	Modulus of Elasticity (ksi)	Poisson's Ratio
Skin	2024-T3	0.063	10500	0.33
Stringer	7075-T3	0.071	10300	0.33
Frame	7075-T3	0.071	10300	0.33
Shear-Clip	7075-T3	0.063	10300	0.33
Intercostal	7075-T3	0.040	10300	0.33
Finger Doublers	2024-T3	0.025	10500	0.33
Attachment Doublers	2024-T3	0.125-0.50	10500	0.33
Tapered Doublers	2024-T3	0.025-0.08	10500	0.33

TABLE D-2. PROPERTIES USED TO MODEL FASTENERS FOR CVP1 AND CVP2

Fastener Row	Fastener Type	Fastener Diameter, d (in)	Fastener Material, A, B	Effective Modulus E' (KSI)	Layer1/ Layer 2	Layer Thick. (in), t_1/t_2	Shear Stiffness, k_{shear} (lb/in)
A	MS20470AD5	0.15625	Aluminum 5.0, 0.8	10500	Outer Skin Outer Doubler	0.063 0.025	136899.8
B	MS20470AD6	0.1875	Aluminum 5.0, 0.8	10500	Outer Skin Outer Doubler	0.063 0.025	147130.8
B	MS20470AD6	0.1875	Aluminum 5.0, 0.8	10500	Outer Doubler Inner Skin	0.025 0.063	147130.8
B	MS20470AD6	0.1875	Aluminum 5.0, 0.8	10500	Inner Skin Inner Doubler	0.063 0.025	147130.8
C	NAS1097KE6	0.1875	Aluminum 5.0, 0.8	10500	Outer Skin Outer Doubler	0.063 0.025	147130.8
C	NAS1097KE6	0.1875	Aluminum 5.0, 0.8	10500	Outer Doubler Inner Skin	0.025 0.063	147130.8
C	NAS1097KE6	0.1875	Aluminum 5.0, 0.8	10500	Inner Skin Inner Doubler	0.063 0.025	147130.8
C	NAS1097KE6	0.1875	Aluminum 5.0, 0.8	10500	Inner Doubler Stringer	0.025 0.071	150140.9
D	MS20470AD5	0.15625	Aluminum 5.0, 0.8	10500	Inner Skin Inner Doubler	0.063 0.025	136899.8
Y	NAS1097AD6	0.1875	Aluminum 5.0, 0.8	10500	Skin Stringer	0.063 0.071	207375.9
Z	NAS1097AD6	0.1875	Aluminum 5.0, 0.8	10500	Skin Shear Clip	0.063 0.063	201676.8

TABLE D-3. PROPERTIES USED TO MODEL FASTENERS FOR CVP3 AND CVP4

Fastener Row	Fastener Type	Fastener Diameter, d (in)	Fastener Material, A, B	Effective Modulus E' (KSI)	Layer1/ Layer 2	Layer Thick. (in), t_1/t_2	Shear Stiffness, k_{shear} (lb/in)
A, H	MS20470AD5	0.15625	Aluminum 5.0, 0.8	10500	Top Skin Finger Doubler	0.063 0.025	136899.8
B, G	NAS1097AD6	0.1875	Aluminum 5.0, 0.8	10500	Top Skin Finger Doubler	0.063 0.025	147130.8
B, G	NAS1097AD6	0.1875	Aluminum 5.0, 0.8	10500	Finger Doubler Tapper Doubler	0.025 0.0525	142074.7
C, F	NAS1097AD6	0.1875	Aluminum 5.0, 0.8	10500	Top Skin Finger Doubler	0.063 0.025	147130.8
C, F	NAS1097AD6	0.1875	Aluminum 5.0, 0.8	10500	Finger Doubler Tapper Doubler	0.025 0.080	152912.6
D, E	HLT 435-6	0.1875	Titanium 4.0, 0.82	10500	Top Skin Finger Doubler	0.063 0.025	156368.2
D, E	HLT 435-6	0.1875	Titanium 4.0, 0.82	10500	Finger Doubler Tapper Doubler	0.025 0.080	163085.7
Y	NAS1097AD6	0.1875	Aluminum 5.0, 0.8	10500	Skin Stringer	0.063 0.071	187613.8
Z	NAS1097AD6	0.1875	Aluminum 5.0, 0.8	10500	Skin Shear Clip	0.063 0.063	182936.9

TABLE D-4. FINITE ELEMENT MODEL INFORMATION FOR CVP1

Finite Element Run	Crack Length, a(in)	Number of Shell Elements	Number of Beam Elements	Total Number of Nodes	Crack Tip Element Dimension (in by in)
cvp1_1_1	3.563	61396	2099	116952	0.0938 x 0.0939
cvp1_1_2	3.844	61396	2099	116964	0.0938 x 0.0939
cvp1_1_3	4.125	61432	2099	117092	0.0469 x 0.0470
cvp1_1_4	4.219	56356	2099	101928	0.0234 x 0.0235
cvp1_1_5	4.289	56356	2099	101912	0.0234 x 0.0235
cvp1_2_1	4.714	61396	2099	117062	0.0268 x 0.0235
cvp1_2_2	5.036	61432	2099	117208	0.1070 x 0.0939
cvp1_2_3	5.357	61432	2099	117220	0.1070 x 0.0939
cvp1_2_4	5.705	58748	2099	109288	0.0268 x 0.0235
cvp1_2_5	5.759	58748	2099	109268	0.0268 x 0.0235
cvp1_3_1	6.188	62156	2099	119478	0.0234 x 0.0235
cvp1_3_2	6.469	61432	2099	117344	0.0937 x 0.0939
cvp1_3_3	6.750	61432	2099	117356	0.0937 x 0.0939
cvp1_3_4	7.149	59948	2099	112952	0.0234 x 0.0235
cvp1_4_1	7.768				
cvp1_4_3	8.464	61432	2099	117456	0.1070 x 0.0939
cvp1_4_4	8.652	59948	2099	113016	0.0268 x 0.0235
cvp1_5_1	9.241				
cvp1_5_3	9.964	61432	2099	117545	0.1070 x 0.0939
cvp1_5_4	10.125	59948	2099	113068	0.0268 x 0.0235
cvp1_6_1	10.734				
cvp1_6_3	11.344	61432	2099	117632	0.0937 x 0.0939
cvp1_6_4	11.695	59348	2099	111324	0.0234 x 0.0235
cvp1_7_1	12.214				
cvp1_7_3	12.857	61432	2099	117772	0.1070 x 0.0939
cvp1_7_4	13.179	59348	2099	111384	0.0268 x 0.0235

TABLE D-5. FINITE ELEMENT MODEL INFORMATION FOR CVP2

Finite Element Run	Crack Length, a(in)	Number of Shell Elements	Number of Beam Elements	Total Number of Nodes	Crack Tip Element Dimension (in by in)
cvp2_1_1	3.563	61396	2099	117010	0.0938 x 0.0939
cvp2_1_2	3.844	61396	2099	117022	0.0938 x 0.0939
cvp2_1_3	4.125	61432	2099	117150	0.0469 x 0.0470
cvp2_1_4	4.219	56356	2099	101982	0.0234 x 0.0235
cvp2_1_5	4.289	56356	2099	101966	0.0234 x 0.0235
cvp2_2_1	4.714	61432	2099	117232	0.0268 x 0.0235
cvp2_2_2	5.036	61432	2099	117262	0.1070 x 0.0939
cvp2_2_3	5.357	61432	2099	117274	0.1070 x 0.0939
cvp2_2_4	5.705	58748	2099	109341	0.0268 x 0.0235
cvp2_2_5	5.759	58748	2099	109322	0.0268 x 0.0235
cvp2_3_1	6.188	61432	2099	117350	0.0234 x 0.0235
cvp2_3_2	6.469	61432	2099	117382	0.0937 x 0.0939
cvp2_3_3	6.750	61432	2099	117394	0.0937 x 0.0939
cvp2_3_4	7.149	59948	2099	113030	0.0234 x 0.0235
cvp2_4_1	7.768	61432	2099	117462	0.0536 x 0.0470
cvp2_4_3	8.464	61432	2099	117494	0.1070 x 0.0939
cvp2_4_4	8.652	59948	2099	113086	0.0268 x 0.0235
cvp2_5_1	9.241	61432	2099	117550	0.0536 x 0.0470
cvp2_5_3	9.964	61432	2099	117582	0.1070 x 0.0939
cvp2_5_4	10.125	59948	2099	113118	0.0268 x 0.0235
cvp2_6_1	10.734	61432	2099	117662	0.0469 x 0.0470
cvp2_6_3	11.344	61432	2099	117694	0.0937 x 0.0939
cvp2_6_4	11.695	59348	2099	111386	0.0234 x 0.0235
cvp2_7_1	12.214	61432	2099	117794	0.0268 x 0.0235
cvp2_7_3	12.857	61432	2099	117834	0.1070 x 0.0939
cvp2_7_4	13.179	59348	2099	111446	0.0268 x 0.0235

TABLE D-6. FINITE ELEMENT MODEL INFORMATION FOR CVP3

Finite Element Run	Crack Length, a(in)	Number of Shell Elements	Number of Beam Elements	Total Number of Nodes	Crack Tip Element Dimension (in by in)
cvp3_1_1	3.474	28850	2335	36990	01097 x 0.0938
cvp3_1_3	3.849	28850	2335	37006	01097 x 0.0938
cvp3_1_4	4.131	28850	2335	37018	01094 x 0.0938
cvp3_1_5	4.224	28850	2335	37022	01094 x 0.0938
cvp3_2_1	4.693	31826	2329	45978	0.0547 x 0.0469
cvp3_2_3	5.209	31826	2329	46022	0.0547 x 0.0469
cvp3_2_5	5.677	31826	2329	46070	0.0547 x 0.0469
cvp3_3_1	6.140	31826	2325	46102	0.0554 x 0.0469
cvp3_3_3	7.080	31826	2327	46182	0.0548 x 0.0471
cvp3_3_6	8.480	31826	2327	46302	0.0550 x 0.0469
cvp3_3_9	8.760	31826	2327	46326	0.0551 x 0.0469

TABLE D-7. FINITE ELEMENT MODEL INFORMATION FOR CVP4

Finite Element Run	Crack Length, a(in)	Number of Shell Elements	Number of Beam Elements	Total Number of Nodes	Crack Tip Element Dimension (in by in)
cvp4_1_1	3.474	28850	2335	37004	0.1097 x 0.0938
cvp4_1_3	3.849	28850	2335	37020	0.1097 x 0.0938
cvp4_1_4	4.131	28850	2335	37032	0.1094 x 0.0938
cvp4_1_5	4.224	29338	2335	38547	0.0547 x 0.0469
cvp4_2_1	4.693	31826	2329	46000	0.0547 x 0.0469
cvp4_2_3	5.209	31826	2329	46044	0.0547 x 0.0469
cvp4_2_5	5.677	31826	2329	46092	0.0548 x 0.0469
cvp4_3_1	6.140	31826	2327	46124	0.0554 x 0.0469
cvp4_3_3	7.080	31826	2327	46204	0.0548 x 0.0471
cvp4_3_6	8.480	31826	2327	46324	0.0550 x 0.0469
cvp4_3_9	8.760	31826	2327	46348	0.0551 x 0.0469

TABLE D-8. LOADING SEQUENCE AND CONDITIONS OF PANELS CVP1 AND CVP2

Load Condition	Test Type	Minimum and Maximum Load			
		Pressure (psi)	Hoop (lb)	Frame (lb)	Long. (lb)
1a	Quasi-Static Loading, Strain Survey	0 to 10.1	0 to 2218.4	0 to 2090.5	0 to 0
1b	Quasi-Static Loading, Strain Survey	0 to 0	0 to 0	0 to 0	0 to 1166.6
1c	Quasi-Static Loading, Strain Survey	0 to 10.1	0 to 2218.4	0 to 2090.5	0 to 1166.6
2	Cyclic Fatigue Crack Growth	1.0 to 10.1	221.8 to 2218.4	209.1 to 2090.5	116.7 to 1166.6

TABLE D-9. LOADING SEQUENCE AND CONDITIONS OF PANELS CVP3 AND CVP4

Load Condition	Test Type	Minimum to Maximum Load			
		Pressure (psi)	Hoop (lb)	Frame (lb)	Long. (lb)
1a	Quasi-Static Loading, Strain Survey	0 to 8.8	0 to 1927.3	0 to 1816.2	0 to 0
1b	Quasi-Static Loading, Strain Survey	0 to 0	0 to 0	0 to 0	0 to 3065.0
1c	Quasi-Static Loading, Strain Survey	0 to 8.8	0 to 1927.3	0 to 1816.2	0 to 3065.0
2	Cyclic Fatigue Crack Growth	0.9 to 8.8	192.7 to 1927.3	181.6 to 1816.2	919.5 to 3065.0

TABLE D-10. FINITE ELEMENT PREDICTIONS OF STRAIN FOR LONGITUDINAL LAP JOINT PANELS CVP1 AND CVP2, LOAD CONDITION 1a

Increment	1	2	3	4	5	6	7	8	9	10
Pressure (psi)	1.01	2.02	3.03	4.04	5.05	6.06	7.07	8.08	9.09	10.10
Frame Load (lb.)	209.05	418.09	627.14	836.18	1045.23	1254.28	1463.32	1672.37	1881.41	2090.46
Hoop Load (lb.)	221.84	443.69	665.53	887.38	1109.22	1331.06	1552.91	1774.75	1996.60	2218.44
Long. Load (lb.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SG01	55.45	113.47	173.10	233.88	295.52	357.88	420.83	484.28	548.18	612.45
SG02	57.40	115.54	174.30	233.56	293.19	353.12	413.31	473.72	534.32	595.11
SG03	63.25	128.86	195.83	263.71	332.26	401.34	470.84	540.71	610.91	681.39
SG04	53.84	108.38	163.82	220.02	276.81	334.07	391.72	449.72	508.00	566.54
SG05	61.49	125.15	190.26	256.38	323.28	390.81	458.86	527.36	596.27	665.56
SG06	66.45	133.01	200.04	267.51	335.36	403.52	471.97	540.66	609.59	678.72
SG07	55.00	112.84	172.43	233.23	294.95	357.39	420.43	483.98	547.99	612.43
SG08	52.96	106.43	160.68	215.57	270.96	326.76	382.89	439.33	496.03	552.98
SG09	62.43	128.34	196.48	266.05	336.56	407.73	479.38	551.38	623.66	696.16
SG10	65.10	126.23	185.05	242.50	299.11	355.19	410.92	466.44	521.82	577.12
SG11	45.52	96.02	149.34	204.37	260.50	317.40	374.86	432.76	491.01	549.57
SG12	92.01	176.50	257.00	335.24	412.14	488.24	563.82	639.09	714.19	789.20
SG13	55.83	115.72	178.13	242.18	307.33	373.27	439.80	506.79	574.15	641.82
SG14	64.68	125.32	183.62	240.54	296.60	352.12	407.29	462.23	517.04	571.77
SG15	71.77	144.58	217.91	291.59	365.54	439.73	514.16	588.77	663.58	738.56
SG16	42.43	86.10	130.43	175.14	220.08	265.18	310.38	355.65	400.97	446.34
SG17	76.29	153.19	230.44	307.94	385.68	463.63	541.77	620.10	698.60	777.26
SG18	43.03	87.16	131.87	176.95	222.26	267.72	313.30	358.95	404.67	450.42
SG19	70.27	141.81	214.01	286.65	359.65	432.94	506.49	580.27	654.25	728.41
SG20	41.66	84.63	128.32	172.46	216.90	261.54	306.32	351.20	396.16	441.19
SG21	-27.75	-57.45	-88.23	-119.64	-151.41	-183.38	-215.45	-247.56	-279.66	-311.72
SG22	-4.38	-7.25	-9.32	-10.94	-12.33	-13.58	-14.79	-15.98	-17.20	-18.47
SG23	-31.07	-64.67	-99.39	-134.61	-170.04	-205.55	-241.05	-276.51	-311.89	-347.18
SG24	-6.18	-10.77	-14.66	-18.23	-21.66	-25.05	-28.46	-31.90	-35.40	-38.96
SG25	-30.49	-58.32	-85.40	-112.24	-139.01	-165.74	-192.45	-219.14	-245.83	-272.52
SG26	-13.80	-28.00	-42.35	-56.78	-71.27	-85.80	-100.38	-114.99	-129.63	-144.31
SG27	-23.89	-47.14	-70.12	-93.10	-116.19	-139.48	-163.00	-186.76	-210.77	-235.02
SG28	-7.78	-16.71	-26.19	-35.91	-45.72	-55.53	-65.31	-75.02	-84.66	-94.20
SG29T	123.15	224.75	317.37	405.89	492.45	578.10	663.36	748.50	833.68	918.95
SG29-45	58.41	104.27	144.82	182.87	219.66	255.80	291.60	327.22	362.77	398.28
SG29L	-5.94	-15.97	-27.77	-40.42	-53.54	-66.90	-80.41	-94.00	-107.64	-121.29
SG30T	121.75	223.80	317.23	406.57	493.91	580.27	666.17	751.88	837.55	923.26
SG30-45	57.42	103.28	144.02	182.30	219.34	255.76	291.86	327.82	363.73	399.65
SG30L	-8.83	-20.63	-33.81	-47.67	-61.89	-76.28	-90.77	-105.28	-119.80	-134.30
SG31T	57.61	134.74	219.97	308.92	399.68	491.37	583.55	675.98	768.56	861.23
SG31-45	23.79	56.40	92.39	129.78	167.74	205.91	244.13	282.32	320.45	358.52
SG31L	-15.47	-32.15	-49.75	-67.98	-86.68	-105.72	-125.02	-144.53	-164.21	-184.03
SG32T	122.79	225.32	319.88	411.12	501.03	590.48	679.90	769.50	859.33	949.44
SG32-45	58.33	103.87	144.22	182.31	219.42	256.14	292.74	329.38	366.11	402.98
SG32L	-13.44	-30.61	-49.29	-68.61	-88.21	-107.91	-127.63	-147.32	-166.96	-186.55
SG33T	122.61	225.23	319.98	411.47	501.64	591.36	681.06	770.91	860.99	951.31
SG33-45	52.90	94.29	131.23	166.36	200.79	235.01	269.27	303.65	338.20	372.93
SG33L	-13.51	-30.55	-49.07	-68.26	-87.75	-107.37	-127.04	-146.70	-166.35	-185.96
SG34T	123.09	224.72	317.34	405.85	492.38	578.01	663.24	748.35	833.51	918.78
SG34-45	58.94	104.67	144.84	182.44	218.81	254.60	290.16	325.66	361.19	396.82
SG34L	-6.32	-16.44	-28.23	-40.85	-53.91	-67.23	-80.70	-94.25	-107.86	-121.50
SG35T	58.56	135.85	221.89	312.00	403.97	496.68	589.58	682.41	775.01	867.34
SG35-45	20.36	52.35	89.97	130.36	172.16	214.67	257.54	300.56	343.62	386.69
SG35L	-20.93	-37.62	-52.12	-65.39	-77.89	-89.91	-101.57	-112.99	-124.20	-135.25
SG36T	110.08	209.24	303.35	394.86	484.93	574.18	662.94	751.43	839.78	928.04
SG36-45	42.70	79.43	113.58	146.50	178.82	210.87	242.80	274.72	306.67	338.70
SG36L	-15.92	-33.92	-52.75	-71.90	-91.17	-110.44	-129.67	-148.82	-167.89	-186.88
SG37T	107.31	206.83	301.60	393.47	483.48	572.29	660.31	747.78	834.89	921.75
SG37-45	45.83	88.78	129.92	169.96	209.31	248.24	286.90	325.40	363.80	402.16
SG37L	-18.77	-35.39	-50.86	-65.63	-79.92	-93.88	-107.59	-121.10	-134.45	-147.68

TABLE D-11. FINITE ELEMENT PREDICTIONS OF STRAIN FOR LONGITUDINAL LAP JOINT PANELS CVP1 AND CVP2, LOAD CONDITION 1b

Increment	1	2	3	4	5	6	7	8	9	10
Pressure (psi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Frame Load (lb.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hoop Load (lb.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Long. Load (lb.)	116.66	233.31	349.97	466.62	583.28	699.93	816.59	933.24	1049.90	1166.55
SG01	-1.76	-3.52	-5.28	-7.03	-8.77	-10.50	-12.22	-13.92	-15.61	-17.28
SG02	-2.63	-5.33	-8.14	-11.07	-14.11	-17.26	-20.51	-23.87	-27.32	-30.86
SG03	-19.21	-38.22	-57.07	-75.75	-94.27	-112.63	-130.84	-148.88	-166.78	-184.53
SG04	-3.88	-7.79	-11.73	-15.73	-19.77	-23.86	-27.99	-32.17	-36.38	-40.63
SG05	-19.15	-38.08	-56.82	-75.38	-93.76	-111.98	-130.03	-147.91	-165.64	-183.20
SG06	-4.25	-8.49	-12.78	-17.12	-21.53	-26.00	-30.52	-35.09	-39.72	-44.39
SG07	0.42	0.86	1.31	1.74	2.17	2.60	3.02	3.45	3.87	4.30
SG08	-3.99	-8.02	-12.11	-16.25	-20.47	-24.74	-29.08	-33.47	-37.92	-42.42
SG09	-19.02	-37.86	-56.53	-75.03	-93.36	-111.52	-129.52	-147.35	-165.02	-182.54
SG10	-2.87	-5.74	-8.67	-11.65	-14.69	-17.80	-20.96	-24.17	-27.43	-30.74
SG11	-19.97	-39.69	-59.19	-78.47	-97.54	-116.40	-135.06	-153.53	-171.81	-189.91
SG12	-2.52	-5.09	-7.77	-10.55	-13.44	-16.42	-19.49	-22.66	-25.90	-29.22
SG13	0.27	0.54	0.81	1.09	1.38	1.68	1.99	2.32	2.65	2.99
SG14	-2.40	-4.78	-7.23	-9.77	-12.41	-15.13	-17.94	-20.83	-23.79	-26.83
SG15	-7.31	-14.60	-21.86	-29.07	-36.24	-43.37	-50.44	-57.48	-64.47	-71.42
SG16	-2.08	[illegible]	-6.46	-8.68	-10.92	-13.16	-15.41	-17.66	-19.93	-22.20
SG17	-7.18	-14.33	-21.45	-28.52	-35.55	-42.54	-49.48	-56.38	-63.24	-70.06
SG18	-2.11	-4.34	-6.59	-8.86	-11.14	-13.43	-15.73	-18.03	-20.34	-22.66
SG19	-2.54	-5.07	-7.59	-10.11	-12.64	-15.16	-17.69	-20.22	-22.74	-25.27
SG20	-1.25	-2.54	-3.84	-5.16	-6.49	-7.84	-9.19	-10.57	-11.95	-13.35
SG21	26.11	52.16	78.16	104.09	129.96	155.77	181.53	207.23	232.88	258.47
SG22	26.30	52.55	78.75	104.90	130.99	157.03	183.02	208.97	234.86	260.71
SG23	31.33	62.57	93.73	124.81	155.81	186.73	217.58	248.34	279.04	309.66
SG24	31.79	63.53	95.20	126.81	158.36	189.84	221.27	252.63	283.93	315.17
SG25	31.56	63.13	94.65	126.12	157.55	188.91	220.22	251.48	282.68	313.83
SG26	33.72	67.37	100.94	134.44	167.86	201.21	234.48	267.67	300.79	333.85
SG27	29.99	59.89	89.70	119.44	149.10	178.68	208.19	237.63	267.00	296.30
SG28	31.53	63.00	94.39	125.72	156.99	188.19	219.33	250.40	281.42	312.37
SG29T	-14.68	-29.25	-43.72	-58.10	-72.39	-86.61	-100.76	-114.83	-128.85	-142.80
SG29-45	7.28	14.75	22.37	30.13	38.02	46.01	54.11	62.31	70.60	78.97
SG29L	34.93	69.97	105.07	140.24	175.47	210.74	246.05	281.39	316.75	352.13
SG30T	-12.28	-24.46	-36.57	-48.62	-60.60	-72.52	-84.39	-96.20	-107.95	-119.66
SG30-45	10.88	21.82	32.81	43.85	54.93	66.05	77.20	88.38	99.59	110.83
SG30L	34.85	69.67	104.44	139.16	173.84	208.47	243.03	277.55	312.00	346.40
SG31T	-7.41	-14.90	-22.45	-30.05	-37.71	-45.41	-53.17	-60.97	-68.82	-76.71
SG31-45	14.07	28.04	41.91	55.68	69.38	82.98	96.51	109.95	123.32	136.60
SG31L	35.07	70.03	104.87	139.60	174.22	208.72	243.13	277.43	311.63	345.73
SG32T	-11.79	-23.51	-35.18	-46.80	-58.38	-69.91	-81.40	-92.84	-104.23	-115.57
SG32-45	11.60	23.19	34.74	46.27	57.78	69.25	80.70	92.13	103.53	114.91
SG32L	34.62	69.16	103.62	138.01	172.31	206.53	240.68	274.74	308.72	342.63
SG33T	-12.05	-24.01	-35.90	-47.73	-59.49	-71.20	-82.85	-94.45	-105.99	-117.47
SG33-45	11.44	22.89	34.32	45.74	57.14	68.52	79.88	91.23	102.55	113.86
SG33L	34.68	69.31	103.91	138.45	172.95	207.39	241.77	276.11	310.38	344.59
SG34T	-14.92	-29.69	-44.35	-58.89	-73.33	-87.68	-101.94	-116.12	-130.22	-144.26
SG34-45	12.77	25.57	38.41	51.28	64.18	77.09	90.01	102.95	115.89	128.82
SG34L	34.88	69.87	104.94	140.09	175.29	210.55	245.84	281.18	316.53	351.91
SG35T	-13.57	-27.05	-40.40	-53.61	-66.70	-79.67	-92.51	-105.24	-117.85	-130.36
SG35-45	11.03	22.05	33.09	44.14	55.20	66.27	77.35	88.44	99.54	110.64
SG35L	35.47	70.82	106.04	141.15	176.14	211.03	245.81	280.49	315.06	349.54
SG36T	-9.68	-19.33	-28.96	-38.58	-48.18	-57.77	-67.33	-76.88	-86.41	-95.91
SG36-45	10.63	21.26	31.88	42.48	53.07	63.65	74.21	84.76	95.29	105.80
SG36L	31.16	62.27	93.30	124.28	155.19	186.03	216.81	247.52	278.17	308.75
SG37T	-10.43	-20.80	-31.13	-41.40	-51.63	-61.81	-71.93	-82.01	-92.05	-102.03
SG37-45	10.17	20.32	30.44	40.55	50.63	60.69	70.74	80.77	90.77	100.77
SG37L	30.72	61.34	91.87	122.32	152.68	182.95	213.14	243.25	273.28	303.23

TABLE D-12. FINITE ELEMENT PREDICTIONS OF STRAIN FOR LONGITUDINAL LAP JOINT PANELS CVP1 AND CVP2, LOAD CONDITION 1c

Increment	1	2	3	4	5	6	7	8	9	10
Pressure (psi)	1.01	2.02	3.03	4.04	5.05	6.06	7.07	8.08	9.09	10.10
Frame Load (lb.)	209.05	418.09	627.14	836.18	1045.23	1254.28	1463.32	1672.37	1881.41	2090.46
Hoop Load (lb.)	221.84	443.69	665.53	887.38	1109.22	1331.06	1552.91	1774.75	1996.60	2218.44
Long. Load (lb.)	116.66	233.31	349.97	466.62	583.28	699.93	816.59	933.24	1049.90	1166.55
SG01	53.12	107.75	163.09	218.79	274.68	330.68	386.73	442.82	498.93	555.07
SG02	54.68	109.85	165.40	221.24	277.29	333.48	389.79	446.20	502.69	559.25
SG03	43.69	89.28	135.85	183.04	230.66	278.65	326.96	375.54	424.39	473.50
SG04	49.98	100.65	152.16	204.34	257.05	310.17	363.62	417.35	471.31	525.47
SG05	41.99	85.71	130.52	176.07	222.21	268.84	315.89	363.33	411.14	459.30
SG06	62.08	124.13	186.48	249.11	311.98	375.03	438.23	501.56	564.99	628.50
SG07	54.78	111.23	168.42	225.93	283.58	341.28	398.98	456.65	514.30	571.91
SG08	49.01	98.56	148.88	199.85	251.32	303.21	355.44	407.97	460.76	513.79
SG09	43.23	89.68	138.10	187.74	238.16	289.15	340.55	392.27	444.25	496.47
SG10	61.94	119.60	174.77	228.45	281.19	333.32	385.03	436.45	487.67	538.75
SG11	25.68	56.52	90.17	125.51	161.94	199.16	236.97	275.26	313.97	353.05
SG12	88.81	169.33	245.48	319.15	391.31	462.51	533.06	603.18	672.99	742.58
SG13	55.68	114.51	175.01	236.37	298.15	360.10	422.10	484.07	545.97	607.77
SG14	61.95	119.53	174.58	228.12	280.73	332.74	384.36	435.73	486.92	538.01
SG15	64.24	129.15	194.27	259.50	324.80	390.16	455.58	521.06	586.60	652.19
SG16	40.41	82.04	124.36	167.11	210.13	253.36	296.74	340.24	383.84	427.52
SG17	68.85	137.90	206.97	276.04	345.12	414.21	483.33	552.47	621.64	690.84
SG18	40.94	82.93	125.52	168.49	211.73	255.16	298.73	342.42	386.20	430.05
SG19	67.54	136.04	204.91	273.98	343.18	412.49	481.86	551.29	620.78	690.30
SG20	40.39	82.03	124.33	167.04	210.02	253.19	296.49	339.90	383.40	426.97
SG21	-1.49	-4.70	-8.80	-13.36	-18.14	-23.01	-27.89	-32.73	-37.49	-42.15
SG22	21.74	44.65	68.05	91.61	115.18	138.65	161.98	185.13	208.10	230.85
SG23	0.47	-1.28	-3.90	-6.85	-9.88	-12.88	-15.79	-18.58	-21.23	-23.73
SG24	25.31	51.66	78.28	104.87	131.27	157.43	183.32	208.93	234.26	259.30
SG25	1.25	5.30	10.18	15.33	20.62	26.01	31.50	37.09	42.77	48.55
SG26	19.75	38.75	57.30	75.50	93.38	110.98	128.32	145.42	162.28	178.93
SG27	6.15	12.89	19.84	26.72	33.42	39.88	46.08	52.02	57.70	63.15
SG28	23.50	45.44	66.53	87.12	107.38	127.40	147.24	166.92	186.47	205.89
SG29T	108.90	197.99	279.70	358.47	436.08	513.31	590.49	667.75	745.16	822.70
SG29-45	65.71	119.71	169.29	217.07	264.12	310.91	357.65	404.45	451.32	498.29
SG29L	28.68	53.10	75.71	97.43	118.64	139.54	160.22	180.74	201.13	221.40
SG30T	109.49	200.00	282.59	361.59	438.87	515.32	591.38	667.24	743.04	818.81
SG30-45	68.25	125.26	177.49	227.49	276.38	324.69	372.68	420.48	468.18	515.80
SG30L	25.80	48.31	69.23	89.26	108.76	127.88	146.73	165.35	183.80	202.08
SG31T	50.61	120.38	197.59	277.96	359.70	442.03	524.58	607.15	689.67	772.10
SG31-45	37.87	84.09	133.19	183.27	233.59	283.86	333.94	383.80	433.42	482.81
SG31L	19.33	36.98	53.39	68.91	83.75	98.03	111.85	125.27	138.35	151.11
SG32T	110.91	202.34	286.63	368.16	448.66	528.88	609.13	689.53	770.11	850.87
SG32-45	69.64	126.59	178.63	228.59	277.63	326.28	374.77	423.20	471.62	520.04
SG32L	20.90	37.73	52.84	67.10	80.87	94.32	107.53	120.55	133.41	146.13
SG33T	110.53	201.92	286.26	367.88	448.50	528.83	609.18	689.67	770.34	851.17
SG33-45	64.27	117.35	166.29	213.57	260.17	306.50	352.73	398.94	445.14	491.35
SG33L	20.92	38.04	53.54	68.21	82.43	96.35	110.06	123.60	137.00	150.27
SG34T	108.71	197.81	279.57	358.39	436.04	513.31	590.52	667.82	745.26	822.84
SG34-45	71.84	131.21	185.71	238.06	289.41	340.25	390.83	441.25	491.56	541.79
SG34L	28.29	52.64	75.30	97.09	118.39	139.38	160.15	180.75	201.21	221.55
SG35T	46.86	114.24	190.84	271.60	354.17	437.43	520.82	604.06	687.03	769.68
SG35-45	32.30	76.86	126.95	179.57	233.31	287.49	341.79	396.02	450.09	503.98
SG35L	14.42	32.48	52.11	72.46	93.10	113.85	134.61	155.31	175.92	196.43
SG36T	100.24	189.83	274.76	357.37	438.72	519.35	599.54	679.46	759.20	838.81
SG36-45	53.23	100.61	145.56	189.37	232.61	275.52	318.26	360.89	403.44	445.94
SG36L	15.03	27.72	39.44	50.69	61.70	72.57	83.35	94.06	104.73	115.34
SG37T	97.48	187.83	273.76	356.91	438.28	518.45	597.79	676.55	754.88	832.88
SG37-45	56.34	110.01	161.90	212.60	262.51	311.89	360.87	409.57	458.03	506.33
SG37L	11.97	25.85	40.55	55.64	70.93	86.30	101.68	117.05	132.36	147.61

TABLE D-13. FINITE ELEMENT PREDICTIONS OF STRAIN FOR CIRCUMFERENTIAL BUTT JOINT PANELS CVP3 AND CVP4, LOAD CONDITION 1a

Increment	1	2	3	4	5
Pressure (psi)	1.76	3.52	5.28	7.04	8.80
Frame Load (lb.)	363.23	726.46	1089.69	1452.92	1816.15
Hoop Load (lb.)	385.47	770.94	1156.40	1541.87	1927.34
Long. Load (lb.)	0.00	0.00	0.00	0.00	0.00
SG01	123.78	244.85	364.43	483.12	601.27
SG02	128.15	252.10	373.77	494.14	613.71
SG03	102.51	199.80	294.07	386.53	477.87
SG04	125.52	246.89	365.89	483.46	600.14
SG05	127.77	251.44	372.83	492.90	612.16
SG06	77.48	158.24	241.01	325.18	410.39
SG07	133.61	262.76	389.39	514.46	638.55
SG08	121.47	239.98	356.91	472.94	588.45
SG09	80.61	164.14	249.32	335.56	422.54
SG10	-50.88	-103.10	-155.11	-206.42	-256.89
SG11	-14.20	-27.78	-41.13	-54.33	-67.39
SG12	-2.07	-3.63	-4.87	-5.85	-6.62
SG13	-11.99	-23.54	-35.56	-48.19	-61.43
SG14	-14.63	-29.96	-45.13	-59.83	-73.97
SG15	-2.53	-2.34	-0.39	2.91	7.29
SG16	-21.17	-44.27	-68.85	-94.61	-121.34
SG17	-32.91	-66.46	-100.59	-135.24	-170.36
SG18	-31.08	-64.48	-99.37	-135.38	-172.33
SG19	-53.02	-111.46	-172.32	-234.52	-297.57
SG20	-14.17	-27.01	-39.47	-51.86	-64.27
SG21	-22.42	-45.96	-69.73	-93.40	-116.86
SG22	30.24	61.30	92.34	123.08	153.42
SG23	-65.86	-136.20	-208.01	-280.27	-352.58
SG24	-13.80	-26.51	-39.28	-52.37	-65.82
SG25	-14.81	-30.25	-45.48	-60.21	-74.36
SG26	-12.11	-23.75	-35.84	-48.54	-61.85
SG27	-21.13	-44.18	-68.69	-94.37	-121.01
SG28	-2.65	-2.61	-0.82	2.30	6.48
SG29	-12.02	-25.45	-40.04	-55.56	-71.88
SG30	-9.58	-17.00	-23.04	-28.01	-32.09
SG31	-50.95	-103.19	-155.16	-206.41	-256.79

Increment	1	2	3	4	5
Pressure (psi)	1.76	3.52	5.28	7.04	8.80
Frame Load (lb.)	363.23	726.46	1089.69	1452.92	1816.15
Hoop Load (lb.)	385.47	770.94	1156.40	1541.87	1927.34
Long. Load (lb.)	0.00	0.00	0.00	0.00	0.00
SG32T	185.95	353.96	510.69	659.75	803.32
SG32-45	88.64	167.02	239.03	306.76	371.44
SG32L	-7.29	-19.37	-34.32	-51.19	-69.40
SG33T	183.74	351.54	509.50	660.79	807.23
SG33-45	85.84	161.50	230.86	295.98	358.03
SG33L	-8.09	-21.21	-37.49	-55.90	-75.84
SG34T	183.19	347.61	505.22	660.02	813.61
SG34-45	76.93	145.50	211.34	276.23	340.88
SG34L	-32.52	-63.14	-92.61	-121.32	-149.49
SG35T	123.93	264.28	411.29	561.52	713.52
SG35-45	47.69	103.92	163.57	224.87	287.11
SG35L	-29.83	-59.25	-88.76	-118.44	-148.23
SG36T	182.64	349.41	506.37	656.66	802.11
SG36-45	82.98	156.34	223.75	287.11	347.56
SG36L	-6.44	-18.36	-33.70	-51.35	-70.67
SG37T	112.66	232.49	355.51	479.92	604.81
SG37-45	20.59	50.48	85.72	124.31	165.15
SG37L	-81.65	-151.06	-212.63	-268.69	-320.60
SG38T	183.73	347.91	505.26	659.93	813.55
SG38-45	76.08	143.32	207.65	270.93	333.84
SG38L	-30.81	-59.71	-87.48	-114.53	-141.11
SG39T	186.50	354.70	511.47	660.52	804.09
SG39-45	87.78	165.26	236.41	303.33	367.29
SG39L	-5.48	-16.00	-29.60	-45.25	-62.34
SG40T	108.07	223.52	342.39	462.83	583.91
SG40-45	15.50	41.68	74.12	110.55	149.70
SG40L	-82.19	-150.61	-210.25	-263.82	-312.90

TABLE D-14. FINITE ELEMENT PREDICTIONS OF STRAIN FOR CIRCUMFERENTIAL BUTT JOINT PANELS CVP3 AND CVP4, LOAD CONDITION 1b

Increment	1	2	3	4	5
Pressure (psi)	0.00	0.00	0.00	0.00	0.00
Frame Load (lb.)	0.00	0.00	0.00	0.00	0.00
Hoop Load (lb.)	0.00	0.00	0.00	0.00	0.00
Long. Load (lb.)	613.00	1226.00	1839.00	2452.00	3065.00
SG01	-96.93	-188.39	-275.40	-358.66	-438.70
SG02	-134.01	-259.64	-378.78	-492.66	-602.16
SG03	208.32	405.77	593.82	773.29	944.74
SG04	-7.90	-16.90	-26.53	-36.71	-47.46
SG05	-132.55	-256.78	-374.52	-487.03	-595.19
SG06	-22.92	-45.98	-69.51	-93.52	-117.94
SG07	-139.70	-271.42	-396.61	-516.36	-631.49
SG08	-94.91	-184.30	-269.23	-350.43	-428.42
SG09	-24.92	-49.35	-73.76	-98.32	-123.10
SG10	58.42	118.87	181.23	245.44	311.44
SG11	69.98	137.37	203.56	269.06	334.11
SG12	140.16	276.14	408.35	537.42	663.85
SG13	235.24	462.86	684.56	901.45	1114.30
SG14	231.11	454.54	673.27	888.69	1101.48
SG15	103.26	207.97	313.94	421.00	528.98
SG16	249.93	484.15	706.20	918.61	1123.20
SG17	179.28	359.43	539.50	719.07	897.93
SG18	113.03	228.25	344.98	462.83	581.58
SG19	132.81	267.70	403.93	540.95	678.39
SG20	140.39	280.43	419.48	557.24	693.62
SG21	85.01	172.77	262.15	352.34	442.75
SG22	15.06	28.46	41.29	54.07	67.04
SG23	163.06	326.40	489.53	652.13	814.00
SG24	169.20	337.25	503.91	669.05	832.63
SG25	230.43	453.70	672.56	888.29	1101.55
SG26	235.27	462.89	684.58	901.45	1114.28
SG27	249.60	483.53	705.32	917.49	1121.83
SG28	103.13	207.69	313.52	420.42	528.27
SG29	184.68	361.18	530.93	695.03	854.34
SG30	72.38	144.82	217.85	291.66	366.26
SG31	58.46	118.97	181.37	245.64	311.68

Increment	1	2	3	4	5
Pressure (psi)	0.00	0.00	0.00	0.00	0.00
Frame Load (lb.)	0.00	0.00	0.00	0.00	0.00
Hoop Load (lb.)	0.00	0.00	0.00	0.00	0.00
Long. Load (lb.)	613.00	1226.00	1839.00	2452.00	3065.00
SG32T	15.50	17.51	9.92	-4.46	-23.69
SG32-45	76.40	152.18	227.21	301.40	374.66
SG32L	122.78	256.41	396.85	541.51	688.72
SG33T	27.58	20.54	-5.27	-41.96	-85.38
SG33-45	13.49	17.46	16.96	14.00	9.48
SG33L	163.14	345.95	538.36	735.18	933.71
SG34T	-72.45	-141.36	-207.19	-270.40	-331.35
SG34-45	31.16	65.48	101.58	138.69	176.37
SG34L	179.22	358.94	538.00	715.89	892.34
SG35T	-30.46	-65.23	-103.18	-143.60	-185.97
SG35-45	58.52	114.88	169.01	220.98	270.95
SG35L	188.23	374.79	559.29	741.58	921.66
SG36T	25.18	13.90	-16.84	-58.81	-107.78
SG36-45	12.08	16.64	17.92	17.31	15.37
SG36L	163.88	346.80	539.51	736.91	936.28
SG37T	-73.99	-143.82	-212.55	-281.23	-350.20
SG37-45	-33.92	-57.92	-78.23	-97.18	-115.80
SG37L	207.72	420.24	631.49	840.03	1045.55
SG38T	-72.08	-141.37	-208.12	-272.61	-335.14
SG38-45	66.89	134.79	203.36	272.38	341.66
SG38L	181.49	362.70	542.94	721.88	899.34
SG39T	10.61	8.27	-3.21	-21.17	-43.77
SG39-45	71.05	141.96	212.63	282.93	352.71
SG39L	122.76	256.34	396.69	541.28	688.52
SG40T	-21.04	-44.13	-68.23	-93.05	-118.50
SG40-45	90.93	176.53	258.66	338.13	415.44
SG40L	179.00	354.03	525.51	693.70	858.94

TABLE D-15. FINITE ELEMENT PREDICTIONS OF STRAIN FOR CIRCUMFERENTIAL BUTT JOINT PANELS CVP3 AND CVP4, LOAD CONDITION 1c

Increment	1.00	2.00	3.00	4.00	5.00
Pressure (psi)	1.76	3.52	5.28	7.04	8.80
Frame Load (lb.)	363.23	726.46	1089.69	1452.92	1816.15
Hoop Load (lb.)	385.47	770.94	1156.40	1541.87	1927.34
Long. Load (lb.)	613.00	1226.00	1839.00	2452.00	3065.00
SG01	24.41	47.68	71.00	94.99	119.98
SG02	-8.42	-16.75	-23.74	-28.83	-31.75
SG03	302.88	577.92	832.30	1070.15	1294.30
SG04	112.07	210.96	301.58	386.47	467.19
SG05	-7.32	-14.49	-20.32	-24.30	-26.16
SG06	55.77	115.50	176.77	238.76	301.17
SG07	-8.45	-17.32	-25.10	-31.11	-35.03
SG08	24.13	46.91	69.66	93.02	117.32
SG09	56.84	117.95	180.91	244.86	309.45
SG10	14.59	39.67	72.63	111.65	155.42
SG11	56.28	112.00	168.09	224.66	281.66
SG12	136.64	267.62	393.91	516.52	636.14
SG13	220.02	429.63	631.66	827.75	1018.95
SG14	213.98	416.91	613.84	806.78	996.74
SG15	100.93	206.63	315.56	426.69	539.32
SG16	225.79	430.86	621.40	801.18	972.67
SG17	145.61	290.42	434.08	576.57	717.97
SG18	83.22	167.54	252.58	338.23	424.53
SG19	84.96	172.22	261.05	350.95	441.61
SG20	124.40	246.89	366.86	484.35	599.58
SG21	63.86	130.44	198.35	266.66	334.87
SG22	43.17	82.31	118.82	153.63	187.31
SG23	100.86	202.39	305.07	408.62	512.74
SG24	152.60	301.58	447.25	590.02	730.27
SG25	213.33	416.29	613.54	806.96	997.49
SG26	219.90	429.38	631.26	827.22	1018.30
SG27	225.49	430.32	620.64	800.25	971.59
SG28	100.66	206.04	314.62	425.38	537.62
SG29	170.48	328.71	477.91	620.15	756.87
SG30	63.53	130.77	201.03	273.68	348.26
SG31	14.60	39.75	72.78	111.86	155.69

Increment	1.00	2.00	3.00	4.00	5.00
Pressure (psi)	1.76	3.52	5.28	7.04	8.80
Frame Load (lb.)	363.23	726.46	1089.69	1452.92	1816.15
Hoop Load (lb.)	385.47	770.94	1156.40	1541.87	1927.34
Long. Load (lb.)	613.00	1226.00	1839.00	2452.00	3065.00
SG32T	186.67	330.19	452.09	561.67	663.60
SG32-45	155.07	291.06	418.61	541.53	661.46
SG32L	110.07	221.42	335.35	451.26	568.41
SG33T	188.76	312.96	409.27	491.11	564.49
SG33-45	84.72	140.21	184.45	223.10	258.49
SG33L	147.69	302.98	461.97	622.00	781.69
SG34T	119.68	229.85	335.74	439.29	541.33
SG34-45	112.85	222.64	330.26	436.09	540.36
SG34L	146.70	294.37	441.07	586.19	729.56
SG35T	86.69	180.65	277.28	374.80	472.46
SG35-45	102.48	208.21	314.12	419.14	522.92
SG35L	157.20	311.41	462.41	610.42	755.72
SG36T	184.99	304.11	395.32	472.23	540.91
SG36-45	81.29	136.81	182.94	224.50	263.41
SG36L	148.76	303.59	462.39	622.77	783.32
SG37T	45.54	103.67	163.49	222.69	280.88
SG37-45	-2.04	20.51	50.66	83.60	117.58
SG37L	141.50	307.70	478.46	648.76	817.13
SG38T	118.49	225.05	327.05	426.83	525.30
SG38-45	146.14	286.06	422.93	557.79	691.12
SG38L	150.16	300.14	448.68	595.42	740.29
SG39T	182.16	321.48	439.78	546.27	645.50
SG39-45	148.98	279.72	402.88	522.10	638.86
SG39L	111.57	223.76	338.18	454.40	571.81
SG40T	88.00	179.75	271.09	361.08	449.62
SG40-45	112.71	234.09	356.75	478.55	598.84
SG40L	109.05	236.51	368.96	502.07	634.26

TABLE D-16. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP1, LOAD CONDITION 1a

CVP1- Load Condition 1a									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 1: Frame Outer Cap (Closest to Skin)									Loading direction
SG2	596.65	586.13	599.27	589.35	592.85	6.14	595.11	-0.4%	
SG4	594.59	582.74	600.85	591.52	592.42	7.54	566.76	4.3%	
SG6	651.48	642.05	662.21	640.67	649.10	9.97	678.71	-4.6%	
SG8	582.27	579.41	600.06	589.08	587.70	9.18	553.13	5.9%	
SG10	-	-	-	-	-	-	-	-	Gage damaged
SG12	955.44	940.31	962.89	936.90	948.89	12.33	789.50	16.8%	
SG14	615.64	612.54	631.67	623.96	620.95	8.62	571.78	7.9%	
SG16	567.95	569.31	555.42	555.34	562.00	7.67	446.24	20.6%	
SG18	554.30	541.27	554.73	556.25	551.64	6.96	450.36	18.4%	
SG20	543.65	543.35	541.25	534.16	540.60	4.43	441.17	18.4%	
Group % Error								13.2%	
Group 2: Frame Inner Cap (Farthest From Skin)									Loading direction
SG1	877.51	810.10	748.91	760.80	799.33	58.47	612.56	23.4%	
SG3	788.96	724.58	676.49	690.93	720.24	50.05	681.50	5.4%	
SG5	778.01	721.53	712.75	703.82	729.03	33.45	665.74	8.7%	
SG7	784.00	761.95	731.68	714.51	748.03	30.97	612.46	18.1%	
SG9	816.82	758.21	710.06	716.74	750.46	49.10	696.28	7.2%	
SG11	639.92	584.88	582.23	577.13	596.04	29.43	549.66	7.8%	
SG13	777.88	753.29	716.97	703.51	737.91	33.94	641.88	13.0%	
SG15	573.49	546.19	523.39	526.83	542.48	22.98	738.31	-36.1%	
SG17	528.92	496.85	540.86	520.32	521.74	18.60	777.05	-48.9%	
SG19	581.98	574.02	550.78	538.61	561.35	20.13	728.21	-29.7%	
Group % Error								21.1%	
Group 3: Stringer Hat (Closest to Skin)									Negligible strain
SG22	-21.12	-23.62	-7.45	-18.66	-17.71	7.13	-18.50	-4.4%	
SG24	-61.57	-63.83	-59.80	-70.80	-64.00	4.82	-38.98	39.1%	
SG26	-44.60	-45.92	-54.85	-56.85	-50.55	6.19	-144.30	-185.4%	
SG28	-66.93	-69.11	-62.05	-72.01	-67.53	4.20	-94.19	-39.5%	
Group % Error								93.7%	
Group 4: Stringer Flange (Farthest From Skin)									
SG21	-297.71	-297.78	-287.00	-298.85	-295.33	5.58	-311.68	-5.5%	
SG23	-232.94	-230.06	-225.17	-236.11	-231.07	4.65	-347.12	-50.2%	
SG25	-254.82	-241.56	-252.24	-237.33	-246.49	8.38	-272.95	-10.7%	
SG27	-	-	-	-	-	-	-	-	Gage damaged
Group % Error								26.8%	

TABLE D-16. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP1, LOAD CONDITION 1a (Continued)

CVP1- Load Condition 1a (Continued)									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 5: Skin, Hoop Direction									Loading direction
SG29T	893.74	895.52	904.65	889.43	895.84	6.41	918.95	-2.6%	
SG30T	809.69	811.27	813.02	797.79	807.94	6.90	923.26	-14.3%	
SG31T	826.65	828.51	851.69	837.64	836.13	11.44	861.29	-3.0%	Opposite Gage 32
SG32T	872.29	872.45	883.91	862.05	872.68	8.93	949.45	-8.8%	
SG33T	890.19	890.26	897.64	877.86	888.99	8.20	951.31	-7.0%	
SG34T	806.93	805.60	808.02	794.04	803.65	6.48	918.77	-14.3%	
SG35T	954.68	957.56	962.99	948.49	955.93	6.04	867.29	9.3%	
SG36T	866.26	865.26	873.13	865.50	867.53	3.75	928.05	-7.0%	
Group % Error								9.0%	
Group 6: Skin, Longitudinal Direction									Negligible strain
SG29L	-110.55	-114.60	-120.21	-111.24	-114.15	4.41	-121.29	-6.3%	
SG30L	-98.74	-98.59	-106.75	-94.69	-99.69	5.07	-134.31	-34.7%	
SG31L	-147.66	-148.28	-164.20	-150.28	-152.60	7.81	-184.07	-20.6%	Opposite Gage 32
SG32L	-153.10	-152.94	-172.03	-153.73	-157.95	9.39	-186.50	-18.1%	
SG33L	-146.98	-144.42	-159.00	-136.80	-146.80	9.21	-185.98	-26.7%	
SG34L	-146.15	-136.22	-145.46	-138.54	-141.59	4.96	-121.51	14.2%	
SG35L	-34.68	-36.81	-34.32	-35.70	-35.38	1.12	-135.25	-282.3%	
SG36L	-115.74	-117.39	-116.44	-122.31	-117.97	2.97	-186.88	-58.4%	
Group % Error								39.3%	
Group 7: Skin, 45-degree Direction									
SG29-45	398.32	402.29	406.93	408.32	403.96	4.56	398.26	1.4%	
SG30-45	340.19	344.83	348.15	351.74	346.23	4.91	399.65	-15.4%	
SG31-45	361.81	374.40	382.88	379.29	374.59	9.20	358.53	4.3%	Opposite Gage 32
SG32-45	367.79	380.62	381.24	378.21	376.96	6.26	402.99	-6.9%	
SG33-45	371.40	384.85	370.22	373.76	375.06	6.69	372.93	0.6%	
SG34-45	353.25	366.83	349.79	348.76	354.66	8.34	396.84	-11.9%	
SG35-45	489.54	501.91	497.88	490.11	494.86	6.04	386.66	21.9%	
SG36-45	382.83	392.19	389.52	381.62	386.54	5.13	338.69	12.4%	
Group % Error								12.6%	

TABLE D-17. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP1, LOAD CONDITION 1b

CVP1 - Load Condition 1b							
	Experiment				Analysis	% Error	Remarks
Gage	Water-1	Water-2	Average	Stdev			
Group 1: Frame Outer Cap (Closest to Skin)							Negligible strain
SG2	-38.19	-31.59	-34.89	4.66	-30.92	11.4%	
SG4	-48.11	-44.11	-46.11	2.82	-40.66	11.8%	
SG6	-60.77	-57.22	-58.99	2.51	-44.46	24.6%	
SG8	-44.23	-42.40	-43.31	1.29	-42.46	2.0%	
SG10	-	-	-	-	-	-	Gage damaged
SG12	-65.51	-63.77	-64.64	1.23	-29.27	54.7%	
SG14	-42.76	-39.41	-41.09	2.38	-26.89	34.6%	
SG16	-38.09	-40.76	-39.43	1.89	-22.14	43.8%	
SG18	-36.78	-36.55	-36.67	0.16	-22.60	38.4%	
SG20	-9.67	-17.09	-13.38	5.25	-13.35	0.2%	
Group % Error						35.4%	
Group 2: Frame Inner Cap (Farthest From Skin)							
SG1	-36.31	-41.38	-38.84	3.59	-17.28	55.5%	
SG3	-182.02	-227.36	-204.69	32.06	-184.54	9.8%	
SG5	-112.54	-184.28	-148.41	50.73	-183.22	-23.5%	
SG7	109.19	-10.13	49.53	84.37	4.28	91.4%	
SG9	-194.87	-229.22	-212.04	24.28	-182.53	13.9%	
SG11	-106.08	-187.87	-146.98	57.83	-189.91	-29.2%	
SG13	107.89	-16.16	45.86	87.72	2.99	93.5%	
SG15	-66.26	-77.92	-72.09	8.25	-71.38	1.0%	
SG17	-37.28	-61.01	-49.14	16.78	-70.03	-42.5%	
SG19	38.78	-27.08	5.85	46.57	-25.28	532.0%	
Group % Error						26.5%	
Group 3: Stringer Hat (Closest to Skin)							
SG22	267.17	259.34	263.26	5.54	260.70	1.0%	
SG24	317.34	313.98	315.66	2.37	315.17	0.2%	
SG26	329.83	320.57	325.20	6.55	333.84	-2.7%	
SG28	317.75	326.37	322.06	6.09	312.37	3.0%	
Group % Error						2.2%	
Group 4: Stringer Flange (Farthest From Skin)							
SG21	268.60	267.37	267.99	0.87	258.47	3.6%	
SG23	309.69	310.49	310.09	0.57	309.66	0.1%	
SG25	558.68	550.87	554.78	5.52	313.78	43.4%	
SG27	-	-	-	-	-	-	Gage damaged
Group % Error						35.0%	

TABLE D-17. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP1, LOAD CONDITION 1b (Continued)

CVP1 - Load Condition 1b (Continued)							
	Experiment				Analysis	% Error	Remarks
Gage	Water-1	Water-2	Average	Stdev			
Group 5: Skin, Hoop Direction							
SG29T	-130.06	-120.46	-125.26	6.79	-142.81	-14.0%	
SG30T	-129.01	-121.21	-125.11	5.52	-119.69	4.3%	
SG31T	-76.97	-70.93	-73.95	4.27	-76.69	-3.7%	Opposite Gage 32
SG32T	-120.58	-108.96	-114.77	8.21	-115.60	-0.7%	
SG33T	-117.19	-113.08	-115.14	2.91	-117.50	-2.1%	
SG34T	-150.42	-161.63	-156.02	7.93	-144.27	7.5%	
SG35T	-137.00	-141.95	-139.47	3.50	-130.32	6.6%	
SG36T	-114.52	-106.25	-110.39	5.85	-95.92	13.1%	
Group % Error						8.1%	
Group 6: Skin, Longitudinal Strain							Loading direction
SG29L	314.79	311.66	313.23	2.21	352.12	-12.4%	
SG30L	337.90	330.81	334.35	5.01	346.39	-3.6%	
SG31L	335.55	329.82	332.68	4.05	345.73	-3.9%	Opposite Gage 32
SG32L	338.53	330.39	334.46	5.75	342.62	-2.4%	
SG33L	344.03	340.68	342.35	2.37	344.58	-0.7%	
SG34L	354.61	359.87	357.24	3.72	351.90	1.5%	
SG35L	303.60	290.71	297.16	9.11	349.55	-17.6%	
SG36L	302.06	290.20	296.13	8.38	308.75	-4.3%	
Group % Error						7.5%	
Group 7: Skin, 45-degree Direction							
SG29-45	75.78	84.12	79.95	5.89	78.94	1.3%	
SG30-45	131.43	133.67	132.55	1.58	110.82	16.4%	
SG31-45	140.53	148.02	144.28	5.30	136.61	5.3%	Opposite Gage 32
SG32-45	126.51	140.41	133.46	9.82	114.89	13.9%	
SG33-45	142.26	149.30	145.78	4.97	113.83	21.9%	
SG34-45	162.57	166.47	164.52	2.75	128.83	21.7%	
SG35-45	96.15	99.47	97.81	2.35	110.66	-13.1%	
SG36-45	88.09	94.86	91.47	4.79	105.80	-15.7%	
Group % Error						16.6%	

TABLE D-18. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP1, LOAD CONDITION 1c

CVP1- Load Condition 1c									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 1: Frame Outer Cap (Closest to Skin)									Primary loading direction
SG2	543.75	544.92	545.29	548.37	545.58	1.97	559.26	-2.5%	
SG4	531.29	531.73	533.59	536.83	533.36	2.52	525.71	1.4%	
SG6	579.94	579.70	577.45	574.70	577.95	2.44	628.48	-8.7%	
SG8	542.78	542.68	551.59	553.69	547.69	5.79	513.93	6.2%	
SG10	-	-	-	-	-	-	-	-	Gage damaged
SG12	861.89	861.15	862.78	859.56	861.35	1.36	742.86	13.8%	
SG14	575.51	575.43	585.52	592.28	582.19	8.23	538.01	7.6%	
SG16	508.91	516.43	513.00	521.42	514.94	5.30	427.48	17.0%	
SG18	525.01	525.31	526.14	535.54	528.00	5.05	430.07	18.5%	
SG20	520.07	525.35	522.19	537.44	526.26	7.76	426.98	18.9%	
Group % Error								12.3%	
Group 2: Frame Inner Cap (Farthest From Skin)									Primary loading direction
SG1	769.04	799.62	693.95	767.52	757.53	44.89	555.17	26.7%	
SG3	587.02	624.64	488.28	580.48	570.11	57.92	473.59	16.9%	
SG5	645.33	681.07	580.31	640.53	636.81	41.78	459.47	27.8%	
SG7	811.29	861.36	723.79	804.59	800.26	56.92	571.93	28.5%	
SG9	617.55	660.12	520.84	622.89	605.35	59.44	496.58	18.0%	
SG11	531.05	564.63	460.42	533.93	522.51	44.09	353.11	32.4%	
SG13	815.01	869.35	722.61	820.03	806.75	61.22	607.81	24.7%	
SG15	511.01	547.69	468.63	544.01	517.84	36.72	651.97	-25.9%	
SG17	502.77	506.56	485.68	530.29	506.33	18.38	690.65	-36.4%	
SG19	574.83	614.41	535.27	620.58	586.27	39.58	690.08	-17.7%	
Group % Error								26.0%	
Group 3: Stringer Hat (Closest to Skin)									
SG22	229.04	230.54	239.31	233.63	233.13	4.54	230.82	1.0%	
SG24	248.76	250.98	238.79	240.32	244.71	6.06	259.27	-5.9%	
SG26	275.61	279.57	266.62	265.59	271.85	6.84	178.94	34.2%	
SG28	239.15	240.41	231.85	226.85	234.57	6.38	205.91	12.2%	
Group % Error								19.9%	
Group 4: Stringer Flange (Farthest From Skin)									
SG21	-22.71	-22.42	-22.00	-26.34	-23.37	2.00	-42.11	-80.2%	
SG23	80.71	80.41	71.58	67.89	75.15	6.43	-23.68	131.5%	
SG25	210.51	243.88	171.16	213.86	209.85	29.84	48.09	77.1%	
SG27	-	-	-	-	-	-	-	-	Gage damaged
Group % Error								85.0%	

TABLE D-18. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP1, LOAD CONDITION 1c (Continued)

CVP1- Load Condition 1c (Continued)									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 5: Skin, Hoop Direction									Primary loading direction
SG29T	820.74	818.22	815.28	811.56	816.45	3.95	822.70	-0.8%	
SG30T	708.66	706.45	699.56	695.65	702.58	6.03	818.80	-16.5%	
SG31T	734.94	729.97	738.27	734.78	734.49	3.42	772.18	-5.1%	Opposite Gage 32
SG32T	776.50	773.22	766.63	762.76	769.78	6.22	850.87	-10.5%	
SG33T	788.18	784.36	775.11	771.09	779.69	7.93	851.17	-9.2%	
SG34T	718.06	714.74	704.37	699.95	709.28	8.53	822.84	-16.0%	
SG35T	863.29	861.61	858.16	851.40	858.62	5.26	769.64	10.4%	
SG36T	781.30	778.30	784.20	781.56	781.34	2.41	838.82	-7.4%	
Group % Error								10.3%	
Group 6: Skin, Longitudinal Direction									Secondary loading direction
SG29L	213.29	216.86	220.62	228.91	219.92	6.70	221.39	-0.7%	
SG30L	222.60	225.44	228.54	232.34	227.23	4.18	202.06	11.1%	
SG31L	180.64	184.21	183.13	188.13	184.03	3.12	151.08	17.9%	Opposite Gage 32
SG32L	176.76	181.16	180.73	186.33	181.25	3.93	146.16	19.4%	
SG33L	187.08	190.09	200.08	207.64	196.22	9.42	150.25	23.4%	
SG34L	201.93	205.60	211.11	217.27	208.98	6.69	221.54	-6.0%	
SG35L	243.79	246.08	249.32	250.18	247.34	2.95	196.44	20.6%	
SG36L	165.87	168.23	155.92	154.96	161.25	6.78	115.33	28.5%	
Group % Error								17.2%	
Group 7: Skin, 45-degree Direction									
SG29-45	499.85	496.14	499.16	504.67	499.96	3.53	498.26	0.3%	
SG30-45	477.88	474.72	474.75	477.10	476.11	1.62	515.80	-8.3%	
SG31-45	500.48	500.69	508.99	502.21	503.09	4.01	482.83	4.0%	Opposite Gage 32
SG32-45	514.39	513.36	521.03	511.38	515.04	4.18	520.04	-1.0%	
SG33-45	518.74	520.08	509.51	511.89	515.06	5.15	491.34	4.6%	
SG34-45	547.50	551.08	530.77	530.72	540.02	10.81	541.80	-0.3%	
SG35-45	603.69	605.67	595.48	594.82	599.92	5.57	503.96	16.0%	
SG36-45	485.02	486.71	476.88	476.06	481.17	5.48	445.94	7.3%	
Group % Error								7.8%	

TABLE D-19. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP2, LOAD CONDITION 1a

CVP2 - Load Condition 1a									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 1: Frame Outer Cap (Closest to Skin)									Loading direction
SG2	620.05	625.67	621.52	616.66	620.97	3.73	595.11	4.2%	
SG4	616.58	617.18	609.07	602.11	611.24	7.12	566.76	7.3%	
SG6	714.61	718.77	718.82	711.92	716.03	3.38	678.71	5.2%	
SG8	617.09	613.09	618.58	611.02	614.95	3.49	553.13	10.1%	
SG10	624.45	624.81	617.08	609.58	618.98	7.21	577.18	6.8%	
SG12	1055.03	1058.84	1069.63	1054.73	1059.56	6.97	789.50	25.5%	
SG14	632.70	632.98	636.88	622.01	631.14	6.38	571.78	9.4%	
SG16	574.97	581.54	565.01	545.82	566.84	15.57	446.24	21.3%	
SG18	532.29	535.96	531.94	476.33	519.13	28.59	450.36	13.2%	
SG20	581.36	584.22	591.36	570.72	581.92	8.57	441.17	24.2%	
Group % Error								16.7%	
Group 2: Frame Inner Cap (Farthest From Skin)									Loading direction
SG1	829.85	953.91	870.32	847.45	875.38	54.91	612.56	30.0%	
SG3	851.03	951.31	865.11	823.28	872.68	55.23	681.50	21.9%	
SG5	781.36	908.98	811.24	757.37	814.74	66.58	665.74	18.3%	
SG7	-	-	-	-	-	-	-	-	Gage damaged
SG9	823.11	918.01	837.61	793.32	843.01	53.29	696.28	17.4%	
SG11	687.96	801.18	695.83	610.84	698.95	78.20	549.66	21.4%	
SG13	870.92	918.37	861.75	802.98	863.50	47.37	641.88	25.7%	
SG15	559.54	592.62	527.41	525.83	551.35	31.59	738.31	-33.9%	
SG17	697.88	730.95	687.14	526.22	660.55	91.47	777.05	-17.6%	
SG19	579.80	597.55	630.05	558.96	591.59	30.10	728.21	-23.1%	
Group % Error								23.5%	
Group 3: Stringer Hat (Closest to Skin)									
SG22	-9.92	-7.31	6.22	10.31	-0.18	9.95	-18.50	-10465.9%	Negligible strain
SG24	-34.43	-42.61	-16.52	-11.69	-26.31	14.62	-38.98	-48.2%	
SG26	253.28	-318.64	-46.87	-16.27	-32.12	233.82	-144.30	-349.2%	Large Stdev
SG28	-54.39	-63.96	-46.37	-51.41	-54.03	7.40	-94.19	-74.3%	
Group % Error								177.9%	
Group 4: Stringer Flange (Farthest From Skin)									
SG21	-319.58	-325.50	-296.33	-310.72	-313.03	12.68	-311.68	0.4%	
SG23	-229.61	-243.56	-218.54	-228.41	-230.03	10.30	-347.12	-50.9%	
SG25	-76.21	-85.80	-123.55	-103.65	-97.30	20.87	-272.95	-180.5%	
SG27	-228.79	-239.83	-245.74	-221.35	-233.93	10.94	-235.05	-0.5%	
Group % Error								45.5%	

TABLE D-19. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP2, LOAD CONDITION 1a (Continued)

CVP2 - Load Condition 1a (Continued)									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 5: Skin, Hoop Direction									Loading direction
SG29T	807.94	807.38	787.12	788.57	797.75	11.46	918.95	-15.2%	
SG30T	817.00	818.99	796.32	794.00	806.58	13.24	923.26	-14.5%	
SG31T	832.92	825.13	821.24	804.79	821.02	11.86	820.94	0.0%	Opposite Gage 37
SG32T	874.50	874.79	855.03	852.76	864.27	12.02	949.45	-9.9%	
SG33T	865.50	861.11	842.68	839.96	852.31	12.87	951.31	-11.6%	
SG34T	771.42	770.59	747.88	749.38	759.82	12.94	918.77	-20.9%	
SG35T	807.02	809.99	788.87	777.11	795.75	15.54	867.29	-9.0%	
SG36T	820.29	816.58	789.42	793.90	805.05	15.64	928.05	-15.3%	
SG37T	830.04	831.07	819.60	805.48	821.55	11.90	921.76	-12.2%	
Group % Error								13.0%	
Group 6: Skin, Longitudinal Direction									Negligible strain
SG29L	-96.86	-99.84	-98.93	-110.02	-101.41	5.87	-121.29	-19.6%	
SG30L	-81.39	-86.66	-88.81	-79.07	-83.98	4.52	-134.31	-59.9%	
SG31L	-89.62	-92.44	-70.07	-64.01	-79.03	14.11	-150.16	-90.0%	Opposite Gage 37
SG32L	-144.55	-153.85	-158.24	-146.19	-150.71	6.45	-186.50	-23.8%	
SG33L	-171.27	-164.81	-165.45	-161.79	-165.83	3.96	-185.98	-12.2%	
SG34L	-134.94	-126.66	-136.35	-130.06	-132.00	4.47	-121.51	7.9%	
SG35L	-28.30	-45.16	-75.28	-26.70	-43.86	22.55	-135.25	-208.4%	
SG36L	-93.73	-98.34	-78.85	-78.42	-87.33	10.22	-186.88	-114.0%	
SG37L	-64.66	-67.83	-47.31	-40.07	-54.97	13.41	-147.72	-168.7%	
Group % Error								59.4%	
Group 7: Skin, 45-degree Direction									
SG29-45	360.36	346.06	357.43	343.25	351.77	8.39	398.26	-13.2%	
SG30-45	363.12	356.85	348.55	366.88	358.85	8.02	399.65	-11.4%	
SG31-45	371.85	357.44	363.63	372.06	366.24	7.06	346.16	5.5%	Opposite Gage 37
SG32-45	376.13	365.45	342.81	356.00	360.10	14.16	402.99	-11.9%	
SG33-45	362.91	365.27	368.87	360.99	364.51	3.39	372.93	-2.3%	
SG34-45	317.27	326.80	320.12	305.97	317.54	8.68	396.84	-25.0%	Questionable gage
SG35-45	369.44	362.61	334.93	356.39	355.84	14.92	386.66	-8.7%	
SG36-45	407.24	399.89	417.99	415.98	410.27	8.35	338.69	17.4%	
SG37-45	386.55	377.89	365.41	389.31	379.79	10.75	402.15	-5.9%	
Group % Error								12.6%	

TABLE D-20. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP2, LOAD CONDITION 1b

CVP2 - Load Condition 1b									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 1: Frame Outer Cap (Closest to Skin)									Negligible strain
SG2	-19.49	-23.10	-20.03	-24.93	-21.89	2.58	-30.92	-41.3%	
SG4	-53.46	-69.28	-54.65	-64.65	-60.51	7.71	-40.66	32.8%	
SG6	-61.34	-62.71	-63.65	-71.63	-64.83	4.63	-44.46	31.4%	
SG8	-32.50	-37.75	-25.22	-33.11	-32.15	5.18	-42.46	-32.1%	
SG10	-63.40	-64.10	-56.92	-73.12	-64.38	6.66	-30.77	52.2%	
SG12	-78.38	-82.55	-79.22	-92.74	-83.22	6.60	-29.27	64.8%	
SG14	-39.26	-46.56	-35.99	-45.86	-41.92	5.14	-26.89	35.9%	
SG16	-40.75	-23.76	-29.61	-52.78	-36.72	12.82	-22.14	39.7%	
SG18	-30.86	-28.63	-39.02	-51.97	-37.62	10.56	-22.60	39.9%	
SG20	-27.40	-28.76	-27.96	-25.34	-27.37	1.46	-13.35	51.2%	
Group % Error								47.9%	
Group 2: Frame Inner Cap (Farthest From Skin)									Negligible strain
SG1	142.64	83.47	32.41	133.63	98.04	50.91	-17.28	117.6%	
SG3	-28.23	-140.90	-208.33	-80.14	-114.40	77.73	-184.54	-61.3%	
SG5	-3.50	-1.97	-194.42	-12.26	-53.04	94.37	-183.22	-245.4%	
SG7	-	-	-	-	-	-	-	-	Gage damaged
SG9	-44.10	-105.41	-200.05	-87.88	-109.36	65.73	-182.53	-66.9%	
SG11	5.16	-3.06	-199.26	-17.54	-53.67	97.51	-189.91	-253.8%	
SG13	108.44	36.77	-65.49	187.86	66.90	107.69	2.99	95.5%	
SG15	-36.24	-5.16	-47.41	-64.27	-38.27	24.90	-71.38	-86.5%	
SG17	-1.87	2.22	-81.55	-56.42	-34.41	41.26	-70.03	-103.5%	
SG19	16.25	2.74	-21.36	50.15	11.95	29.85	-25.28	311.6%	
Group % Error								118.5%	
Group 3: Stringer Hat (Closest to Skin)									
SG22	281.59	303.81	268.83	305.87	290.02	17.90	260.70	10.1%	
SG24	356.51	371.73	339.48	384.31	363.01	19.37	315.17	13.2%	
SG26	5.20	48.93	321.34	365.64	185.28	184.45	333.84	-80.2%	Large Stdev
SG28	346.00	350.87	318.59	362.24	344.42	18.52	312.37	9.3%	
Group % Error								26.7%	
Group 4: Stringer Flange (Farthest From Skin)									
SG21	271.23	281.40	263.30	285.18	275.28	9.92	258.47	6.1%	
SG23	335.08	343.55	327.06	354.70	340.10	11.84	309.66	8.9%	
SG25	289.47	296.77	280.85	216.64	270.93	36.78	313.78	-15.8%	
SG27	317.62	321.96	298.47	337.01	318.77	15.88	296.30	7.0%	
Group % Error								9.8%	

TABLE D-20. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP2, LOAD CONDITION 1b (Continued)

CVP2 - Load Condition 1b (Continued)									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 5: Skin, Hoop Direction									
SG29T	-156.19	-159.80	-169.27	-181.60	-166.71	11.35	-142.81	14.3%	
SG30T	-134.17	-142.56	-153.65	-163.69	-148.52	12.88	-119.69	19.4%	
SG31T	-94.74	-99.23	-58.32	-105.69	-89.50	21.26	-72.28	19.2%	Opposite Gage 37
SG32T	-130.42	-134.50	-135.91	-159.88	-140.18	13.34	-115.60	17.5%	
SG33T	-138.49	-142.38	-141.22	-147.86	-142.49	3.94	-117.50	17.5%	
SG34T	-176.60	-180.58	-190.39	-167.05	-178.65	9.67	-144.27	19.2%	
SG35T	-114.37	-116.00	-120.33	-132.81	-120.88	8.34	-130.32	-7.8%	
SG36T	-107.68	-110.53	-98.75	-134.74	-112.93	15.38	-95.92	15.1%	
SG37T	-105.68	-110.91	-112.39	-129.16	-114.53	10.17	-102.03	10.9%	
Group % Error								16.5%	
Group 6: Skin, Longitudinal Direction									Loading direction
SG29L	355.19	356.04	354.00	370.00	358.81	7.51	352.12	1.9%	
SG30L	374.55	385.55	361.20	401.92	380.81	17.24	346.39	9.0%	
SG31L	319.75	339.11	304.06	347.46	327.60	19.52	300.07	8.4%	Opposite Gage 37
SG32L	384.58	398.20	366.03	414.70	390.88	20.64	342.62	12.3%	
SG33L	362.41	371.30	334.81	371.71	360.06	17.37	344.58	4.3%	
SG34L	339.41	344.40	315.16	337.77	334.19	13.00	351.90	-5.3%	
SG35L	374.39	381.34	350.09	400.96	376.69	21.00	349.55	7.2%	
SG36L	319.19	330.42	303.02	341.75	323.60	16.52	308.75	4.6%	
SG37L	322.79	343.38	305.96	350.89	330.76	20.36	303.23	8.3%	
Group % Error								7.6%	
Group 7: Skin, 45-degree Direction									
SG29-45	137.11	159.17	121.49	147.22	141.25	15.96	78.94	44.1%	
SG30-45	108.15	132.77	90.10	131.21	115.56	20.36	110.82	4.1%	
SG31-45	96.44	88.91	91.66	103.90	95.23	6.57	114.37	-20.1%	Opposite Gage 37
SG32-45	103.53	91.62	79.03	106.74	95.23	12.60	114.89	-20.6%	
SG33-45	95.33	98.32	93.81	101.93	97.35	3.58	113.83	-16.9%	
SG34-45	24.38	25.16	32.30	40.42	30.57	7.47	128.83	-321.5%	Questionable gage
SG35-45	121.24	117.03	111.95	144.37	123.65	14.33	110.66	10.5%	
SG36-45	94.72	98.03	114.21	126.07	108.26	14.61	105.80	2.3%	
SG37-45	86.58	81.26	59.84	88.69	79.09	13.21	100.77	-27.4%	
Group % Error								40.0%	

TABLE D-21. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP2, LOAD CONDITION 1c

CVP2 - Load Condition 1c									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 1: Frame Outer Cap (Closest to Skin)									Primary loading direction
SG2	579.98	586.49	591.92	589.19	586.90	5.12	559.26	4.7%	
SG4	553.07	557.42	565.94	567.61	561.01	6.92	525.71	6.3%	
SG6	637.36	638.54	658.56	659.98	648.61	12.33	628.48	3.1%	
SG8	571.61	575.27	602.10	597.42	586.60	15.39	513.93	12.4%	
SG10	557.94	559.38	562.67	565.44	561.35	3.37	538.80	4.0%	
SG12	959.66	962.17	979.46	983.76	971.26	12.12	742.86	23.5%	
SG14	580.50	579.57	608.39	600.40	592.22	14.44	538.01	9.2%	
SG16	540.10	528.85	537.34	530.13	534.10	5.47	427.48	20.0%	
SG18	497.14	488.46	491.19	493.07	492.46	3.65	430.07	12.7%	
SG20	557.41	546.90	543.07	551.79	549.79	6.21	426.98	22.3%	
Group % Error								15.6%	
Group 2: Frame Inner Cap (Farthest From Skin)									Primary loading direction
SG1	876.17	898.59	807.80	859.26	860.46	38.62	555.17	35.5%	
SG3	733.30	740.54	685.05	707.24	716.53	25.40	473.59	33.9%	
SG5	681.88	668.39	699.98	687.03	684.32	13.07	459.47	32.9%	
SG7	-	-	-	-	-	-	-	-	Gage damaged
SG9	723.13	715.81	663.33	687.11	697.35	27.49	496.58	28.8%	
SG11	608.06	573.74	582.48	580.81	586.27	15.01	353.11	39.8%	
SG13	871.88	807.36	808.85	795.67	820.94	34.47	607.81	26.0%	
SG15	525.25	487.40	494.77	495.97	500.85	16.70	651.97	-30.2%	
SG17	662.64	602.36	611.77	617.50	623.57	26.78	690.65	-10.8%	
SG19	579.73	532.71	542.87	543.99	549.82	20.57	690.08	-25.5%	
Group % Error								30.6%	
Group 3: Stringer Hat (Closest to Skin)									
SG22	264.49	262.02	258.65	254.08	259.81	4.51	230.82	11.2%	
SG24	306.58	300.00	293.25	295.38	298.80	5.90	259.27	13.2%	
SG26	173.34	261.24	322.65	289.42	261.66	64.01	178.94	31.6%	Large Stdev
SG28	262.23	264.86	269.97	255.33	263.10	6.09	205.91	21.7%	
Group % Error								20.6%	
Group 4: Stringer Flange (Farthest From Skin)									
SG21	-33.01	-35.01	-40.08	-36.47	-36.14	2.98	-42.11	-16.5%	
SG23	103.10	97.20	84.43	79.38	91.02	11.00	-23.68	126.0%	
SG25	195.74	195.79	185.93	162.99	185.11	15.46	48.09	74.0%	
SG27	75.89	77.90	66.99	68.00	72.19	5.51	63.12	12.6%	
Group % Error								80.8%	

TABLE D-21. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP2, LOAD CONDITION 1c (Continued)

CVP2 - Load Condition 1c (Continued)									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 5: Skin, Hoop Direction									Primary loading direction
SG29T	724.40	726.61	724.09	737.12	728.06	6.15	822.70	-13.0%	
SG30T	708.14	712.39	718.88	721.67	715.27	6.14	818.80	-14.5%	
SG31T	740.72	744.17	749.94	745.57	745.10	3.82	735.44	1.3%	Opposite Gage 37
SG32T	768.09	772.78	779.45	785.94	776.56	7.80	850.87	-9.6%	
SG33T	753.80	758.65	761.85	765.70	760.00	5.04	851.17	-12.0%	
SG34T	687.90	688.52	683.65	693.18	688.31	3.90	822.84	-19.5%	
SG35T	711.01	711.90	705.40	709.34	709.41	2.88	769.64	-8.5%	
SG36T	721.76	722.37	727.97	728.76	725.22	3.66	838.82	-15.7%	
SG37T	729.96	735.29	752.11	744.74	740.53	9.85	832.89	-12.5%	
Group % Error								12.6%	
Group 6: Skin, Longitudinal Direction									Secondary loading direction
SG29L	252.24	250.79	265.07	236.07	251.04	11.87	221.39	11.8%	
SG30L	278.90	273.92	264.47	261.84	269.78	7.99	202.06	25.1%	
SG31L	223.87	218.78	206.40	221.29	217.58	7.74	142.44	34.5%	Opposite Gage 37
SG32L	224.89	220.84	206.04	194.97	211.69	13.78	146.16	31.0%	
SG33L	195.85	189.66	181.62	174.01	185.29	9.51	150.25	18.9%	
SG34L	204.16	206.11	194.92	184.56	197.44	9.88	221.54	-12.2%	
SG35L	304.38	304.39	295.91	295.29	299.99	5.08	196.44	34.5%	
SG36L	205.42	209.67	203.95	210.64	207.42	3.24	115.33	44.4%	
SG37L	243.16	237.48	226.94	238.56	236.54	6.86	147.57	37.6%	
Group % Error								30.1%	
Group 7: Skin, 45-degree Direction									
SG29-45	546.34	537.76	514.42	514.76	528.32	16.24	498.26	5.7%	
SG30-45	498.50	496.20	475.55	486.02	489.07	10.52	515.80	-5.5%	
SG31-45	473.58	473.75	454.80	470.88	468.25	9.07	451.02	3.7%	Opposite Gage 37
SG32-45	485.07	486.84	466.73	465.91	476.14	11.37	520.04	-9.2%	
SG33-45	491.84	489.11	499.86	500.04	495.21	5.59	491.34	0.8%	
SG34-45	406.69	414.51	409.40	410.91	410.38	3.26	541.80	-32.0%	questionable gage
SG35-45	497.37	491.06	483.83	489.63	490.47	5.56	503.96	-2.7%	
SG36-45	507.63	502.82	521.87	519.80	513.03	9.26	445.94	13.1%	
SG37-45	478.74	479.51	464.67	479.07	475.50	7.23	506.32	-6.5%	
Group % Error								11.3%	

TABLE D-22. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP3, LOAD CONDITION 1a

CVP3 - Load Condition 1a									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 1: Frame Outer Cap (Closest to Skin)									Loading direction
SG6	445.18	441.21	469.51	462.70	454.65	13.62	410.33	9.7%	
SG9	483.24	476.35	501.05	491.73	488.09	10.69	422.34	13.5%	
Group % Error								11.9%	
Group 2: Frame Inner Cap (Farthest From Skin)									Loading direction
SG1	328.39	276.12	409.39	414.21	357.03	66.78	601.41	-68.4%	
SG2	377.86	307.18	473.21	457.82	404.02	76.91	613.67	-51.9%	
SG3	421.35	348.87	644.97	539.44	488.66	130.49	477.95	2.2%	
SG4	482.46	409.17	613.15	529.65	508.60	85.52	600.18	-18.0%	
SG5	397.36	327.36	482.80	454.74	415.57	68.72	612.17	-47.3%	
SG7	405.24	321.41	496.61	521.20	436.12	91.30	638.60	-46.4%	
SG8	381.07	330.22	428.06	399.63	384.74	41.17	588.46	-52.9%	
Group % Error								42.4%	
Group 3: Stringer Hat (Closest to Skin)									Negligible strain
SG12	-7.14	-6.05	13.83	23.53	6.04	15.13	-6.55	208.4%	
SG14	-69.24	-68.25	-55.31	-69.18	-65.50	6.80	-73.91	-12.8%	
SG16	-31.80	-32.26	-12.54	-12.83	-22.36	11.17	-121.32	-442.7%	
SG17	-	-	-	-	-	-	-	-	Gage damaged
SG20	-20.43	-27.15	-27.51	-28.20	-25.82	3.62	-64.30	-149.0%	
SG21	-108.17	-108.64	-100.97	-111.37	-107.29	4.44	-116.91	-9.0%	
SG24	-16.21	-21.44	-14.59	8.13	-11.03	13.10	-65.80	-496.6%	
SG25	-79.95	-77.65	-66.38	-73.00	-74.24	5.99	-74.32	-0.1%	
SG27	-24.30	-22.69	-6.02	-5.34	-14.59	10.31	-120.99	-729.5%	
SG29	-10.68	-10.25	13.29	19.68	3.01	15.78	-71.85	2488.8%	
Group % Error								117.4%	
Group 4: Stringer Flange (Farthest From Skin)									
SG10	-159.68	-162.96	-126.20	-113.58	-140.61	24.50	-256.93	-82.7%	
SG11	-136.86	-139.47	-143.85	-137.18	-139.34	3.22	-67.39	51.6%	
SG13	-25.05	-37.31	-34.64	-21.01	-29.50	7.73	-61.40	-108.1%	
SG15	-2.86	-11.08	-26.71	-21.94	-15.65	10.74	7.32	146.8%	
SG18	-200.71	-191.10	-209.54	-219.59	-205.24	12.18	-172.44	16.0%	
SG19	-297.60	-293.43	-305.38	-319.95	-304.09	11.68	-297.51	2.2%	
SG22	38.90	24.80	26.52	41.60	32.96	8.53	153.49	-365.7%	
SG23	-310.86	-307.90	-308.57	-288.91	-304.06	10.18	-352.61	-16.0%	
SG26	-15.96	-20.54	-29.34	-10.13	-18.99	8.11	-61.80	-225.4%	
SG28	-20.20	-16.35	-48.00	-28.72	-28.32	14.11	6.51	123.0%	
SG30	-87.70	-86.31	-52.87	-49.14	-69.00	20.85	-32.10	53.5%	
SG31	-148.10	-154.92	-121.55	-103.96	-132.13	23.66	-257.95	-95.2%	
Group % Error								44.8%	

TABLE D-22. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP3, LOAD CONDITION 1a (Continued)

CVP3 - Load Condition 1a (Continued)									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 5: Skin, Hoop Direction									Loading direction
SG32T	684.70	693.69	682.65	678.91	684.99	6.28	803.29	-17.3%	
SG33T	672.96	688.69	682.42	672.27	679.08	7.90	807.21	-18.9%	
SG34T	803.45	805.16	790.05	771.36	792.50	15.63	813.62	-2.7%	
SG35T	652.85	661.03	636.16	639.57	647.40	11.59	713.55	-10.2%	Opposite Gage 34
SG36T	762.12	767.95	764.18	750.88	761.28	7.34	802.08	-5.4%	
SG37T	452.89	467.93	416.90	414.00	437.93	26.70	604.89	-38.1%	Opposite Gage 36
SG38T	766.41	769.08	759.20	736.50	757.80	14.80	813.54	-7.4%	
SG39T	717.92	719.64	712.96	701.16	712.92	8.34	804.06	-12.8%	
SG40T	526.05	532.30	522.19	501.65	520.55	13.27	583.99	-12.2%	Opposite Gage 39
Group % Error								14.0%	
Group 6: Skin, Longitudinal Direction									Negligible strain
SG32L	-13.33	-18.54	3.20	-2.50	-7.79	9.92	-69.32	-789.8%	
SG33L	-33.44	-45.33	-22.19	-25.84	-31.70	10.22	-75.76	-139.0%	
SG34L	-108.51	-109.95	-104.84	-81.93	-101.31	13.09	-149.49	-47.6%	
SG35L	-102.27	-106.77	-98.28	-78.73	-96.51	12.35	-148.23	-53.6%	Opposite Gage 34
SG36L	-31.07	-34.13	-19.77	-13.49	-24.62	9.66	-70.58	-186.7%	
SG37L	-150.66	-150.70	-143.18	-136.62	-145.29	6.77	-320.67	-120.7%	Opposite Gage 36
SG38L	-95.98	-95.44	-97.36	-78.11	-91.72	9.11	-141.09	-53.8%	
SG39L	-15.94	-15.96	-2.81	7.01	-6.92	11.16	-62.24	-799.0%	
SG40L	-160.01	-156.74	-149.61	-152.59	-154.74	4.57	-313.00	-102.3%	Opposite Gage 39
Group % Error								99.6%	
Group 7: Skin, 45-degree Direction									
SG32-45	349.69	348.18	342.51	365.45	351.46	9.82	371.47	-5.7%	
SG33-45	280.97	278.37	275.95	270.77	276.51	4.35	358.06	-29.5%	
SG34-45	354.24	352.97	349.85	362.02	354.77	5.17	340.89	3.9%	
SG35-45	305.01	303.52	311.37	314.05	308.49	5.03	287.12	6.9%	Opposite Gage 34
SG36-45	340.42	332.76	325.56	332.88	332.90	6.07	347.59	-4.4%	
SG37-45	185.47	185.99	177.00	178.15	181.65	4.74	165.16	9.1%	Opposite Gage 36
SG38-45	325.31	327.50	316.81	313.02	320.66	6.87	333.85	-4.1%	
SG39-45	409.46	414.10	404.04	423.54	412.78	8.27	367.34	11.0%	
SG40-45	217.65	223.50	208.74	213.94	215.96	6.22	149.71	30.7%	Opposite Gage 39
Group % Error								12.9%	

TABLE D-23. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP3, LOAD CONDITION 1b

CVP3 - Load Condition 1b									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 1: Frame Outer Cap (Closest to Skin)									
SG6	-212.15	-195.05	-202.13	-194.90	-201.06	8.13	-117.89	41.4%	
SG9	-150.26	-146.58	-159.96	-157.41	-153.55	6.20	-122.97	19.9%	
Group % Error								35.0%	
Group 2: Frame Inner Cap (Farthest From Skin)									
SG1	-199.76	-231.96	-230.24	-282.13	-236.02	34.11	-438.79	-85.9%	
SG2	-262.11	-310.42	-334.72	-409.52	-329.19	61.47	-602.18	-82.9%	
SG3	755.96	762.56	662.97	532.39	678.47	107.48	944.82	-39.3%	
SG4	-14.97	-10.77	-84.78	-211.26	-80.45	93.58	-47.49	41.0%	
SG5	-260.83	-292.82	-337.36	-424.15	-328.79	70.90	-595.22	-81.0%	
SG7	-376.25	-365.94	-312.35	-436.87	-372.85	51.05	-631.57	-69.4%	
SG8	-187.21	-186.42	-238.48	-308.92	-230.26	57.82	-428.45	-86.1%	
Group % Error								62.6%	
Group 3: Stringer Hat (Closest to Skin)									
SG12	823.22	817.43	822.37	810.53	818.39	5.83	664.24	18.8%	
SG14	1011.40	1050.13	1041.56	1017.80	1030.22	18.56	1101.55	-6.9%	
SG16	1020.41	998.39	1002.76	990.82	1003.10	12.55	1123.43	-12.0%	
SG17	-	-	-	-	-	-	-	-	Gage damaged
SG20	800.77	827.06	833.35	811.19	818.09	14.84	693.62	15.2%	
SG21	513.62	504.26	513.03	484.78	503.92	13.46	442.76	12.1%	
SG24	888.54	905.30	909.80	893.09	899.18	10.01	832.61	7.4%	
SG25	1052.49	1048.81	1046.46	1027.66	1043.86	11.08	1101.58	-5.5%	
SG27	964.45	936.12	942.69	941.59	946.21	12.49	1122.08	-18.6%	
SG29	807.42	790.23	799.00	796.36	798.25	7.13	854.52	-7.0%	
Group % Error								12.1%	
Group 4: Stringer Flange (Farthest From Skin)									
SG10	358.94	356.12	369.57	355.77	360.10	6.47	311.50	13.5%	
SG11	364.53	369.63	372.46	361.00	366.91	5.12	333.86	9.0%	
SG13	1094.75	1080.29	1098.28	1079.01	1088.08	9.86	1114.43	-2.4%	
SG15	563.90	568.36	571.54	562.94	566.69	4.01	529.26	6.6%	
SG18	629.82	629.46	635.53	618.93	628.44	6.92	581.59	7.5%	
SG19	589.71	674.01	674.34	650.57	647.16	39.88	678.33	-4.8%	
SG22	-128.60	161.75	159.10	118.77	77.76	138.97	66.98	13.9%	
SG23	755.40	795.38	801.44	778.65	782.72	20.60	813.96	-4.0%	
SG26	1085.30	1072.27	1079.17	1072.64	1077.35	6.18	1114.38	-3.4%	
SG28	485.98	493.08	489.50	488.47	489.26	2.95	528.55	-8.0%	
SG30	329.30	338.54	196.47	186.31	262.66	82.48	366.40	-39.5%	
SG31	361.27	369.40	376.15	362.32	367.29	6.93	311.74	15.1%	
Group % Error								7.4%	

TABLE D-23. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP3, LOAD CONDITION 1b (Continued)

CVP3 - Load Condition 1b (Continued)									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 5: Skin, Hoop Direction									
SG32T	-276.96	-278.08	-281.48	-266.37	-275.72	6.52	-23.56	91.5%	
SG33T	-414.72	-425.75	-423.66	-410.89	-418.76	7.10	-85.36	79.6%	
SG34T	-352.17	-343.88	-347.59	-334.89	-344.63	7.33	-331.34	3.9%	
SG35T	-183.52	-205.99	-202.70	-177.63	-192.46	14.00	-186.00	3.4%	Opposite Gage 34
SG36T	-402.93	-416.97	-414.69	-406.61	-410.30	6.63	-107.74	73.7%	
SG37T	-418.07	-401.72	-401.25	-384.32	-401.34	13.78	-350.24	12.7%	Opposite Gage 36
SG38T	-360.35	-353.23	-357.03	-355.22	-356.46	3.02	-335.14	6.0%	
SG39T	-279.38	-281.54	-279.54	-264.33	-276.20	7.97	-43.72	84.2%	
SG40T	-158.72	-149.25	-149.54	-145.77	-150.82	5.54	-118.49	21.4%	Opposite Gage 39
Group % Error								58.1%	
Group 6: Skin, Longitudinal Direction									Loading direction
SG32L	844.46	849.46	840.93	815.88	837.68	14.95	688.49	17.8%	
SG33L	1067.39	1059.53	1056.25	1030.56	1053.43	15.95	933.70	11.4%	
SG34L	875.16	884.03	888.28	871.50	879.74	7.75	892.35	-1.4%	
SG35L	850.73	857.62	863.73	848.20	855.07	7.01	921.66	-7.8%	Opposite Gage 34
SG36L	1076.61	1075.79	1068.50	1052.38	1068.32	11.23	936.28	12.4%	
SG37L	965.84	977.50	978.30	971.82	973.37	5.79	1045.55	-7.4%	Opposite Gage 36
SG38L	898.61	911.76	909.97	903.88	906.06	6.00	899.34	0.7%	
SG39L	851.83	842.83	844.38	833.65	843.17	7.47	688.39	18.4%	
SG40L	808.81	810.75	811.07	798.28	807.23	6.05	858.77	-6.4%	Opposite Gage 39
Group % Error								10.9%	
Group 7: Skin, 45-degree Direction									
SG32-45	321.29	328.52	323.80	332.24	326.46	4.88	374.64	-14.8%	
SG33-45	-110.97	-105.68	-105.82	-102.45	-106.23	3.52	9.48	108.9%	
SG34-45	144.00	160.87	162.85	165.31	158.26	9.68	176.38	-11.5%	
SG35-45	184.61	182.77	189.61	198.31	188.83	6.95	270.94	-43.5%	Opposite Gage 34
SG36-45	-109.32	-92.42	-97.22	-111.76	-102.68	9.34	15.39	115.0%	
SG37-45	-256.59	-187.01	-188.86	-193.68	-206.54	33.49	-115.84	43.9%	Opposite Gage 36
SG38-45	305.25	313.99	321.26	302.38	310.72	8.59	341.68	-10.0%	
SG39-45	245.78	263.42	262.19	268.68	260.02	9.90	352.71	-35.6%	
SG40-45	352.05	374.88	373.07	371.00	367.75	10.59	415.36	-12.9%	Opposite Gage 39
Group % Error								32.7%	

TABLE D-24. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP3, LOAD CONDITION 1c

CVP3 - Load Condition 1c									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 1: Frame Outer Cap (Closest to Skin)									Secondary loading direction
SG6	258.32	246.40	265.09	274.00	260.95	11.63	301.19	-15.4%	
SG9	321.97	303.36	322.40	330.44	319.54	11.47	309.44	3.2%	
Group % Error								10.1%	
Group 2: Frame Inner Cap (Farthest From Skin)									Secondary loading direction
SG1	49.32	12.44	22.32	28.45	28.13	15.59	120.02	-326.6%	
SG2	-39.40	-103.59	-68.27	-89.62	-75.22	27.95	-31.80	57.7%	
SG3	1142.93	1041.25	993.98	923.95	1025.53	91.91	1294.43	-26.2%	
SG4	436.88	352.11	328.91	266.89	346.20	70.35	467.23	-35.0%	
SG5	-30.59	-109.91	-57.95	-88.13	-71.65	34.68	-26.18	63.5%	
SG7	-20.92	-88.45	-7.44	-63.34	-45.04	37.48	-35.06	22.2%	
SG8	77.34	-2.45	50.29	35.40	40.15	33.28	117.30	-192.2%	
Group % Error								29.8%	
Group 3: Stringer Hat (Closest to Skin)									
SG12	836.44	808.29	800.77	793.71	809.80	18.73	636.60	21.4%	
SG14	954.65	938.30	916.50	902.87	928.08	22.95	996.80	-7.4%	
SG16	1024.26	978.50	957.22	945.78	976.44	34.64	972.90	0.4%	
SG17	-	-	-	-	-	-	-	-	Gage damaged
SG20	779.08	771.02	757.06	740.53	761.92	16.92	599.55	21.3%	
SG21	390.41	383.14	374.02	347.25	373.71	18.87	334.84	10.4%	
SG24	910.39	865.81	845.23	838.20	864.91	32.51	730.27	15.6%	
SG25	964.14	953.09	932.08	906.09	938.85	25.57	997.52	-6.2%	
SG27	950.31	917.90	900.36	884.34	913.23	28.27	971.81	-6.4%	
SG29	794.38	773.87	773.62	759.03	775.23	14.53	757.04	2.3%	
Group % Error								11.9%	
Group 4: Stringer Flange (Farthest From Skin)									
SG10	276.02	274.29	302.99	291.10	286.10	13.56	155.45	45.7%	
SG11	264.03	261.39	252.96	241.87	255.06	9.98	281.44	-10.3%	
SG13	1080.08	1048.25	1029.64	1026.94	1046.23	24.48	1019.14	2.6%	
SG15	569.58	566.44	547.13	542.00	556.29	13.76	539.64	3.0%	
SG18	454.26	464.61	450.32	434.36	450.89	12.56	424.46	5.9%	
SG19	464.33	461.58	442.33	418.30	446.64	21.27	441.61	1.1%	
SG22	229.11	208.41	215.18	217.80	217.63	8.62	187.30	13.9%	
SG23	586.99	554.49	537.95	525.74	551.29	26.55	512.68	7.0%	
SG26	1084.98	1051.49	1028.29	1015.45	1045.05	30.51	1018.47	2.5%	
SG28	476.14	476.36	448.85	442.71	461.02	17.77	537.95	-16.7%	
SG30	264.46	271.96	152.71	141.49	207.66	70.14	348.43	-67.8%	
SG31	310.06	289.52	319.72	308.69	307.00	12.64	155.72	49.3%	
Group % Error								13.8%	

TABLE D-24. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP3, LOAD CONDITION 1c (Continued)

CVP3 - Load Condition 1c (Continued)									
	Experiment						Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Average	Stdev			
Group 5: Skin, Hoop Direction									Secondary loading direction
SG32T	383.15	391.52	390.33	411.49	394.12	12.15	663.65	-68.4%	
SG33T	215.84	229.88	235.96	254.97	234.16	16.23	564.47	-141.1%	
SG34T	512.69	513.63	508.26	525.07	514.91	7.17	541.33	-5.1%	
SG35T	396.73	403.32	350.83	428.74	394.91	32.46	472.46	-19.6%	Opposite Gage 34
SG36T	292.44	299.69	307.82	325.56	306.38	14.25	540.87	-76.5%	
SG37T	65.08	80.76	58.81	69.53	68.55	9.25	280.91	-309.8%	Opposite Gage 36
SG38T	442.99	457.07	449.34	463.59	453.25	8.98	525.27	-15.9%	
SG39T	401.08	410.00	410.28	430.63	413.00	12.51	645.50	-56.3%	
SG40T	336.89	345.52	341.68	342.16	341.56	3.55	449.72	-31.7%	Opposite Gage 39
Group % Error								54.2%	
Group 6: Skin, Longitudinal Direction									Primary loading direction
SG32L	805.37	789.80	769.10	750.38	778.66	24.00	568.22	27.0%	
SG33L	1007.90	985.76	960.36	939.71	973.43	29.71	781.72	19.7%	
SG34L	756.43	758.49	737.23	720.69	743.21	17.81	729.56	1.8%	
SG35L	739.22	735.41	718.71	702.01	723.84	17.06	755.72	-4.4%	Opposite Gage 34
SG36L	1004.92	999.91	965.00	944.30	978.53	28.92	783.37	19.9%	
SG37L	851.25	843.95	823.63	803.63	830.62	21.45	817.08	1.6%	Opposite Gage 36
SG38L	839.83	809.01	774.06	767.29	797.55	33.60	740.31	7.2%	
SG39L	807.57	795.28	778.72	764.57	786.54	18.82	571.72	27.3%	
SG40L	696.26	691.06	677.77	648.94	678.51	21.19	634.03	6.6%	Opposite Gage 39
Group % Error								16.9%	
Group 7: Skin, 45-degree Direction									
SG32-45	660.27	655.63	631.57	646.54	648.50	12.65	661.42	-2.0%	
SG33-45	108.41	121.63	114.47	114.60	114.78	5.40	258.49	-125.2%	
SG34-45	569.59	555.96	531.24	540.38	549.29	16.95	540.37	1.6%	
SG35-45	493.51	480.51	470.67	473.63	479.58	10.16	522.93	-9.0%	Opposite Gage 34
SG36-45	193.03	179.45	177.22	187.68	184.35	7.33	263.43	-42.9%	
SG37-45	-11.71	-24.50	-17.31	-9.01	-15.63	6.85	117.54	851.9%	Opposite Gage 36
SG38-45	682.62	647.02	635.01	639.40	651.01	21.65	691.13	-6.2%	
SG39-45	700.01	664.10	640.18	653.30	664.40	25.68	638.87	3.8%	
SG40-45	643.70	606.67	582.26	573.83	601.62	31.32	598.79	0.5%	Opposite Gage 39
Group % Error								14.8%	

TABLE D-25. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP4, LOAD CONDITION 1a

CVP4 - Load Condition 1a										
	Experiment							Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Water-3	Average	Stdev			
Group 1: Frame Outer Cap (Closest to Skin)										Loading direction
SG6	440.62	439.04	416.63	440.76	437.50	434.91	10.31	410.33	5.7%	
SG9	473.30	471.61	454.64	462.26	462.11	464.79	7.67	422.34	9.1%	
Group % Error									7.7%	
Group 2: Frame Inner Cap (Farthest From Skin)										Loading direction
SG1	688.74	745.80	658.59	619.54	679.43	678.42	46.12	601.41	11.4%	
SG2	835.98	884.33	772.17	679.97	770.95	788.68	77.12	613.67	22.2%	
SG3	1019.69	1015.79	896.52	634.68	842.74	881.88	157.94	477.95	45.8%	
SG4	860.00	859.85	790.64	594.22	734.56	767.85	110.38	600.18	21.8%	
SG5	2659.74	1014.47	744.26	633.93	770.78	1164.63	847.26	612.17	47.4%	
SG7	-	-	-	-	-	-	-	-	-	Gage damaged
SG8	656.44	687.12	579.67	528.72	606.45	611.68	62.51	588.46	3.8%	
Group % Error									35.7%	
Group 3: Stringer Hat (Closest to Skin)										
SG12	-30.84	-30.19	-41.07	-39.99	-39.90	-36.40	5.40	-6.55	82.0%	
SG14	-234.92	-108.12	-167.97	236.61	745.37	94.19	406.90	-73.91	178.5%	
SG16	-63.77	-64.81	-67.93	-77.04	-72.32	-69.17	5.51	-121.32	-75.4%	
SG17	-42.24	-34.93	-31.89	-40.72	-49.34	-39.82	6.78	-170.45	-328.0%	
SG20	-3.64	1.37	-5.88	-14.62	-17.29	-8.01	7.77	-64.30	-702.3%	
SG21	-157.66	-159.94	-151.64	-174.48	-176.76	-164.10	10.98	-116.91	28.8%	
SG24	-35.40	-27.79	-28.27	-42.23	-38.86	-34.51	6.39	-65.80	-90.7%	
SG25	-140.12	-137.68	-139.67	-165.31	-163.01	-149.16	13.75	-74.32	50.2%	
SG27	-61.74	-57.86	-54.13	-67.65	-67.28	-61.73	5.88	-120.99	-96.0%	
SG29	-68.73	-67.66	-62.86	-64.10	-70.38	-66.75	3.16	-71.85	-7.6%	
Group % Error									92.5%	
Group 4: Stringer Flange (Farthest From Skin)										
SG10	-103.32	-129.21	-129.05	-165.97	-143.17	-134.14	22.88	-256.93	-91.5%	
SG11	-73.25	-78.66	-79.51	-93.05	-82.41	-81.38	7.32	-67.39	17.2%	
SG13	30.68	43.61	32.29	10.90	21.56	27.81	12.28	-61.40	320.8%	
SG15	-27.01	-33.64	-33.15	-44.62	-36.54	-34.99	6.40	7.32	120.9%	
SG18	-243.02	-239.68	-1537.38	278.65	-333.64	-415.02	672.28	-172.44	58.4%	
SG19	-348.57	-341.18	-345.02	-352.23	-352.99	-348.00	4.96	-297.51	14.5%	
SG22	-	-	-	-	-	-	-	-	-	Gage damaged
SG23	-344.66	-337.58	-331.59	-347.53	-348.43	-341.96	7.19	-352.61	-3.1%	
SG26	5.93	26.06	-5.74	-5.39	-1.00	3.97	13.21	-61.80	1656.7%	
SG28	-13.65	-12.84	-21.00	-10.89	-23.51	-16.38	5.53	6.51	139.7%	
SG30	-37.38	-37.90	-38.17	-35.85	-43.35	-38.53	2.84	-32.10	16.7%	
SG31	-169.87	-168.01	-173.38	-162.74	-171.82	-169.16	4.12	-257.95	-52.5%	
Group % Error									46.1%	

TABLE D-25. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP4, LOAD CONDITION 1a (Continued)

CVP4 - Load Condition 1a (Continued)										
	Experiment							Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Water-3	Average	Stdev			
Group 5: Skin, Hoop Direction										Loading direction
SG32T	774.92	772.07	792.78	809.24	791.77	788.16	15.11	803.29	-1.9%	
SG33T	804.45	800.49	806.68	835.49	823.14	814.05	14.77	807.21	0.8%	
SG34T	746.79	742.23	727.59	733.87	753.74	740.84	10.34	813.62	-9.8%	
SG35T	703.26	695.36	704.37	742.17	710.56	711.14	18.17	713.55	-0.3%	Opposite Gage 34
SG36T	746.86	744.22	743.50	760.73	762.14	751.49	9.18	802.08	-6.7%	
SG37T	459.27	444.31	452.09	482.53	462.82	460.21	14.36	604.89	-31.4%	Opposite Gage 36
SG38T	796.39	790.67	793.14	792.70	801.76	794.93	4.33	813.54	-2.3%	
SG39T	775.12	768.36	780.13	796.14	785.20	780.99	10.51	804.06	-3.0%	
SG40T	451.17	439.32	439.04	466.31	452.59	449.68	11.27	583.99	-29.9%	Opposite Gage 39
Group % Error									10.3%	
Group 6: Skin, Longitudinal Direction										
SG32L	41.53	46.36	29.59	27.09	29.23	34.76	8.61	-69.32	299.4%	
SG33L	14.22	21.02	13.69	-19.69	-3.79	5.09	16.61	-75.76	1587.7%	
SG34L	-97.65	-93.51	-63.98	-112.58	-116.06	-96.76	20.67	-149.49	-54.5%	
SG35L	-100.51	-95.97	-64.63	-115.45	-118.12	-98.94	21.38	-148.23	-49.8%	Opposite Gage 34
SG36L	-13.49	-11.17	-11.26	-50.10	-42.93	-25.79	19.11	-70.58	-173.7%	
SG37L	-179.28	-184.36	-259.57	-187.22	-201.53	-202.39	33.01	-320.67	-58.4%	Opposite Gage 36
SG38L	-107.51	-94.68	-97.74	-110.14	-111.09	-104.23	7.52	-141.09	-35.4%	
SG39L	2.66	12.66	12.41	-4.90	-5.86	3.40	8.97	-62.24	1933.2%	
SG40L	-166.23	-160.90	-160.39	-155.36	-167.10	-162.00	4.79	-313.00	-93.2%	Opposite Gage 39
Group % Error									82.2%	
Group 7: Skin, 45-degree Direction										
SG32-45	425.30	434.40	436.13	429.39	426.01	430.25	4.88	371.47	13.7%	
SG33-45	420.32	425.03	402.49	420.39	417.23	417.09	8.63	358.06	14.2%	
SG34-45	322.46	323.99	352.20	324.03	336.74	331.88	12.74	340.89	-2.7%	
SG35-45	307.00	305.17	349.26	328.08	318.70	321.64	18.02	287.12	10.7%	Opposite Gage 34
SG36-45	336.84	331.94	318.81	331.33	339.95	331.77	8.07	347.59	-4.8%	
SG37-45	175.46	160.96	206.00	233.79	191.44	193.53	28.14	165.16	14.7%	Opposite Gage 36
SG38-45	350.31	345.13	345.70	351.73	352.51	349.08	3.44	333.85	4.4%	
SG39-45	422.21	422.75	428.99	450.41	438.85	432.64	11.98	367.34	15.1%	
SG40-45	152.77	149.08	145.05	177.09	166.16	158.03	13.28	149.71	5.3%	Opposite Gage 39
Group % Error									11.5%	

TABLE D-26. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP4, LOAD CONDITION 1b

CVP4 - Load Condition 1b										
	Experiment							Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Water-3	Average	Stdev			
Group 1: Frame Outer Cap (Closest to Skin)										
SG6	-147.39	-146.64	-136.29	-135.86	-149.96	-143.23	6.64	-117.89	17.7%	
SG9	-154.46	-155.82	-146.22	-142.41	-160.90	-151.96	7.50	-122.97	19.1%	
Group % Error									18.4%	
Group 2: Frame Inner Cap Farthest From Skin)										
SG1	-349.18	-309.88	-309.61	-333.88	-427.83	-346.08	48.69	-438.79	-26.8%	
SG2	-580.73	-538.51	-525.64	-533.15	-704.79	-576.56	74.81	-602.18	-4.4%	
SG3	390.09	408.72	384.69	333.64	307.18	364.86	42.59	944.82	-159.0%	
SG4	-43.31	28.41	55.09	-63.99	-106.17	-25.99	66.53	-47.49	-82.7%	
SG5	-792.82	-542.37	-518.85	-510.96	-679.75	-608.95	123.47	-595.22	2.3%	
SG7	-	-	-	-	-	-	-	-	-	Gage damaged
SG8	-381.59	-375.19	-341.43	-337.07	-493.04	-385.66	63.19	-428.45	-11.1%	
Group % Error									56.1%	
Group 3: Stringer Hat (Closest to Skin)										
SG12	756.21	754.25	725.77	735.25	762.55	746.81	15.55	664.24	11.1%	
SG14	1086.31	1145.14	1104.93	1115.95	991.15	1088.70	58.55	1101.55	-1.2%	
SG16	759.18	755.74	754.90	741.76	764.69	755.25	8.47	1123.43	-48.7%	
SG17	927.92	918.92	886.74	936.42	927.07	919.41	19.29	898.03	2.3%	
SG20	834.51	831.83	787.27	812.74	835.84	820.44	20.76	693.62	15.5%	
SG21	466.48	468.12	418.75	451.74	467.38	454.49	21.10	442.76	2.6%	
SG24	912.11	909.89	880.30	893.26	908.88	900.89	13.72	832.61	7.6%	
SG25	1137.48	1140.09	1078.21	1105.47	1134.73	1119.20	26.83	1101.58	1.6%	
SG27	723.81	723.49	680.27	710.77	728.83	713.44	19.71	1122.08	-57.3%	
SG29	537.89	536.43	527.40	537.08	537.45	535.25	4.42	854.52	-59.6%	
Group % Error									25.1%	
Group 4: Stringer Flange (Farthest From Skin)										
SG10	343.62	346.18	334.73	348.30	345.18	343.60	5.24	311.50	9.3%	
SG11	453.86	449.79	444.55	447.71	456.98	450.58	4.92	333.86	25.9%	
SG13	1037.70	1032.00	1013.97	1017.87	1034.55	1027.22	10.60	1114.43	-8.5%	
SG15	492.02	492.47	465.85	483.15	499.67	486.63	13.01	529.26	-8.8%	
SG18	635.46	630.08	603.08	605.64	634.94	621.84	16.12	581.59	6.5%	
SG19	859.88	857.75	824.27	681.34	862.06	817.06	77.44	678.33	17.0%	
SG22	-	-	-	-	-	-	-	-	-	Gage damaged
SG23	912.33	902.63	884.74	852.32	905.49	891.50	24.15	813.96	8.7%	
SG26	1022.48	1024.34	995.27	987.34	1021.15	1010.11	17.44	1114.38	-10.3%	
SG28	485.50	484.24	476.83	477.36	487.56	482.30	4.90	528.55	-9.6%	
SG30	393.06	396.48	375.02	407.10	396.10	393.55	11.64	366.40	6.9%	
SG31	347.00	333.05	327.30	334.62	318.19	332.03	10.56	311.74	6.1%	
Group % Error									11.4%	

TABLE D-26. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP4, LOAD CONDITION 1b (Continued)

CVP4 - Load Condition 1b (Continued)										
	Experiment							Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Water-3	Average	Stdev			
Group 5: Skin, Hoop Direction										
SG32T	-229.53	-232.37	-232.72	-239.19	-216.65	-230.09	8.30	-23.56	89.8%	
SG33T	-543.47	-549.69	-550.67	-574.90	-522.38	-548.22	18.77	-85.36	84.4%	
SG34T	-348.90	-346.55	-336.39	-359.83	-345.48	-347.43	8.40	-331.34	4.6%	
SG35T	-222.14	-225.64	-212.69	-216.41	-197.59	-214.90	10.89	-186.00	13.4%	Opposite Gage 34
SG36T	-469.51	-474.57	-467.03	-487.34	-456.10	-470.91	11.40	-107.74	77.1%	
SG37T	-289.57	-289.98	-289.65	-277.52	-273.25	-283.99	8.01	-350.24	-23.3%	Opposite Gage 36
SG38T	-339.20	-343.11	-339.93	-355.44	-330.81	-341.70	8.93	-335.14	1.9%	
SG39T	-244.61	-247.44	-245.10	-250.05	-222.57	-241.95	11.05	-43.72	81.9%	
SG40T	-154.11	-160.04	-155.42	-151.81	-146.92	-153.66	4.82	-118.49	22.9%	Opposite Gage 39
Group % Error									65.2%	
Group 6: Skin, Longitudinal Direction										Loading direction
SG32L	870.46	870.06	838.29	841.60	877.82	859.65	18.29	688.49	19.9%	
SG33L	881.86	878.14	839.31	849.66	883.65	866.52	20.55	933.70	-7.8%	
SG34L	916.48	909.65	872.94	894.67	917.45	902.24	18.74	892.35	1.1%	
SG35L	909.04	903.23	865.91	885.91	911.38	895.09	19.12	921.66	-3.0%	Opposite Gage 34
SG36L	1032.30	1030.15	1003.81	1006.08	1037.75	1022.02	15.85	936.28	8.4%	
SG37L	963.59	986.88	949.07	966.82	998.29	972.93	19.57	1045.55	-7.5%	Opposite Gage 36
SG38L	936.09	934.67	907.47	922.47	936.98	927.54	12.66	899.34	3.0%	
SG39L	852.97	851.42	840.82	843.76	856.09	849.01	6.45	688.39	18.9%	
SG40L	833.72	830.87	811.52	822.14	832.93	826.24	9.43	858.77	-3.9%	Opposite Gage 39
Group % Error									10.1%	
Group 7: Skin, 45-degree Direction										
SG32-45	390.22	396.44	373.03	369.57	421.15	390.08	20.72	374.64	4.0%	
SG33-45	-249.98	-250.65	-293.06	-276.47	-226.80	-259.39	25.75	9.48	103.7%	
SG34-45	227.77	232.64	224.30	209.54	220.92	223.04	8.70	176.38	20.9%	
SG35-45	288.68	292.68	280.71	275.63	292.81	286.10	7.64	270.94	5.3%	Opposite Gage 34
SG36-45	-67.66	-74.22	-81.39	-80.93	-78.33	-76.50	5.71	15.39	120.1%	
SG37-45	-72.61	-75.67	-86.60	-62.99	-77.02	-74.98	8.50	-115.84	-54.5%	Opposite Gage 36
SG38-45	332.15	326.01	339.76	327.15	315.55	328.13	8.88	341.68	-4.1%	
SG39-45	356.86	356.23	364.36	354.63	362.79	358.98	4.32	352.71	1.7%	
SG40-45	385.41	382.44	383.87	382.83	381.70	383.25	1.44	415.36	-8.4%	Opposite Gage 39
Group % Error									34.0%	

TABLE D-27. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP4, LOAD CONDITION 1c

CVP4 - Load Condition 1c										
	Experiment							Analysis	% Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Water-3	Average	Stdev			
Group 1: Frame Outer Cap (Closest to Skin)										Secondary loading direction
SG8	283.50	280.95	262.82	287.39	292.33	281.40	11.24	301.19	-7.0%	
SG9	322.94	318.52	292.74	316.86	327.29	315.67	13.45	309.44	2.0%	
Group % Error									4.9%	
Group 2: Frame Inner Cap (Farthest From Skin)										Secondary loading direction
SG1	290.56	247.64	163.36	196.33	239.60	227.50	49.03	120.02	47.2%	
SG2	209.58	153.70	22.91	61.01	146.70	118.78	75.45	-31.80	126.8%	
SG3	1356.40	1304.94	1014.86	1009.97	1276.34	1192.50	166.89	1294.43	-8.5%	
SG4	668.13	624.63	445.71	460.15	626.31	564.98	103.89	467.23	17.3%	
SG5	261.42	357.20	183.61	-17754.56	617.63	-3266.94	8100.48	-26.18	99.2%	
SG7	-	-	-	-	-	-	-	-	-	Gage damaged
SG8	263.16	206.17	103.10	129.16	216.06	183.53	65.83	-35.06	119.1%	
Group % Error									92.1%	
Group 3: Stringer Hat (Closest to Skin)										
SG12	698.40	697.60	658.27	695.01	705.84	691.03	18.75	636.60	7.9%	
SG14	545.46	251.39	470.62	944.78	-47.38	432.98	367.33	996.80	-130.2%	Large stdev
SG16	653.34	651.25	629.60	645.82	658.47	647.70	11.09	972.90	-50.2%	
SG17	836.02	834.50	813.42	819.51	834.69	827.63	10.43	717.99	13.2%	
SG20	787.94	785.29	750.57	764.20	786.50	774.90	16.73	599.55	22.6%	
SG21	317.05	317.56	287.59	297.16	313.50	306.57	13.48	334.84	-9.2%	
SG24	830.99	828.51	813.41	820.05	837.13	826.02	9.34	730.27	11.6%	
SG25	979.79	972.15	934.64	942.73	965.22	958.90	19.37	997.52	-4.0%	
SG27	624.30	619.43	605.45	611.66	622.28	616.63	7.88	971.81	-57.6%	
SG29	447.90	446.20	442.56	447.80	451.86	447.27	3.36	757.04	-69.3%	
Group % Error									38.9%	
Group 4: Stringer Flange (Farthest From Skin)										
SG10	317.74	296.90	278.44	309.20	324.17	305.29	18.15	155.45	49.1%	
SG11	367.18	369.86	356.43	364.35	372.40	366.04	6.15	281.44	23.1%	
SG13	1026.82	1022.51	996.63	1014.65	1034.19	1018.96	14.35	1019.14	0.0%	
SG15	420.63	423.53	407.98	414.69	423.25	418.02	6.64	539.64	-29.1%	
SG18	422.92	426.67	159.73	396.61	454.10	372.01	120.40	424.46	-14.1%	
SG19	525.67	528.97	502.87	515.02	531.85	520.88	11.91	441.61	15.2%	
SG22	-	-	-	-	-	-	-	-	-	Gage damaged
SG23	581.10	587.14	576.04	585.77	594.85	584.98	7.03	512.68	12.4%	
SG26	1001.15	991.71	955.76	977.89	996.18	984.54	18.27	1018.47	-3.4%	
SG28	437.24	439.43	425.05	445.07	437.79	436.92	7.32	537.95	-23.1%	
SG30	335.64	338.20	328.69	342.16	336.01	336.14	4.90	348.43	-3.7%	
SG31	258.56	263.16	248.51	279.06	260.59	261.98	11.05	155.72	40.6%	
Group % Error									15.2%	

TABLE D-27. COMPARISON OF MEASURED AND PREDICTED STRAINS FOR CVP4, LOAD CONDITION 1c (Continued)

CVP4 - Load Condition 1c (Continued)										
	Experiment							Analysis	%Error	Remarks
Gage	Air-1	Air-2	Water-1	Water-2	Water-3	Average	Stdev			
Group 5: Skin, Hoop Direction										Secondary loading direction
SG32T	467.57	466.72	496.85	488.55	473.30	478.60	13.44	663.65	-38.7%	
SG33T	313.98	324.71	371.91	337.94	324.59	334.62	22.51	564.47	-68.7%	
SG34T	461.29	461.56	473.08	451.69	464.11	462.35	7.64	541.33	-17.1%	
SG35T	422.05	428.87	449.84	460.24	427.50	437.70	16.45	472.46	-7.9%	Opposite Gage 34
SG36T	282.33	282.92	310.08	290.30	284.61	290.05	11.64	540.87	-86.5%	
SG37T	149.97	154.02	184.02	177.86	154.25	164.02	15.69	280.91	-71.3%	Opposite Gage 36
SG38T	498.39	499.14	504.69	493.58	499.75	499.11	3.96	525.27	-5.2%	
SG39T	474.17	478.60	484.61	491.22	481.03	481.92	6.43	645.50	-33.9%	
SG40T	283.83	290.42	283.07	302.28	285.72	289.06	7.92	449.72	-55.6%	Opposite Gage 39
Group % Error									39.7%	
Group 6: Skin, Longitudinal Direction										Primary loading direction
SG32L	814.17	813.32	773.78	791.25	818.51	802.21	19.11	568.22	29.2%	
SG33L	842.50	830.91	767.97	796.56	829.86	813.56	30.71	781.72	3.9%	
SG34L	781.07	778.57	744.58	752.23	774.74	766.24	16.66	729.56	4.8%	
SG35L	772.60	770.59	740.47	743.85	766.43	758.79	15.39	755.72	0.4%	Opposite Gage 34
SG36L	937.87	935.84	917.09	896.11	931.20	923.62	17.39	783.37	15.2%	
SG37L	765.55	764.66	761.03	752.94	760.06	760.85	4.99	817.08	-7.4%	Opposite Gage 36
SG38L	794.50	793.51	778.56	781.63	796.13	788.87	8.13	740.31	6.2%	
SG39L	783.76	778.10	771.61	764.39	783.71	776.31	8.33	571.72	26.4%	
SG40L	675.05	670.82	656.26	674.69	674.76	670.31	8.05	634.03	5.4%	Opposite Gage 39
Group % Error									15.0%	
Group 7: Skin, 45-degree Direction										
SG32-45	719.39	713.17	712.03	716.87	730.26	718.35	7.28	661.42	7.9%	
SG33-45	175.90	177.66	179.71	172.32	184.56	178.03	4.55	258.49	-45.2%	
SG34-45	558.00	555.00	555.45	546.95	551.31	553.34	4.30	540.37	2.3%	
SG35-45	539.02	539.60	555.63	545.35	530.85	542.09	9.17	522.93	3.5%	Opposite Gage 34
SG36-45	236.81	239.92	276.05	233.25	237.02	244.61	17.73	263.43	-7.7%	
SG37-45	49.36	54.17	127.19	88.87	65.30	76.98	31.95	117.54	-52.7%	Opposite Gage 36
SG38-45	700.24	701.61	715.22	703.04	700.54	704.13	6.30	691.13	1.8%	
SG39-45	706.65	701.55	708.41	719.06	707.06	708.55	6.43	638.87	9.8%	
SG40-45	539.82	538.04	531.32	556.96	538.28	540.89	9.56	598.79	-10.7%	Opposite Gage 39
Group % Error									9.1%	

TABLE D-28. SUMMARY OF GROUP PERCENTAGE ERRORS BETWEEN THE MEASURED AND PREDICTED STRAINS

CVP1						
Gage Group	Load Condition 1a		Load Condition 1b		Load Condition 1c	
	% Error	Remarks	% Error	Remarks	% Error	Remarks
1. Frame Outer Cap (Closest to skin)	13.2%	Loading direction	35.4%		12.3%	Primary loading direction
2. Frame Inner Cap (Farthest from skin)	21.1%	Loading direction	26.5%		26.0%	Primary loading direction
3. Stringer Hat (Closest to skin)	93.7%		2.2%		19.9%	
4. Stringer Flange (Farthest from skin)	26.8%		35.0%		85.0%	
5. Skin, Hoop Direction	9.0%	Loading direction	8.1%		10.3%	Primary loading direction
6. Skin, Longitudinal Direction	39.3%		7.5%	Loading direction	17.2%	Secondary loading direction
7. Skin, 45-degree Direction	12.6%		16.6%		7.8%	
CVP2						
Gage Group	Load Condition 1a		Load Condition 1b		Load Condition 1c	
	% Error	Remarks	% Error	Remarks	% Error	Remarks
1. Frame Outer Cap (Closest to skin)	16.7%	Loading direction	47.9%		15.6%	Primary loading direction
2. Frame Inner Cap (Farthest from skin)	23.5%	Loading direction	118.5%		30.6%	Primary loading direction
3. Stringer Hat (Closest to skin)	177.9%		26.7%		20.6%	
4. Stringer Flange (Farthest from skin)	45.5%		9.8%		80.8%	
5. Skin, Hoop Direction	13.0%	Loading direction	16.5%		12.6%	Primary loading direction
6. Skin, Longitudinal Direction	59.4%		7.6%	Loading direction	30.1%	Secondary loading direction
7. Skin, 45-degree Direction	12.6%		40.0%		11.3%	
CVP3						
Gage Group	Load Condition 1a		Load Condition 1b		Load Condition 1c	
	% Error	Remarks	% Error	Remarks	% Error	Remarks
1. Frame Outer Cap (Closest to skin)	11.9%	Loading direction	35.0%		10.1%	Secondary loading direction
2. Frame Inner Cap (Farthest from skin)	42.4%	Loading direction	62.6%		29.8%	Secondary loading direction
3. Stringer Hat (Closest to skin)	117.4%		12.1%		11.9%	
4. Stringer Flange (Farthest from skin)	44.8%		7.4%		13.8%	
5. Skin, Hoop Direction	14.0%	Loading direction	58.1%		54.2%	Secondary loading direction
6. Skin, Longitudinal Direction	99.6%		10.9%	Loading direction	16.9%	Primary loading direction
7. Skin, 45-degree Direction	12.9%		32.7%		14.8%	
CVP4						
Gage Group	Load Condition 1a		Load Condition 1b		Load Condition 1c	
	% Error	Remarks	% Error	Remarks	% Error	Remarks
1. Frame Outer Cap (Closest to skin)	7.7%	Loading direction	18.4%		4.9%	Secondary loading direction
2. Frame Inner Cap (Farthest from skin)	35.7%	Loading direction	56.1%		92.1%	Secondary loading direction
3. Stringer Hat (Closest to skin)	92.5%		25.1%		38.9%	
4. Stringer Flange (Farthest from skin)	46.1%		11.4%		15.2%	
5. Skin, Hoop Direction	10.3%	Loading direction	65.2%		39.7%	Secondary loading direction
6. Skin, Longitudinal Direction	82.2%		10.1%	Loading direction	15.0%	Primary loading direction
7. Skin, 45-degree Direction	11.5%		34.0%		9.1%	

TABLE D-29. STRESS-INTENSITY FACTOR RANGE CALCULATIONS FOR PANELS CVP1 AND CVP2

	CVP1 Baseline ($ksi\sqrt{in}$)				CVP2 Multiple Cracks ($ksi\sqrt{in}$)			
a, in	ΔK_1	ΔK_2	Δk_1	Δk_2	ΔK_1	ΔK_2	Δk_1	Δk_2
3.56	30.19	0.75	0.24	9.76	30.78	0.73	0.30	9.76
3.84	31.68	1.08	0.13	9.89	32.79	1.05	0.03	9.90
4.13	33.30	1.56	0.29	9.35	36.57	1.62	0.02	9.40
4.29	34.11	1.95	0.32	8.38	44.39	2.46	0.66	8.81
4.69	38.13	2.42	0.63	12.45	38.47	2.41	0.68	12.46
5.04	39.52	2.72	0.46	13.08	40.09	2.71	0.44	13.07
5.36	40.91	3.27	0.62	13.01	42.09	3.29	0.88	12.99
5.71	42.23	4.34	0.88	11.86	47.33	4.76	0.34	12.06
5.76	42.46	4.41	0.89	11.66	51.97	5.32	0.03	12.20
6.16	47.09	4.74	0.04	15.36	47.68	4.94	0.33	16.01
6.47	48.07	5.19	0.87	15.52	49.04	5.22	0.89	15.53
6.75	49.14	5.55	0.17	15.17	50.86	5.64	0.32	15.11
7.15	50.56	6.49	0.77	13.85	59.91	7.48	1.06	13.83
7.77	55.41	7.23	0.97	16.88	56.50	7.28	1.03	16.88
8.46	58.06	7.96	0.85	16.26	62.62	8.47	0.34	16.14
8.65	58.43	8.51	0.19	14.98	69.44	9.96	0.92	14.99
9.24	63.13	9.15	0.97	18.44	64.37	9.26	0.86	18.90
9.96	65.54	9.77	1.72	17.36	70.26	10.38	1.20	17.26
10.13	65.78	10.20	0.79	16.18	78.54	12.05	0.48	16.13
10.73	70.57	10.85	0.78	19.98	71.67	11.03	0.47	18.96
11.34	72.26	11.31	2.29	16.98	74.39	11.57	2.07	16.96
11.70	72.93	11.84	1.57	15.58	83.55	13.44	0.53	15.60
12.21	77.37	12.43	0.08	21.66	78.54	12.65	0.44	20.03
12.86	78.40	12.76	3.17	17.95	80.93	13.09	2.95	17.87
13.18	78.90	13.40	2.53	16.62	91.15	15.34	1.52	16.62

TABLE D-30. STRESS-INTENSITY FACTOR RANGE CALCULATIONS FOR PANELS CVP3 AND CVP4

	CVP3, Baseline ($ksi\sqrt{in}$)				CVP4, Multiple Cracks $ksi\sqrt{in}$			
a, in	ΔK_1	ΔK_2	Δk_1	Δk_2	ΔK_1	ΔK_2	Δk_1	Δk_2
3.47	27.51	1.49	5.57	6.64	27.69	1.49	5.61	6.68
3.85	28.67	1.46	5.22	5.81	29.07	1.46	5.26	5.83
4.13	29.46	1.80	5.19	5.46	30.79	1.86	5.25	5.47
4.22	29.71	1.75	5.25	5.20	33.24	1.98	5.55	4.95
4.69	31.67	1.41	5.24	5.49	31.76	1.40	5.25	5.49
5.21	33.03	1.34	5.29	5.31	33.23	1.31	5.30	5.31
5.68	33.98	1.42	5.37	5.40	35.08	1.41	5.34	5.42
6.14	35.70	0.34	5.30	5.98	35.57	0.38	5.29	5.95
7.08	37.18	0.38	4.81	5.11	37.22	0.38	4.81	5.11
8.48	35.29	0.09	4.23	3.22	35.69	0.14	4.23	3.21
8.76	34.68	0.08	4.55	1.84	37.17	0.19	4.39	1.78

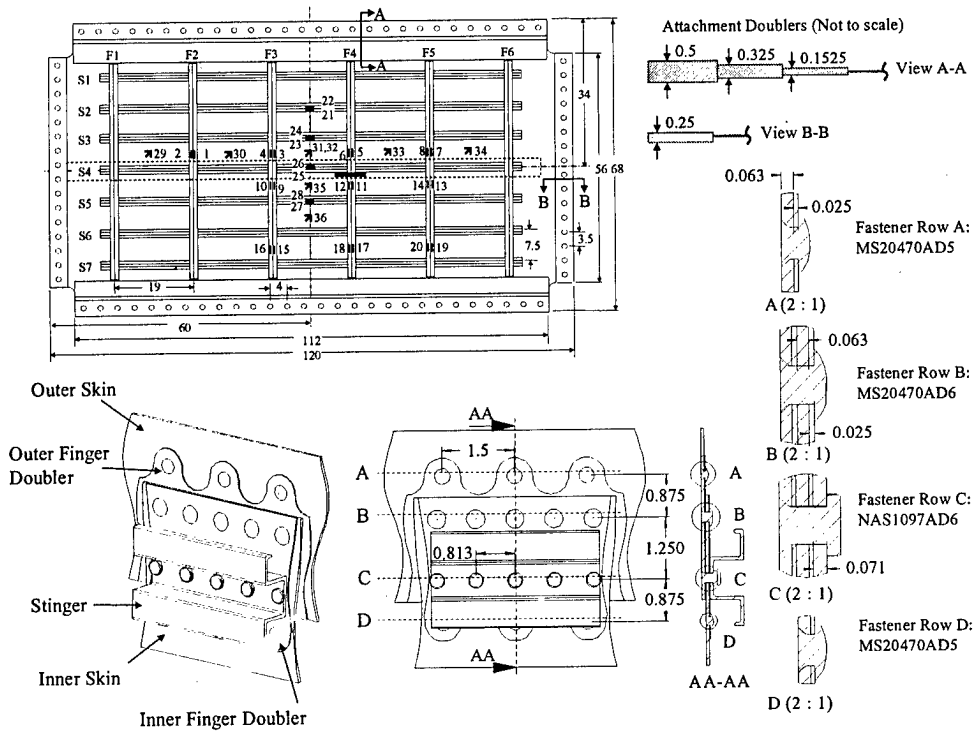


FIGURE D-1. CVP1 AND CVP2 PENAL CONFIGURATION AND STRAIN GAGE LOCATIONS

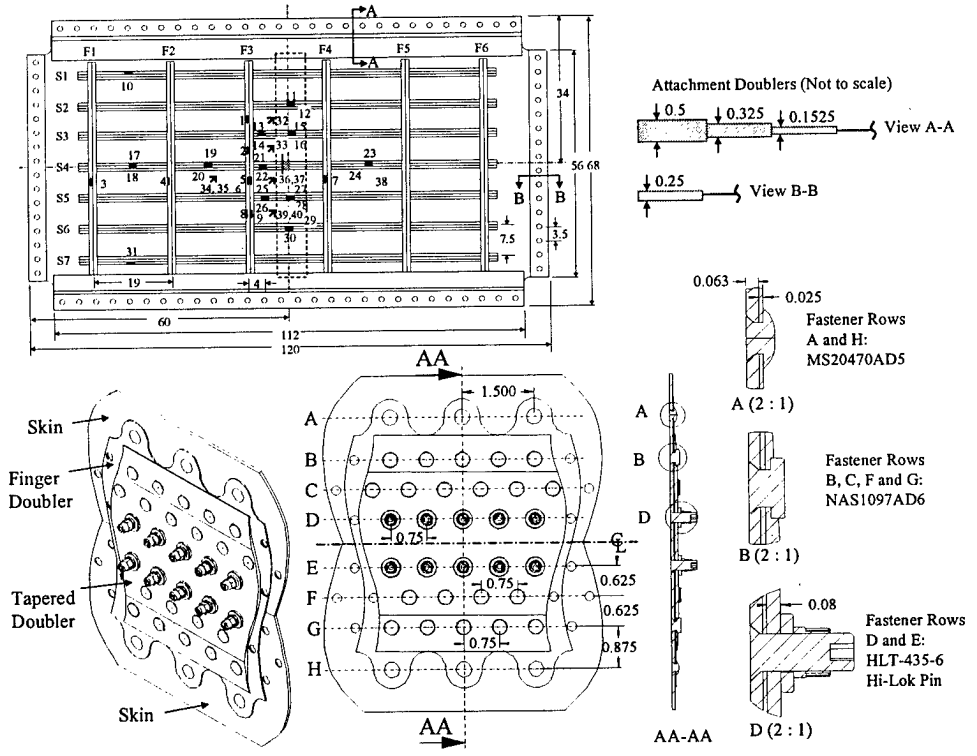


FIGURE D-2. CVP3 AND CVP4 PENAL CONFIGURATION AND STRAIN GAGE LOCATIONS

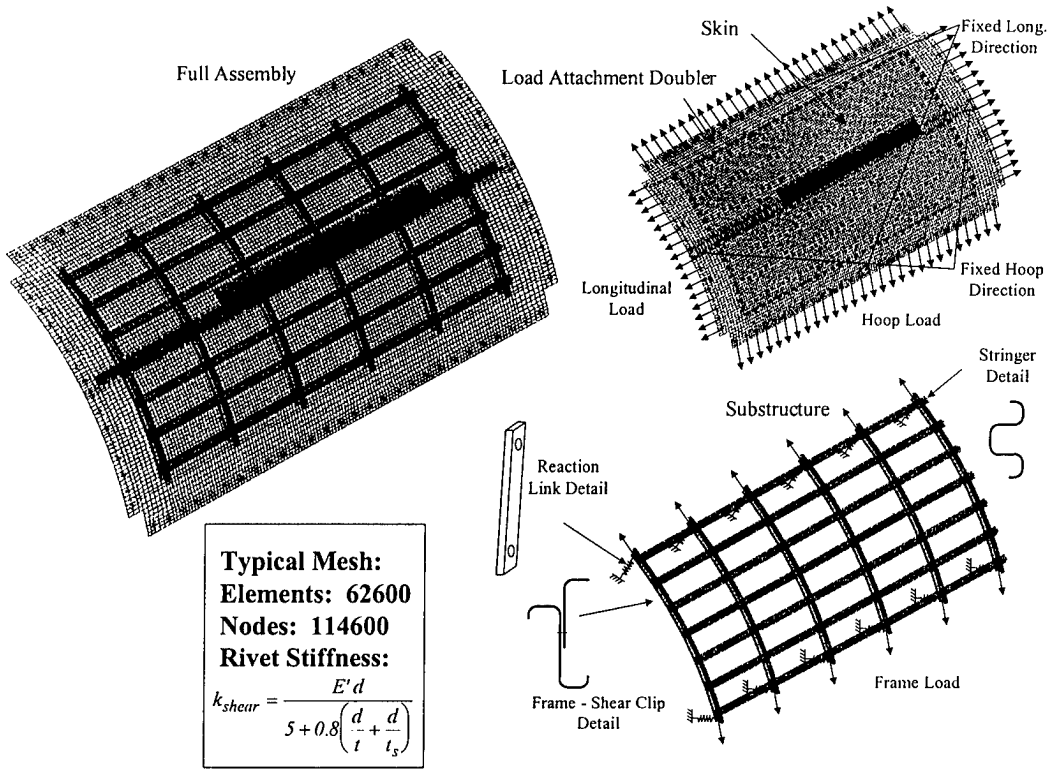


FIGURE D-3. FINITE ELEMENT MODEL OF CVP1 AND CVP2, SHOWING FULL ASSEMBLY AND SUBSTRUCTURE COMPONENTS

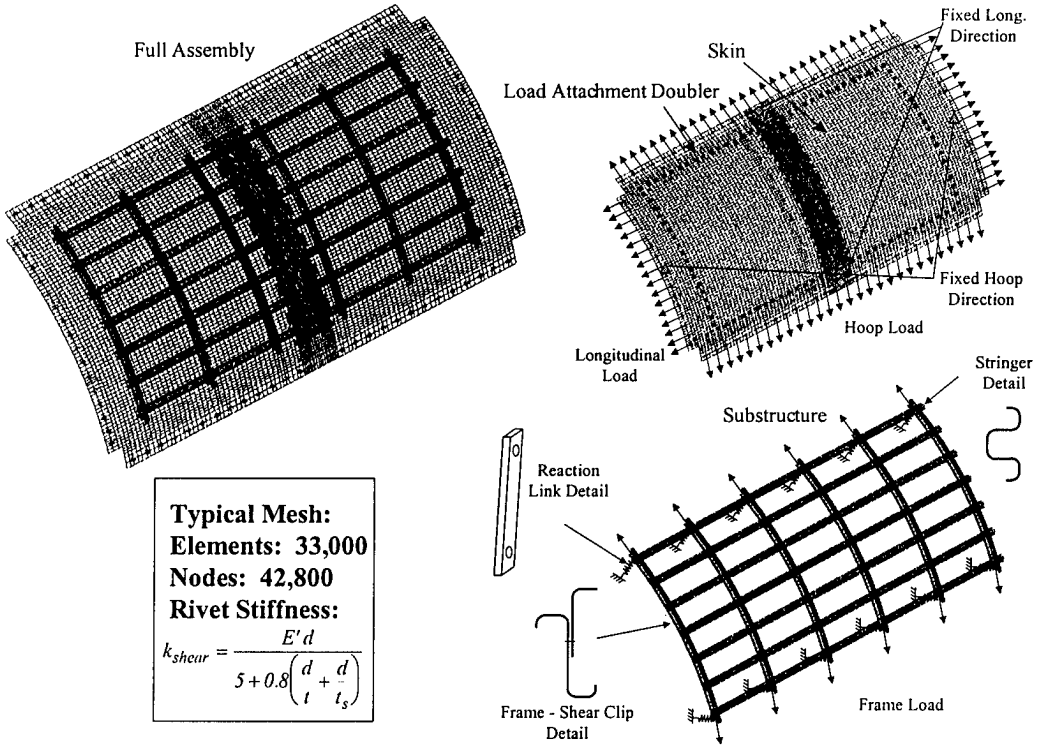


FIGURE D-4. FINITE ELEMENT MODEL OF CVP3 AND CVP4, SHOWING FULL ASSEMBLY AND SUBSTRUCTURE COMPONENTS

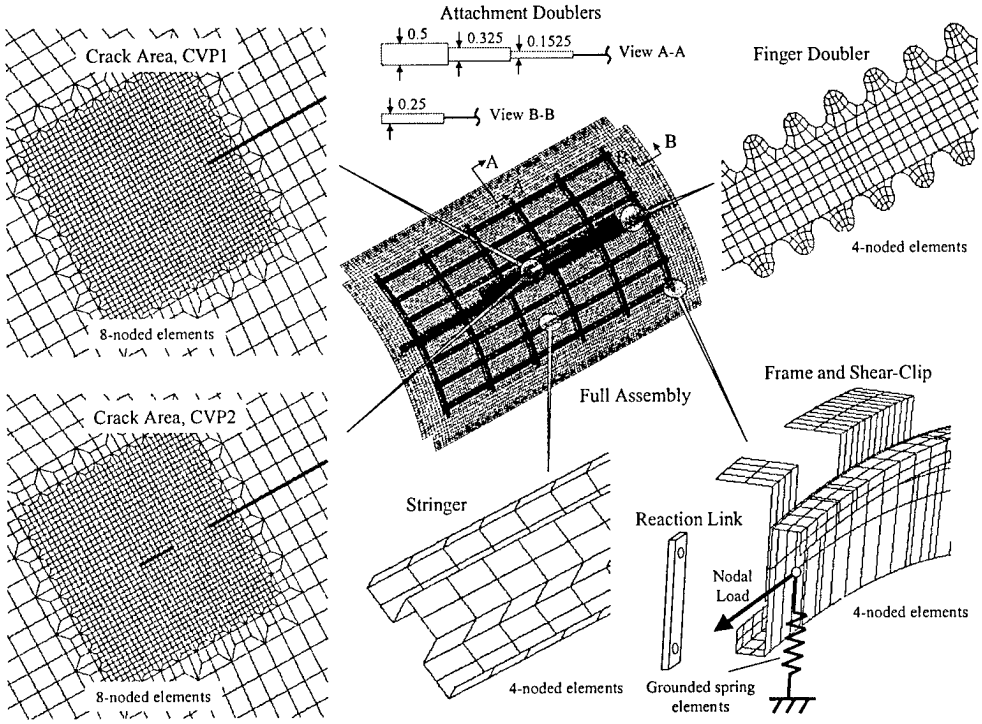


FIGURE D-5. FINITE ELEMENT MODEL OF CVP1 AND CVP2, SHOWING DETAILED MESHES OF FINGER DOUBLERS, FRAMES, STRINGERS, AND CRACK REGION

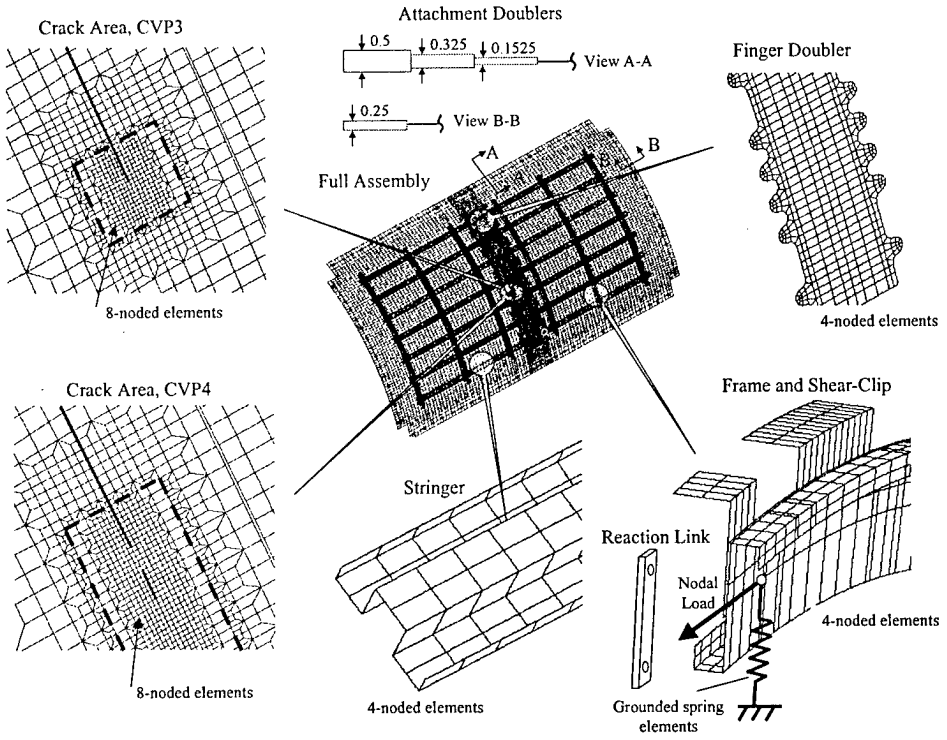


FIGURE D-6. FINITE ELEMENT MODEL OF CVP3 AND CVP4, SHOWING DETAILED MESHES OF FINGER DOUBLERS, FRAMES, STRINGERS, AND CRACK REGION

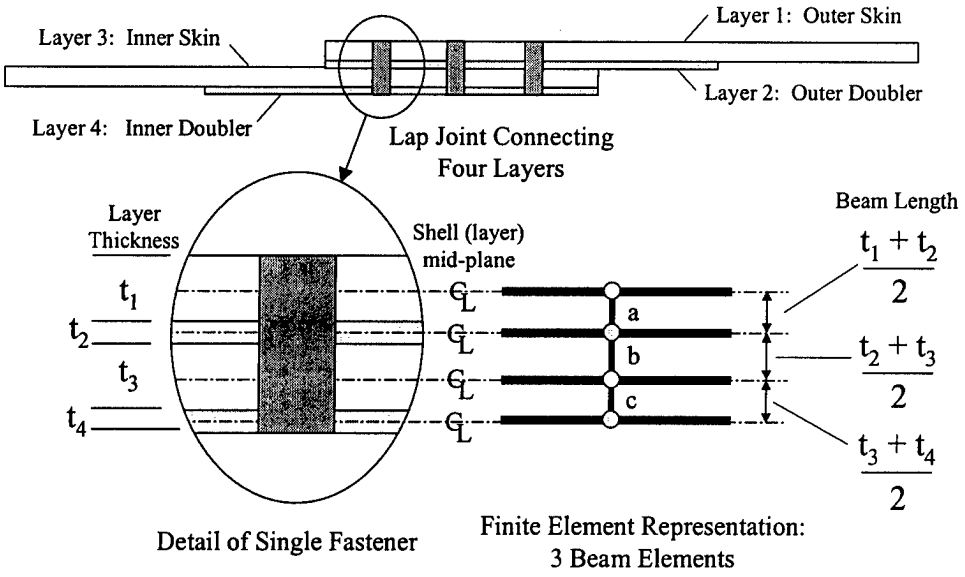
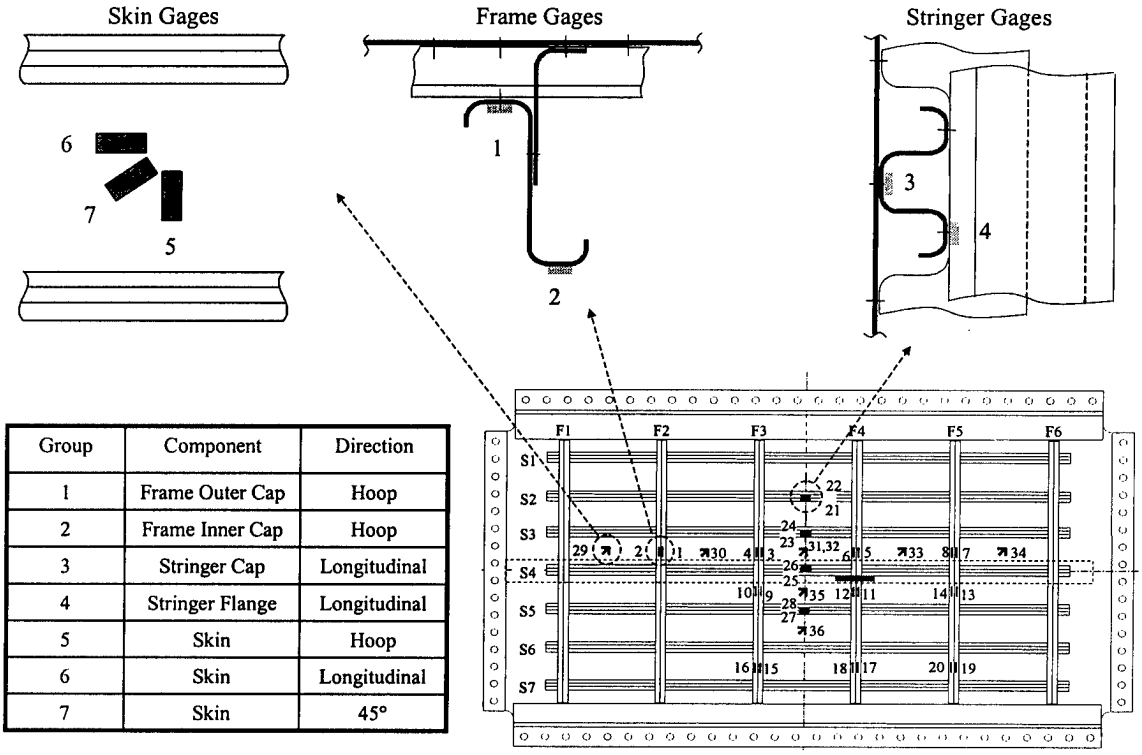


FIGURE D-7. SCHEMATIC OF LAP JOINT AND CORRESPONDING FINITE ELEMENT REPRESENTATION



Group	Component	Direction
1	Frame Outer Cap	Hoop
2	Frame Inner Cap	Hoop
3	Stringer Cap	Longitudinal
4	Stringer Flange	Longitudinal
5	Skin	Hoop
6	Skin	Longitudinal
7	Skin	45°

FIGURE D-8. GROUPING OF STRAIN GAGES ACCORDING TO LOCATION AND MEASURE DIRECTION

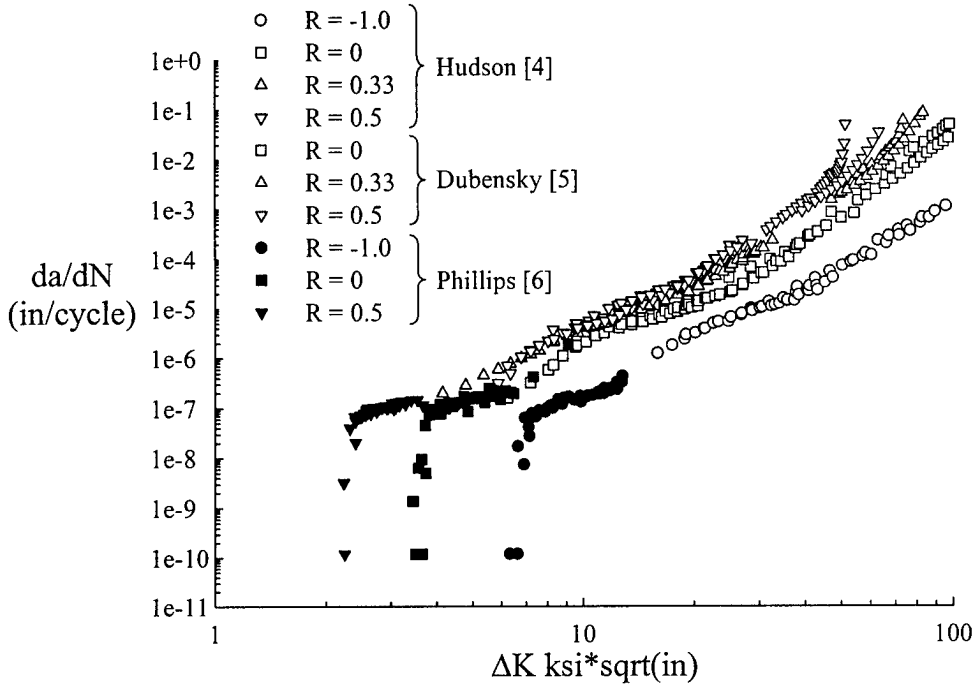


FIGURE D-9. FATIGUE CRACK GROWTH DATA FOR 2024-T3 ALUMINUM WITH VARIOUS R-RATIOS

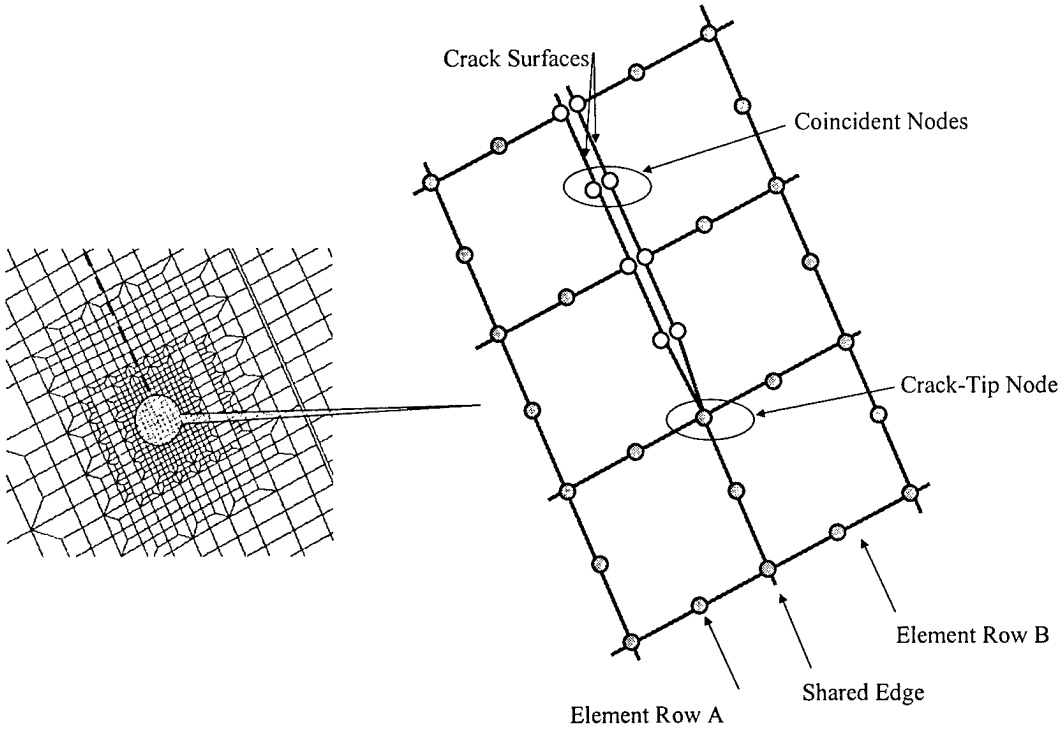


FIGURE D-10. FINITE ELEMENT MESH IN THE VICINITY OF A CRACK TIPS USED IN THE FATIGUE CRACK GROWTH ANALYSIS

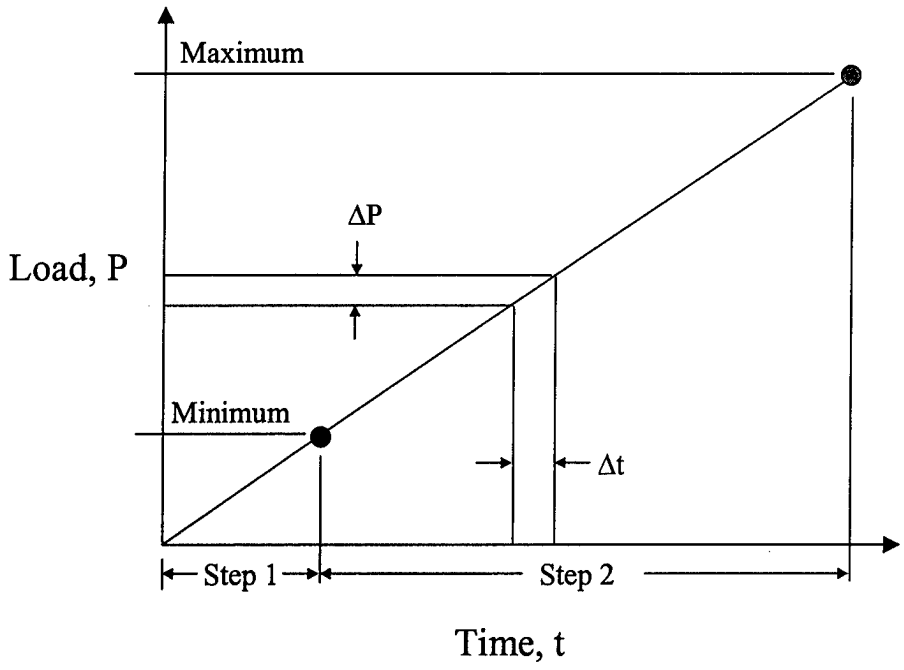


FIGURE D-11. RAMP FUNCTION USED IN THE FATIGUE CRACK GROWTH ANALYSIS

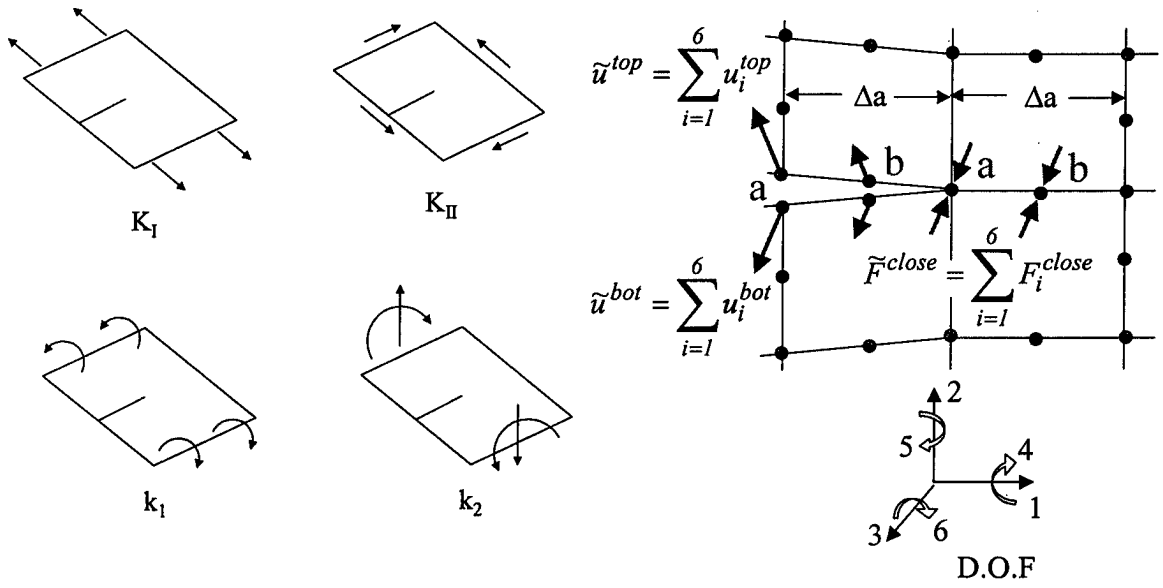


FIGURE D-12. DEFINITION OF FOUR STRESS-INTENSITY FACTORS AND CRACK TIP ELEMENTS AND NODES FOR THE MCCI METHOD

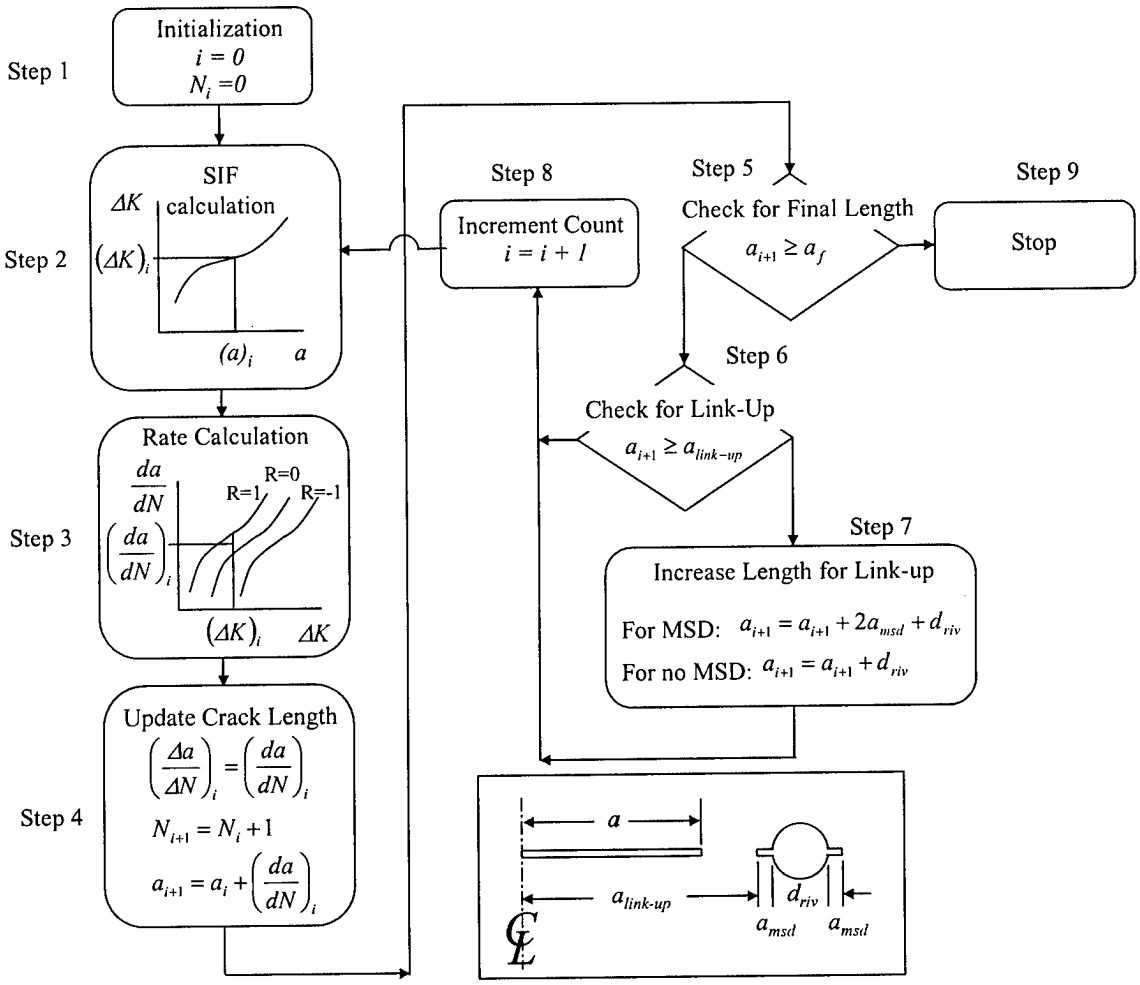
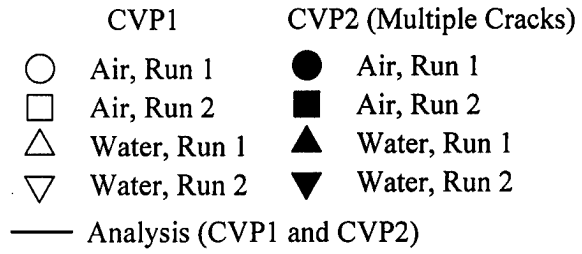
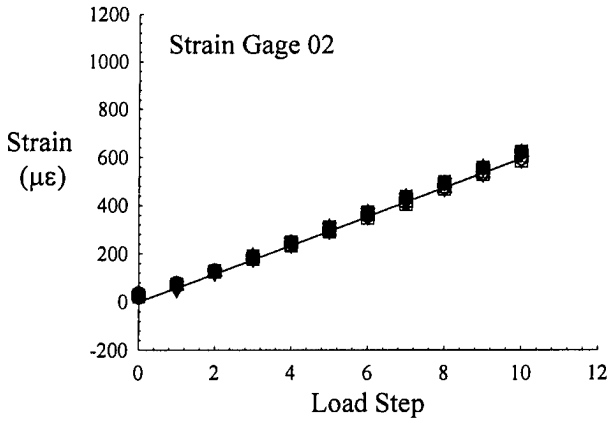
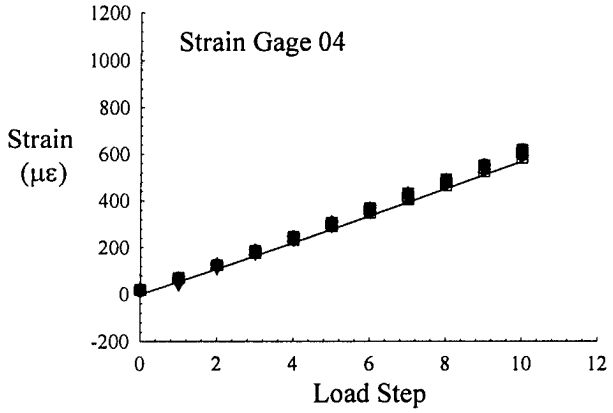


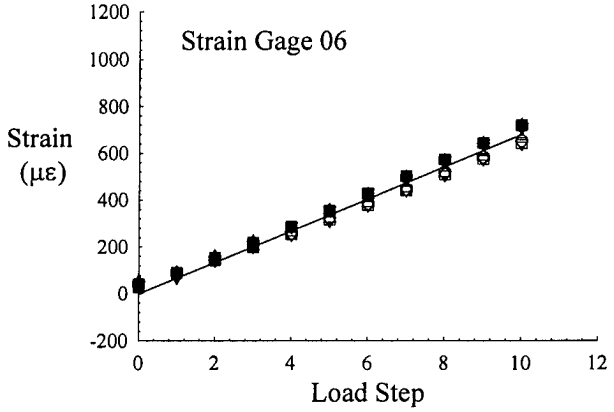
FIGURE D-13. ALGORITHM FOR THE CYCLE-BY-CYCLE CRACK GROWTH ANALYSIS

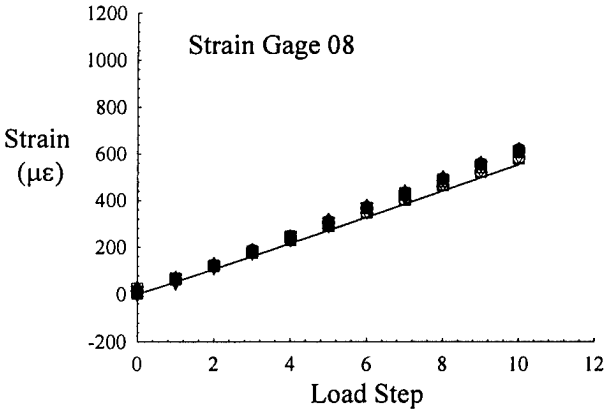
Load Cond. 1a	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	0 lb/in











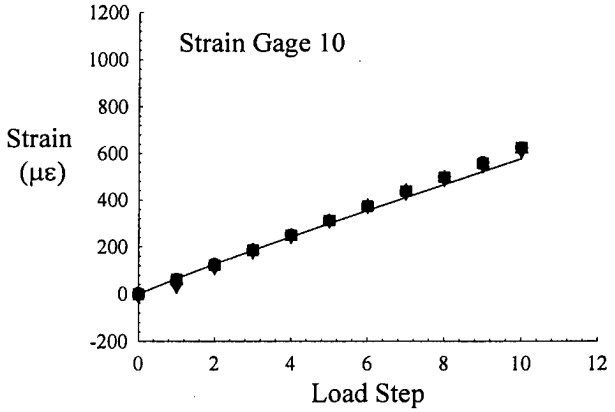
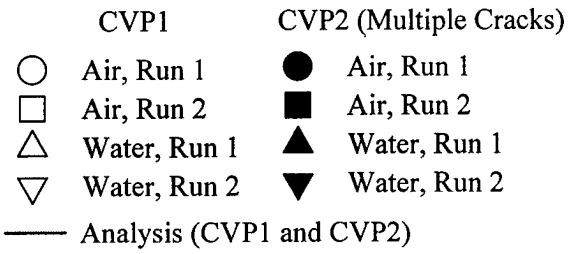
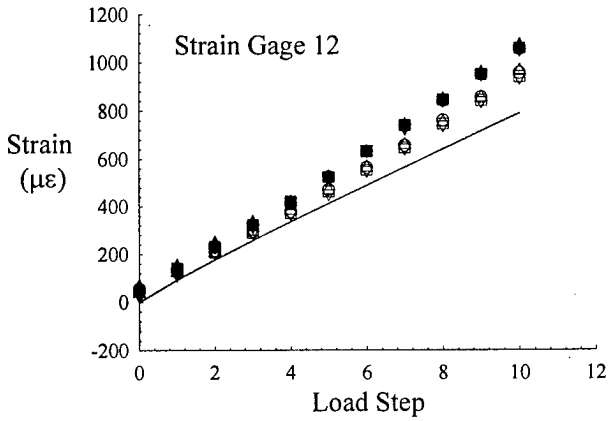
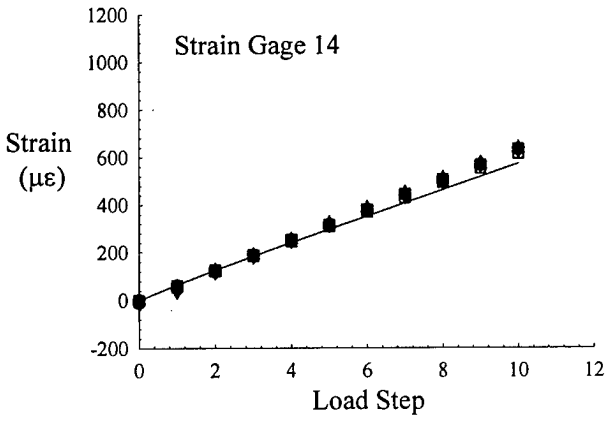


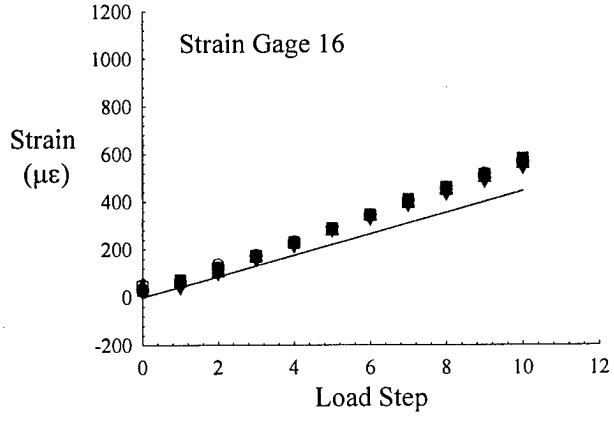
FIGURE D-14. MEASURED AND PREDICTED STRAINS FOR GROUP 1 GAGES IN FRAME OUTER CAPS OF CVP1 AND CVP2, LOAD CONDITION 1a

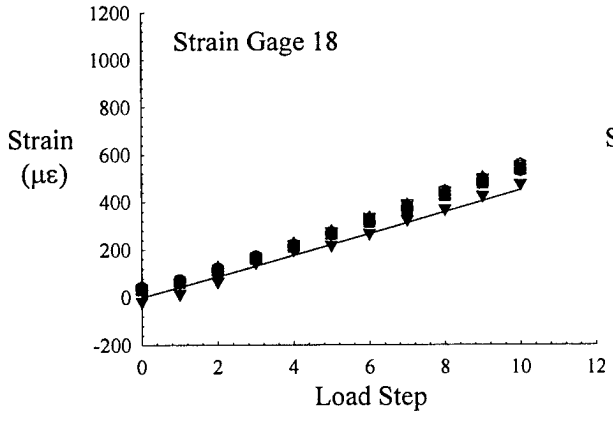
Load Cond. 1a	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	0 lb/in











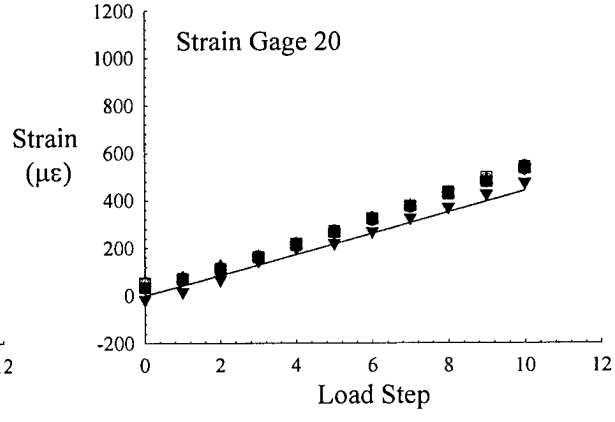
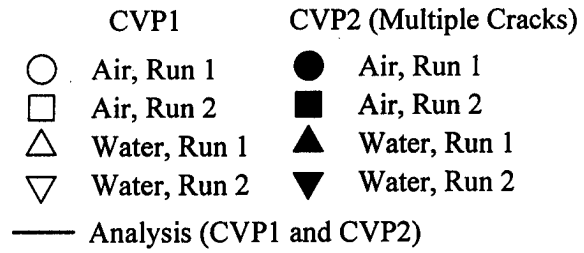
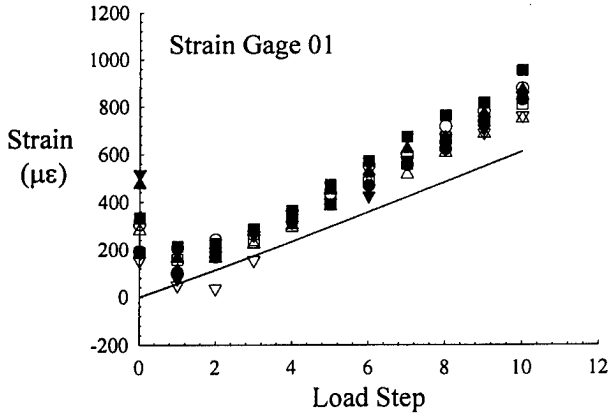
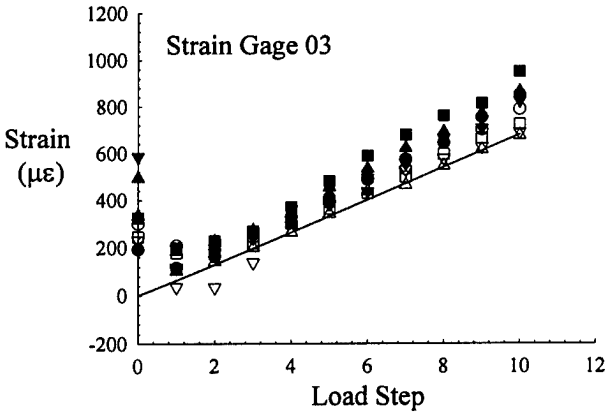


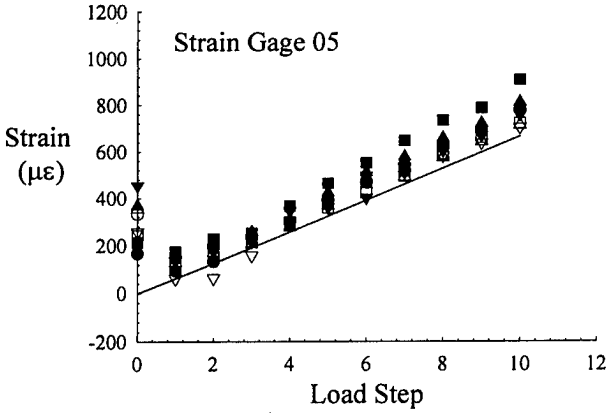
FIGURE D-14. MEASURED AND PREDICTED STRAINS FOR GROUP 1 GAGES IN FRAME OUTER CAPS OF CVP1 AND CVP2, LOAD CONDITION 1a (Continued)

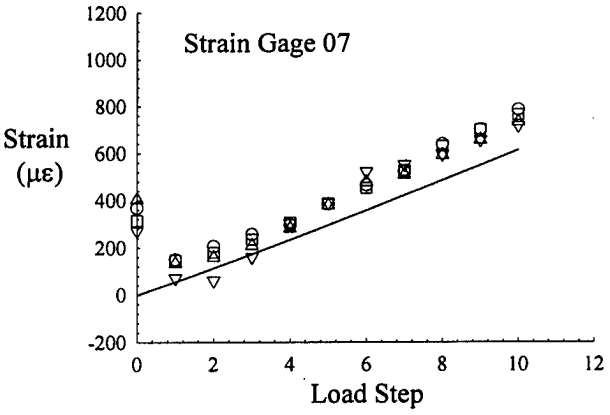
Load Cond. 1a	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	0 lb/in











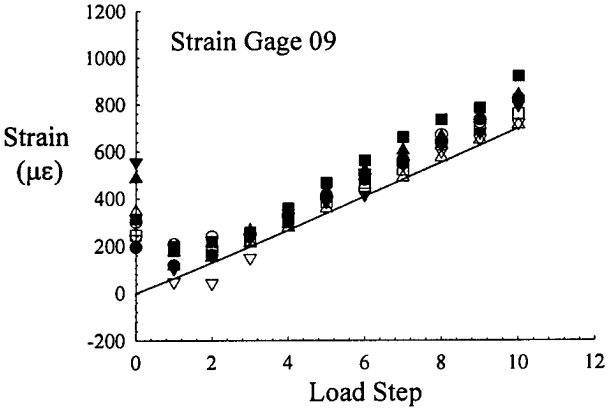
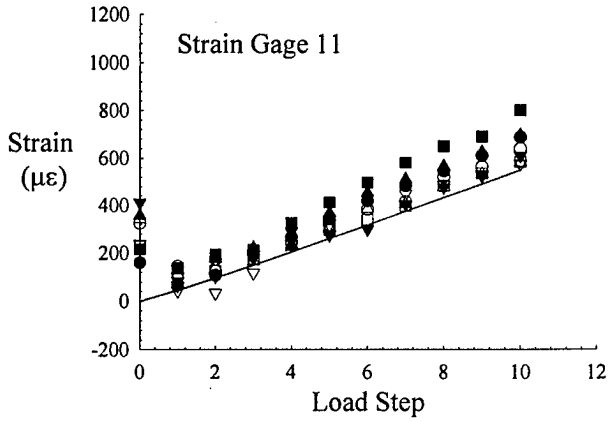


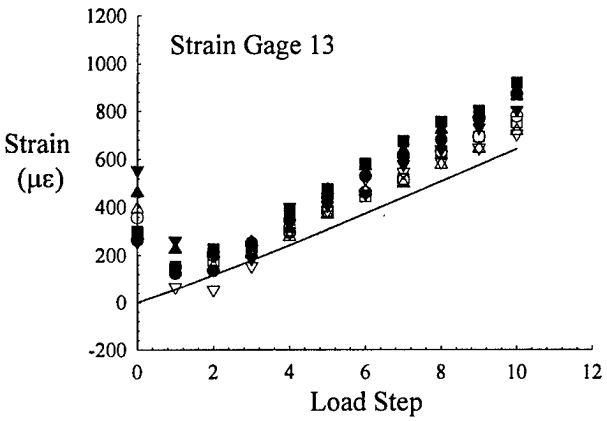
FIGURE D-15. MEASURED AND PREDICTED STRAINS FOR GROUP 2 GAGES IN FRAME INNER CAPS OF CVP1 AND CVP2, LOAD CONDITION 1a

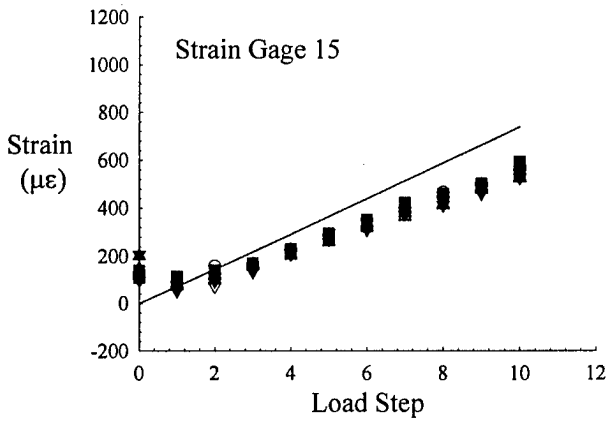
Load Cond. 1a	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	0 lb/in

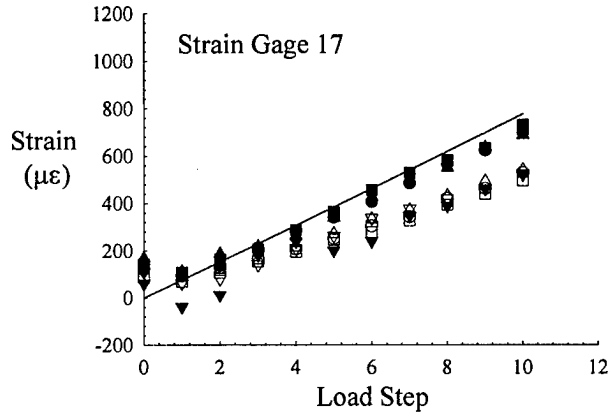
CVP1 — CVP2 (Multiple Cracks)

- ○ Air, Run 1 — ● Air, Run 1
- □ Air, Run 2 — ■ Air, Run 2
- △ Water, Run 1 — ▲ Water, Run 1
- ▽ Water, Run 2 — ▼ Water, Run 2
- —— Analysis (CVP1 and CVP2)









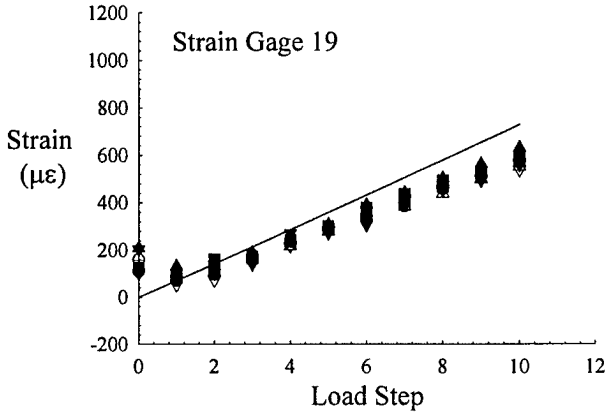
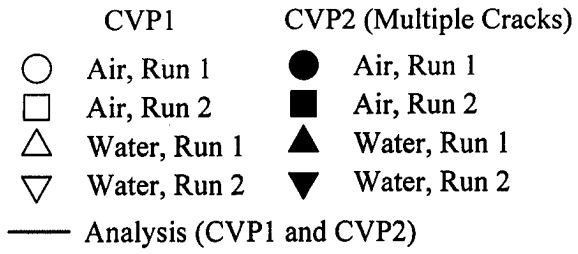
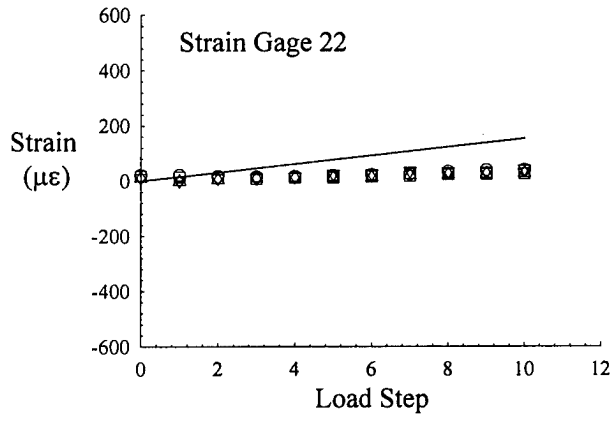
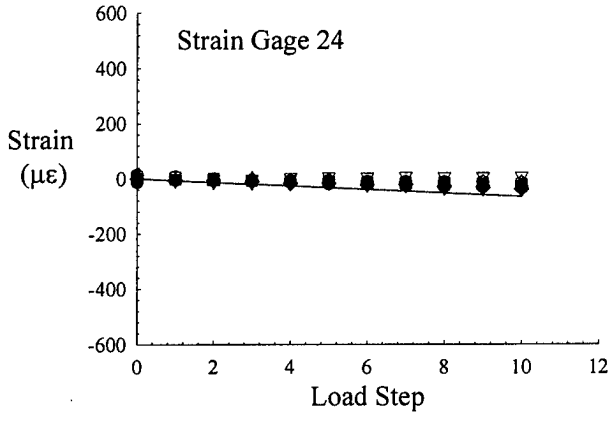


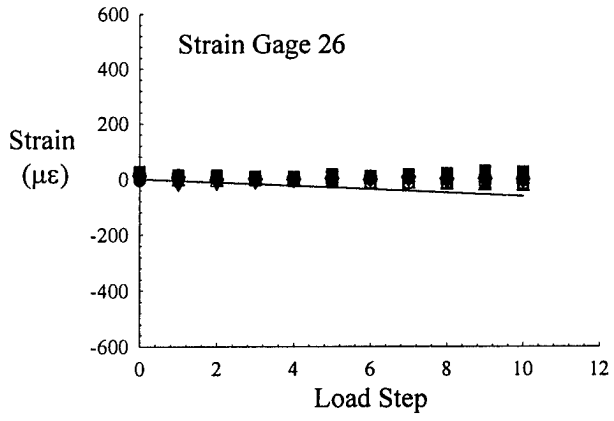
FIGURE D-15. MEASURED AND PREDICTED STRAINS FOR GROUP 2 GAGES IN FRAME INNER CAPS OF CVP1 AND CVP2, LOAD CONDITION 1a (Continued)

Load Cond. 1a	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	0 lb/in









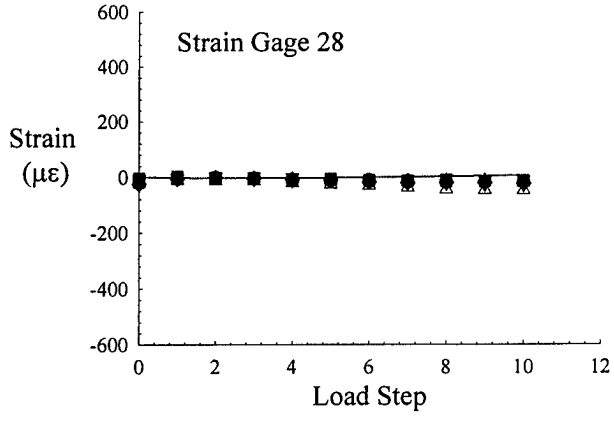


FIGURE D-16. MEASURED AND PREDICTED STRAINS FOR GROUP 3 GAGES IN STRINGER HATS OF CVP1 AND CVP2, LOAD CONDITION 1a

Load Cond. 1a	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	0 lb/in

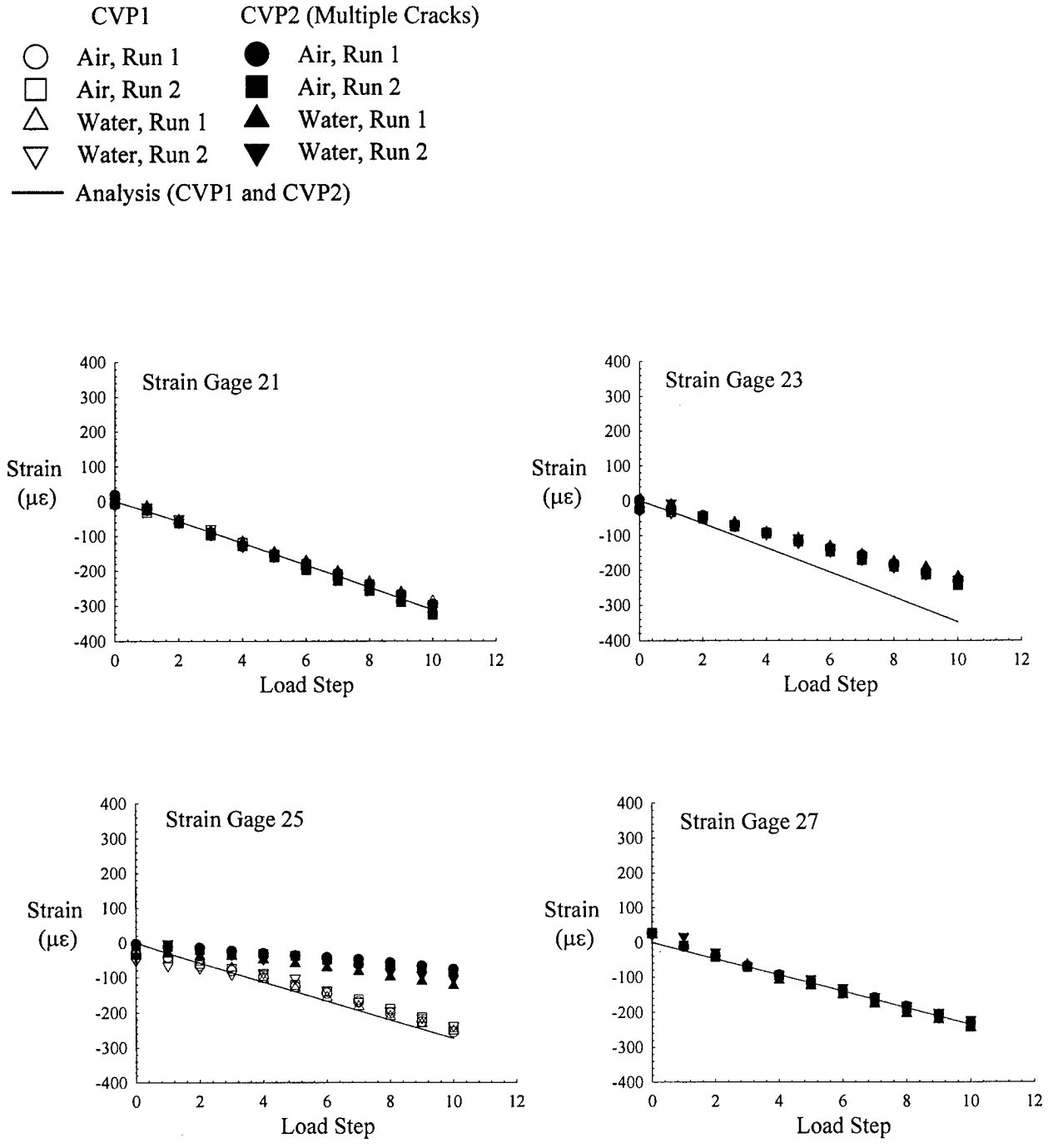
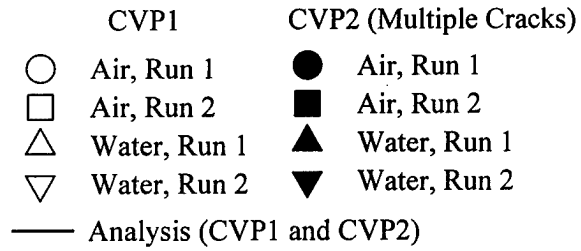
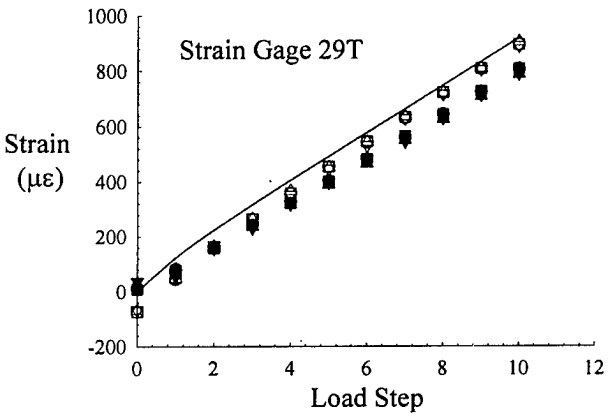
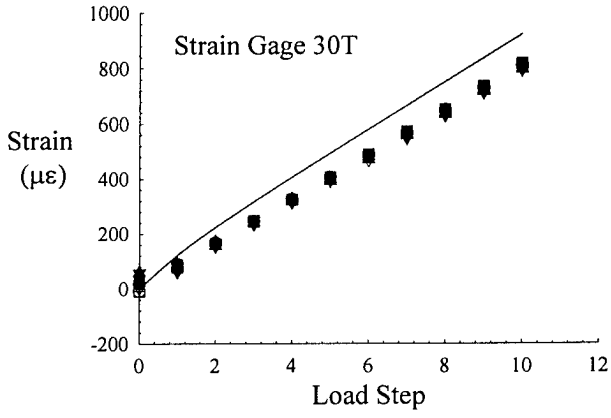


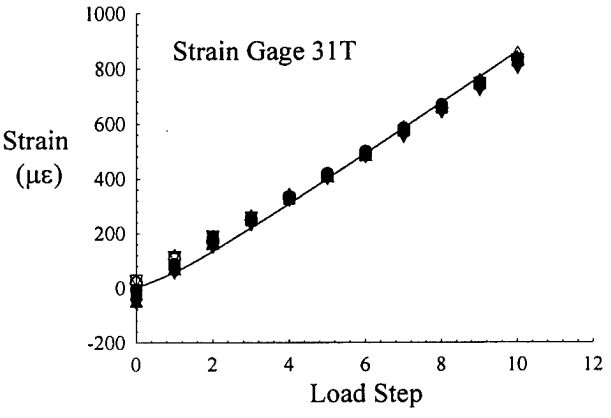
FIGURE D-17. MEASURED AND PREDICTED STRAINS FOR GROUP 4 GAGES IN STRINGER FLANGES OF CVP1 AND CVP2, LOAD CONDITION 1a

Load Cond. 1a	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	0 lb/in









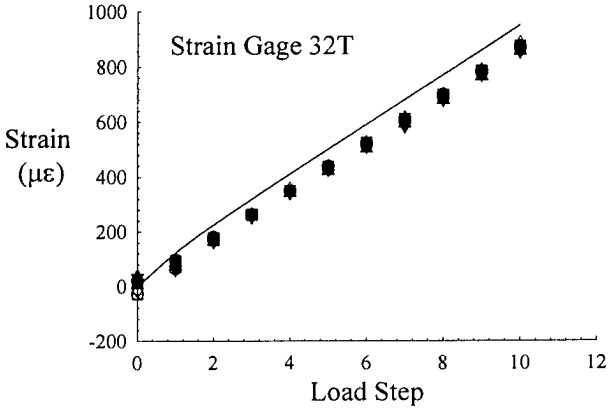
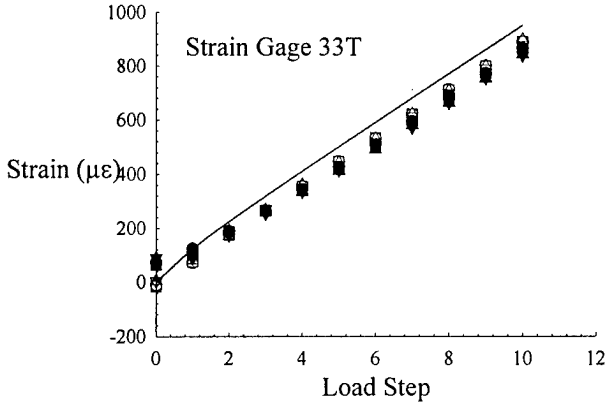


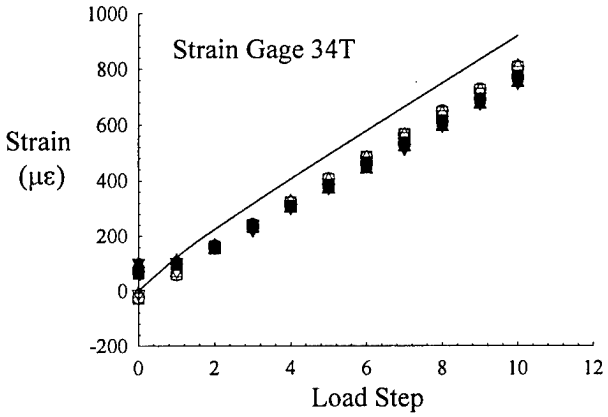
FIGURE D-18. MEASURED AND PREDICTED HOOP STRAIN FOR GROUP 5 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1a

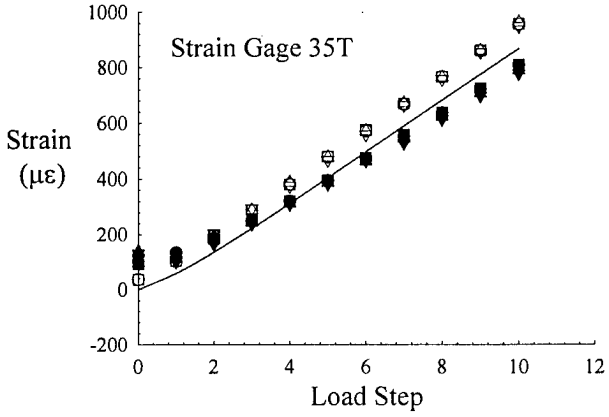
Load Cond. 1a	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	0 lb/in

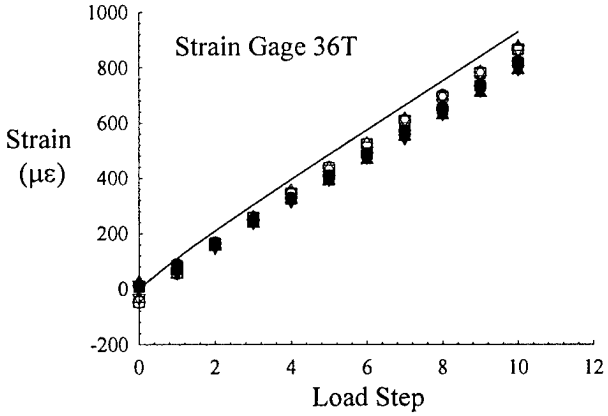
CVP1 — CVP2 (Multiple Cracks)

- ○ Air, Run 1 — ● Air, Run 1
- □ Air, Run 2 — ■ Air, Run 2
- △ Water, Run 1 — ▲ Water, Run 1
- ▽ Water, Run 2 — ▼ Water, Run 2
- —— Analysis (CVP1 and CVP2)









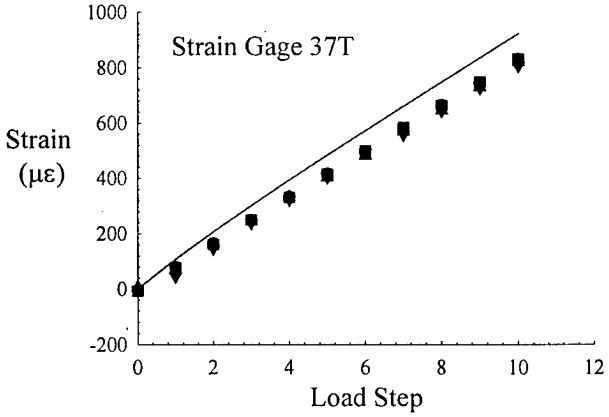


FIGURE D-18. MEASURED AND PREDICTED HOOP STRAIN FOR GROUP 5 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1a (Continued)

Load Cond. 1a	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	0 lb/in

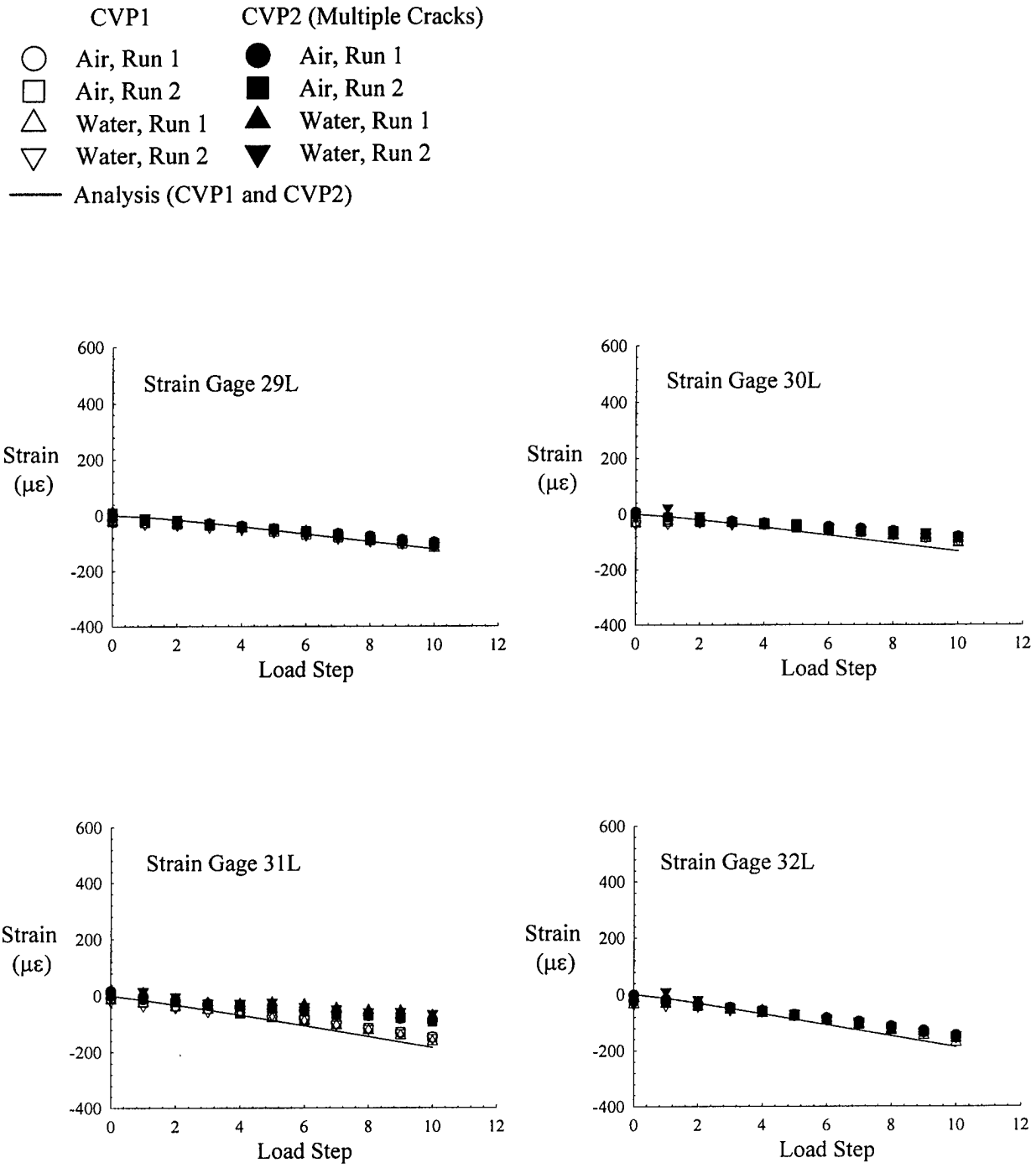
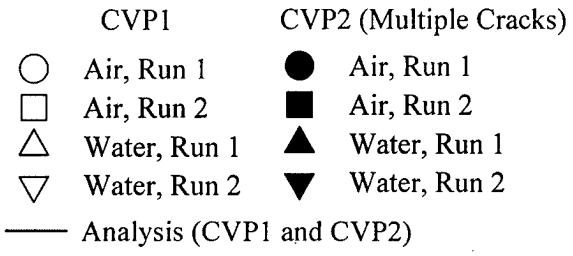
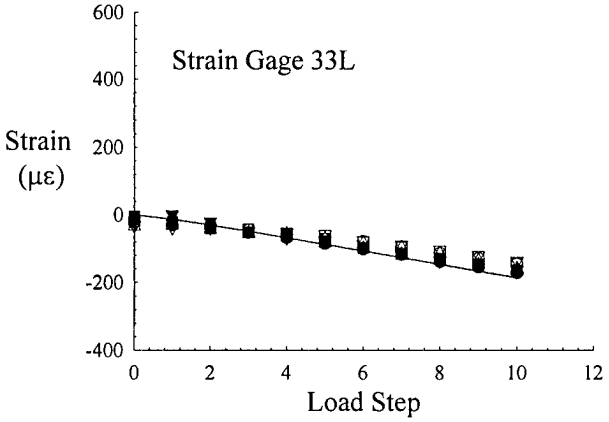
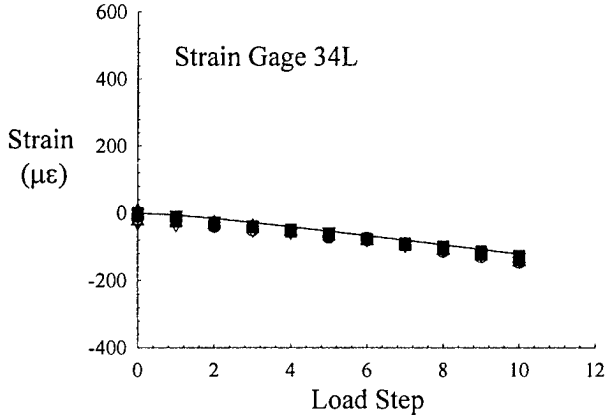


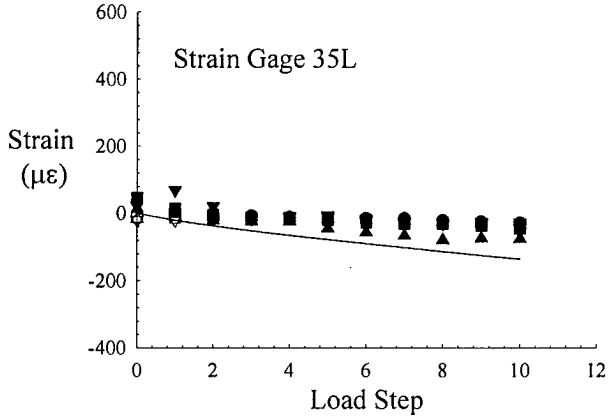
FIGURE D-19. MEASURED AND PREDICTED LONGITUDINAL STRAINS FOR GROUP 6 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1a

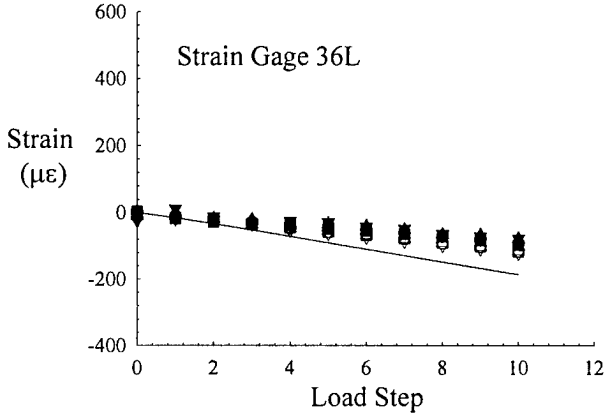
Load Cond. 1a	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	0 lb/in











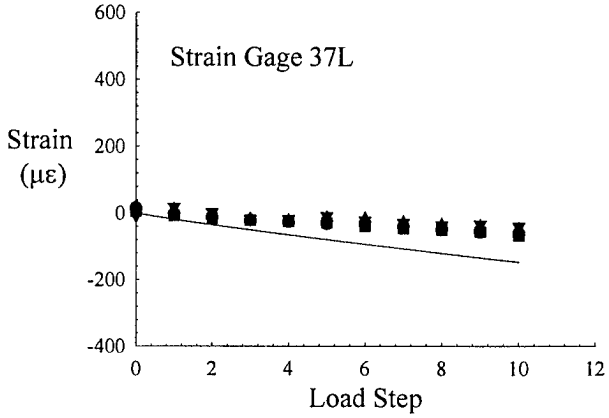


FIGURE D-19. MEASURED AND PREDICTED LONGITUDINAL STRAINS FOR GROUP 6 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1a (Continued)

Load Cond. 1a	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	0 lb/in

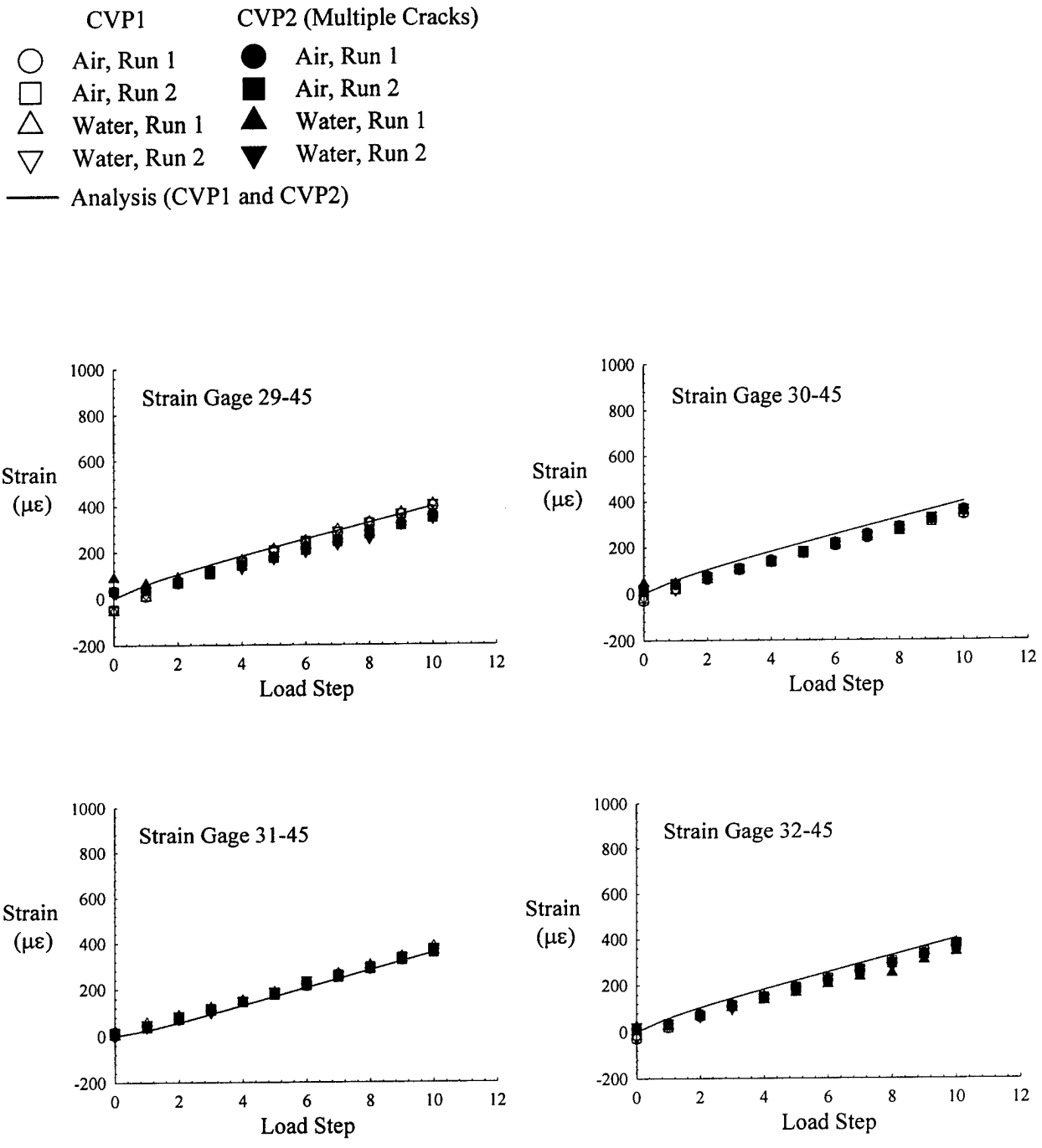


FIGURE D-20. MEASURED AND PREDICTED 45° STRAINS FOR GROUP 7 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1a

Load Cond. 1a	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	0 lb/in

CVP1 CVP2 (Multiple Cracks)

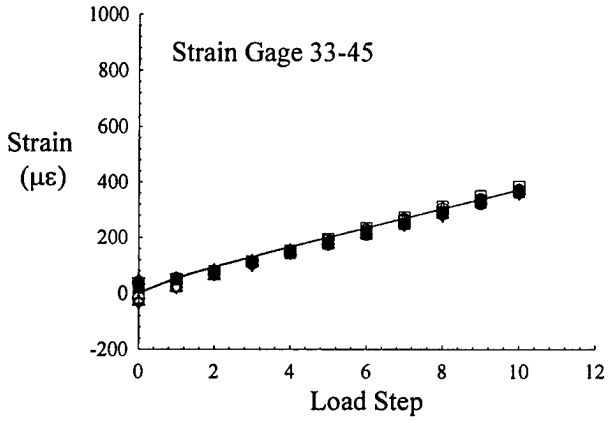
○ Air, Run 1 ● Air, Run 1

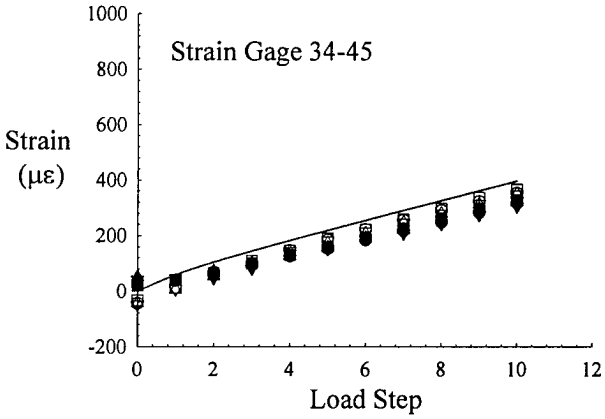
□ Air, Run 2 ■ Air, Run 2

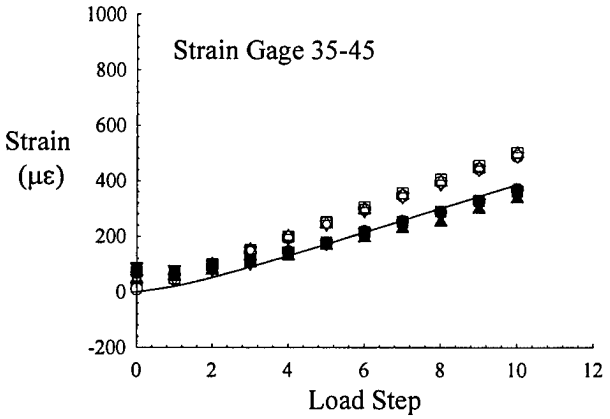
△ Water, Run 1 ▲ Water, Run 1

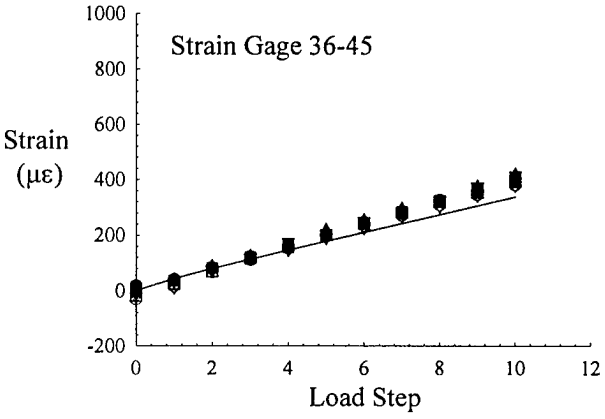
▽ Water, Run 2 ▼ Water, Run 2

—— Analysis (CVP1 and CVP2)









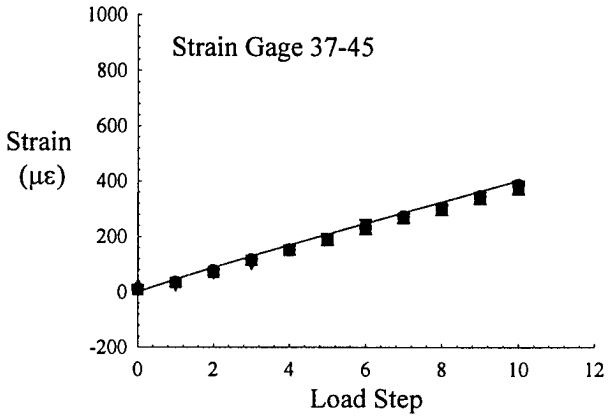
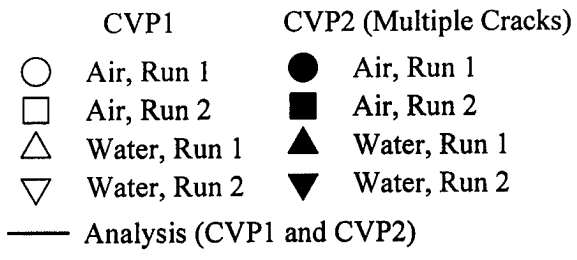
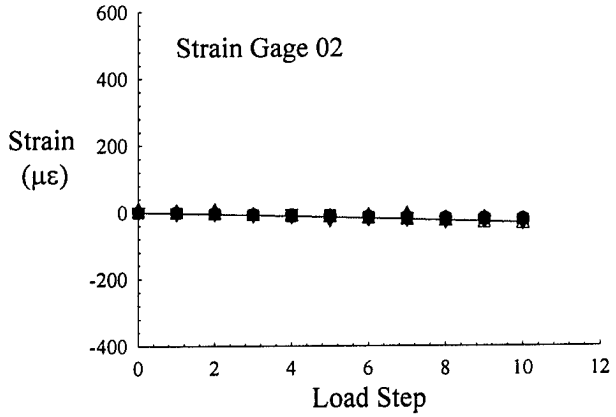
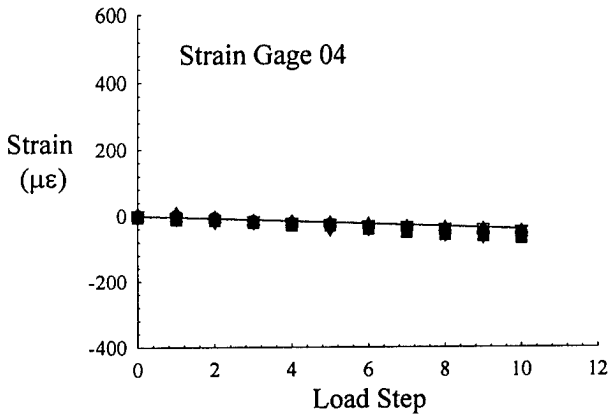


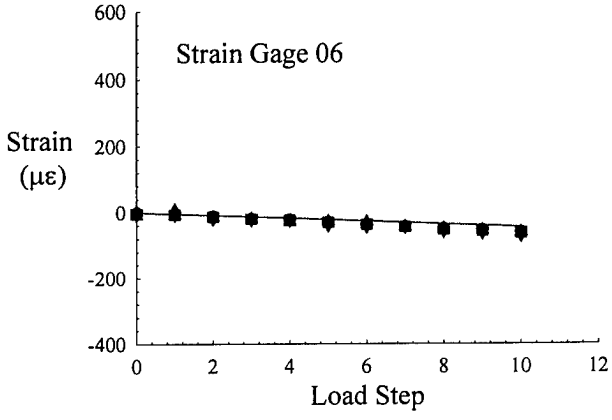
FIGURE D-20. MEASURED AND PREDICTED 45° STRAINS FOR GROUP 7 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1a (Continued)

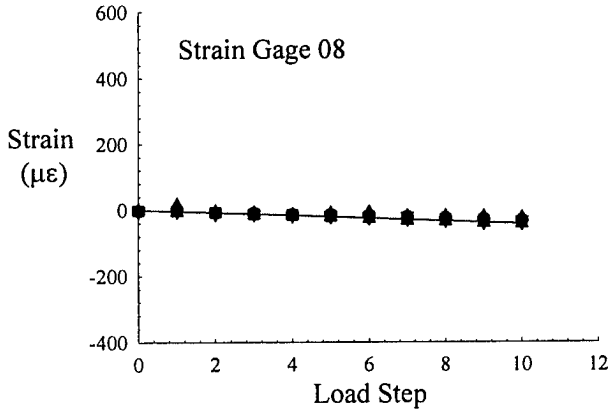
Load Cond. 1b	Max. Load
Pressure	0 psi
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	333.3 lb/in











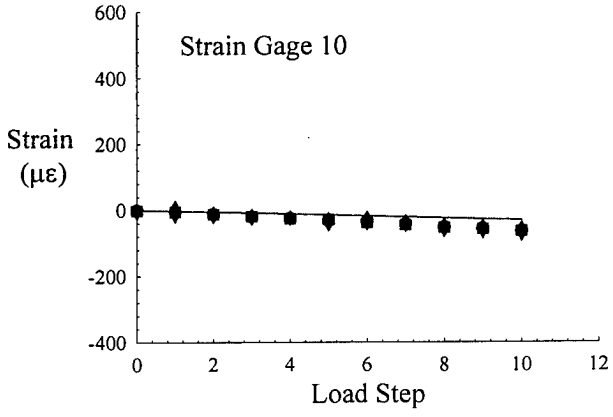
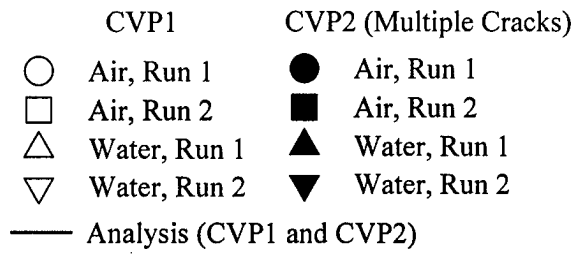
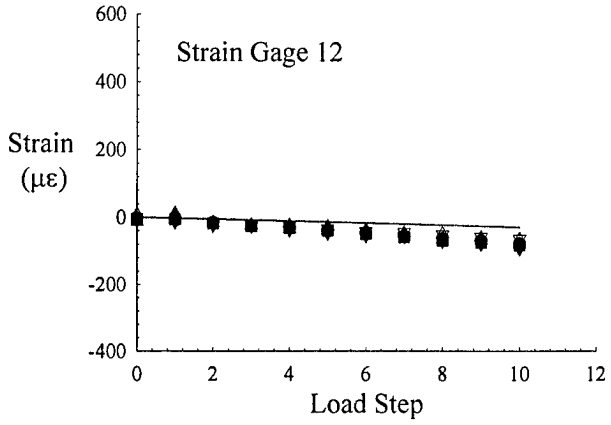
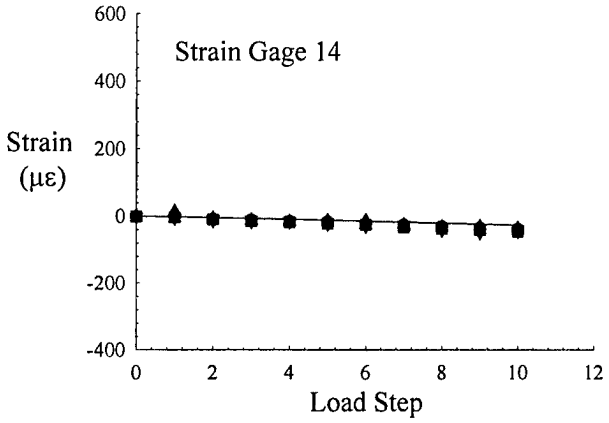


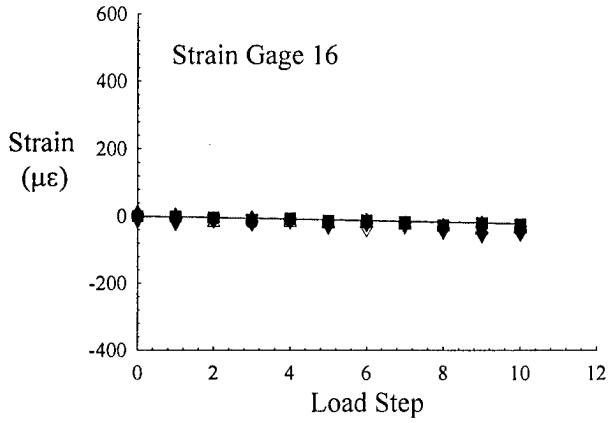
FIGURE D-21. MEASURED AND PREDICTED STRAINS FOR GROUP 1 GAGES IN FRAME OUTER CAPS OF CVP1 AND CVP2, LOAD CONDITION 1b

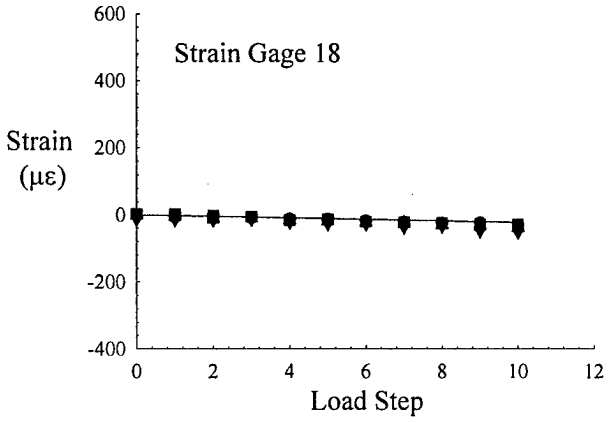
Load Cond. 1b	Max. Load
Pressure	0 psi
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	333.3 lb/in











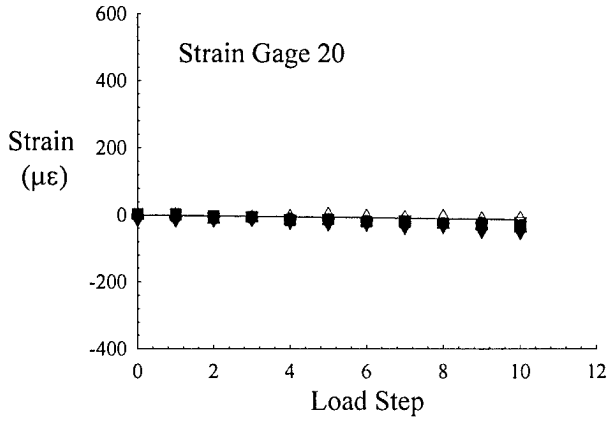
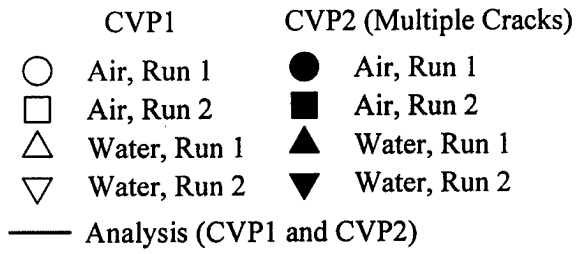
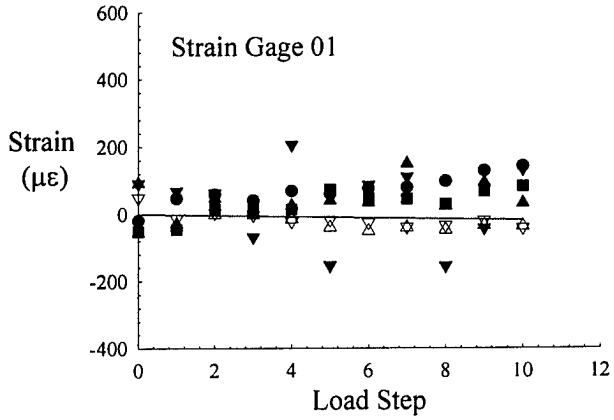
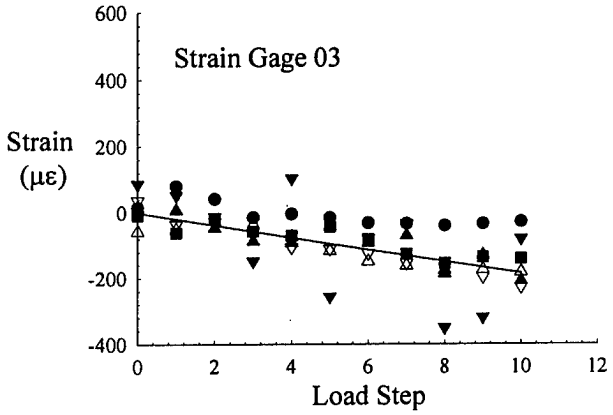


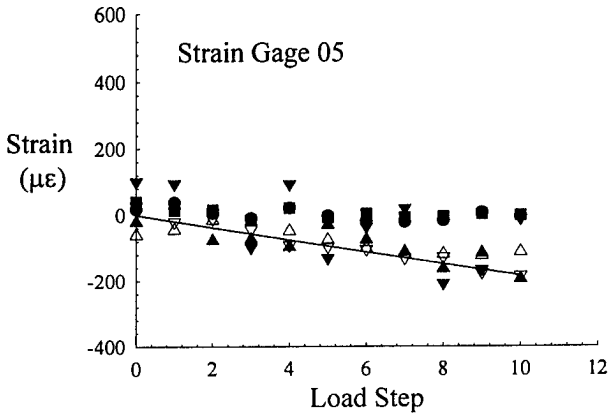
FIGURE D-21. MEASURED AND PREDICTED STRAINS FOR GROUP 1 GAGES IN FRAME OUTER CAPS OF CVP1 AND CVP2, LOAD CONDITION 1b (Continued)

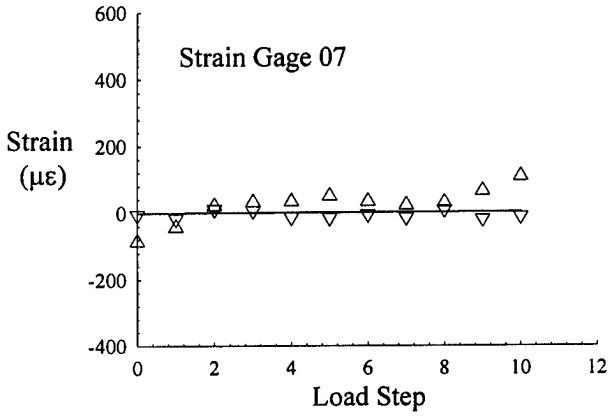
Load Cond. 1b	Max. Load
Pressure	0 psi
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	333.3 lb/in











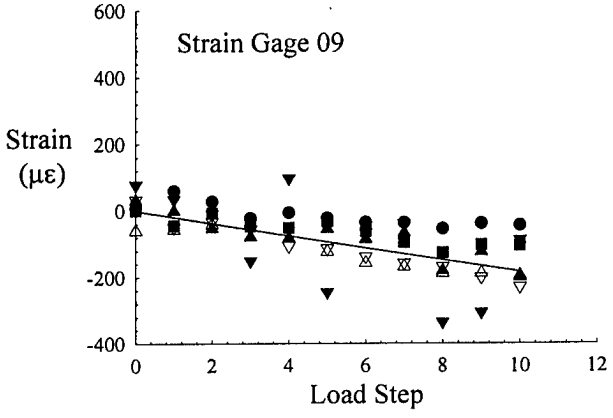


FIGURE D-22. MEASURED AND PREDICTED STRAINS FOR GROUP 2 GAGES IN FRAME INNER CAPS OF CVP1 AND CVP2, LOAD CONDITION 1b

Load Cond. 1b	Max. Load
Pressure	0 psi
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	333.3 lb/in

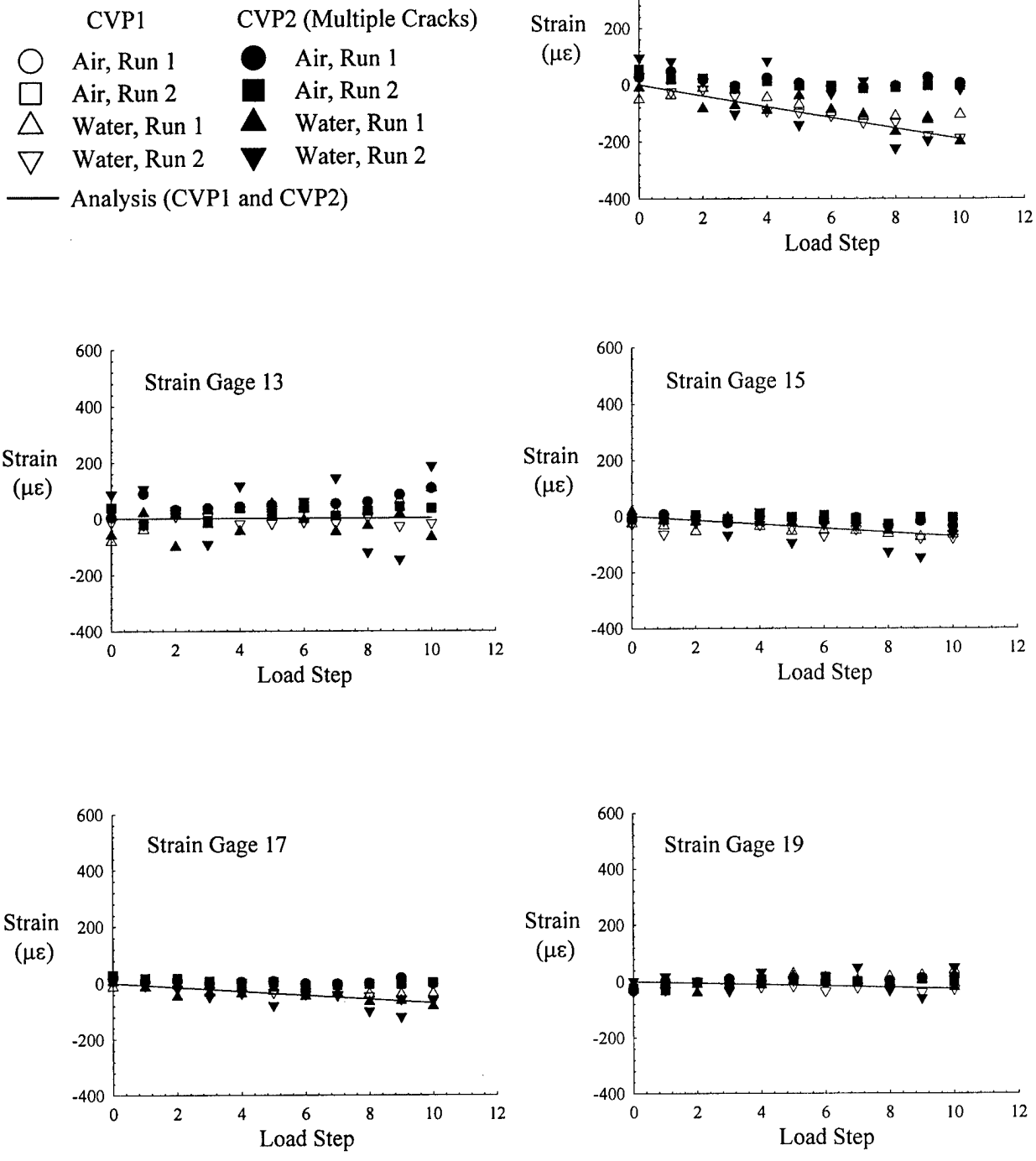


FIGURE D-22. MEASURED AND PREDICTED STRAINS FOR GROUP 2 GAGES IN FRAME INNER CAPS OF CVP1 AND CVP2, LOAD CONDITION 1b (Continued)

Load Cond. 1b	Max. Load
Pressure	0 psi
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	333.3 lb/in

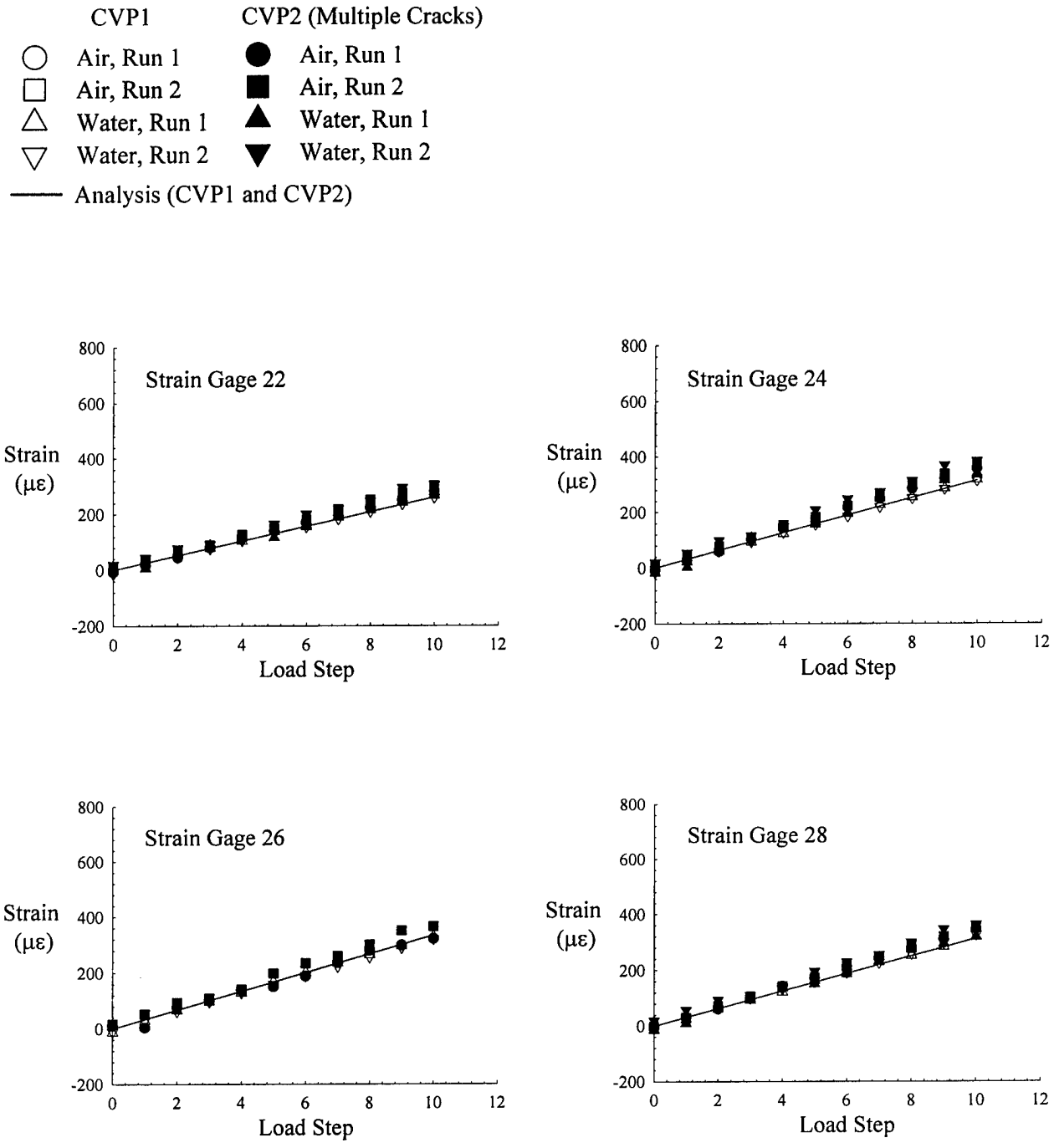


FIGURE D-23. MEASURED AND PREDICTED STRAINS FOR GROUP 3 GAGES IN STRINGER HATS OF CVP1 AND CVP2, LOAD CONDITION 1b

Load Cond. 1b	Max. Load
Pressure	0 psi
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	333.3 lb/in

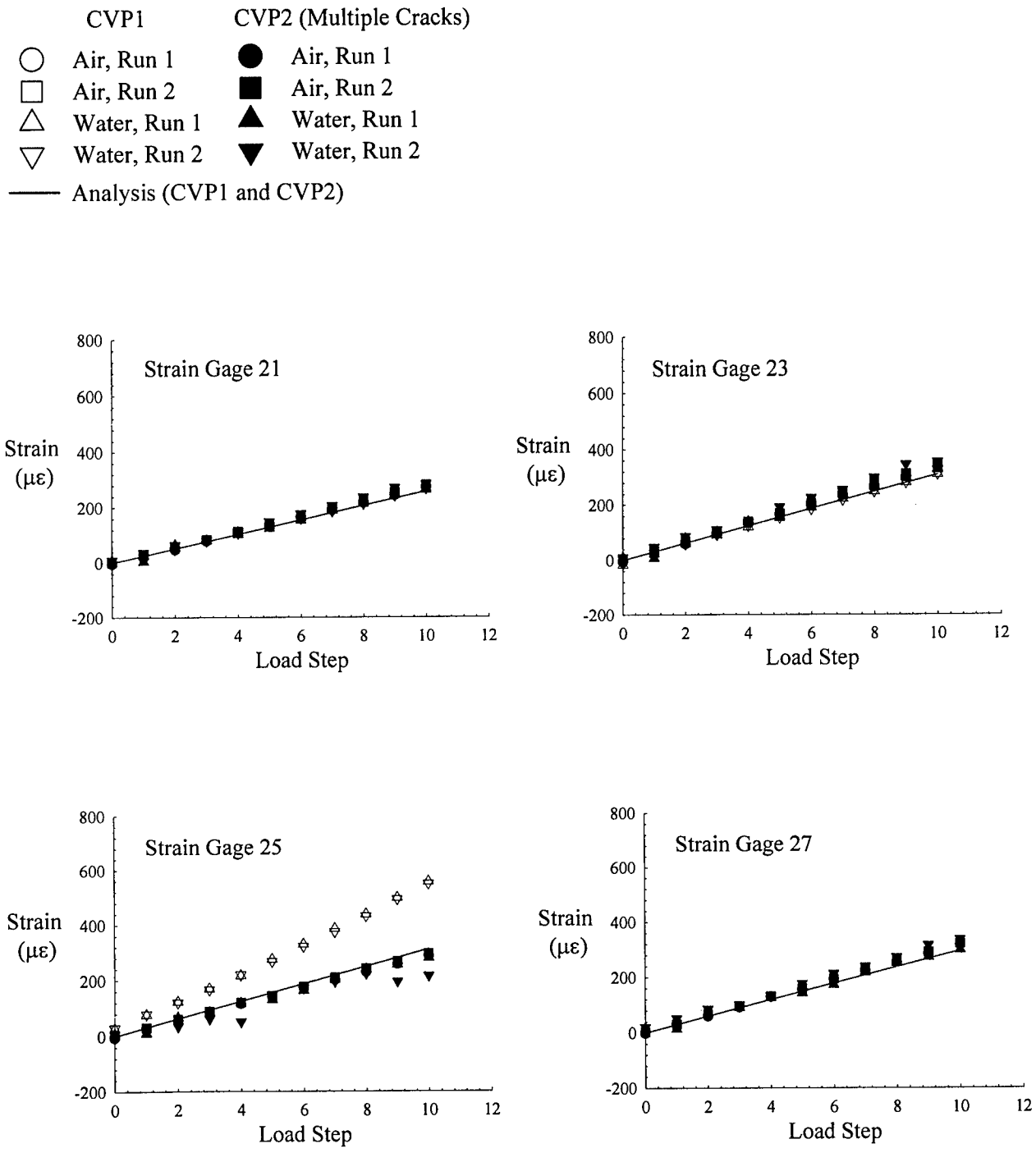
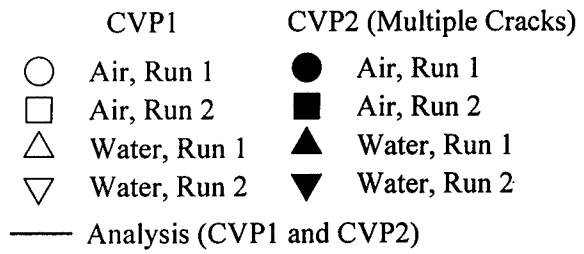


FIGURE D-24. MEASURED AND PREDICTED STRAINS FOR GROUP 4 GAGES IN STRINGER FLANGES OF CVP1 AND CVP2, LOAD CONDITION 1b

Load Cond. 1b	Max. Load
Pressure	0 psi
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	333.3 lb/in



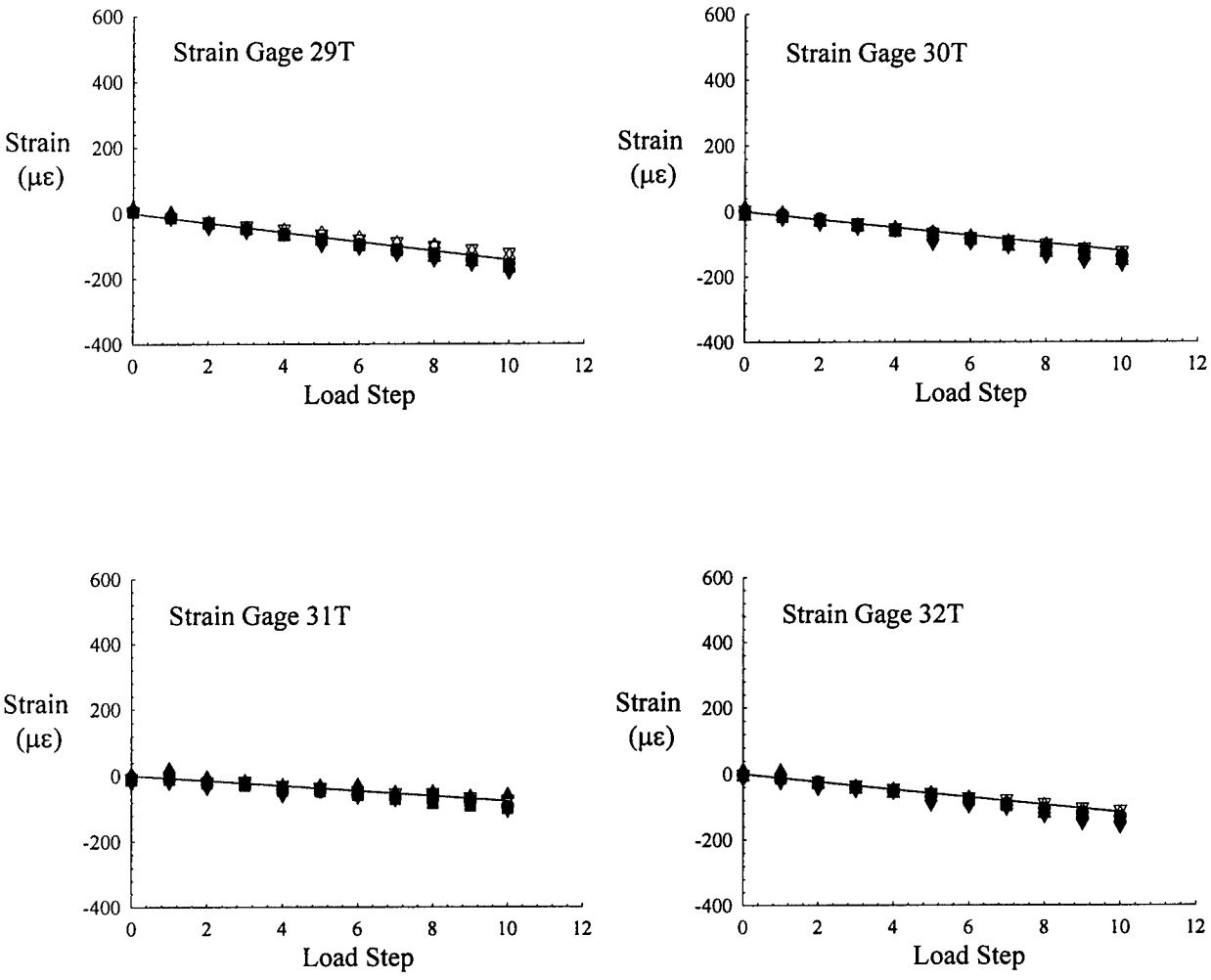
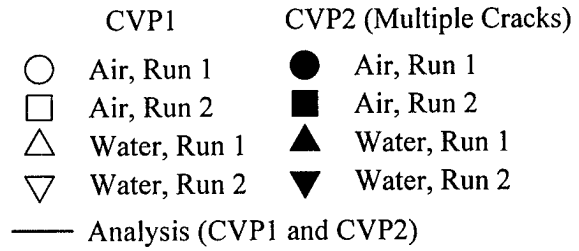
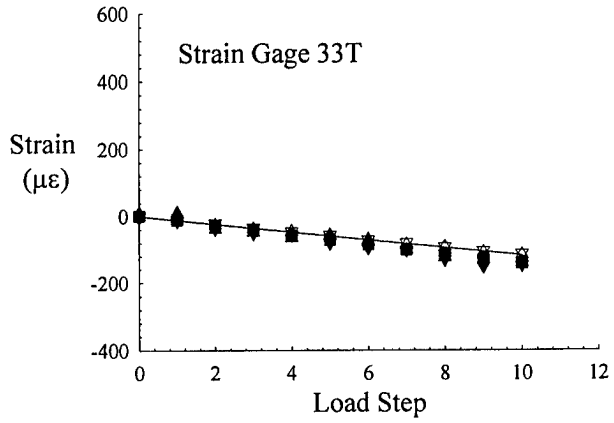
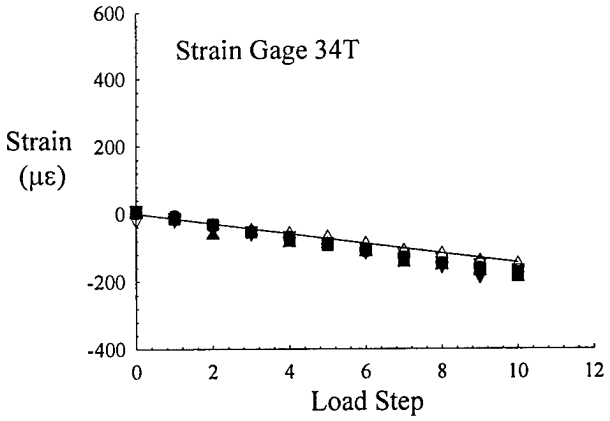


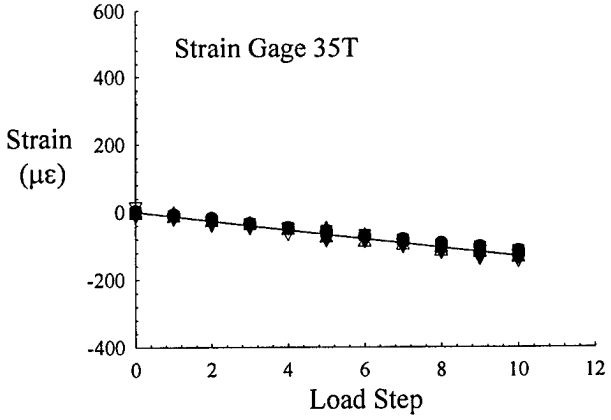
FIGURE D-25. MEASURED AND PREDICTED HOOP STRAINS FOR GROUP 5 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1b

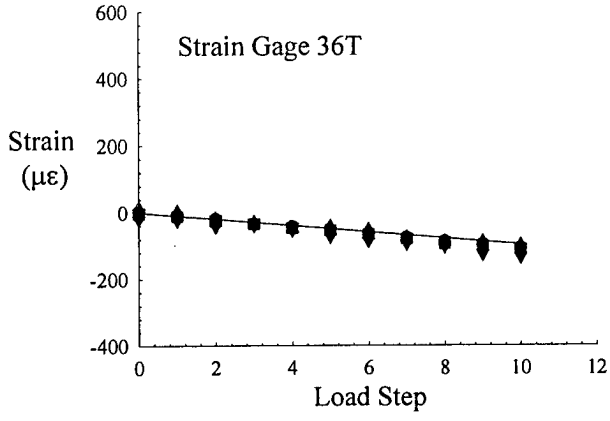
Load Cond. 1b	Max. Load
Pressure	0 psi
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	333.3 lb/in











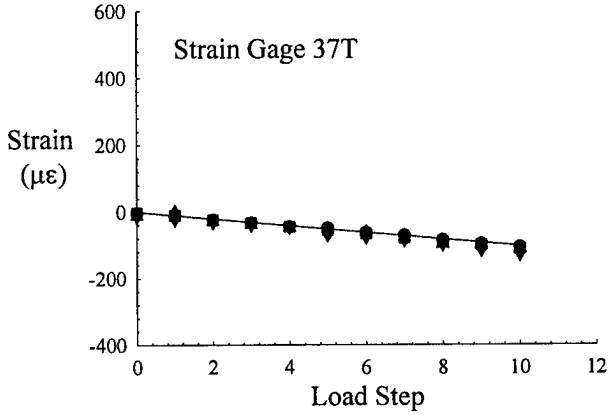


FIGURE D-25. MEASURED AND PREDICTED HOOP STRAINS FOR GROUP 5 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1b (Continued)

Load Cond. 1b	Max. Load
Pressure	0 psi
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	333.3 lb/in

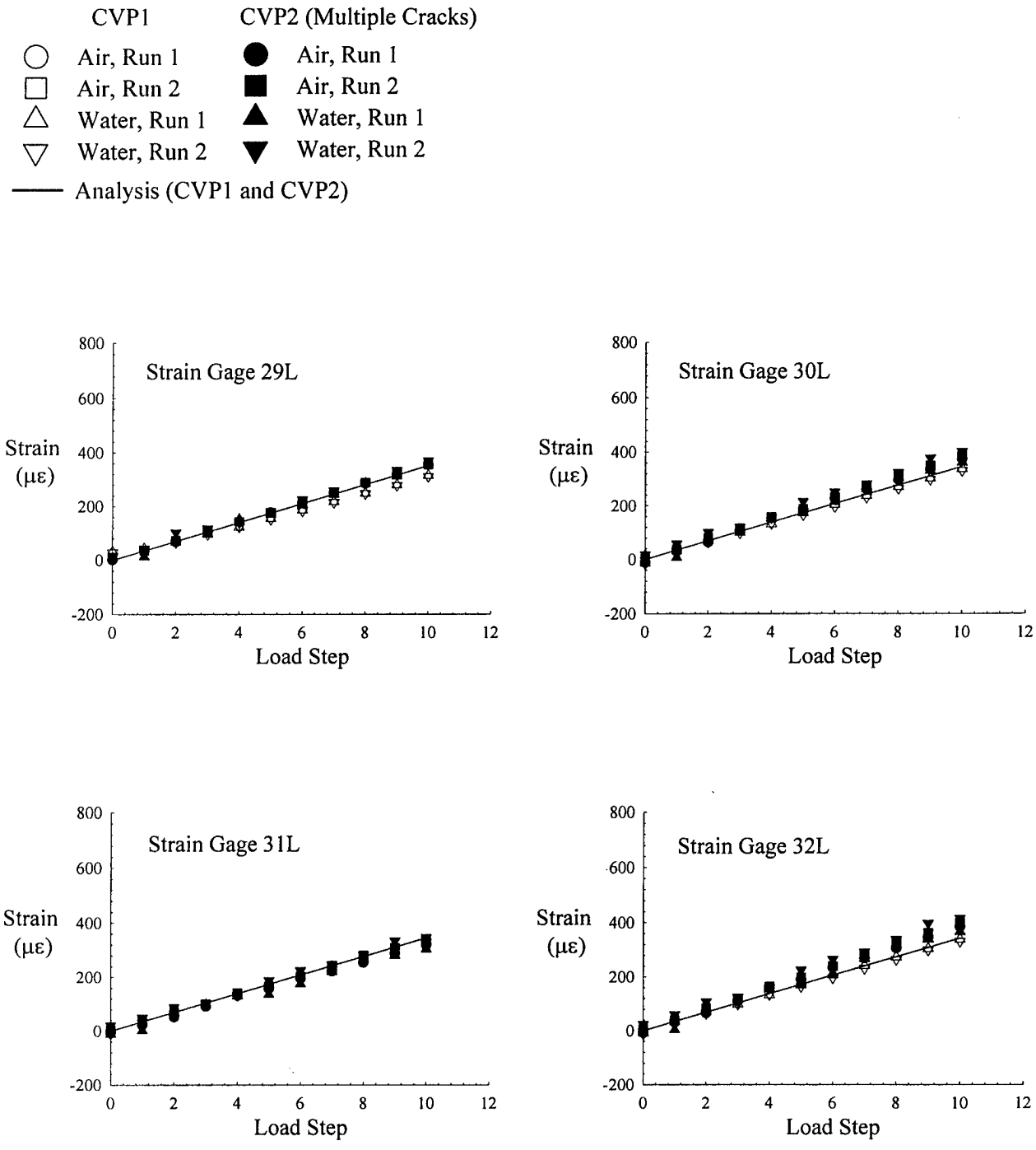
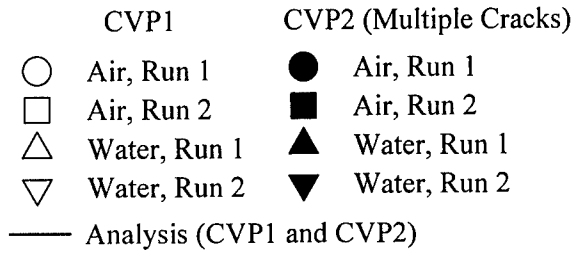
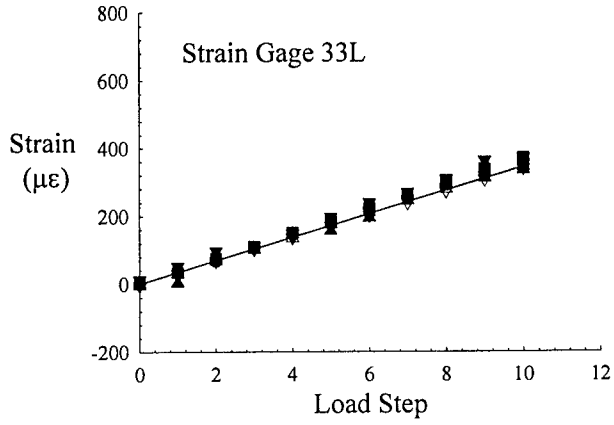
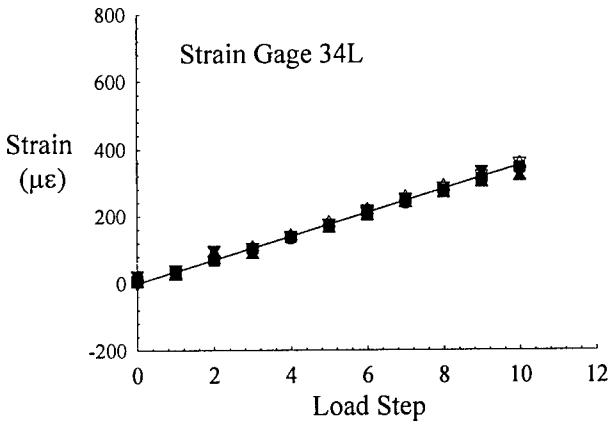


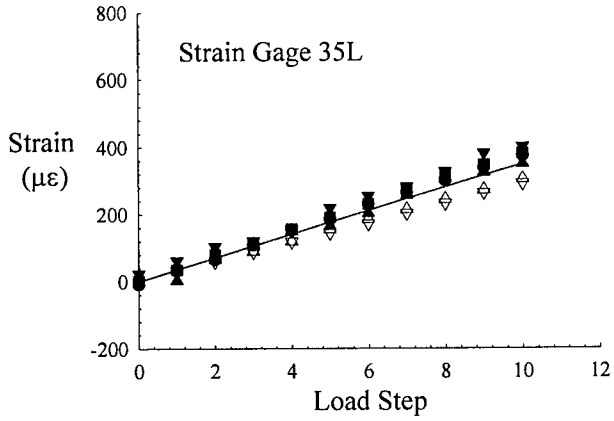
FIGURE D-26. MEASURED AND PREDICTED LONGITUDINAL STRAINS FOR GROUP 6 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1b

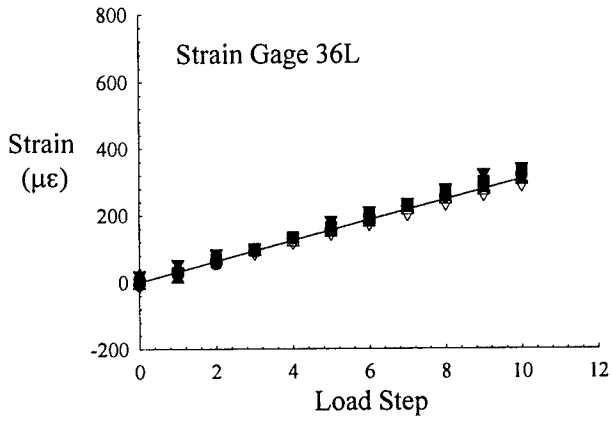
Load Cond. 1b	Max. Load
Pressure	0 psi
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	333.3 lb/in











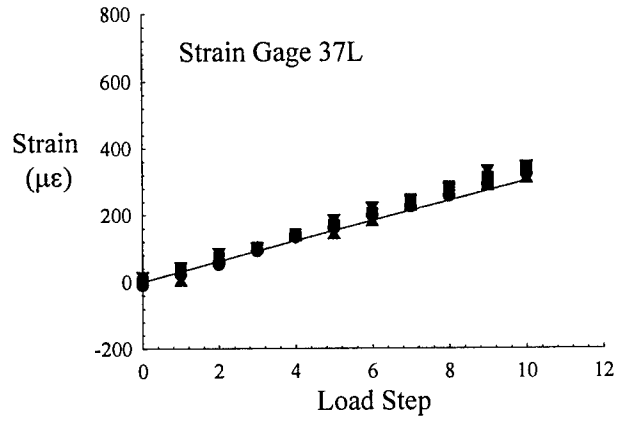


FIGURE D-26. MEASURED AND PREDICTED LONGITUDINAL STRAINS FOR GROUP 6 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1b (Continued)

Load Cond. 1b	Max. Load
Pressure	0 psi
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	333.3 lb/in

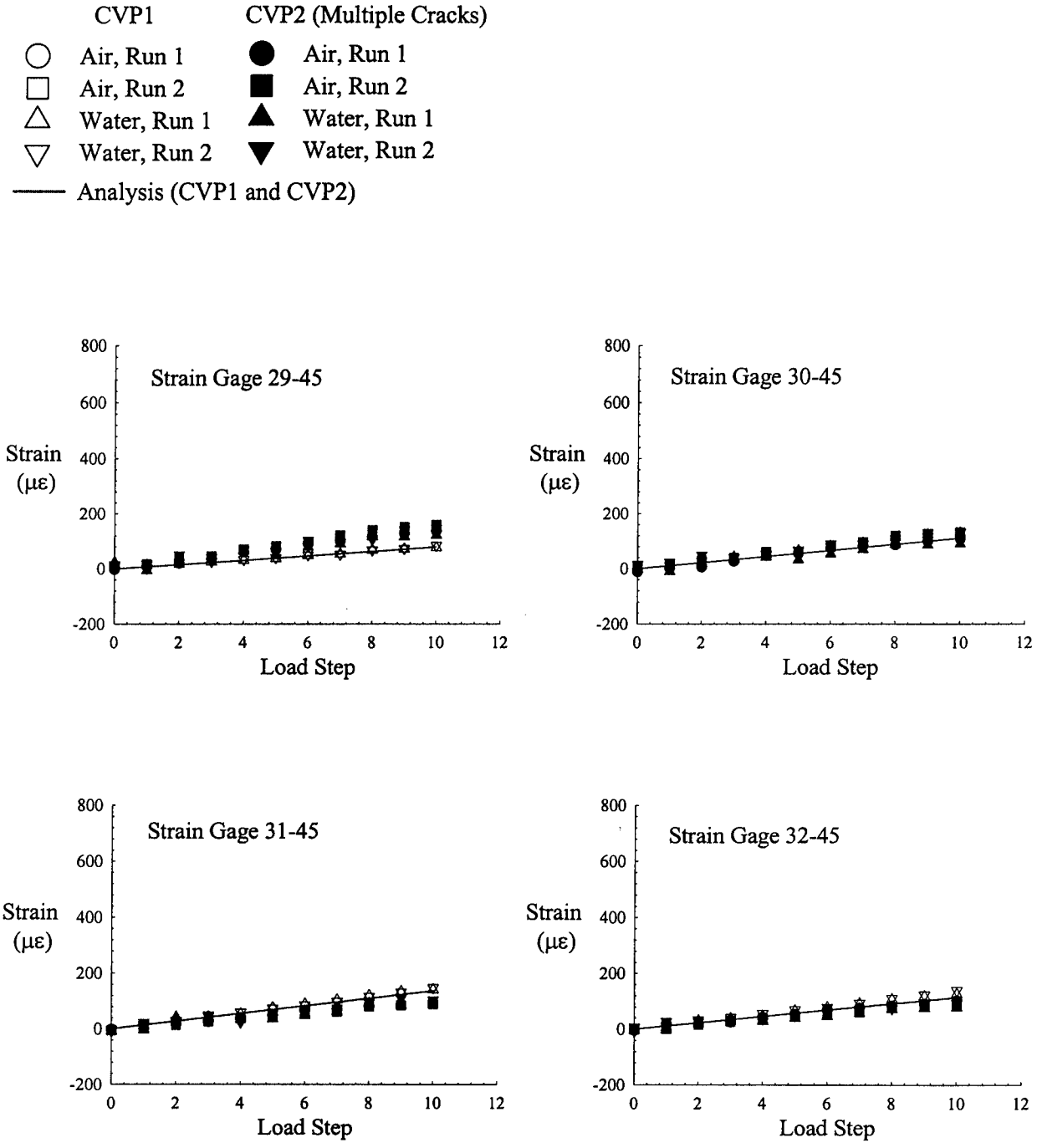
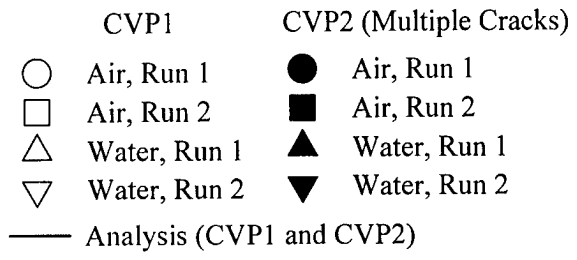
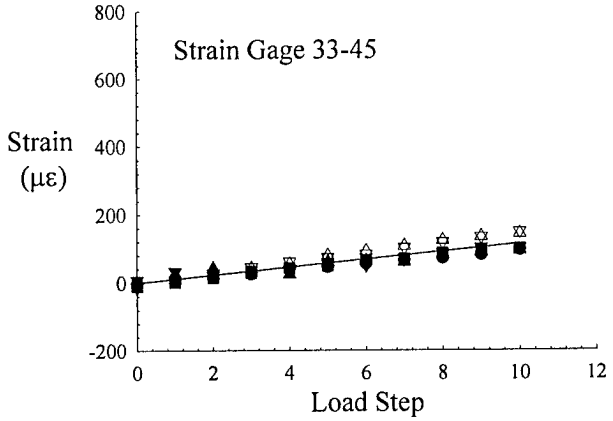
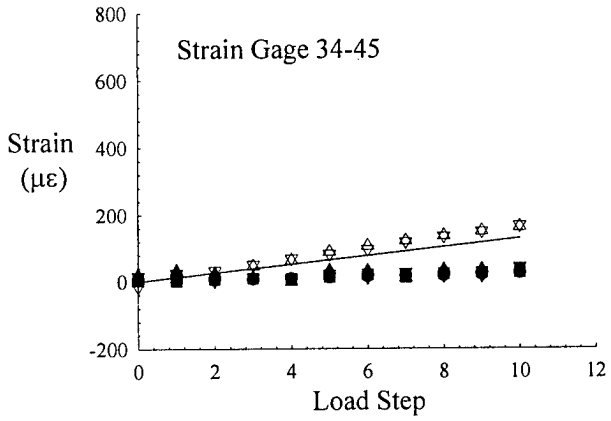


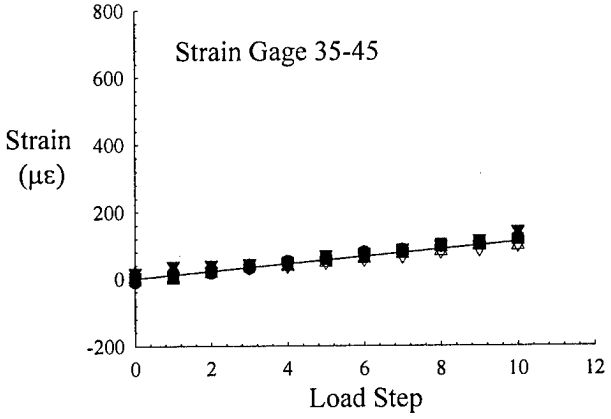
FIGURE D-27. MEASURED AND PREDICTED 45° STRAINS FOR GROUP 7 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1b

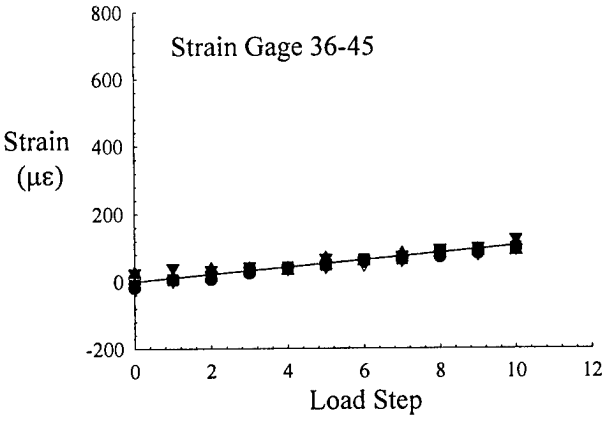
Load Cond. 1b	Max. Load
Pressure	0 psi
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	333.3 lb/in











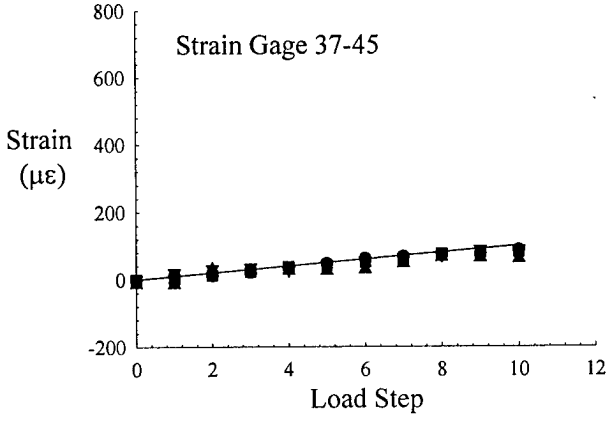
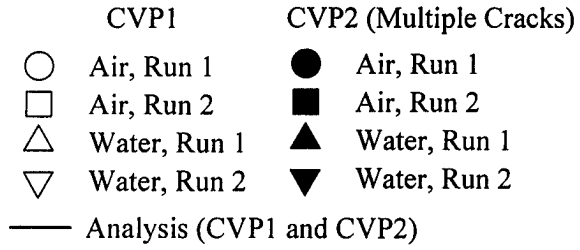
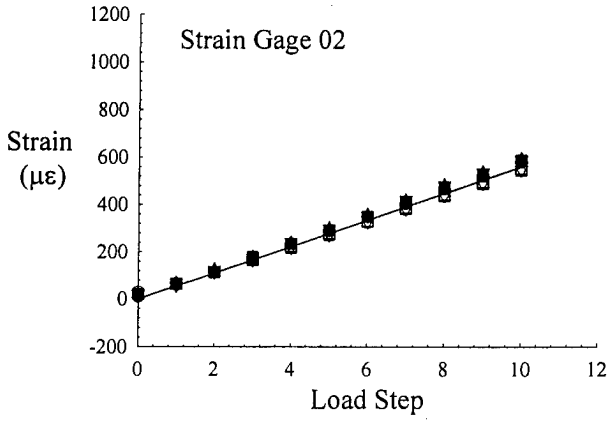
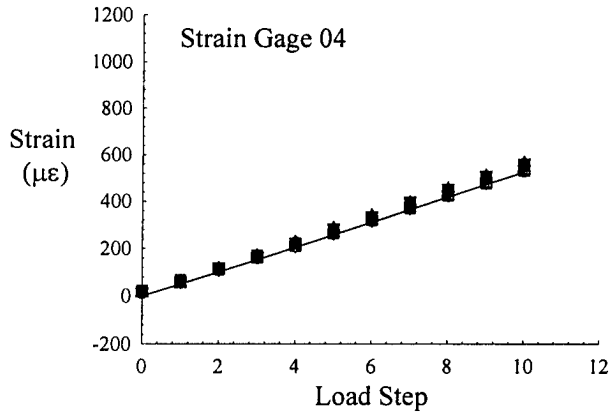


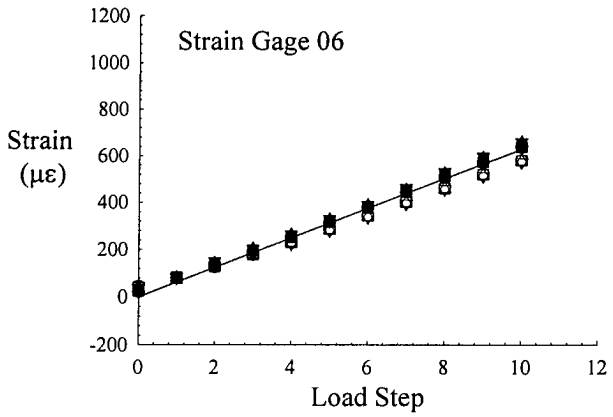
FIGURE D-27. MEASURED AND PREDICTED 45° STRAINS FOR GROUP 7 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1b (Continued)

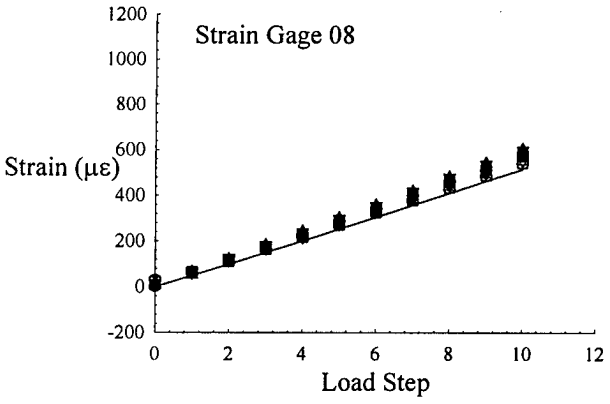
Load Cond. 1c	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	333.3 lb/in











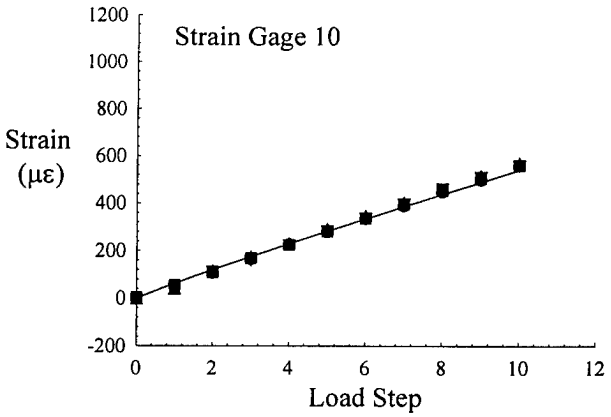


FIGURE D-28. MEASURED AND PREDICTED STRAINS FOR GROUP 1 GAGES IN FRAME OUTER CAPS OF CVP1 AND CVP2, LOAD CONDITION 1c

Load Cond. 1c	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	333.3 lb/in

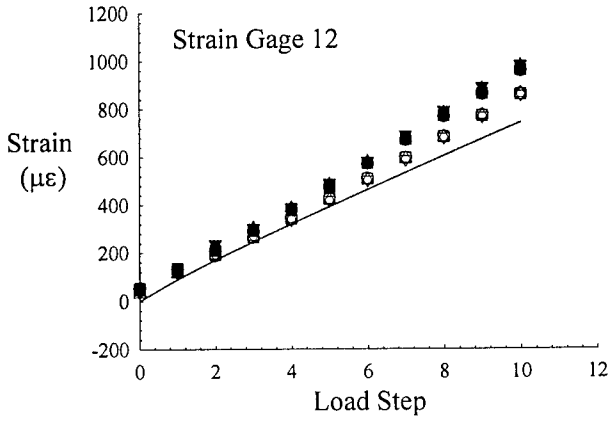
CVP1

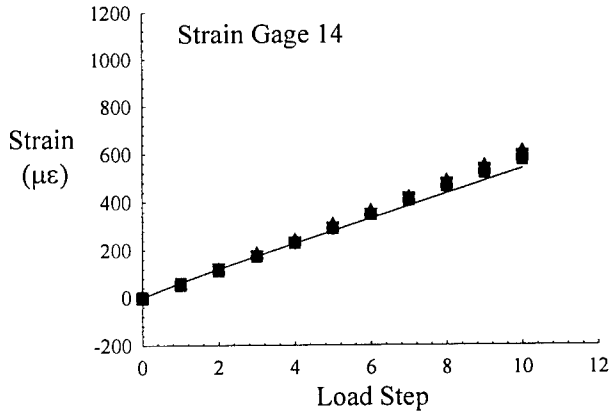
○ Air, Run 1
□ Air, Run 2
△ Water, Run 1
▽ Water, Run 2

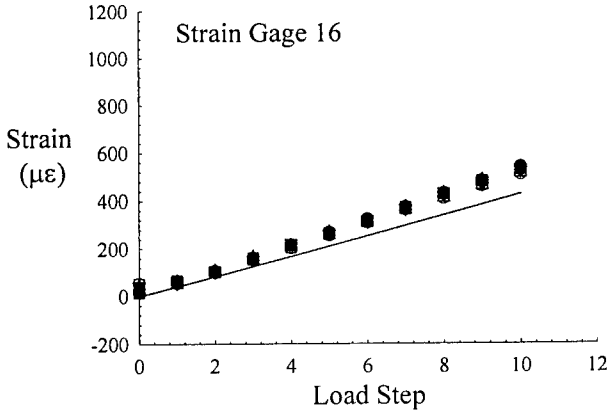
CVP2 (Multiple Cracks)

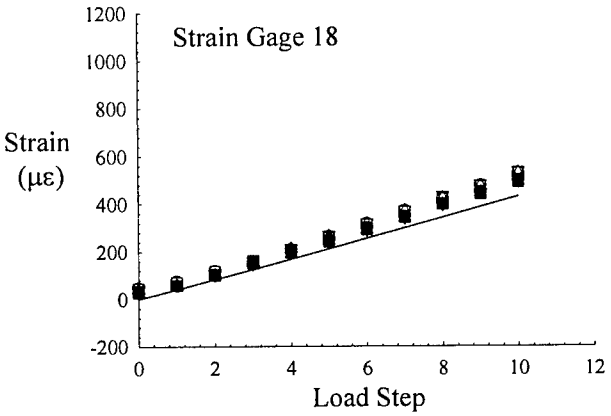
● Air, Run 1
■ Air, Run 2
▲ Water, Run 1
▼ Water, Run 2

—— Analysis (CVP1 and CVP2)









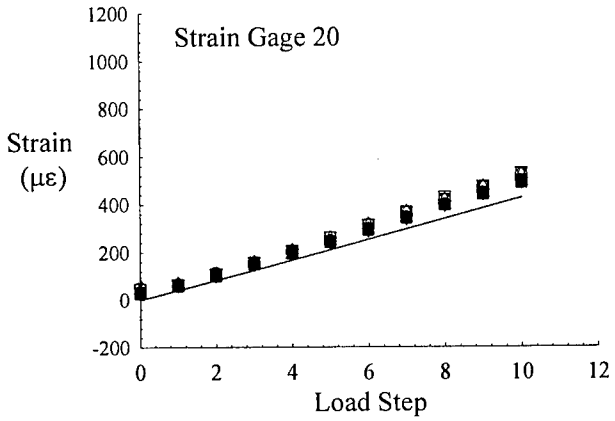
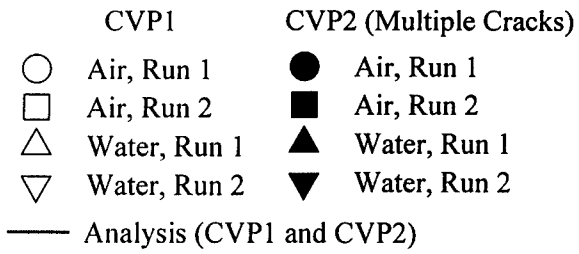
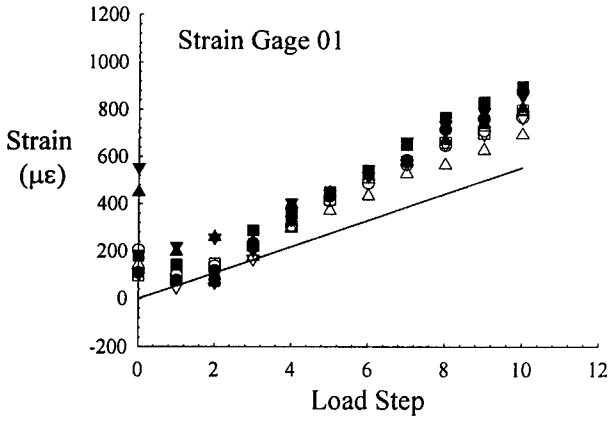
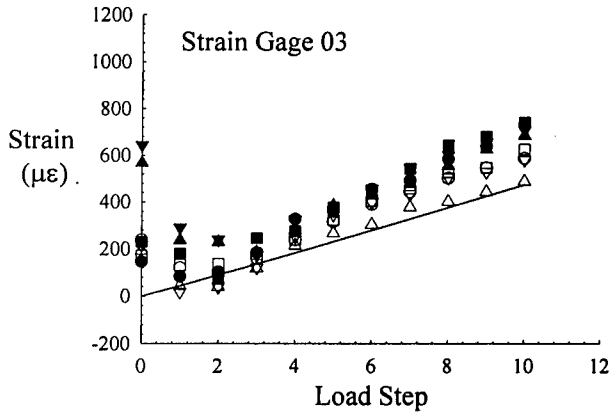


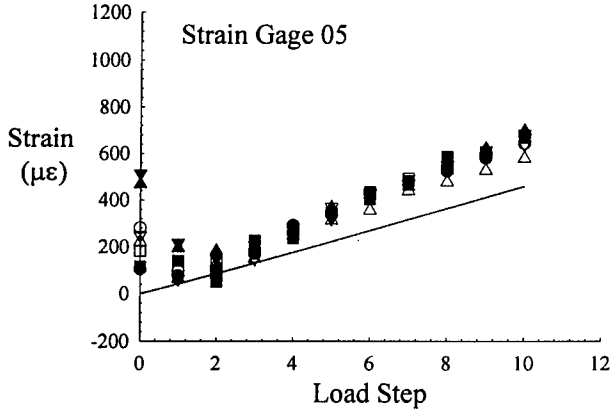
FIGURE D-28. MEASURED AND PREDICTED STRAINS FOR GROUP 1 GAGES IN FRAME OUTER CAPS OF CVP1 AND CVP2, LOAD CONDITION 1c (Continued)

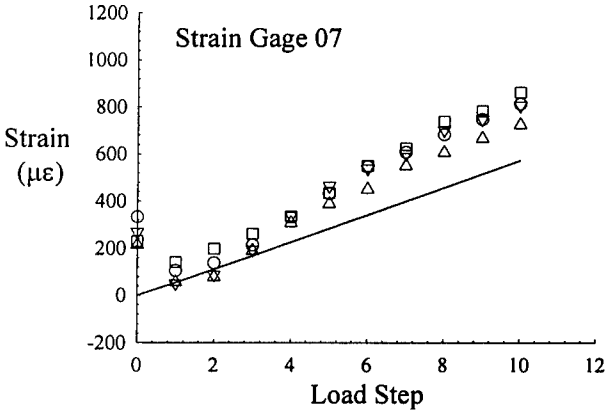
Load Cond. 1c	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	333.3 lb/in











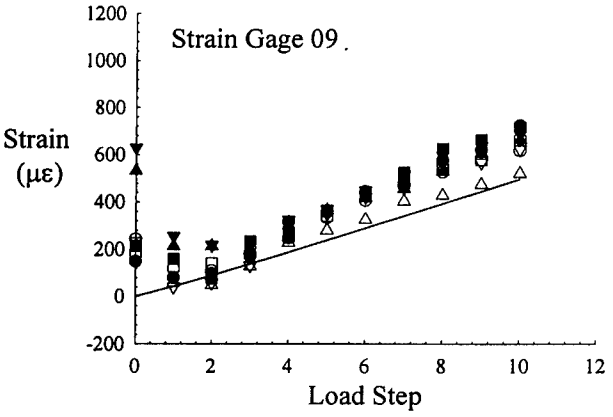
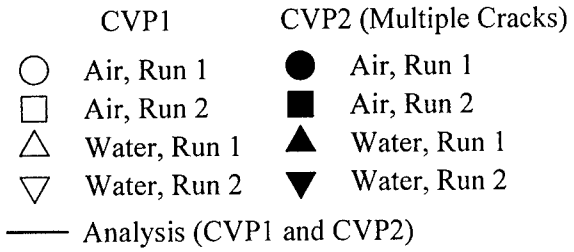
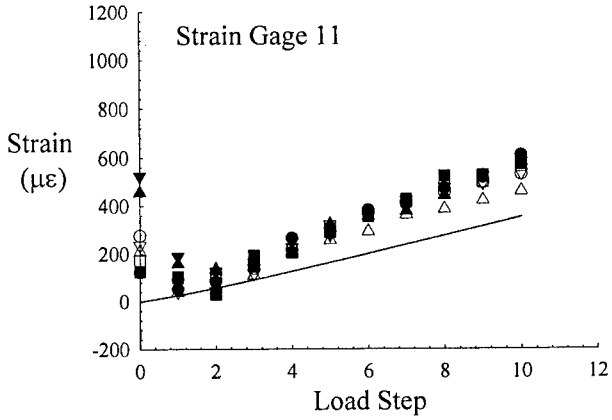
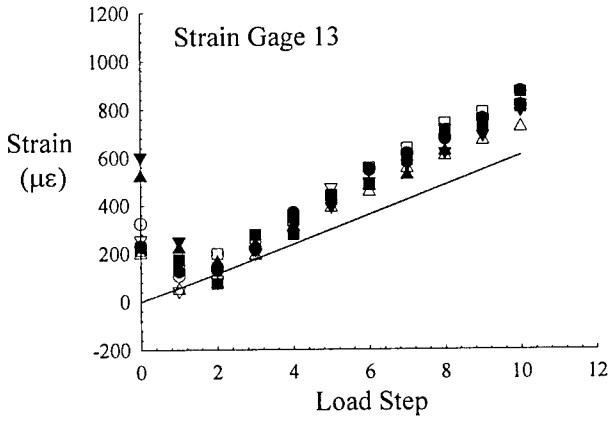


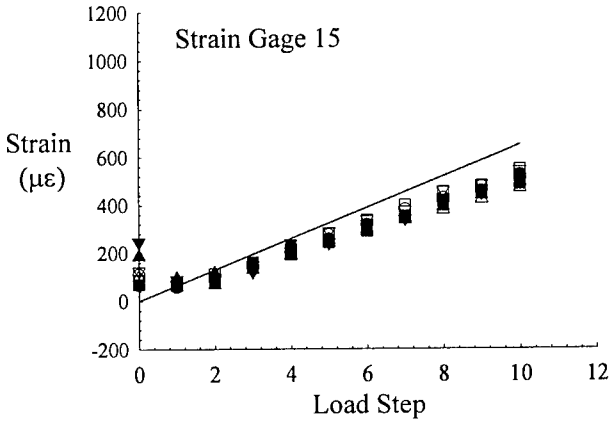
FIGURE D-29. MEASURED AND PREDICTED STRAINS FOR GROUP 2 GAGES IN FRAME INNER CAPS OF CVP1 AND CVP2, LOAD CONDITION 1c

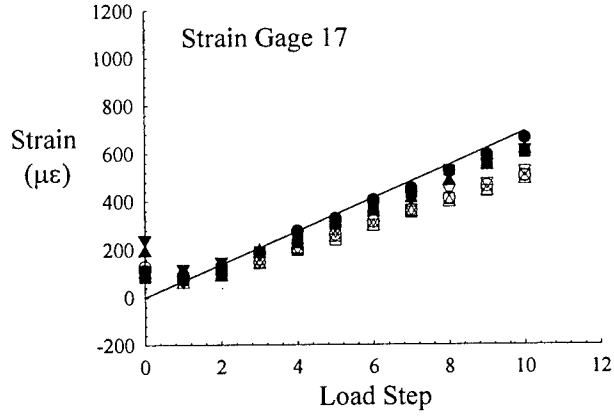
Load Cond. 1c	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	333.3 lb/in











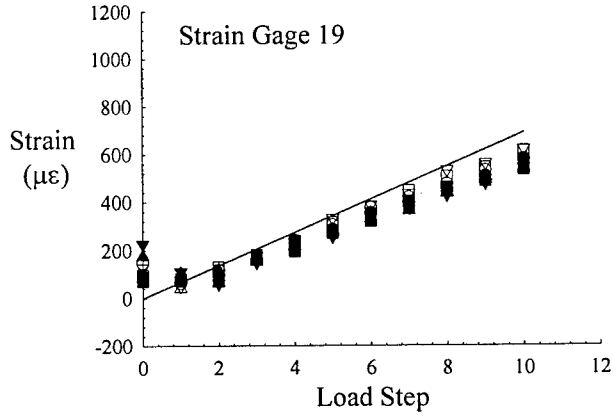


FIGURE D-29. MEASURED AND PREDICTED STRAINS FOR GROUP 2 GAGES IN FRAME INNER CAPS OF CVP1 AND CVP2, LOAD CONDITION 1c (Continued)

Load Cond. 1c	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	333.3 lb/in

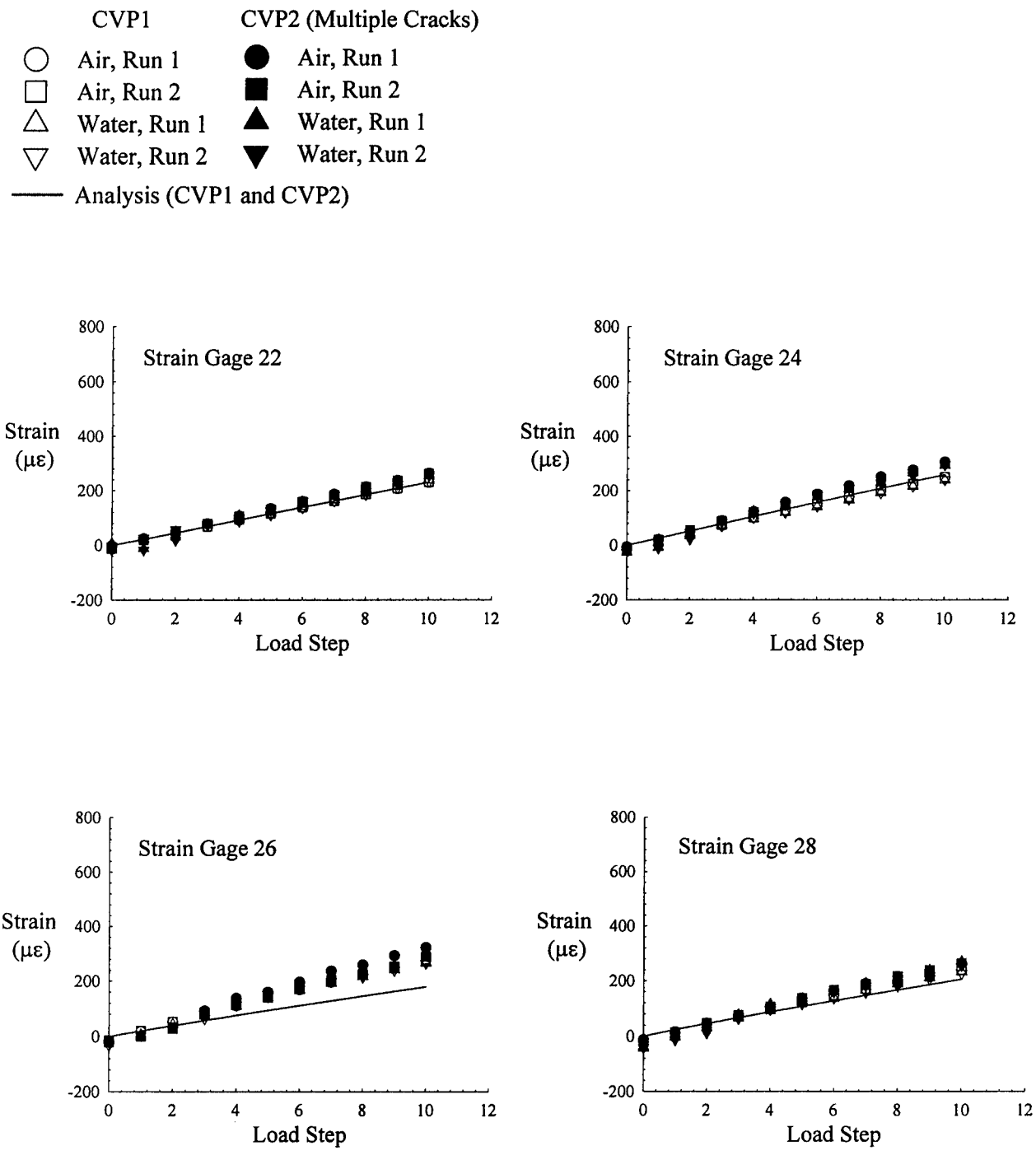


FIGURE D-30. MEASURED AND PREDICTED STRAINS FOR GROUP 3 GAGES IN STRINGER HATS OF CVP1 AND CVP2, LOAD CONDITION 1c

Load Cond. 1c	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	333.3 lb/in

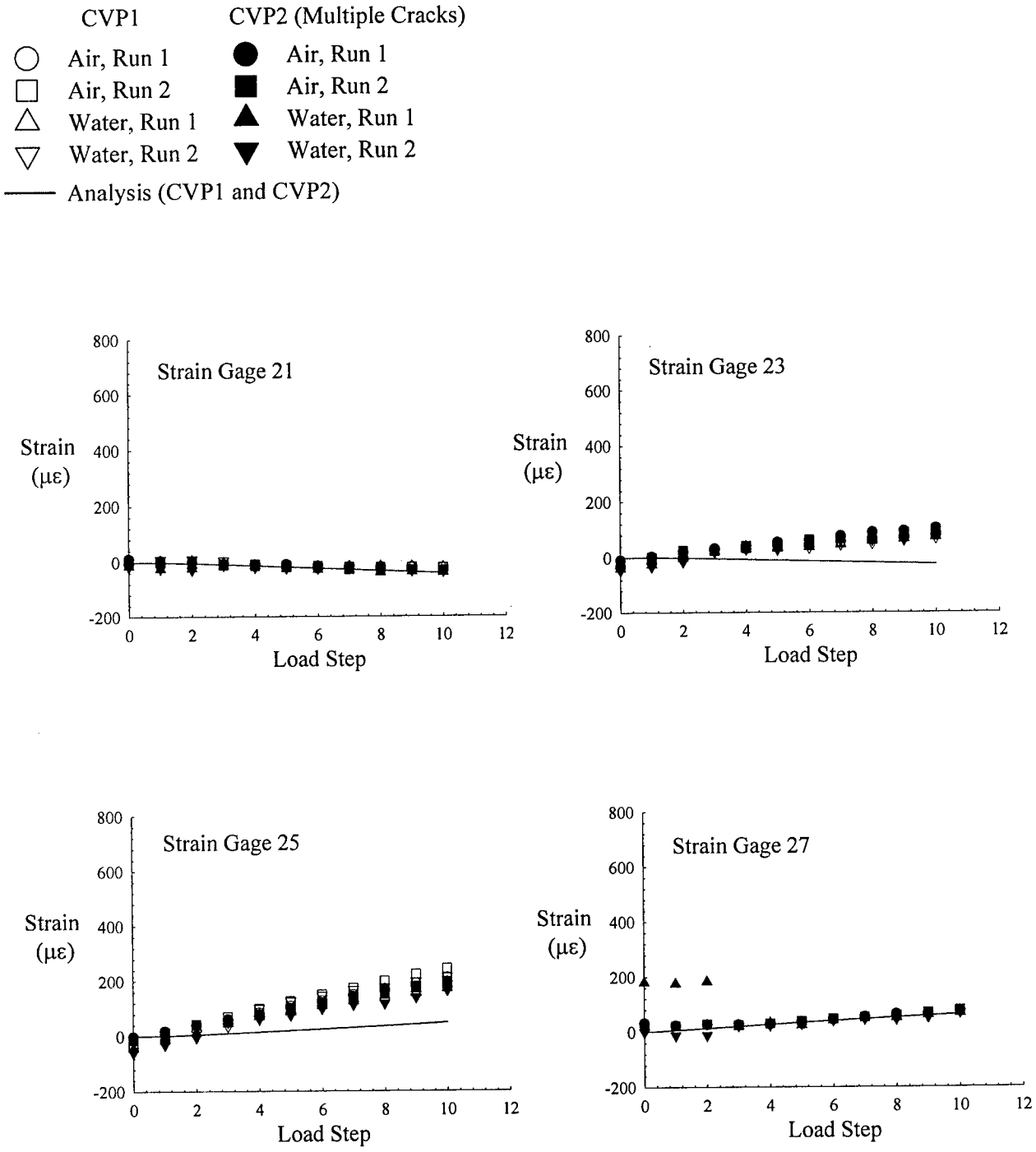
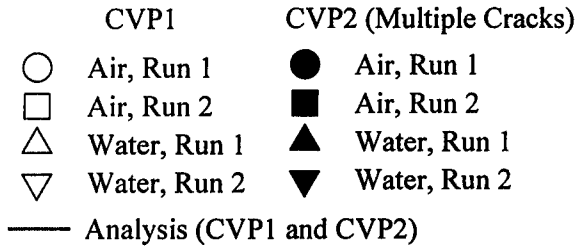
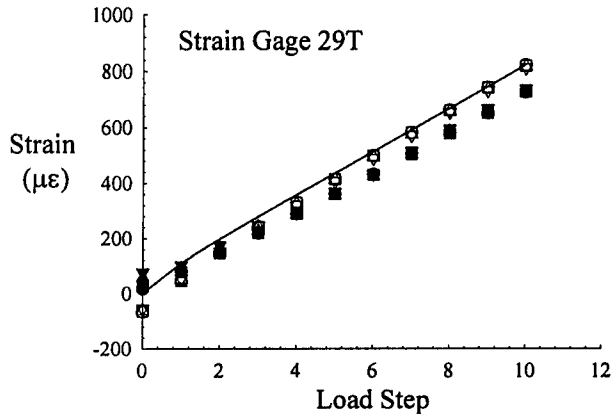
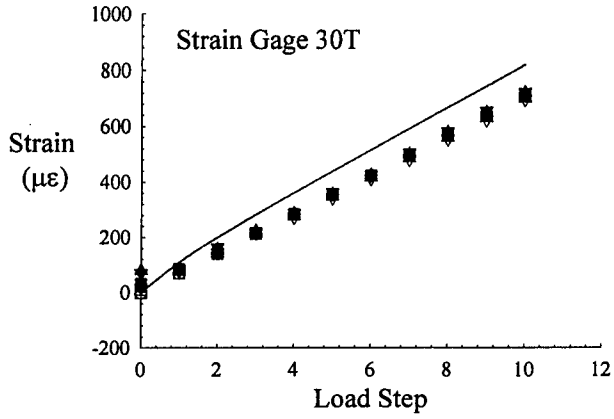


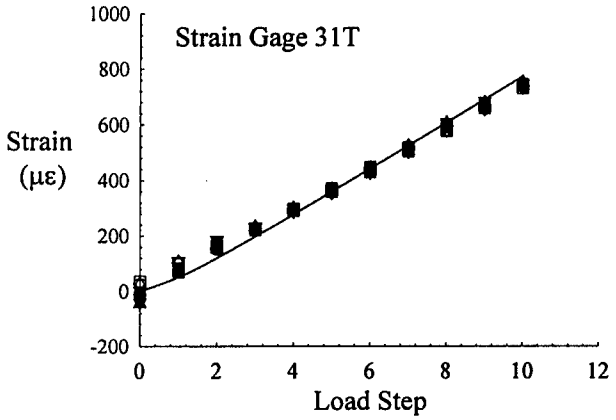
FIGURE D-31. MEASURED AND PREDICTED STRAINS FOR GROUP 4 GAGES IN STRINGER FLANGES OF CVP1 AND CVP2, LOAD CONDITION 1c

Load Cond. 1c	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	333.3 lb/in









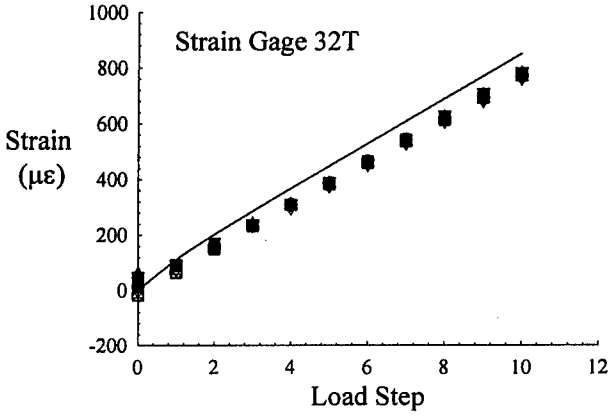
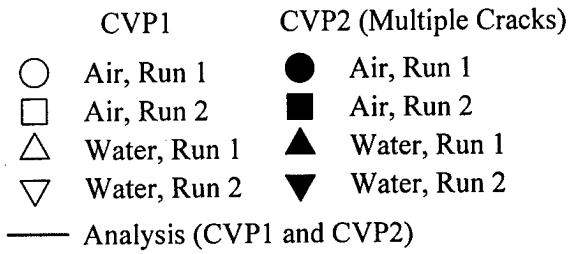
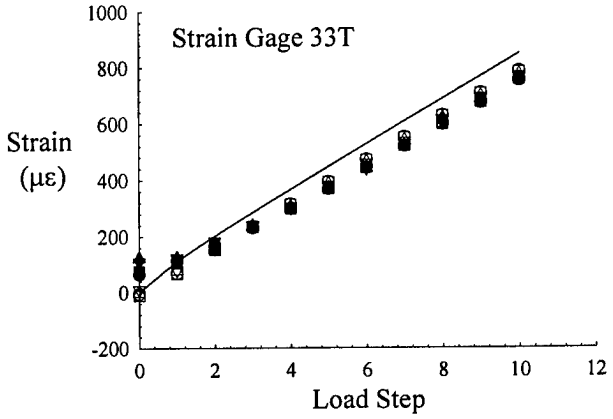
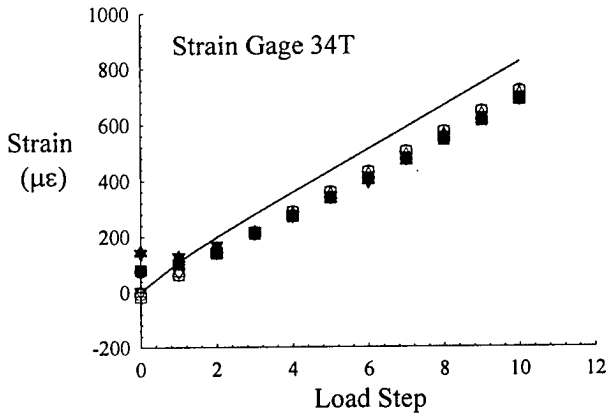


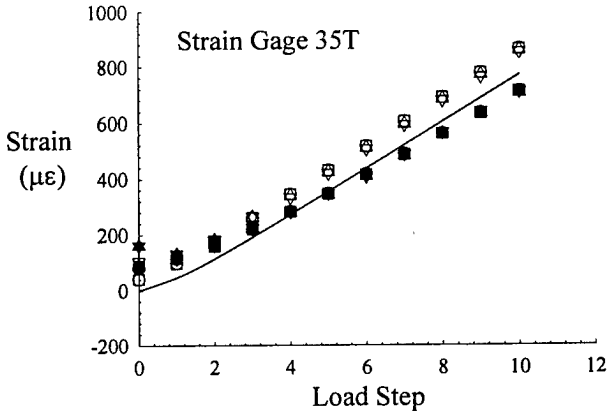
FIGURE D-32. MEASURED AND PREDICTED HOOP STRAINS FOR GROUP 5 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1c

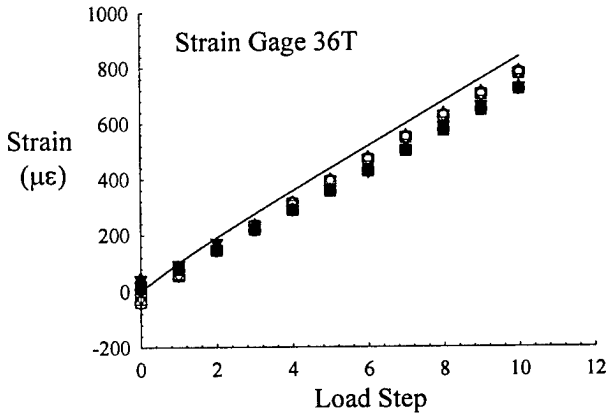
Load Cond. 1c	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	333.3 lb/in











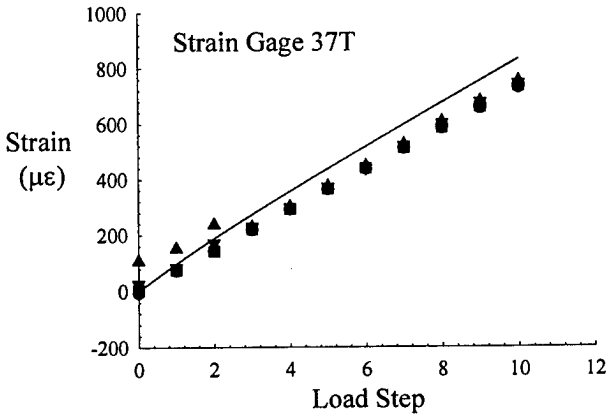
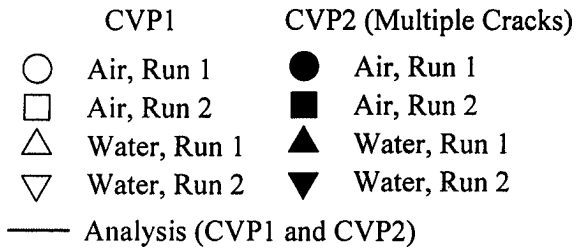
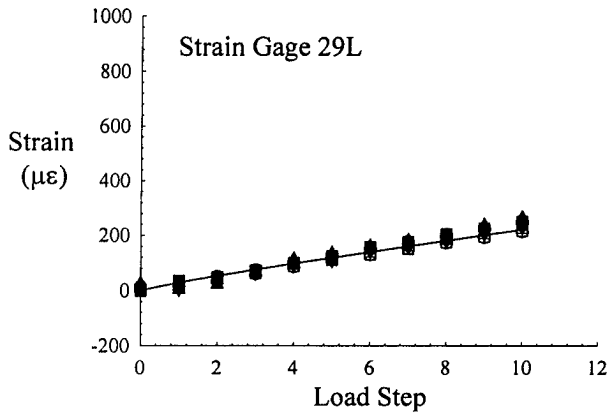
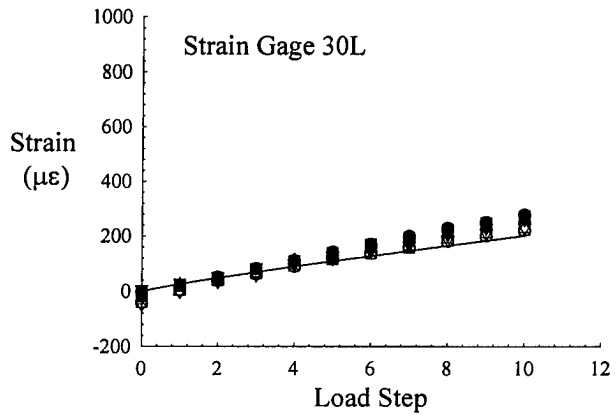


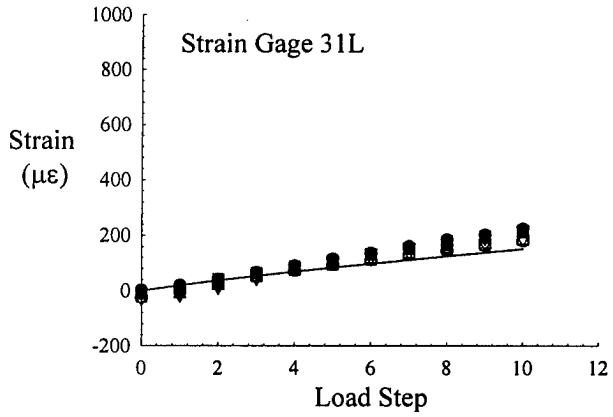
FIGURE D-32. MEASURED AND PREDICTED HOOP STRAINS FOR GROUP 5 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1c (Continued)

Load Cond. 1c	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	333.3 lb/in









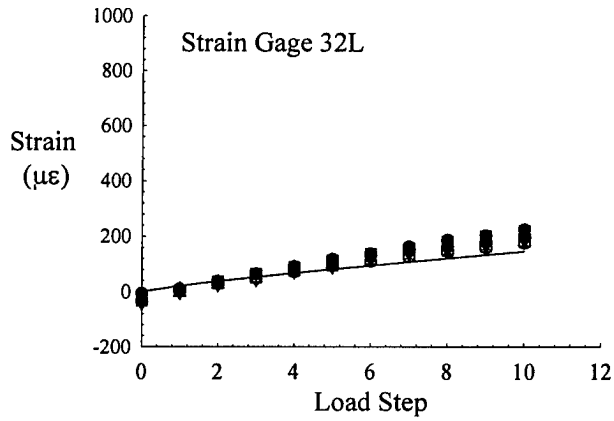
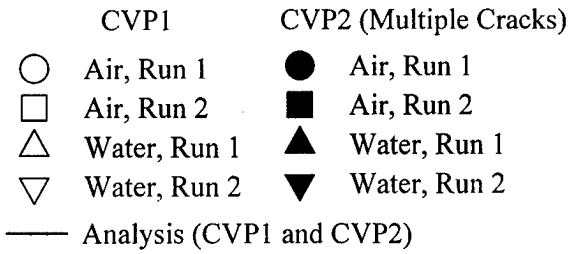
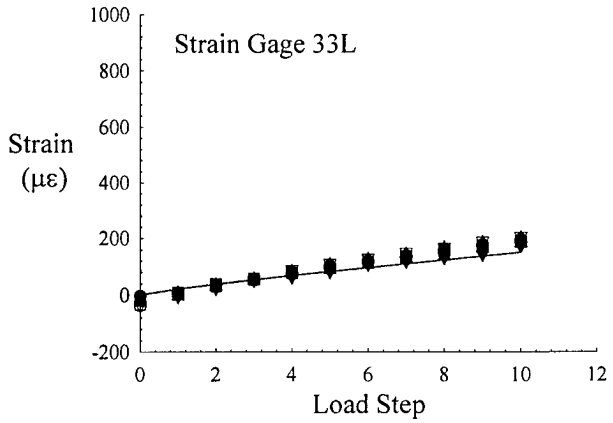
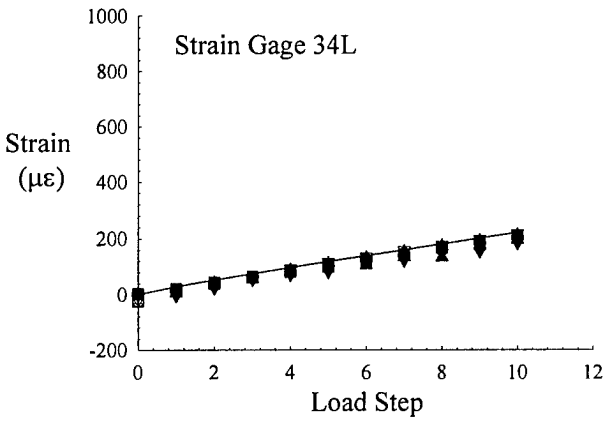


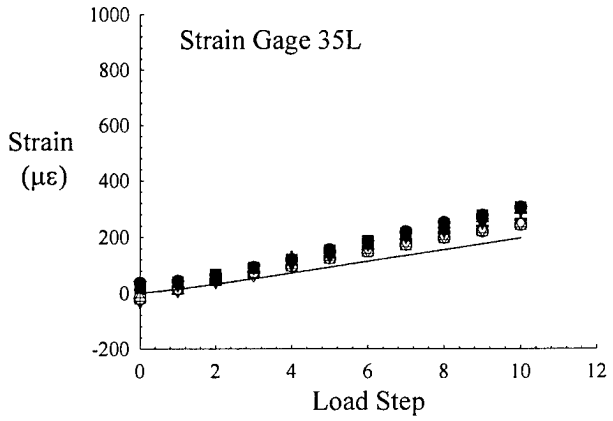
FIGURE D-33. MEASURED AND PREDICTED LONGITUDINAL STRAINS FOR GROUP 6 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1c

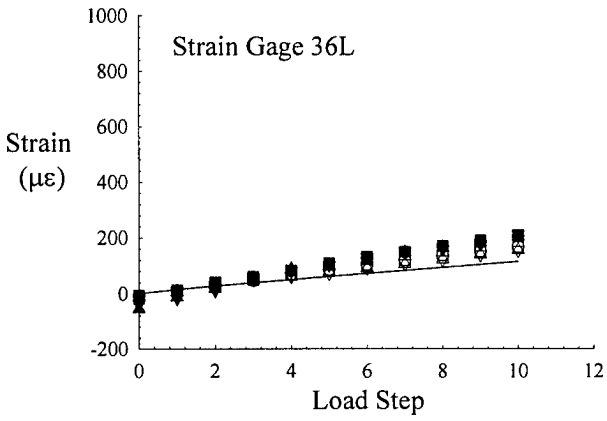
Load Cond. 1c	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	333.3 lb/in











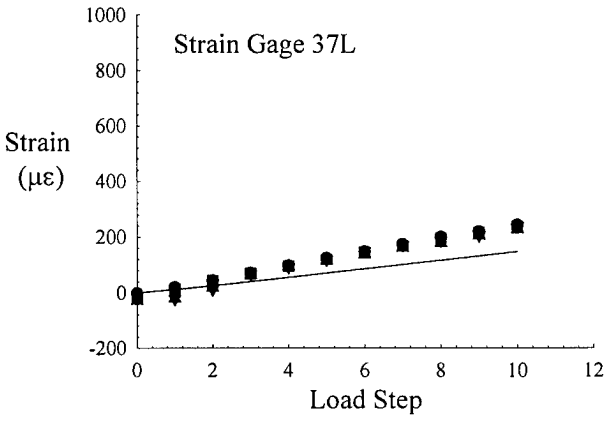


FIGURE D-33. MEASURED AND PREDICTED LONGITUDINAL STRAINS FOR GROUP 6 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1c (Continued)

Load Cond. 1c	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	333.3 lb/in

CVP1	CVP2 (Multiple Cracks)
○ Air, Run 1	● Air, Run 1
□ Air, Run 2	■ Air, Run 2
△ Water, Run 1	▲ Water, Run 1
▽ Water, Run 2	▼ Water, Run 2

—— Analysis (CVP1 and CVP2)

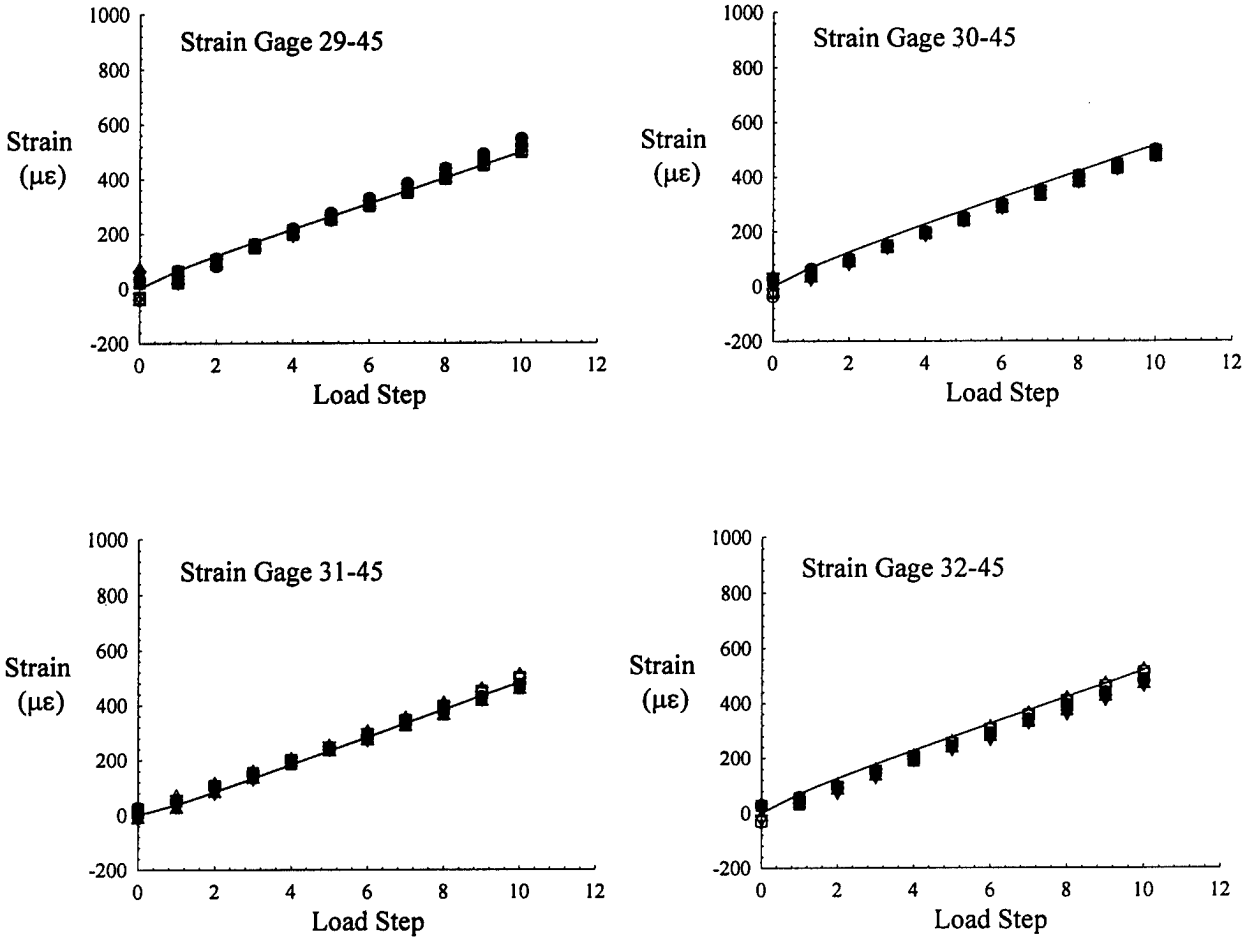


FIGURE D-34. MEASURED AND PREDICTED 45° STRAINS FOR GROUP 7 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1c

Load Cond. 1c	Max. Load
Pressure	10.1 psi
Hoop Load	554.6 lb/in
Frame Load	111.9 lb/in
Long. Load	333.3 lb/in

CVP1 CVP2 (Multiple Cracks)

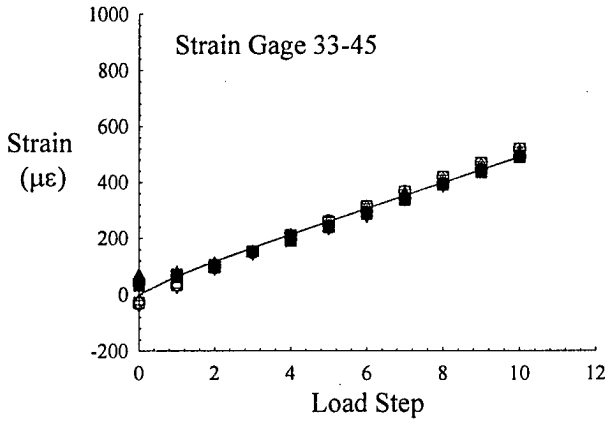
○ Air, Run 1 ● Air, Run 1

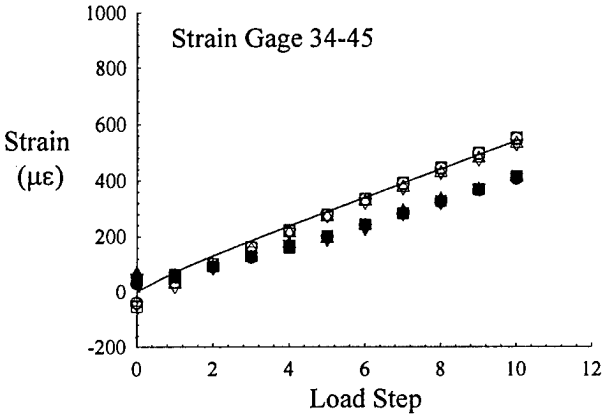
□ Air, Run 2 ■ Air, Run 2

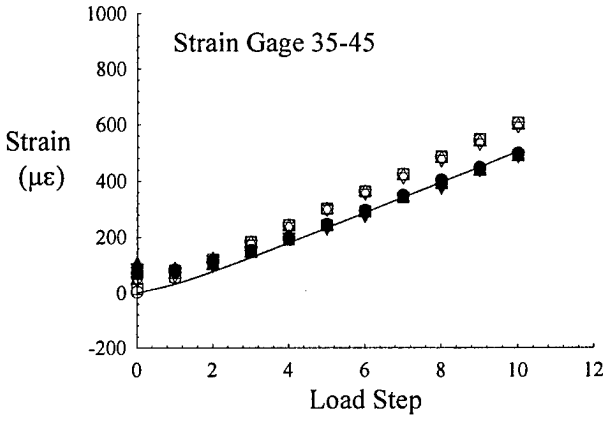
△ Water, Run 1 ▲ Water, Run 1

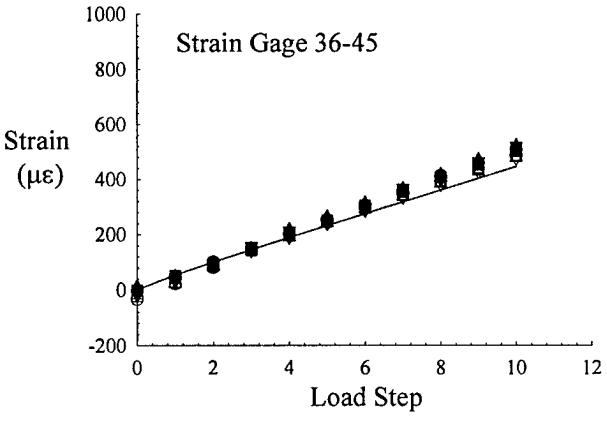
▽ Water, Run 2 ▼ Water, Run 2

—— Analysis (CVP1 and CVP2)









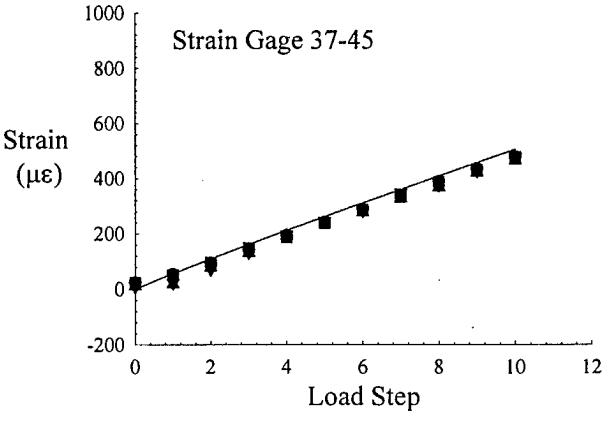


FIGURE D-34. MEASURED AND PREDICTED 45° STRAINS FOR GROUP 7 GAGES IN SKIN MID-BAY OF CVP1 AND CVP2, LOAD CONDITION 1c (Continued)

Load Cond. 1a	Max.
Pressur	8.8
Hoop Load	483.2
Frame	97.6
Long. Load	0

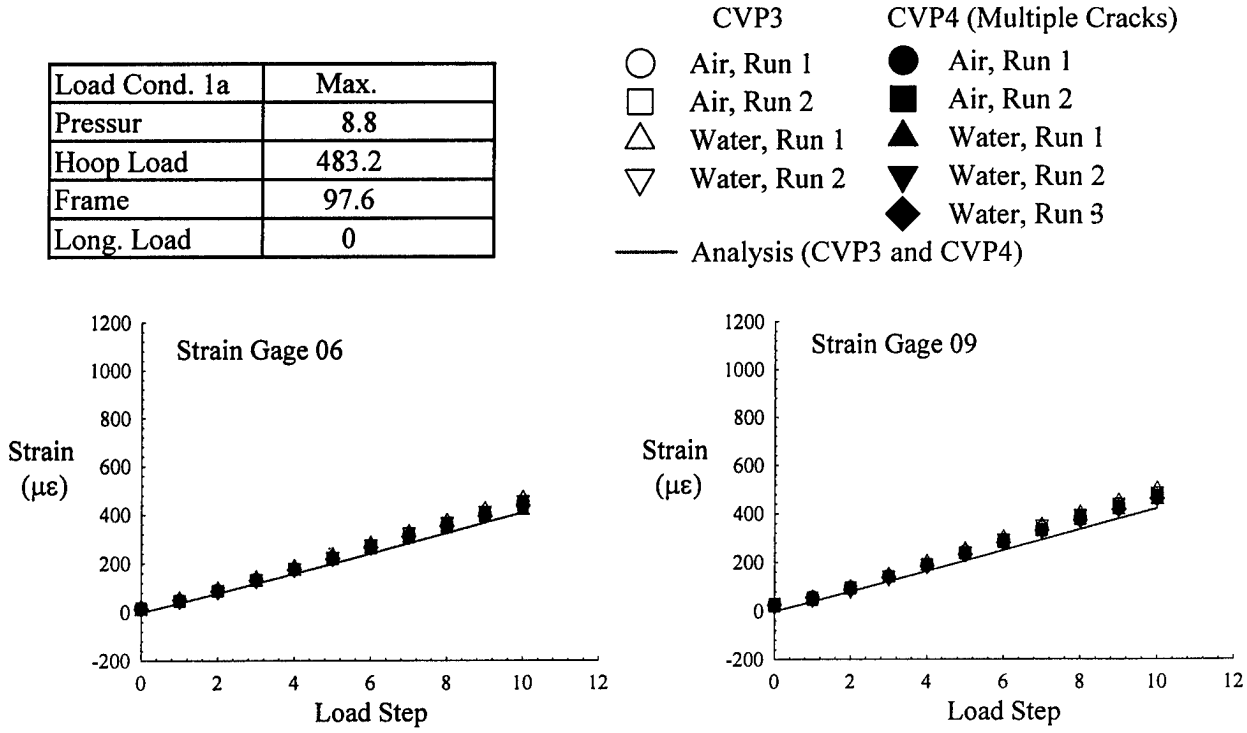


FIGURE D-35. MEASURED AND PREDICTED STRAINS FOR GROUP 1 GAGES IN FRAME OUTER CAPS OF CVP3 AND CVP4, LOAD CONDITION 1a

Load Cond. 1a	Max.
Pressur	8.8
Hoop Load	483.2
Frame	97.6
Long. Load	0

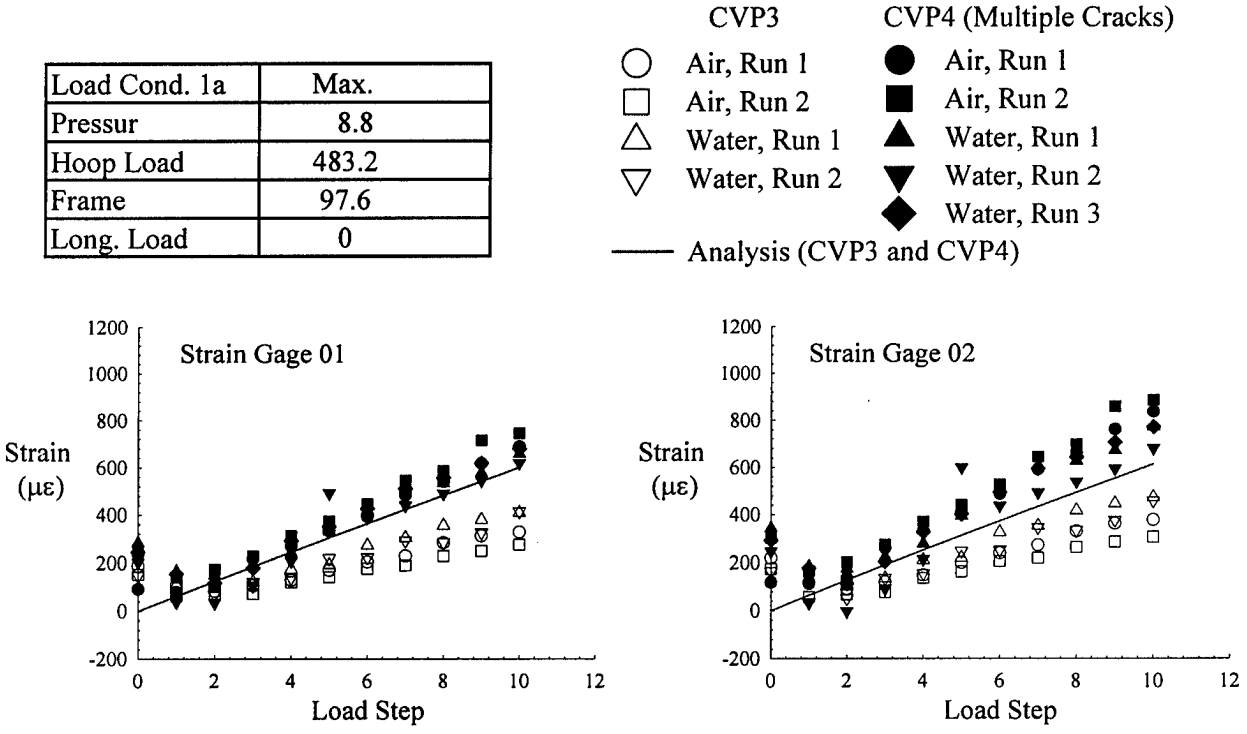
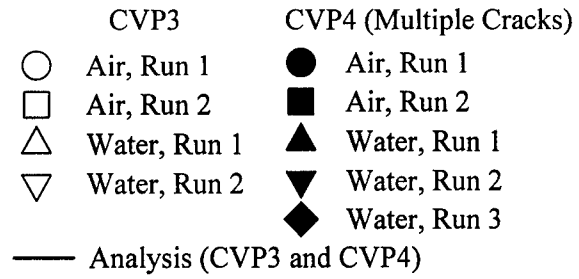
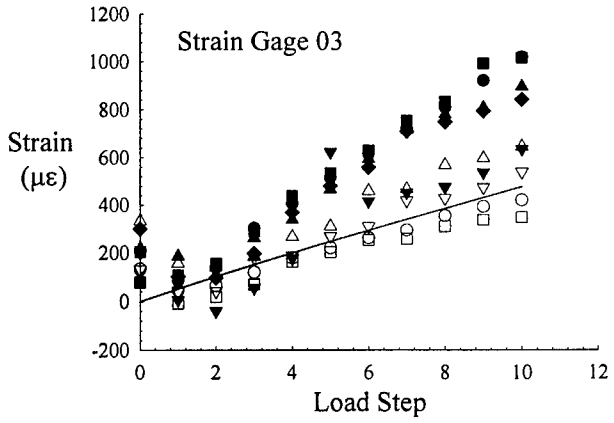
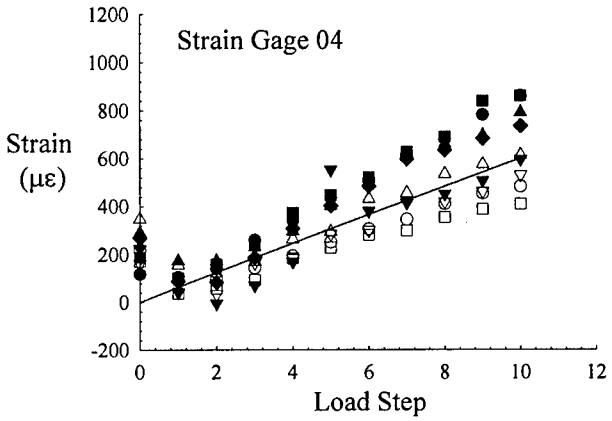


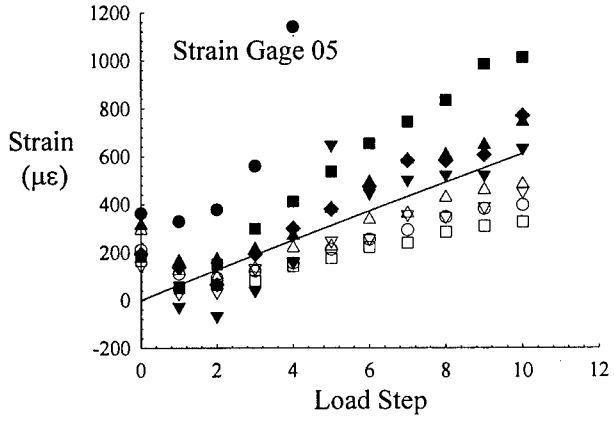
FIGURE D-36. MEASURED AND PREDICTED STRAINS FOR GROUP 2 GAGES IN FRAME INNER CAPS OF CVP3 AND CVP4, LOAD CONDITION 1a

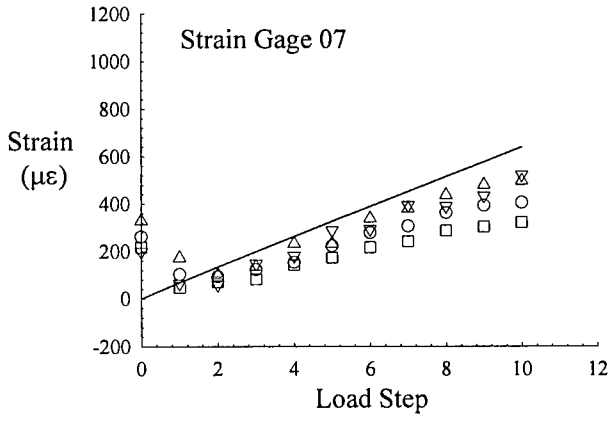
Load Cond. 1a	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	0 lb/in











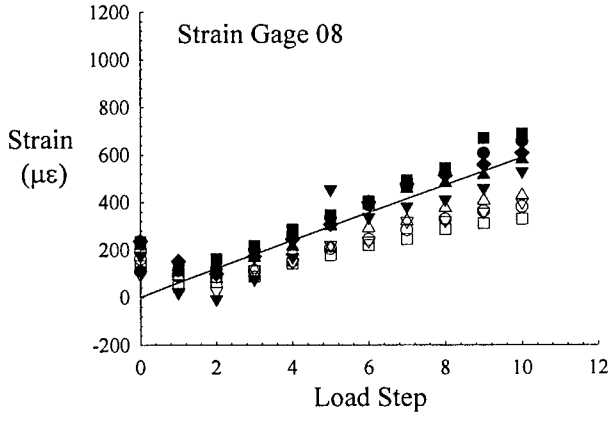
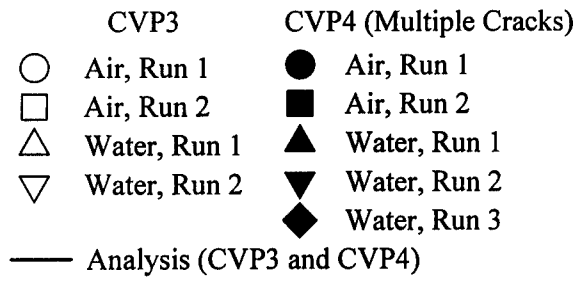
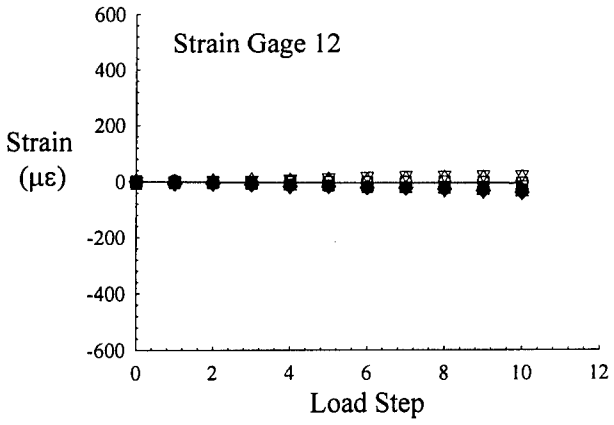
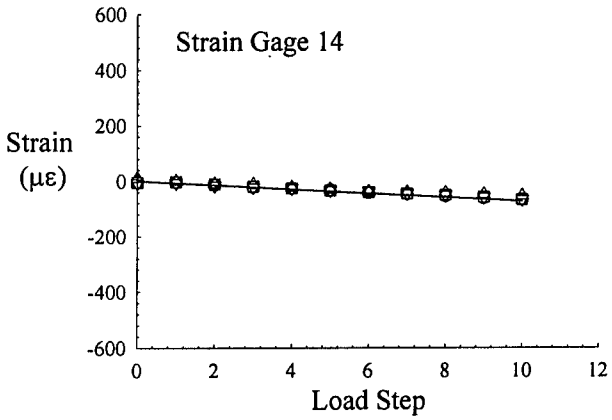


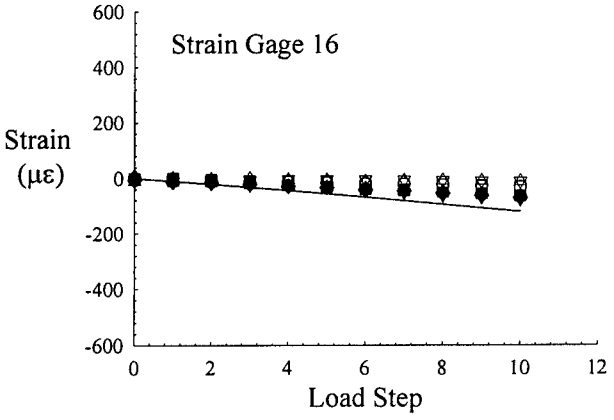
FIGURE D-36. MEASURED AND PREDICTED STRAINS FOR GROUP 2 GAGES IN FRAME INNER CAPS OF CVP3 AND CVP4, LOAD CONDITION 1a (Continued)

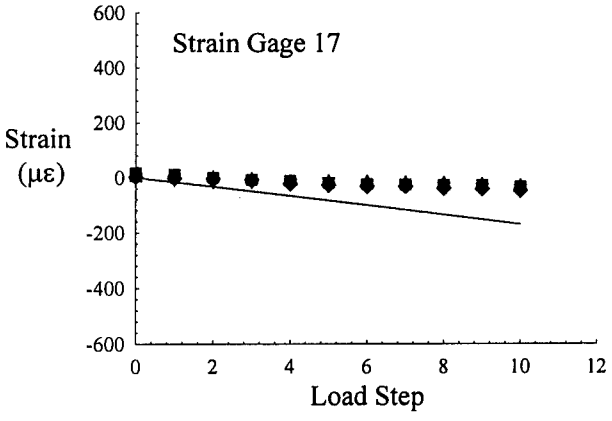
Load Cond. 1a	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	0 lb/in











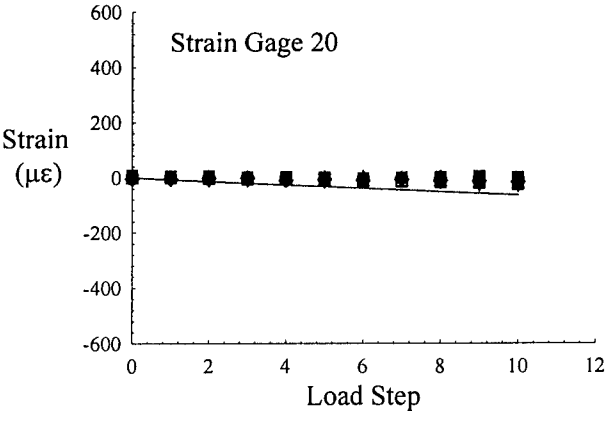


FIGURE D-37. MEASURED AND PREDICTED STRAINS FOR GROUP 3 GAGES IN STRINGER HATS OF CVP3 AND CVP4, LOAD CONDITION 1a

Load Cond. 1a	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	0 lb/in

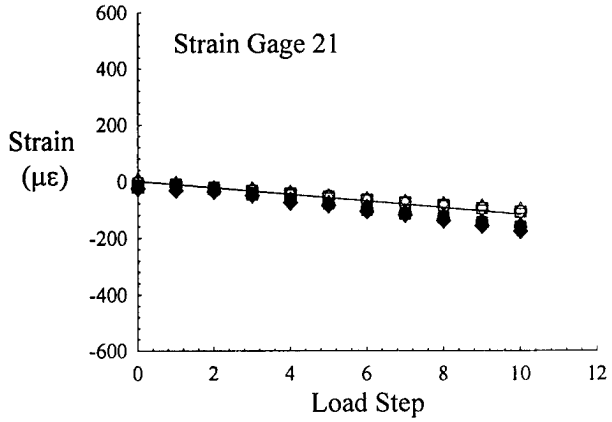
CVP3

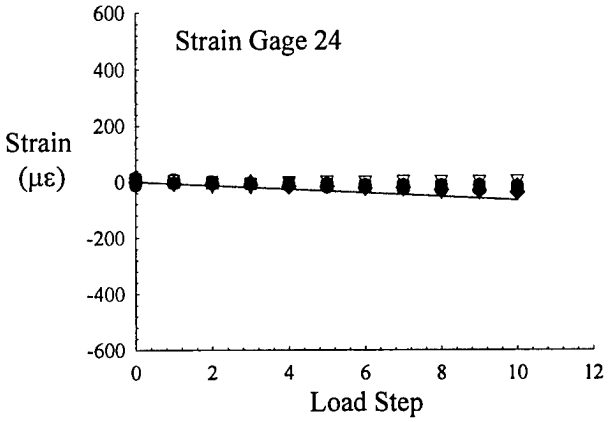
- ○ Air, Run 1
- □ Air, Run 2
- △ Water, Run 1
- ▽ Water, Run 2

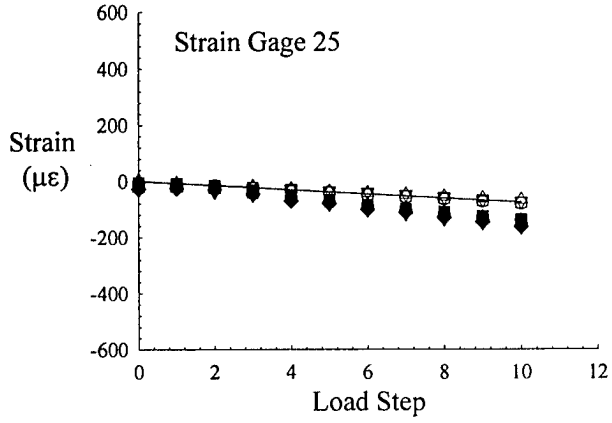
CVP4 (Multiple Cracks)

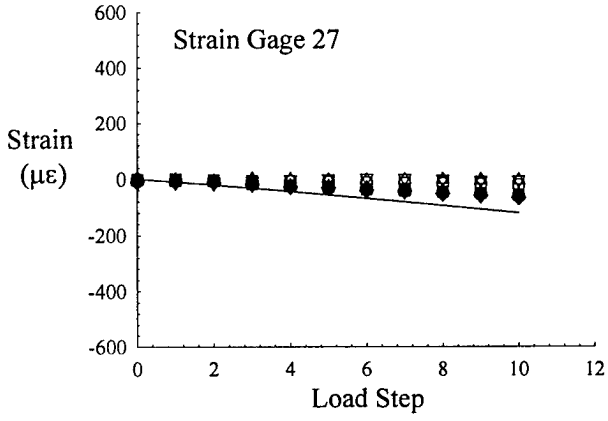
- ● Air, Run 1
- ■ Air, Run 2
- ▲ Water, Run 1
- ▼ Water, Run 2
- ◆ Water, Run 3

—— Analysis (CVP3 and CVP4)









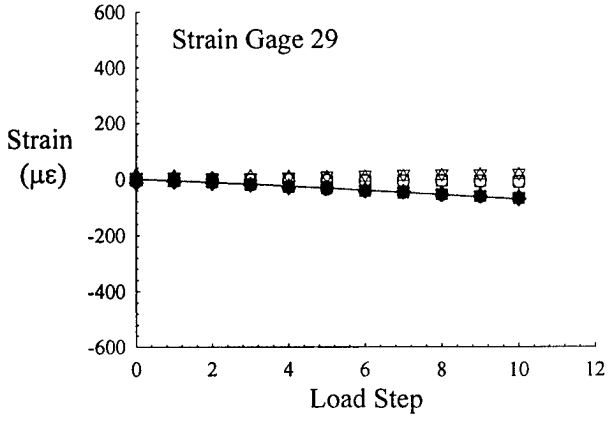


FIGURE D-37. MEASURED AND PREDICTED STRAINS FOR GROUP 3 GAGES IN STRINGER HATS OF CVP3 AND CVP4, LOAD CONDITION 1a (Continued)

Load Cond. 1a	Max.
Pressur	8.8
Hoop Load	483.2
Frame	97.6
Long. Load	0

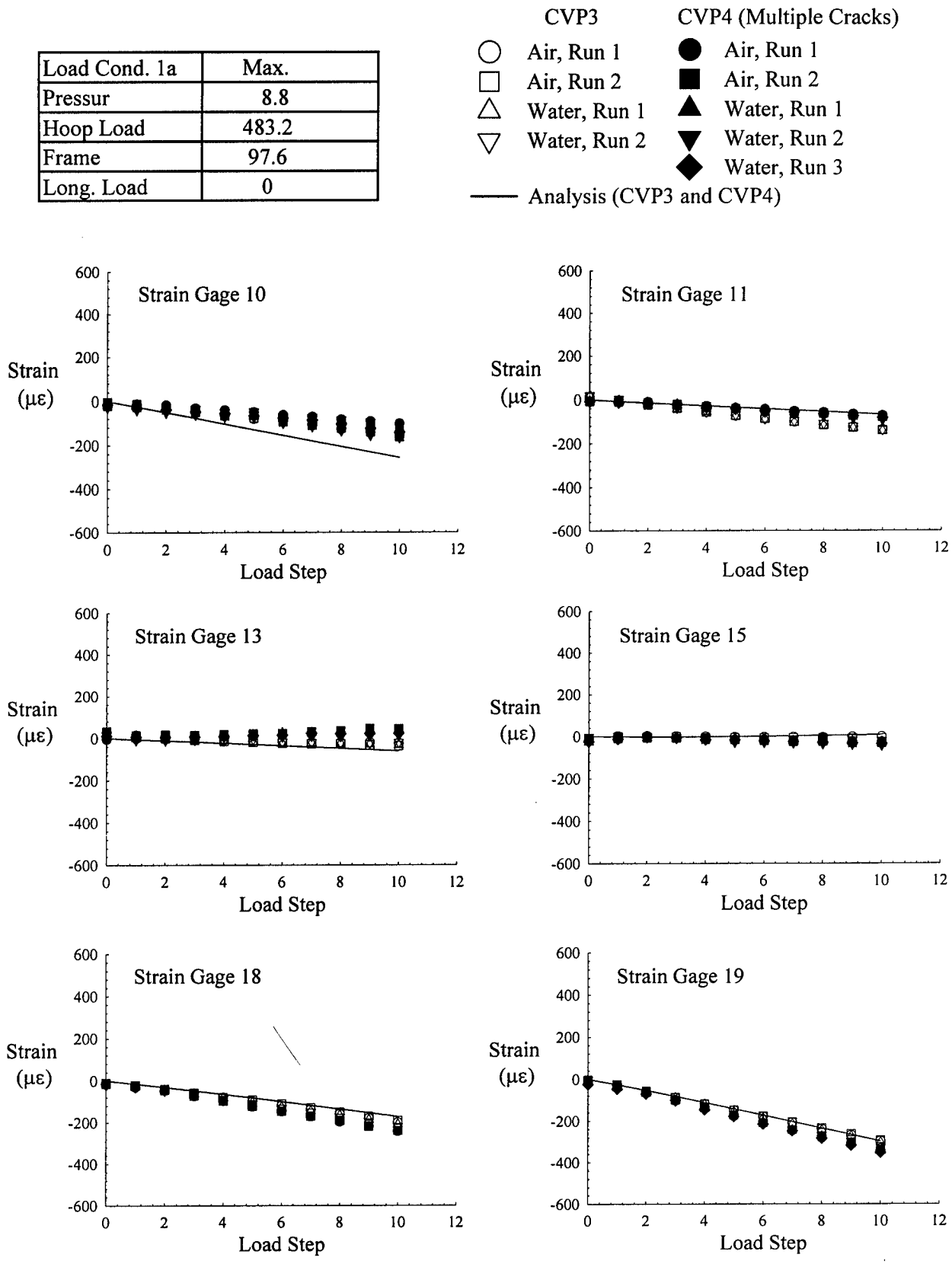


FIGURE D-38. MEASURED AND PREDICTED STRAINS FOR GROUP 4 GAGES IN STRINGER FLANGES OF CVP3 AND CVP4, LOAD CONDITION 1a

Load Cond. 1a	Max.
Pressur	8.8
Hoop Load	483.2
Frame	97.6
Long. Load	0

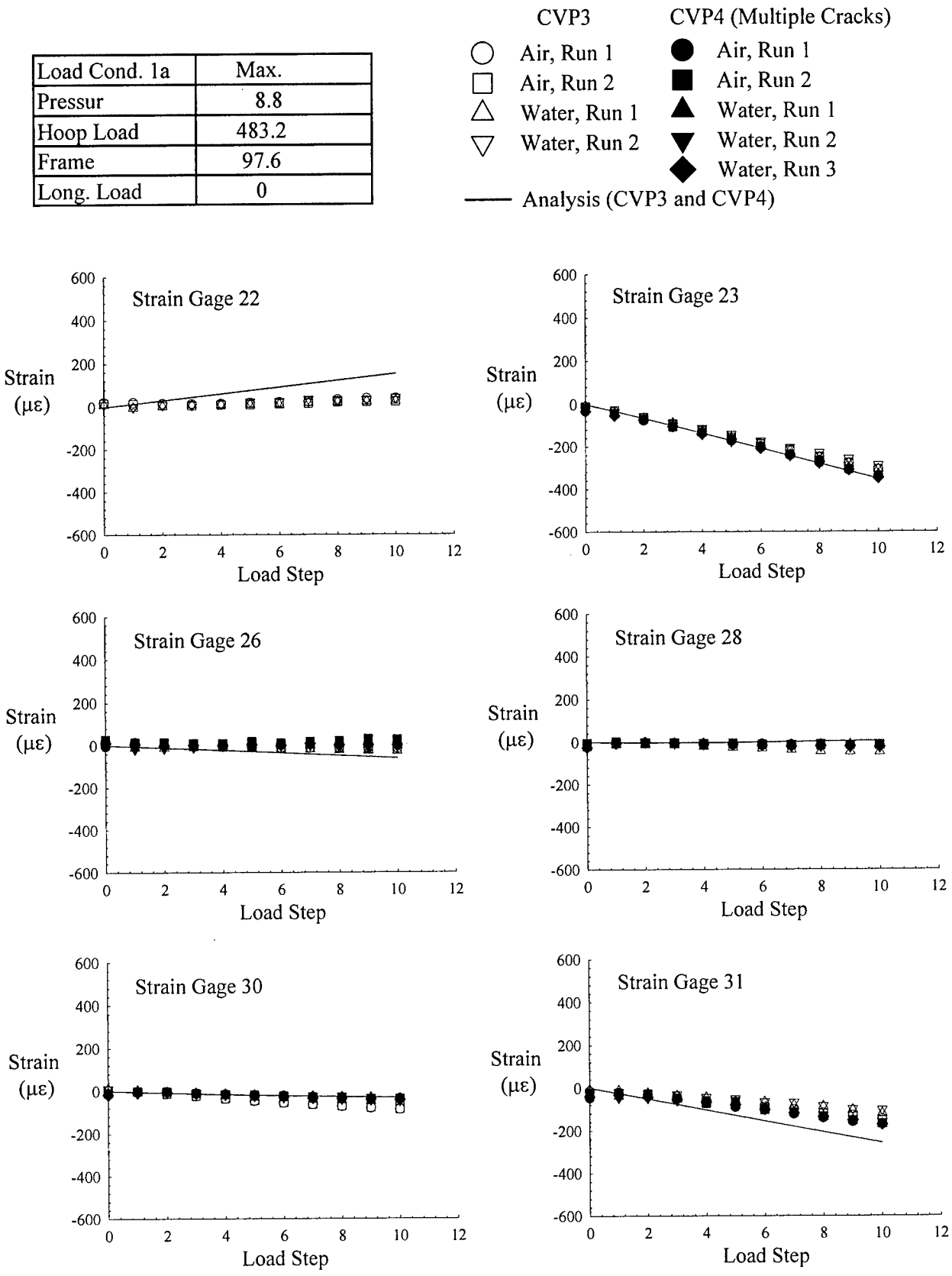


FIGURE D-38. MEASURED AND PREDICTED STRAINS FOR GROUP 4 GAGES IN STRINGER FLANGES OF CVP3 AND CVP4, LOAD CONDITION 1a (Continued)

Load Cond. 1a	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	0 lb/in

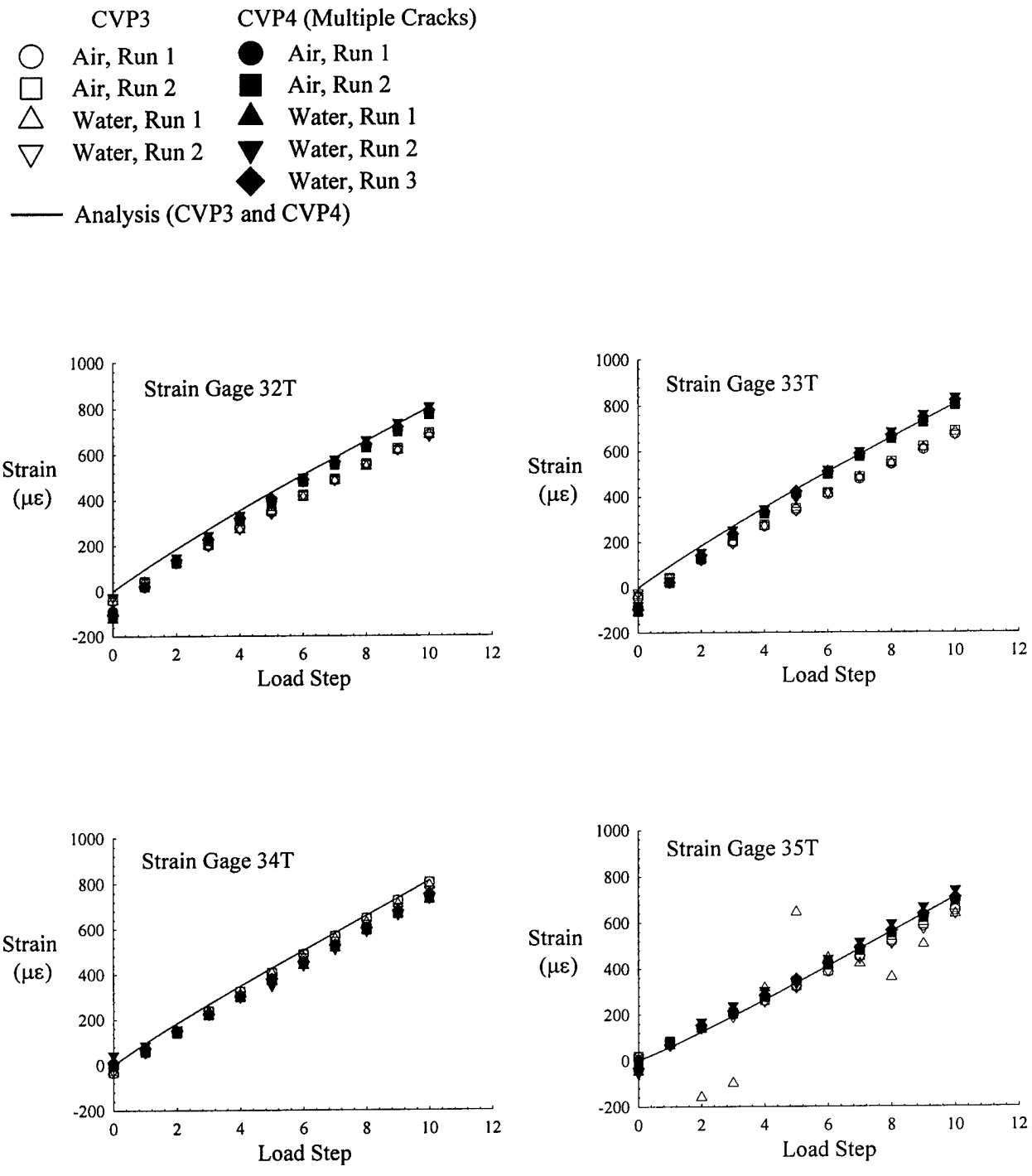
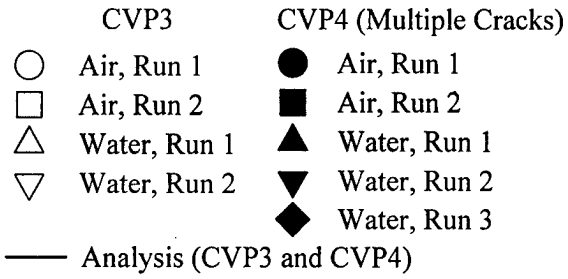
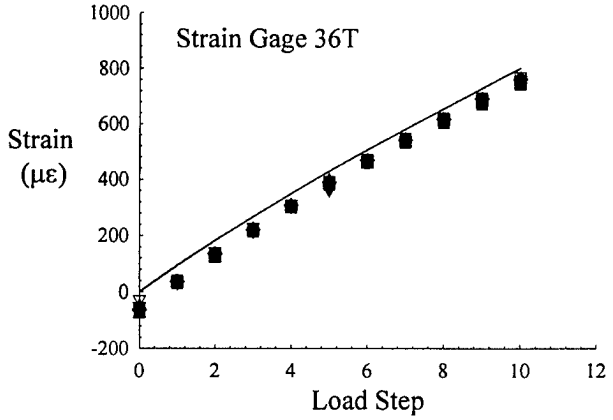
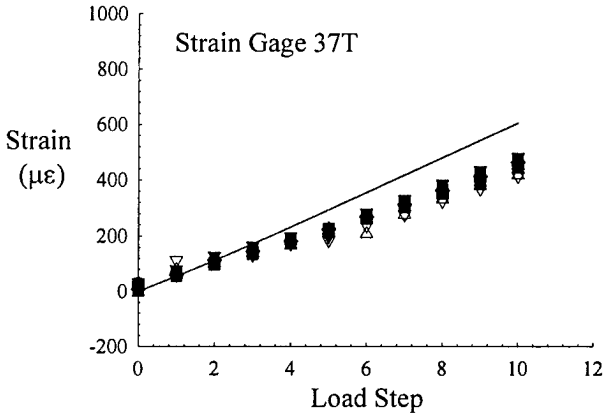


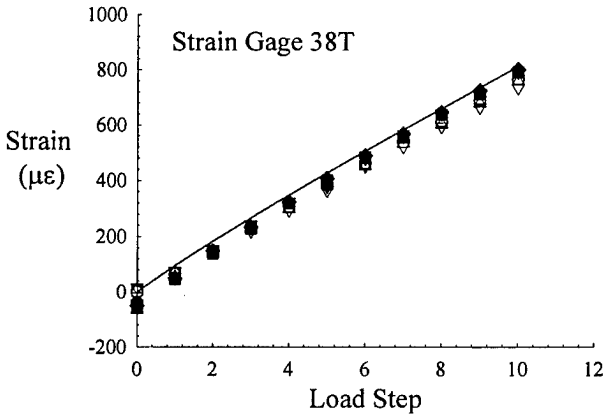
FIGURE D-39. MEASURED AND PREDICTED HOOP STRAINS FOR GROUP 5 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1a

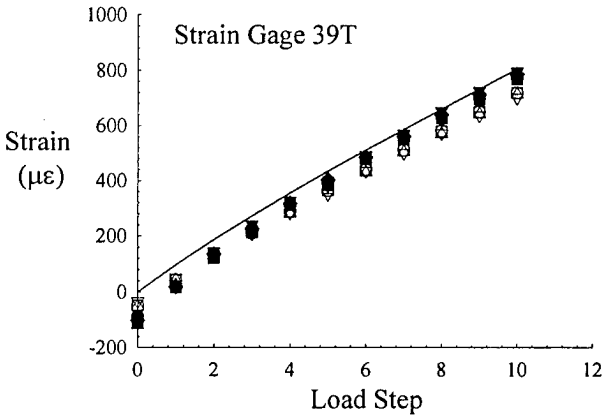
Load Cond. 1a	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	0 lb/in











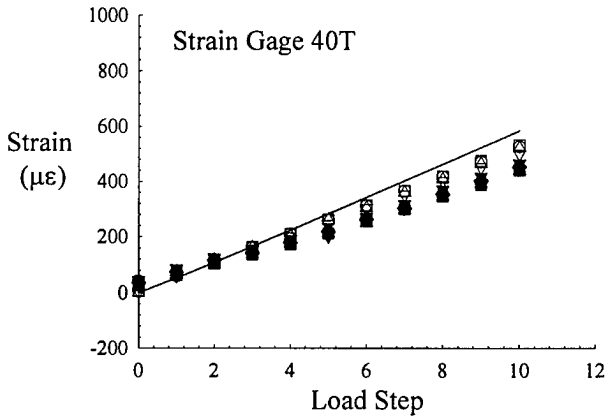


FIGURE D-39. MEASURED AND PREDICTED HOOP STRAINS FOR GROUP 5 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1a (Continued)

Load Cond. 1a	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	0 lb/in

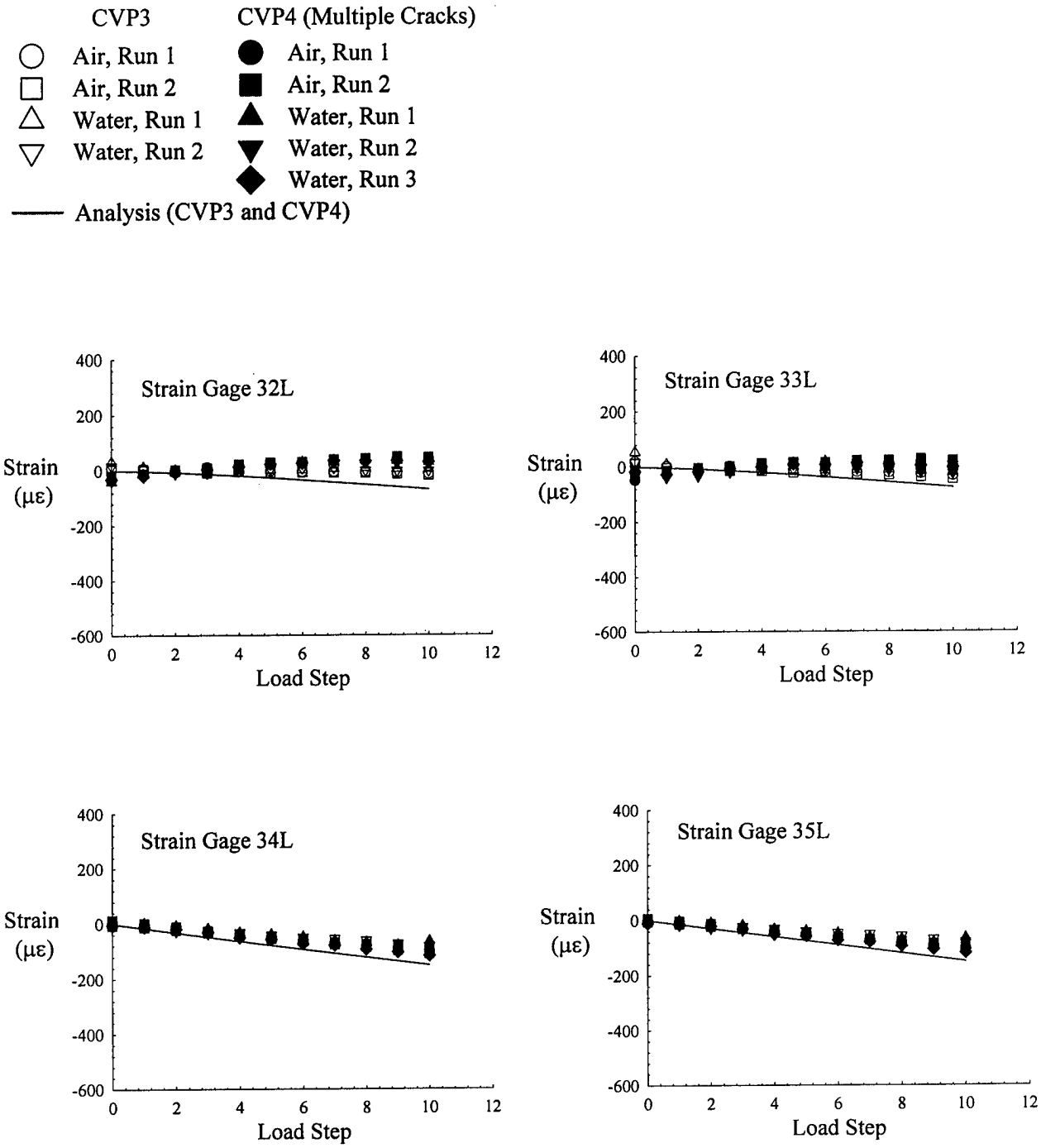
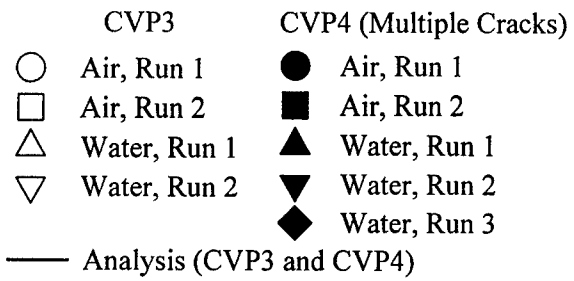
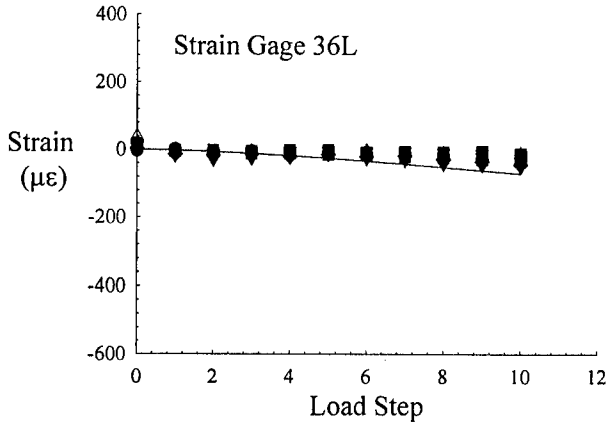
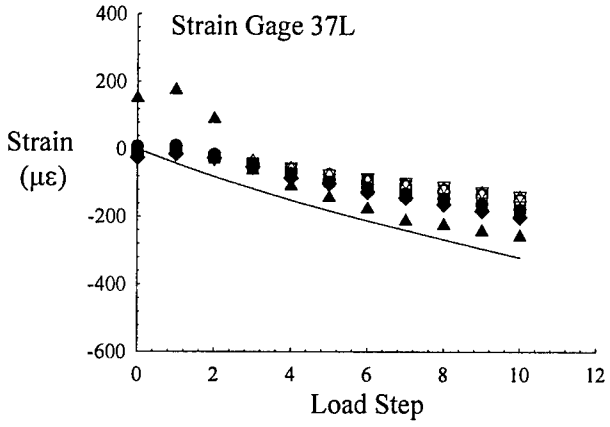


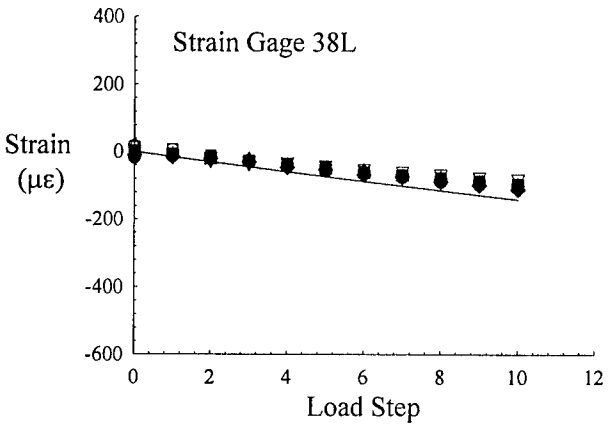
FIGURE D-40. MEASURED AND PREDICTED LONGITUDINAL STRAINS FOR GROUP 6 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1a

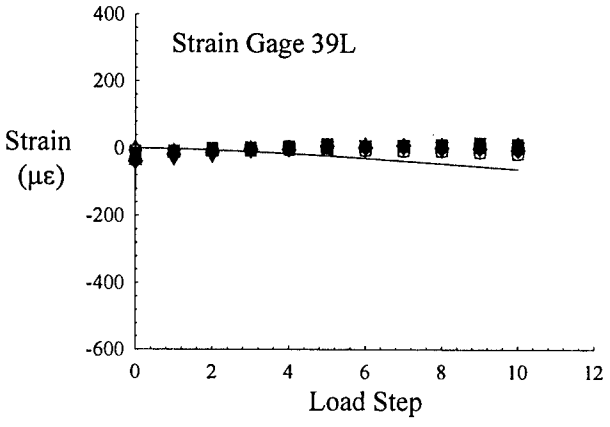
Load Cond. 1a	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	0 lb/in











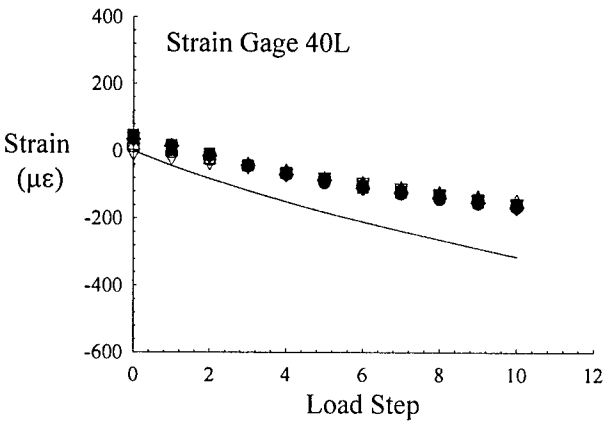


FIGURE D-40. MEASURED AND PREDICTED LONGITUDINAL STRAINS FOR GROUP 6 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1a (Continued)

Load Cond. 1a	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	0 lb/in

CVP3	CVP4 (Multiple Cracks)
○ Air, Run 1	● Air, Run 1
□ Air, Run 2	■ Air, Run 2
△ Water, Run 1	▲ Water, Run 1
▽ Water, Run 2	▼ Water, Run 2
	◆ Water, Run 3

—— Analysis (CVP3 and CVP4)

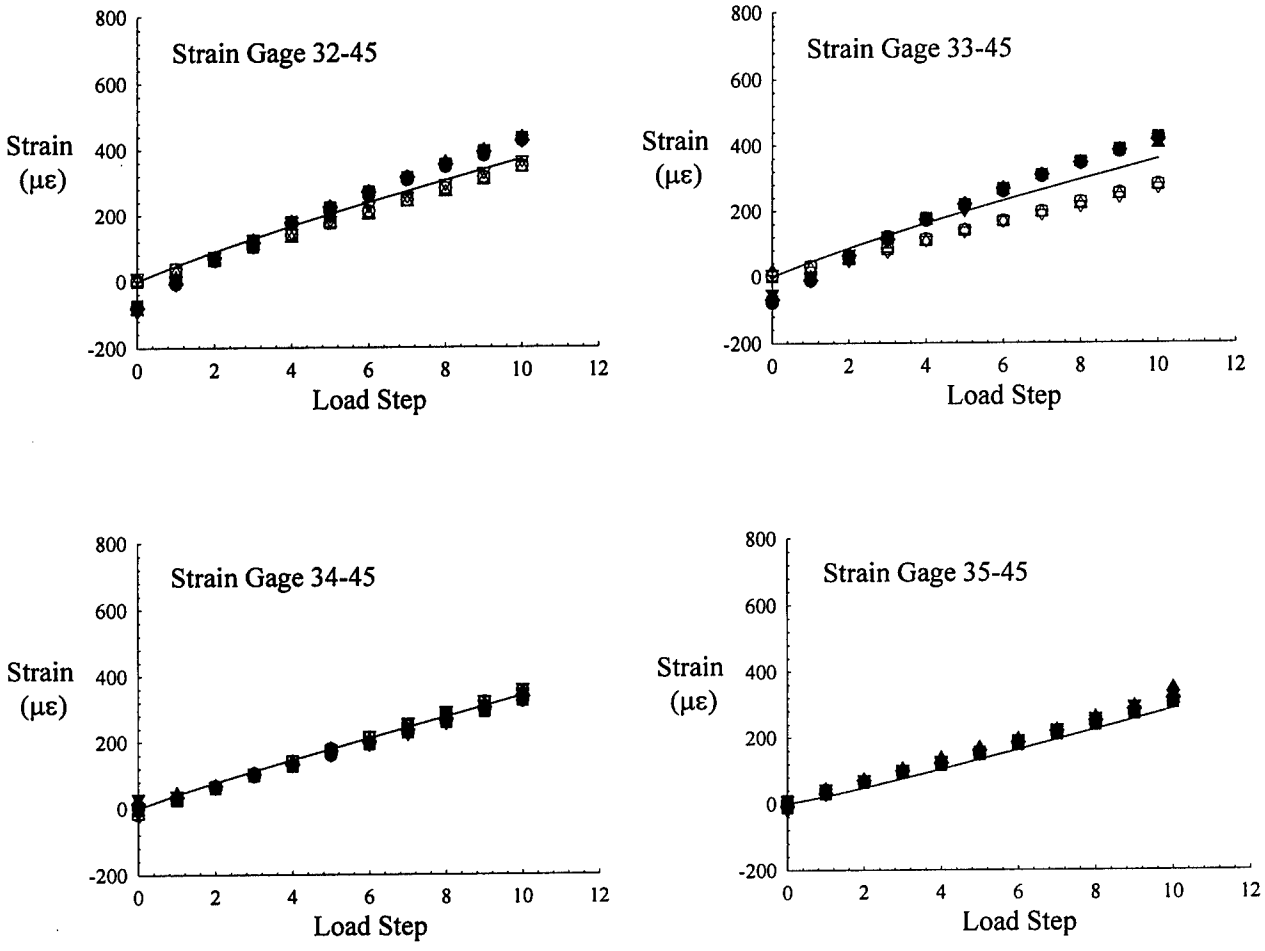


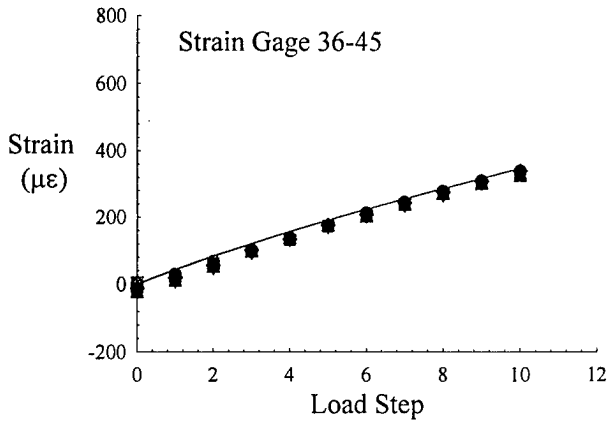
FIGURE D-41. MEASURED AND PREDICTED 45° STRAINS FOR GROUP 7 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1a

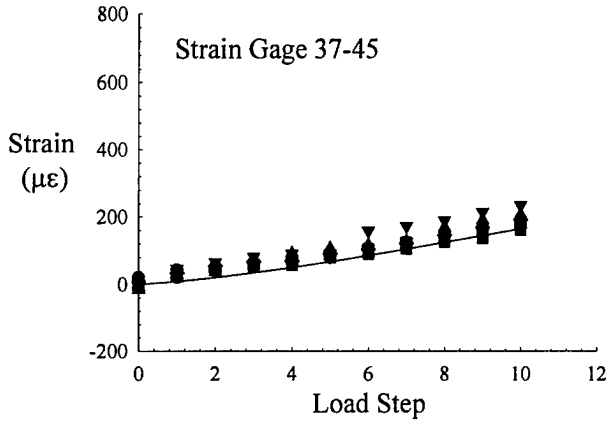
Load Cond. 1a	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	0 lb/in

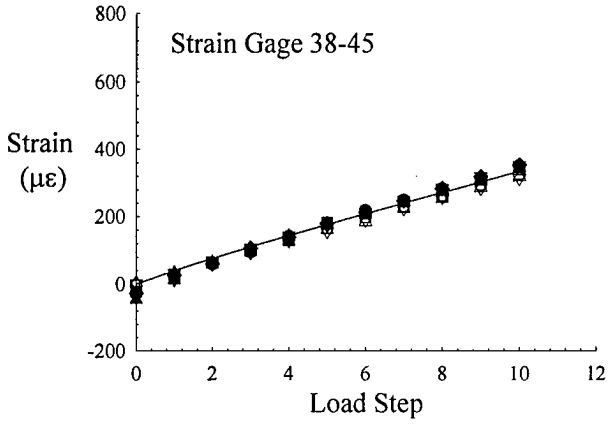
CVP3
- ○ Air, Run 1
- □ Air, Run 2
- △ Water, Run 1
- ▽ Water, Run 2

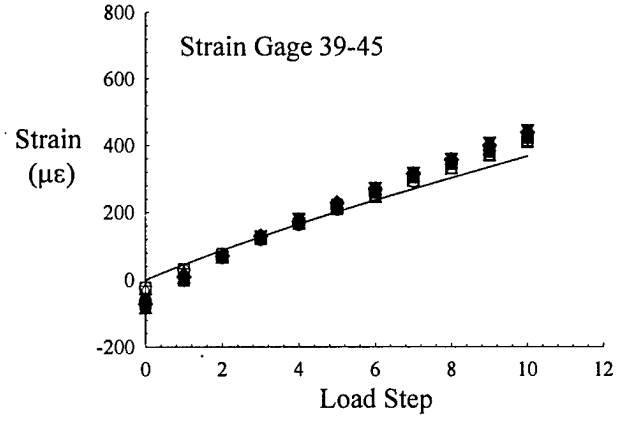
CVP4 (Multiple Cracks)
- ● Air, Run 1
- ■ Air, Run 2
- ▲ Water, Run 1
- ▼ Water, Run 2
- ◆ Water, Run 3

—— Analysis (CVP3 and CVP4)









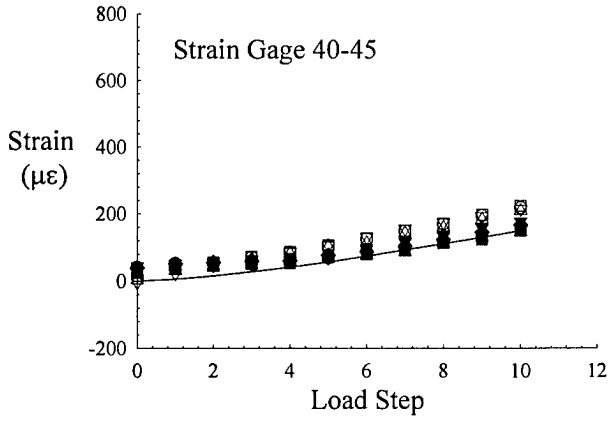


FIGURE D-41. MEASURED AND PREDICTED 45° STRAINS FOR GROUP 7 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1a (Continued)

Load Cond. 1b	Max. Load
Pressure	0
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	875.7 lb/in

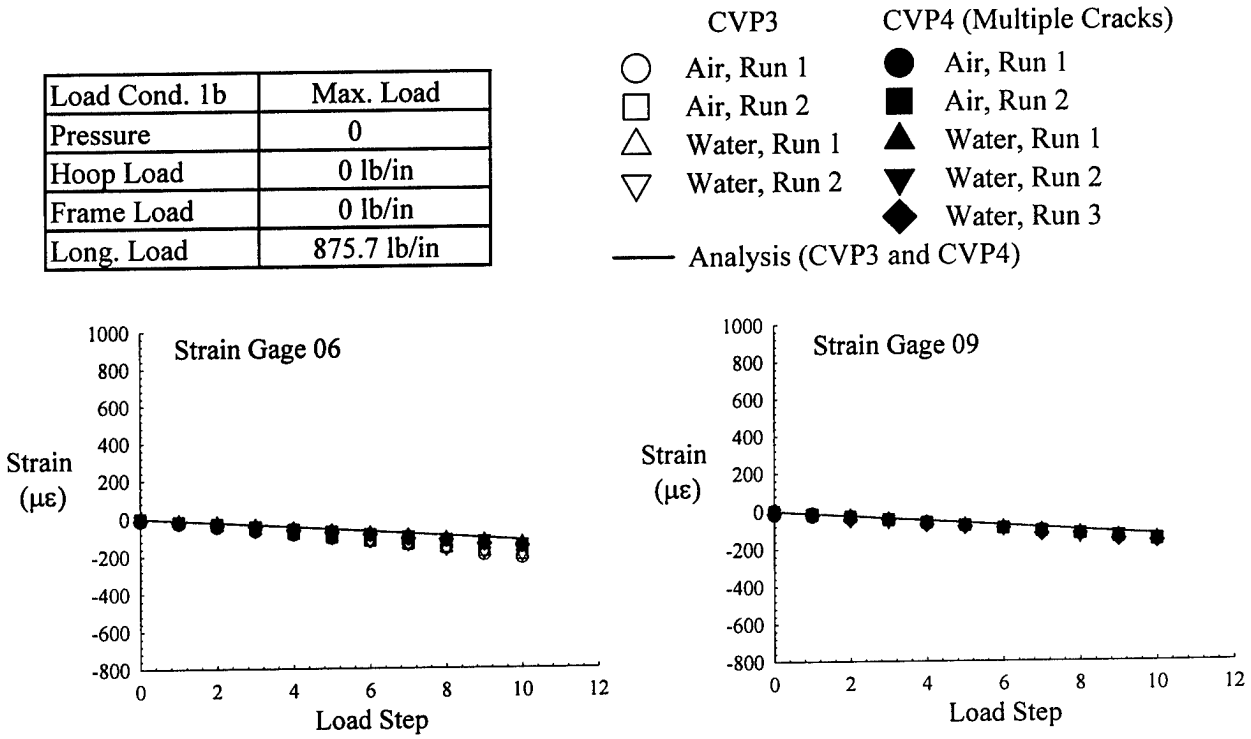


FIGURE D-42. MEASURED AND PREDICTED STRAINS FOR GROUP 1 GAGES IN FRAME OUTER CAPS OF CVP3 AND CVP4, LOAD CONDITION 1b

Load Cond. 1b	Max. Load
Pressure	0
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	875.7 lb/in

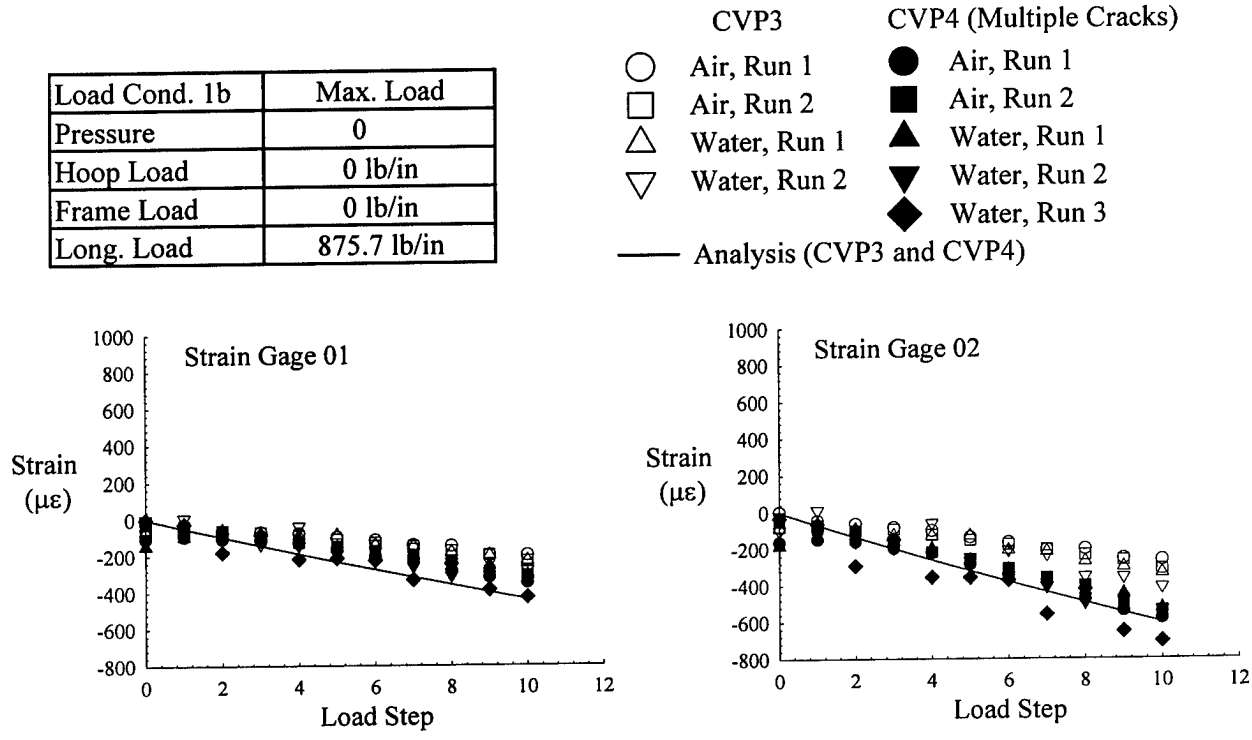


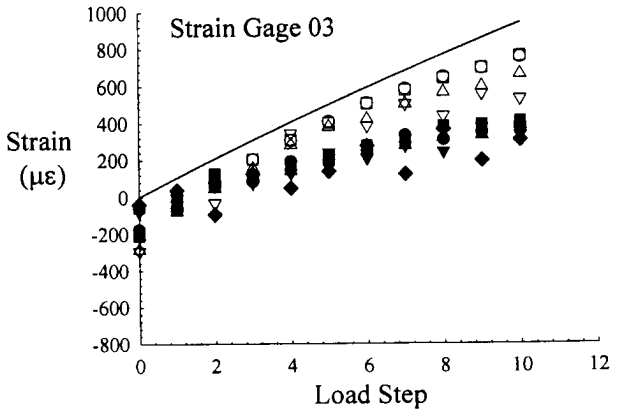
FIGURE D-43. MEASURED AND PREDICTED STRAINS FOR GROUP 2 GAGES IN FRAME INNER CAPS OF CVP3 AND CVP4, LOAD CONDITION 1b

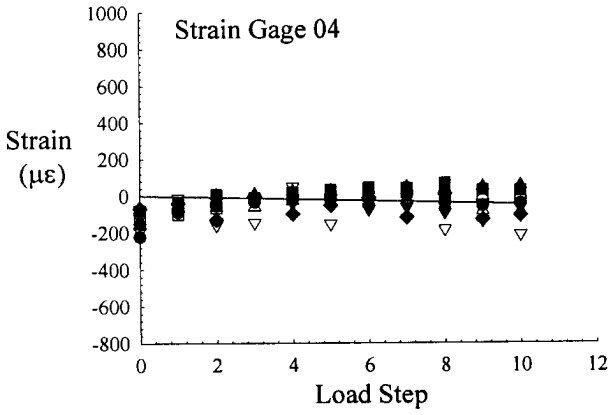
Load Cond. 1b	Max. Load
Pressure	0
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	875.7 lb/in

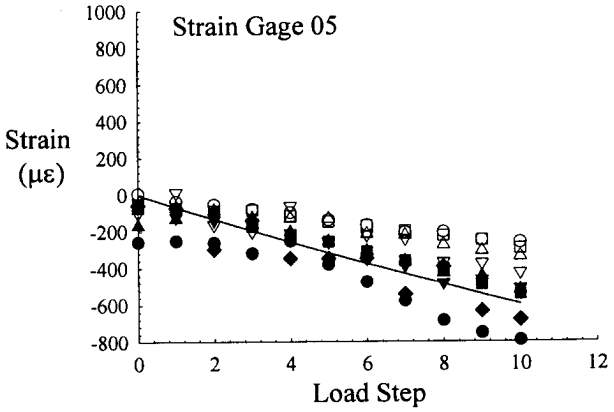
CVP3
- ○ Air, Run 1
- □ Air, Run 2
- △ Water, Run 1
- ▽ Water, Run 2

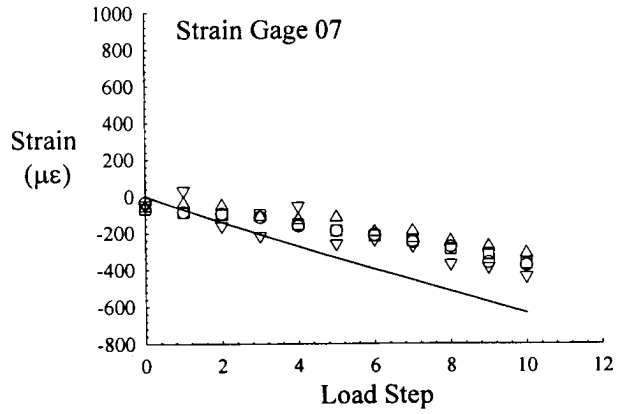
CVP4 (Multiple Cracks)
- ● Air, Run 1
- ■ Air, Run 2
- ▲ Water, Run 1
- ▼ Water, Run 2
- ◆ Water, Run 3

—— Analysis (CVP3 and CVP4)









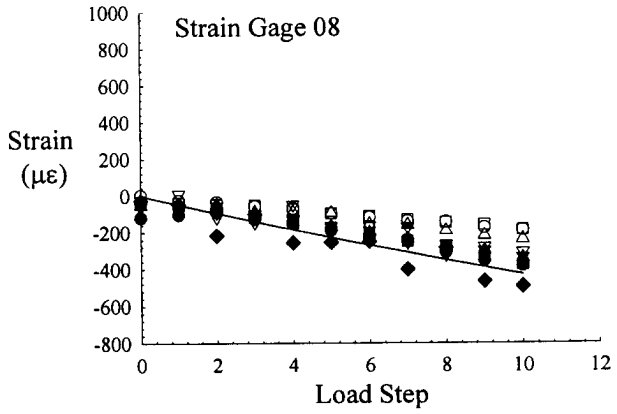
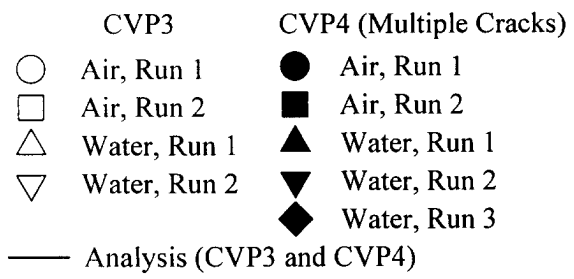
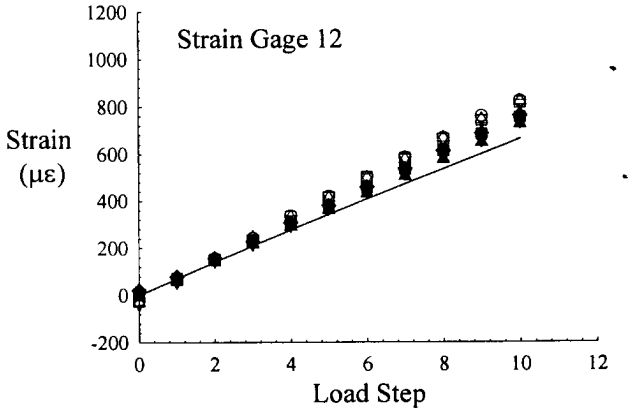
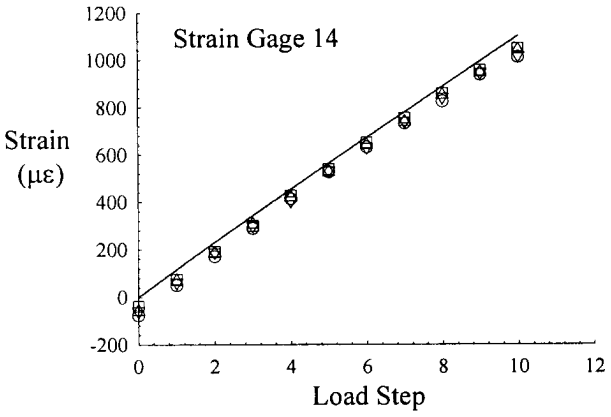


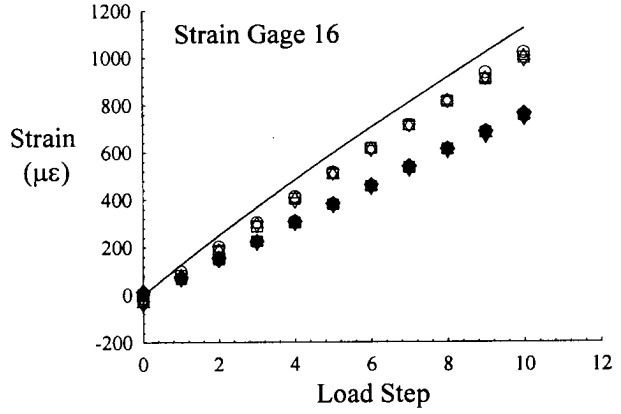
FIGURE D-43. MEASURED AND PREDICTED STRAINS FOR GROUP 2 GAGES IN FRAME INNER CAPS OF CVP3 AND CVP4, LOAD CONDITION 1b (Continued)

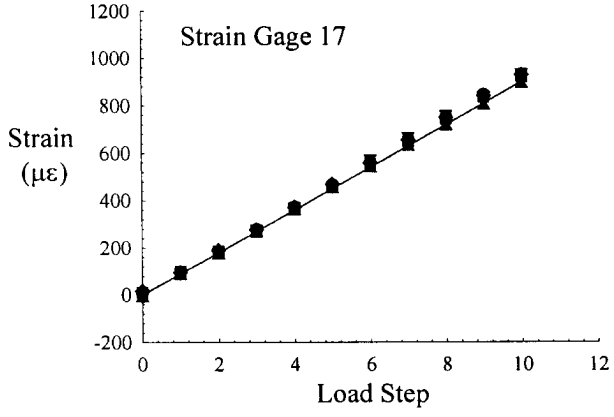
Load Cond. 1b	Max. Load
Pressure	0
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	875.7 lb/in











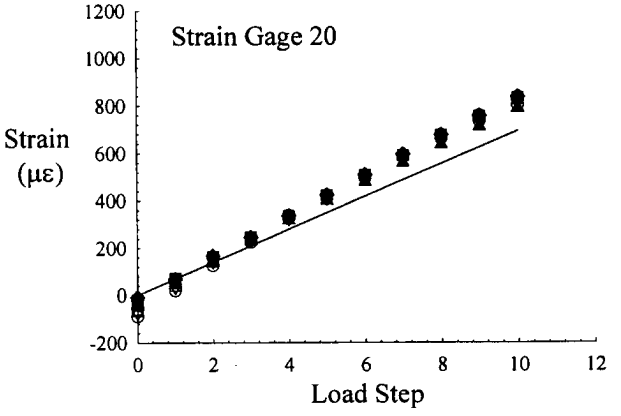


FIGURE D-44. MEASURED AND PREDICTED STRAINS FOR GROUP 3 GAGES IN STRINGER HATS OF CVP3 AND CVP4, LOAD CONDITION 1b

Load Cond. 1b	Max. Load
Pressure	0
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	875.7 lb/in

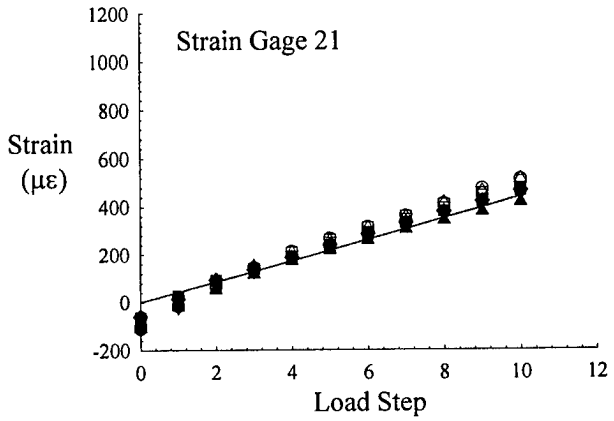
CVP3

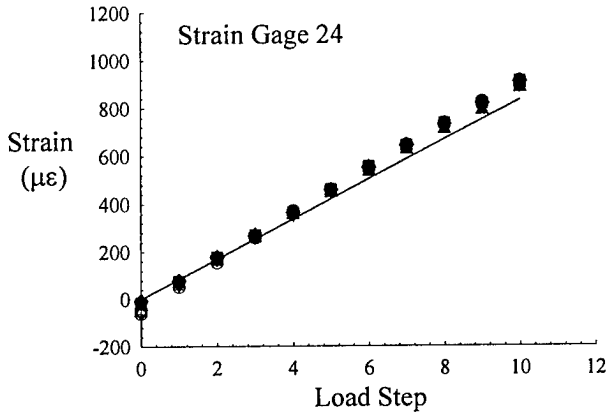
○ Air, Run 1
□ Air, Run 2
△ Water, Run 1
▽ Water, Run 2

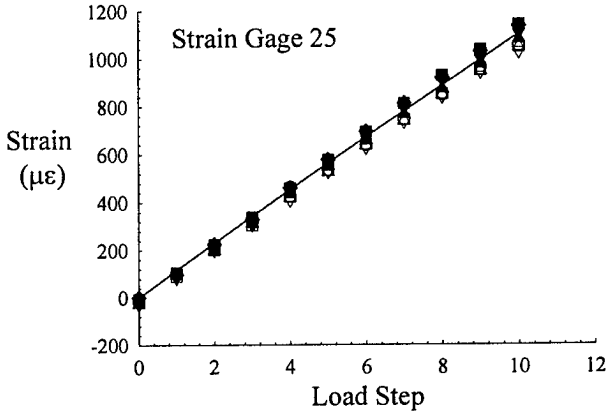
CVP4 (Multiple Cracks)

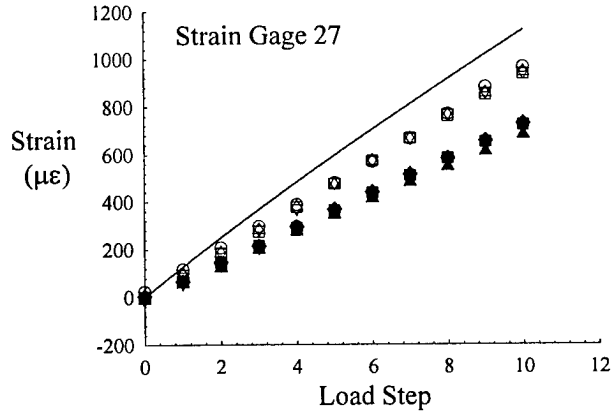
● Air, Run 1
■ Air, Run 2
▲ Water, Run 1
▼ Water, Run 2
◆ Water, Run 3

—— Analysis (CVP3 and CVP4)









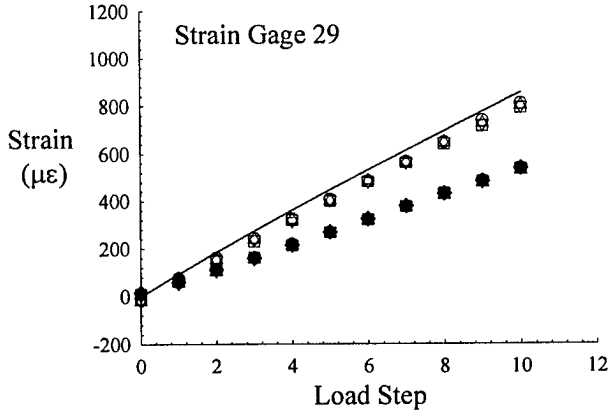


FIGURE D-44. MEASURED AND PREDICTED STRAINS FOR GROUP 3 GAGES IN STRINGER HATS OF CVP3 AND CVP4, LOAD CONDITION 1b (Continued)

Load Cond. 1b	Max. Load
Pressure	0
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	875.7 lb/in

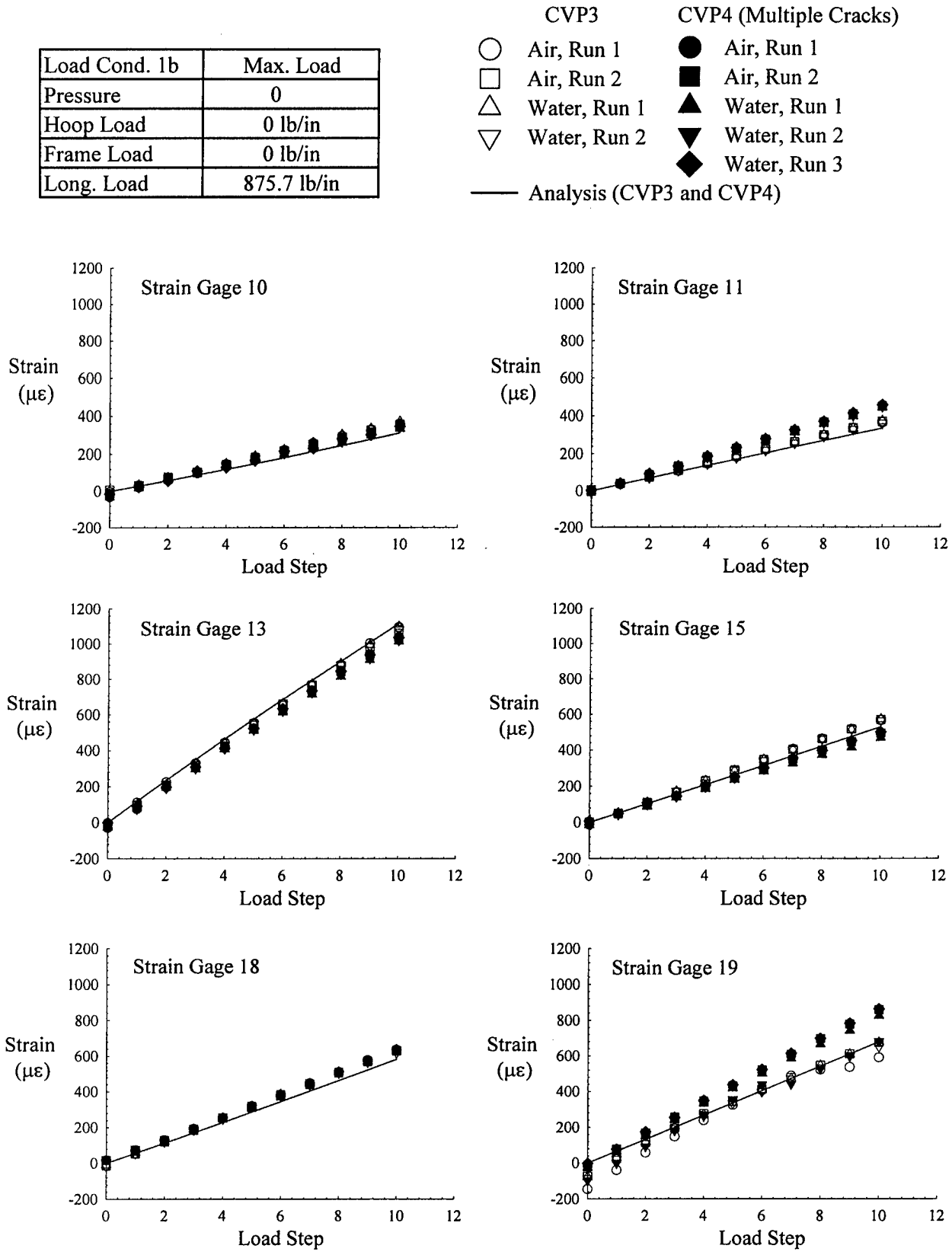


FIGURE D-45. MEASURED AND PREDICTED STRAINS FOR GROUP 4 GAGES IN STRINGER FLANGES OF CVP3 AND CVP4, LOAD CONDITION 1b

Load Cond. 1b	Max. Load
Pressure	0
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	875.7 lb/in

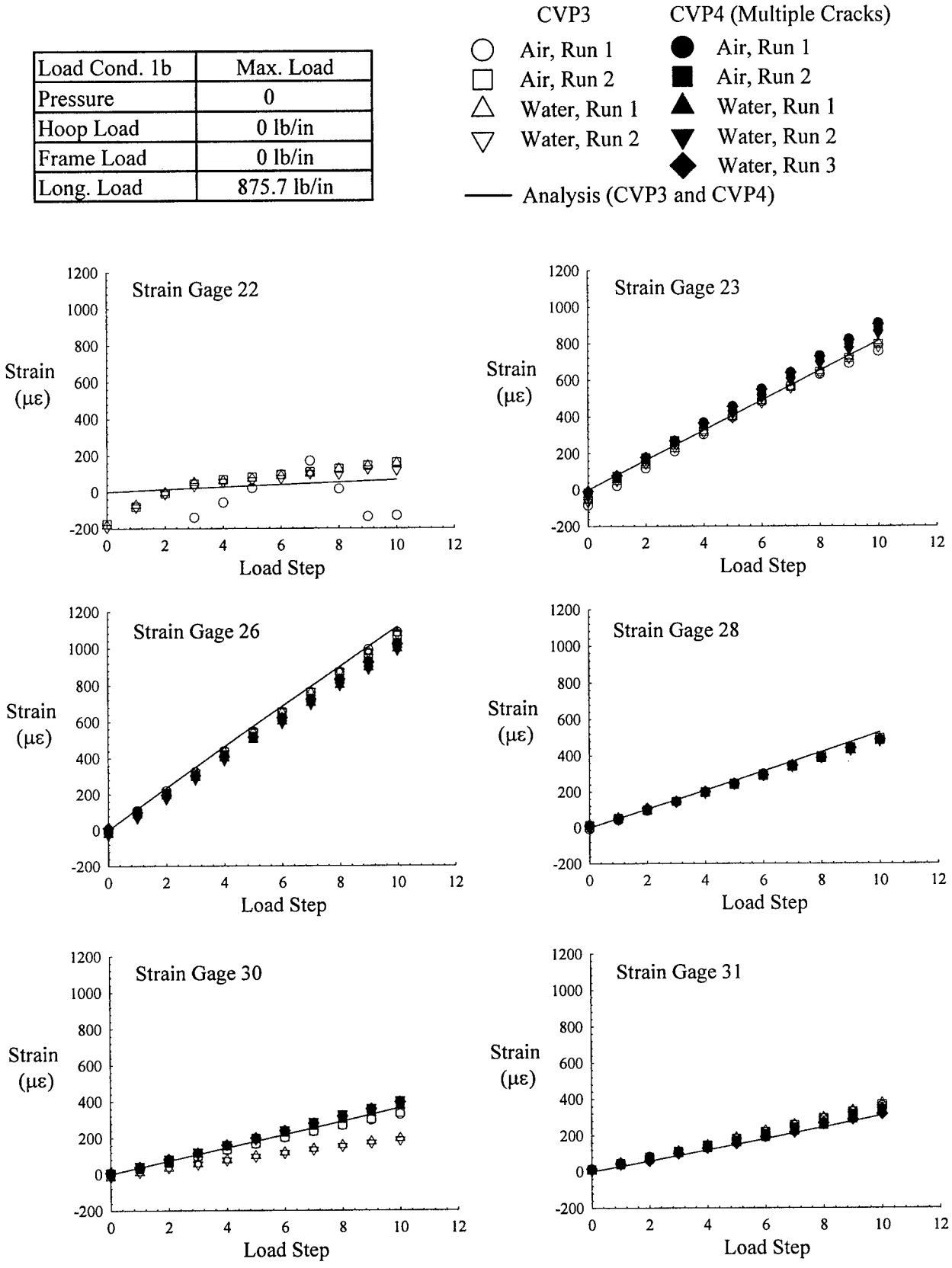


FIGURE D-45. MEASURED AND PREDICTED STRAINS FOR GROUP 4 GAGES IN STRINGER FLANGES OF CVP3 AND CVP4, LOAD CONDITION 1b (Continued)

Load Cond. 1b	Max. Load
Pressure	0
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	875.7 lb/in

CVP3	CVP4 (Multiple Cracks)
○ Air, Run 1	● Air, Run 1
□ Air, Run 2	■ Air, Run 2
△ Water, Run 1	▲ Water, Run 1
▽ Water, Run 2	▼ Water, Run 2
	◆ Water, Run 3

—— Analysis (CVP3 and CVP4)

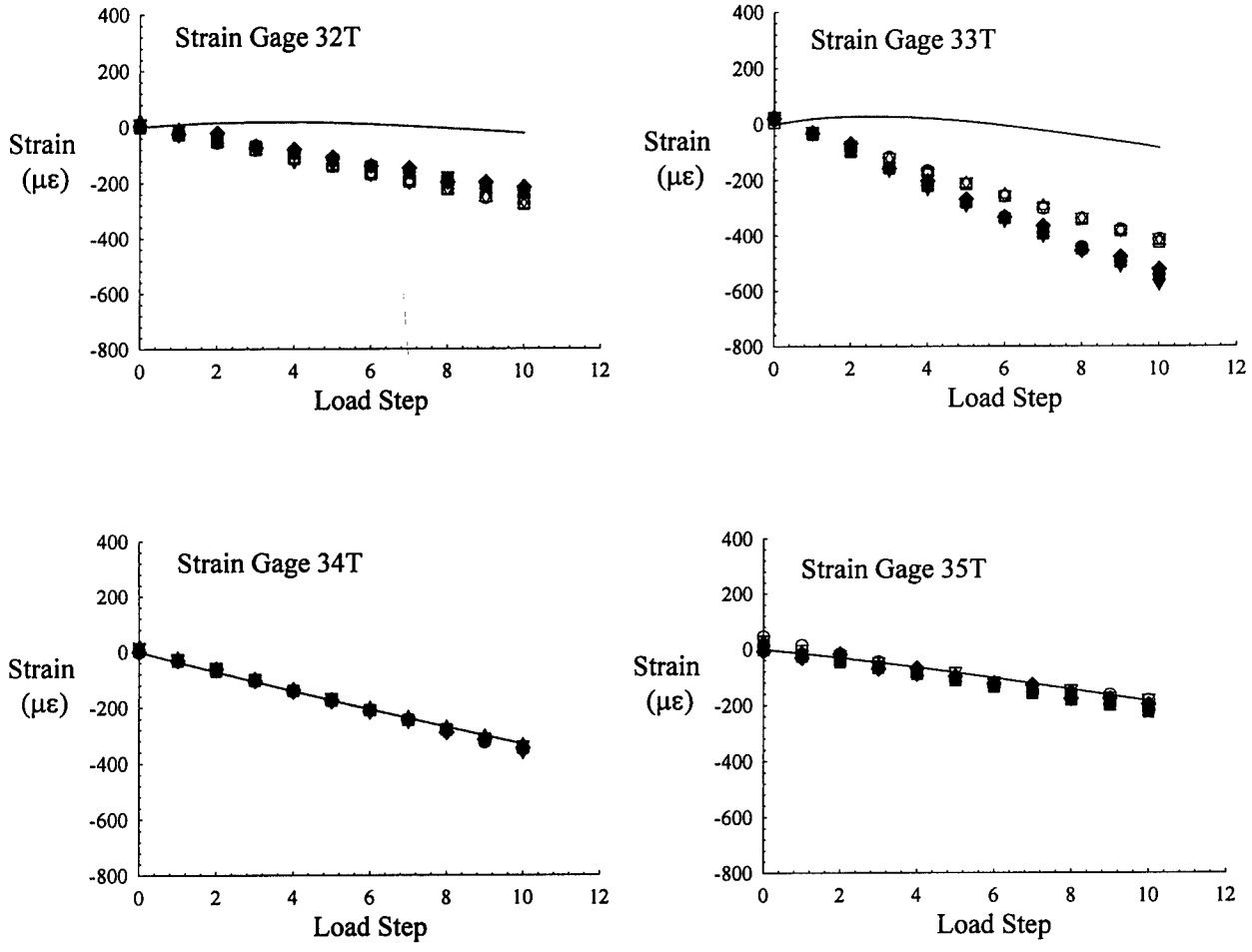
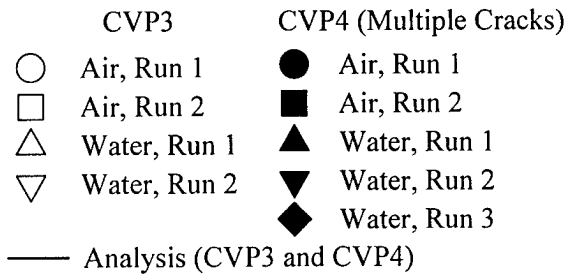
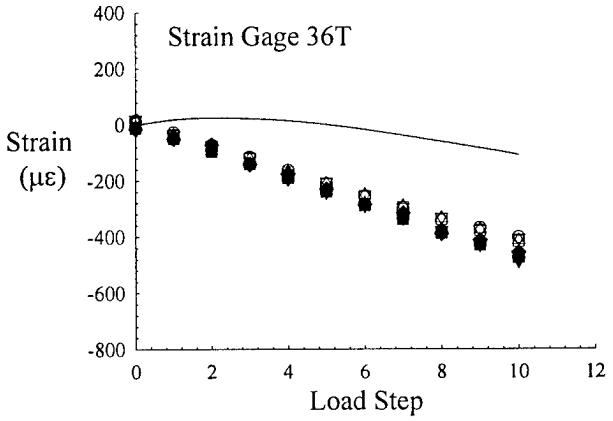
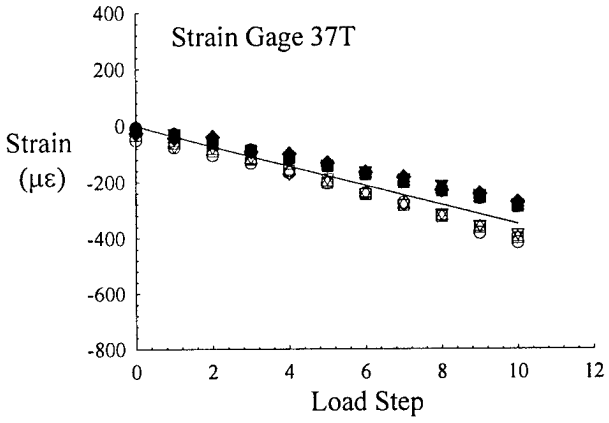


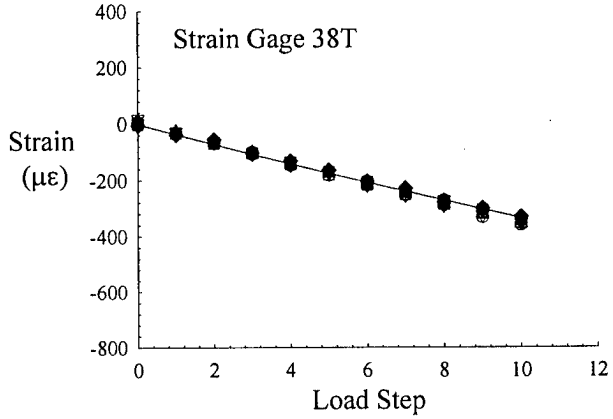
FIGURE D-46. MEASURED AND PREDICTED HOOP STRAINS FOR GROUP 5 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1b

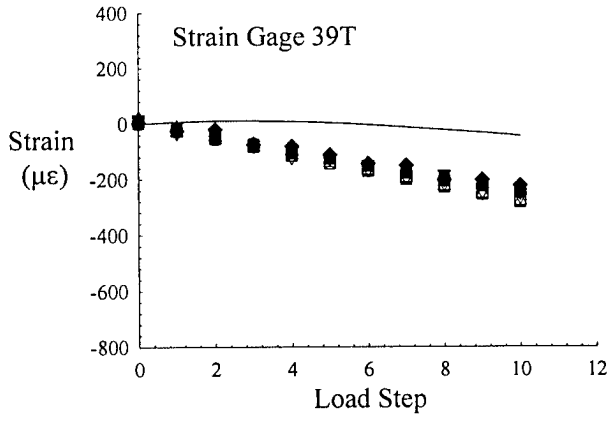
Load Cond. 1b	Max. Load
Pressure	0
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	875.7 lb/in











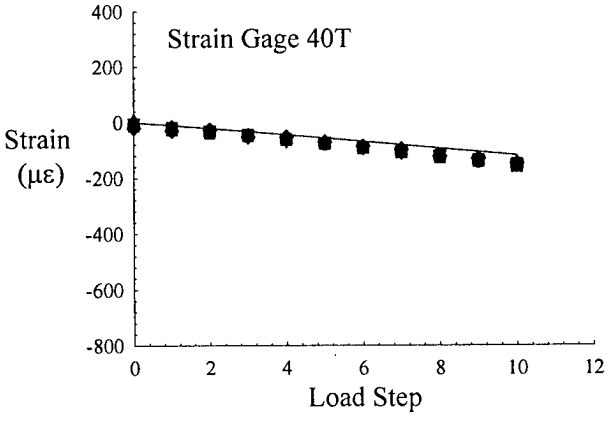
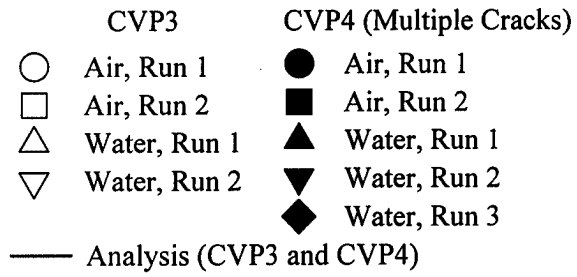


FIGURE D-46. MEASURED AND PREDICTED HOOP STRAINS FOR GROUP 5 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1b (Continued)

Load Cond. 1b	Max. Load
Pressure	0
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	875.7 lb/in



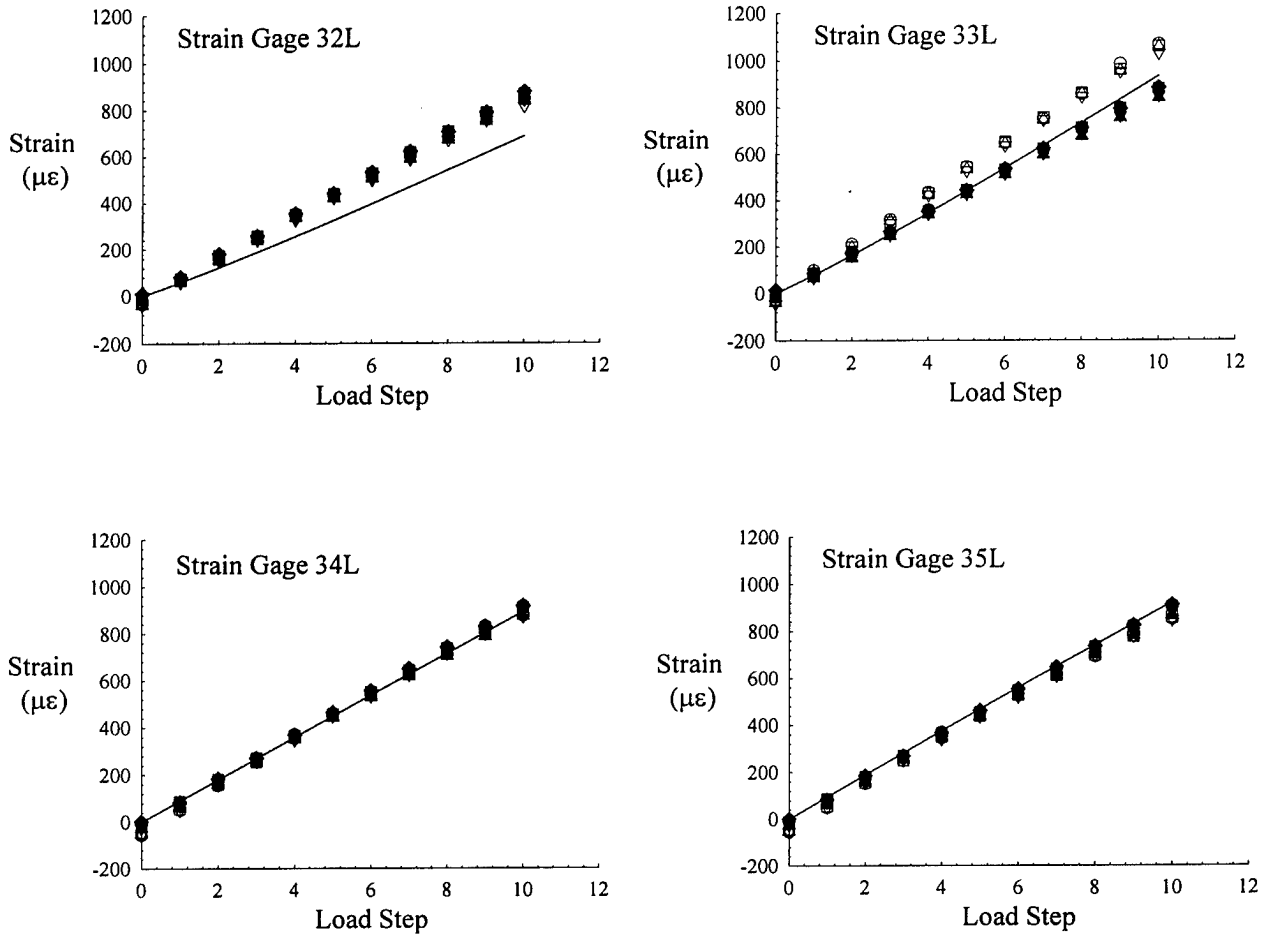


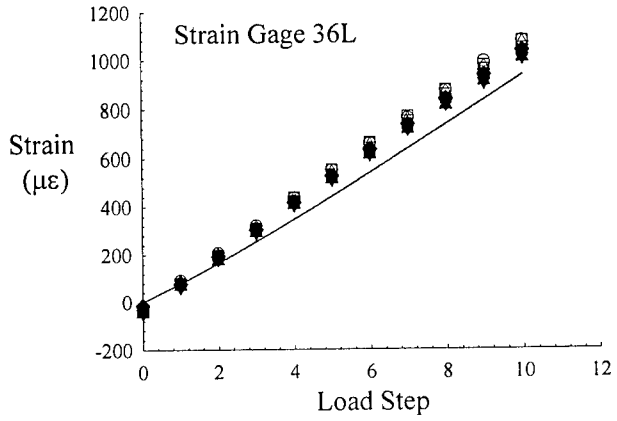
FIGURE D-47. MEASURED AND PREDICTED LONGITUDINAL STRAINS FOR GROUP 6 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1b

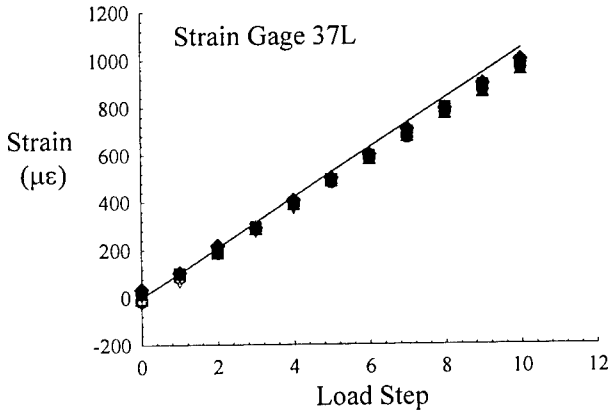
Load Cond. 1b	Max. Load
Pressure	0
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	875.7 lb/in

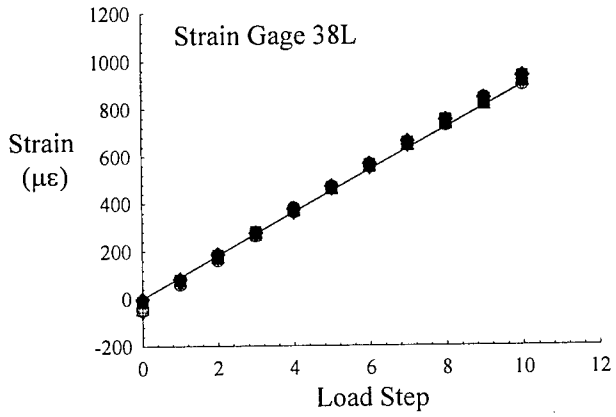
CVP3
- ○ Air, Run 1
- □ Air, Run 2
- △ Water, Run 1
- ▽ Water, Run 2

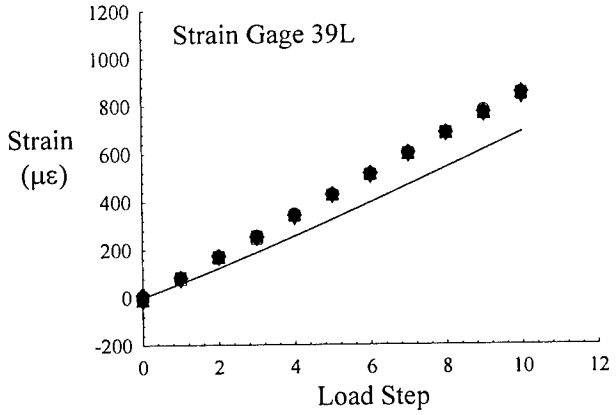
CVP4 (Multiple Cracks)
- ● Air, Run 1
- ■ Air, Run 2
- ▲ Water, Run 1
- ▼ Water, Run 2
- ◆ Water, Run 3

—— Analysis (CVP3 and CVP4)









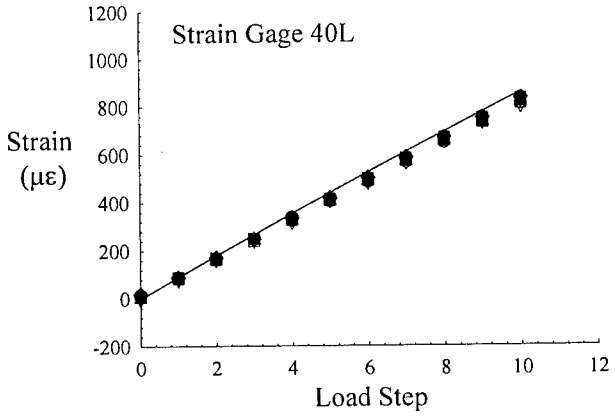
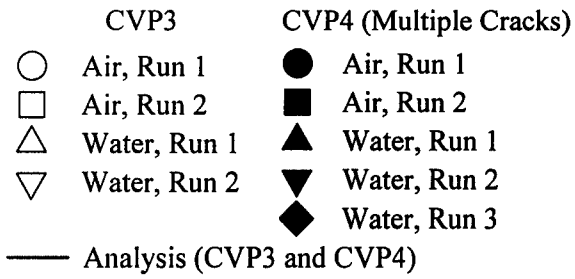


FIGURE D-47. MEASURED AND PREDICTED LONGITUDINAL STRAINS FOR GROUP 6 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1b (Continued)

Load Cond. 1b	Max. Load
Pressure	0
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	875.7 lb/in



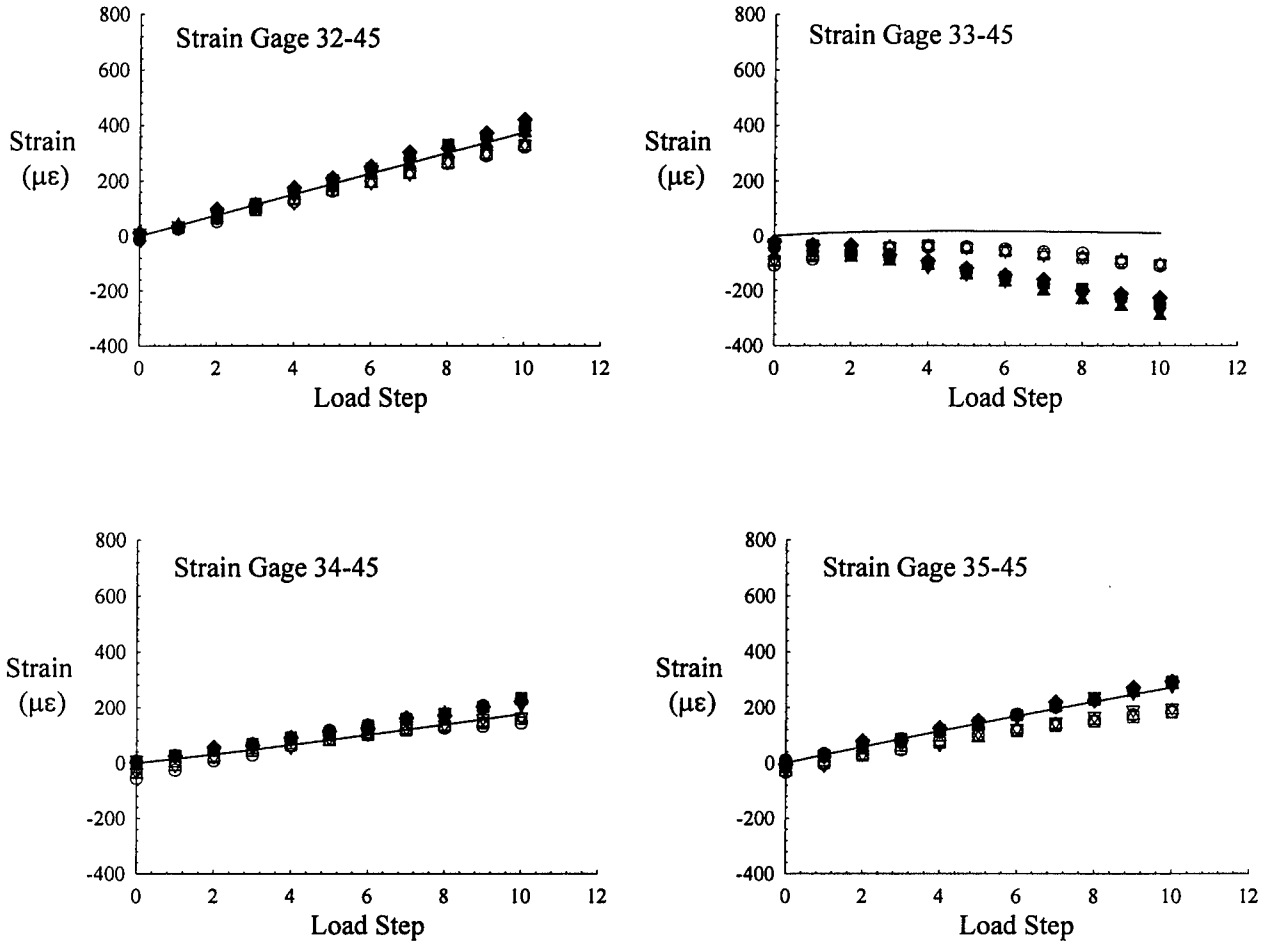


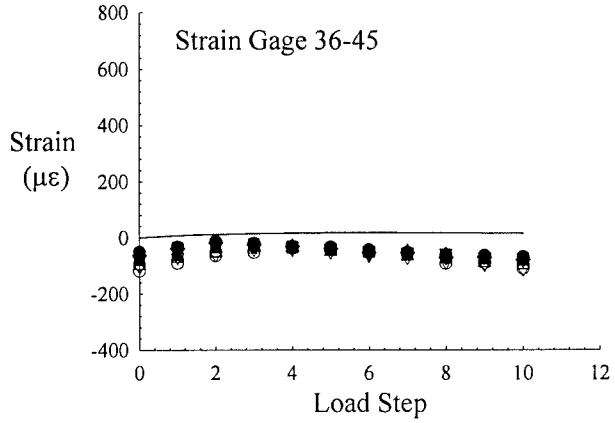
FIGURE D-48. MEASURED AND PREDICTED 45° STRAINS FOR GROUP 7 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1b

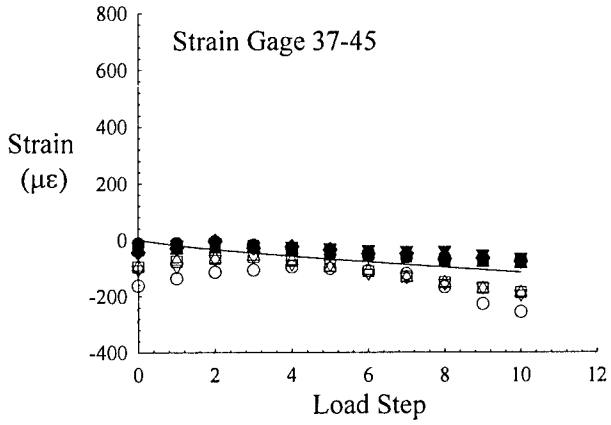
Load Cond. 1b	Max. Load
Pressure	0
Hoop Load	0 lb/in
Frame Load	0 lb/in
Long. Load	875.7 lb/in

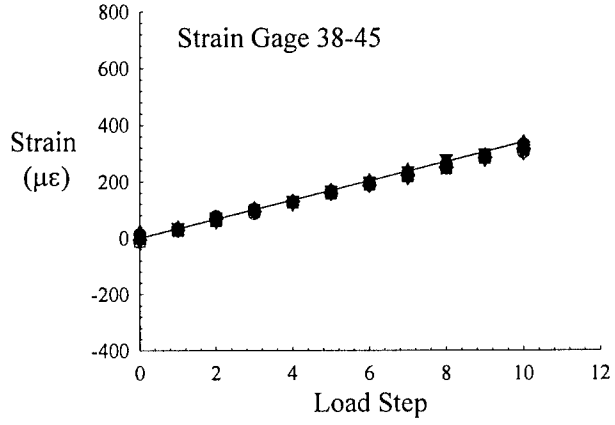
CVP3
- ○ Air, Run 1
- □ Air, Run 2
- △ Water, Run 1
- ▽ Water, Run 2

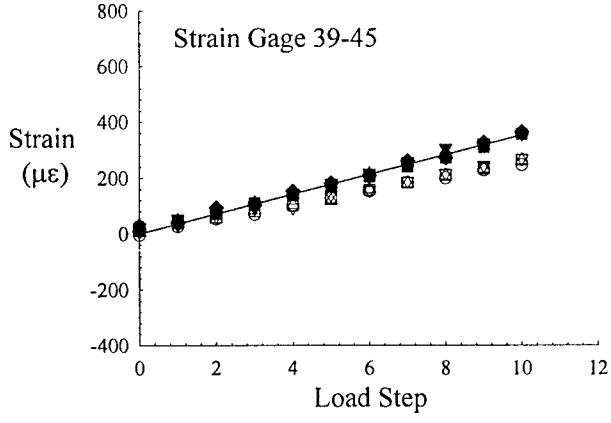
CVP4 (Multiple Cracks)
- ● Air, Run 1
- ■ Air, Run 2
- ▲ Water, Run 1
- ▼ Water, Run 2
- ◆ Water, Run 3

—— Analysis (CVP3 and CVP4)









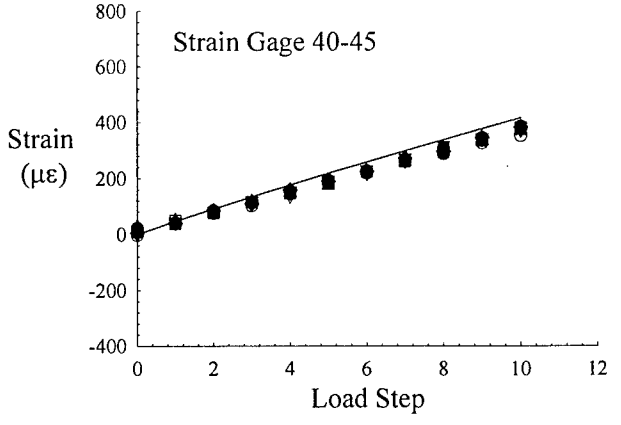


FIGURE D-48. MEASURED AND PREDICTED 45° STRAINS FOR GROUP 7 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1b (Continued)

Load Cond. 1c	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	875.7 lb/in

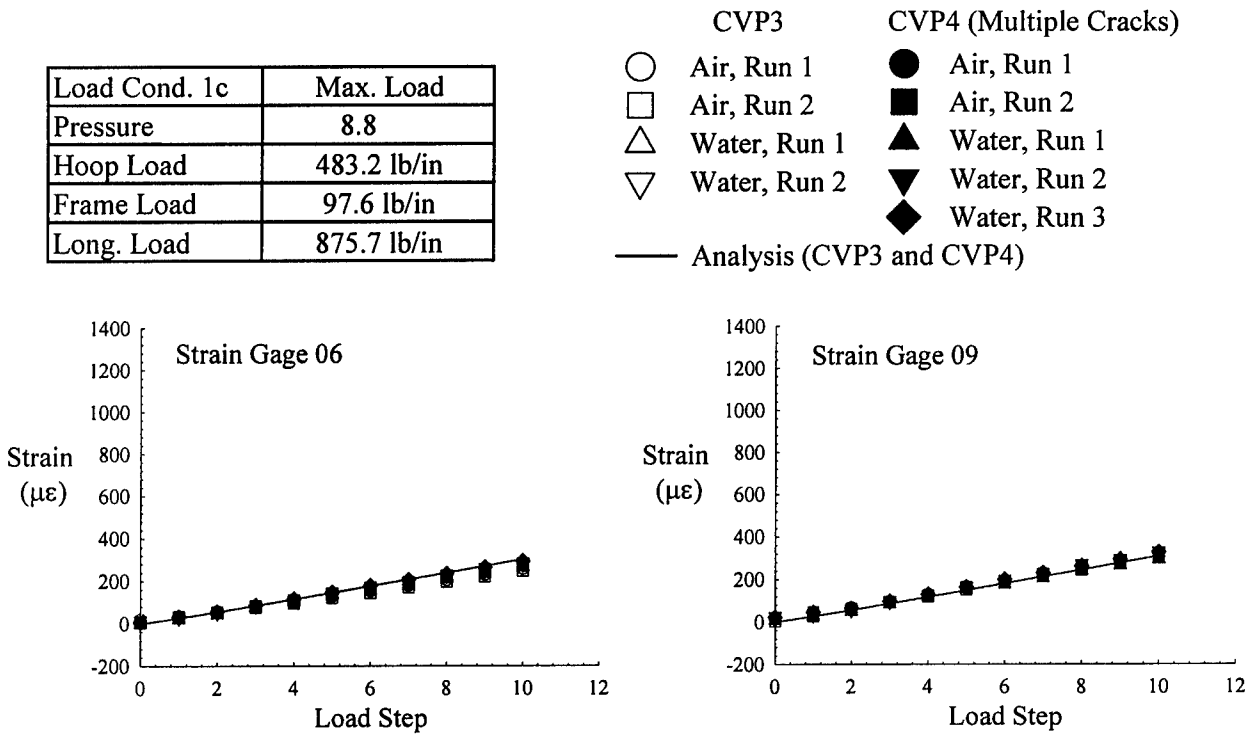


FIGURE D-49. MEASURED AND PREDICTED STRAINS FOR GROUP 1 GAGES IN FRAME OUTER CAPS OF CVP3 AND CVP4, LOAD CONDITION 1c

Load Cond. 1c	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	875.7 lb/in

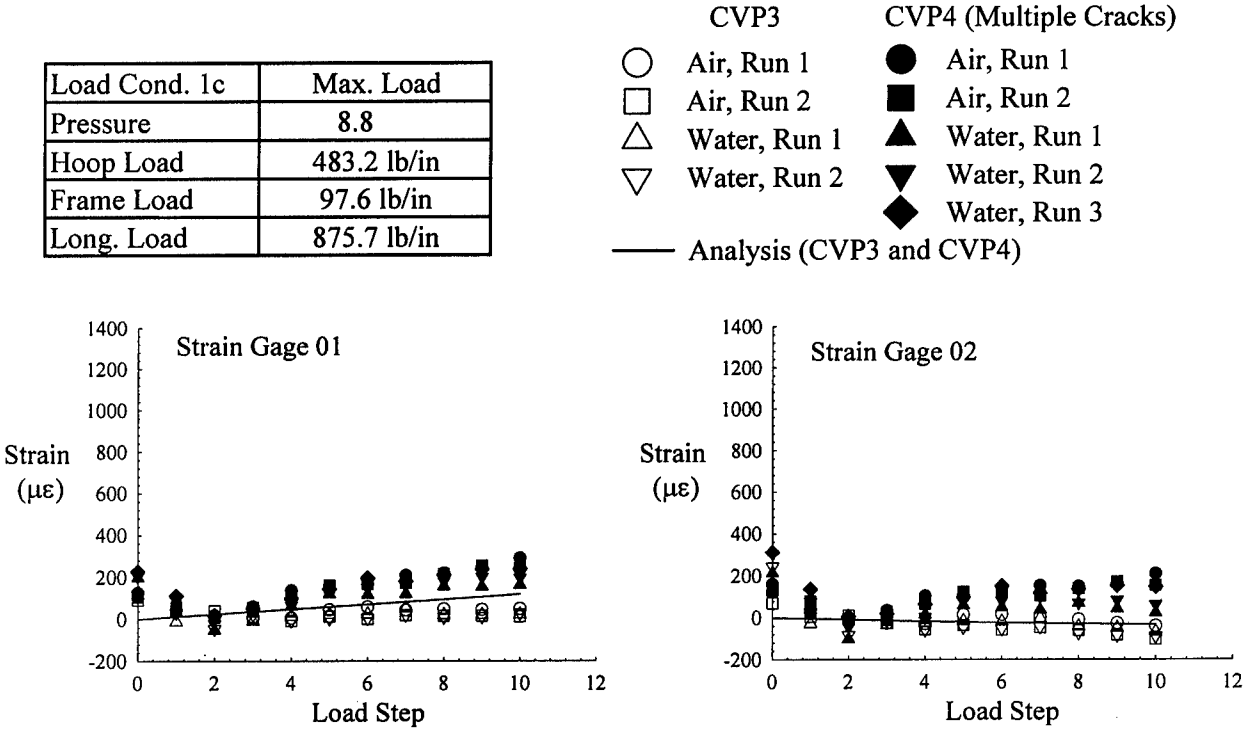


FIGURE D-50. MEASURED AND PREDICTED STRAINS FOR GROUP 2 GAGES IN FRAME INNER CAPS OF CVP3 AND CVP4, LOAD CONDITION 1c

Load Cond. 1c	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	875.7 lb/in

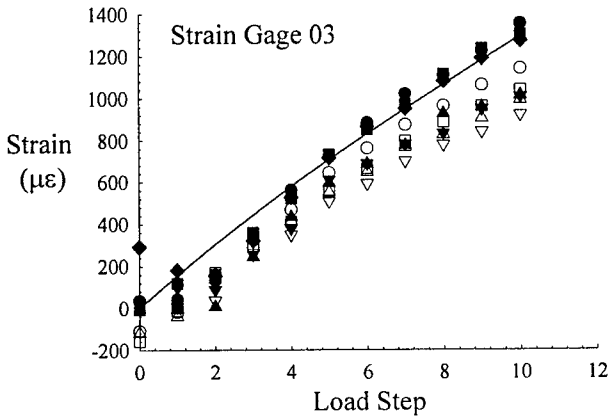
CVP3

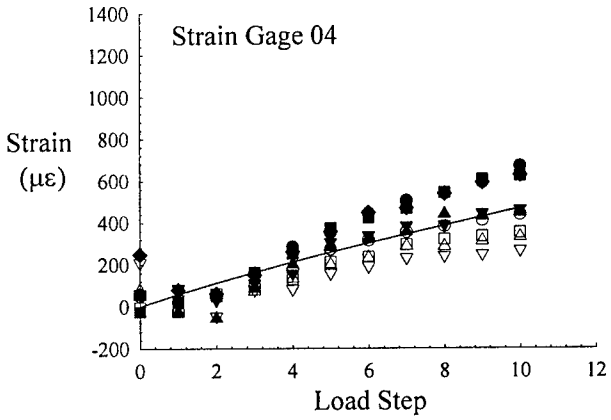
- ○ Air, Run 1
- □ Air, Run 2
- △ Water, Run 1
- ▽ Water, Run 2

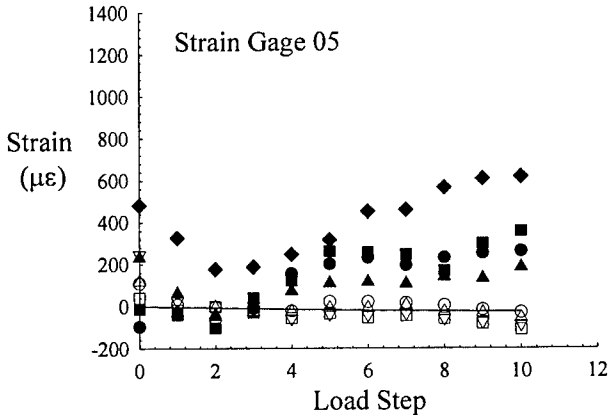
CVP4 (Multiple Cracks)

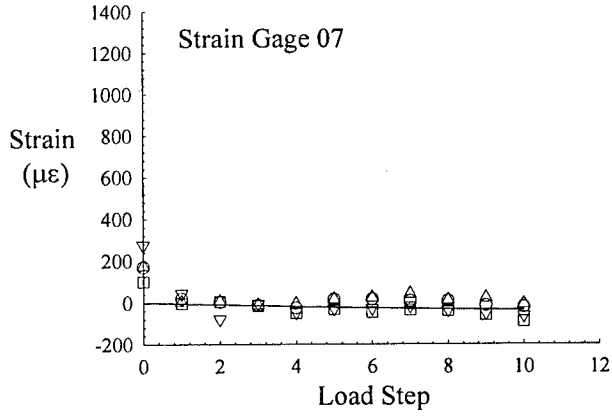
- ● Air, Run 1
- ■ Air, Run 2
- ▲ Water, Run 1
- ▼ Water, Run 2
- ◆ Water, Run 3

—— Analysis (CVP3 and CVP4)









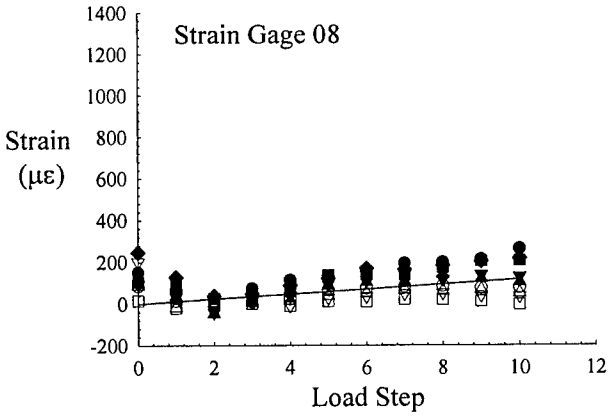
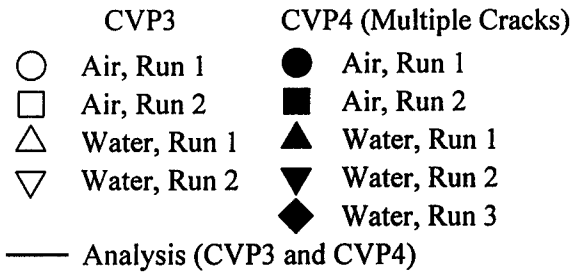
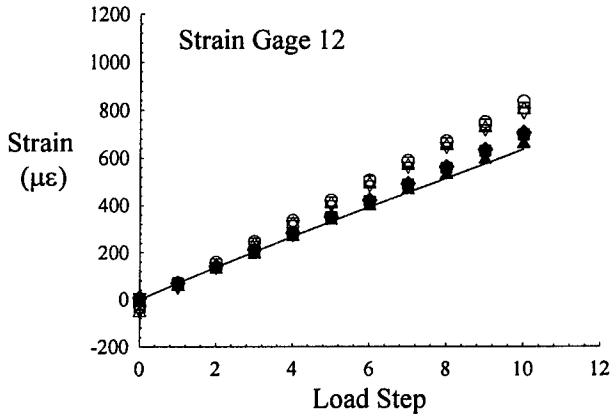
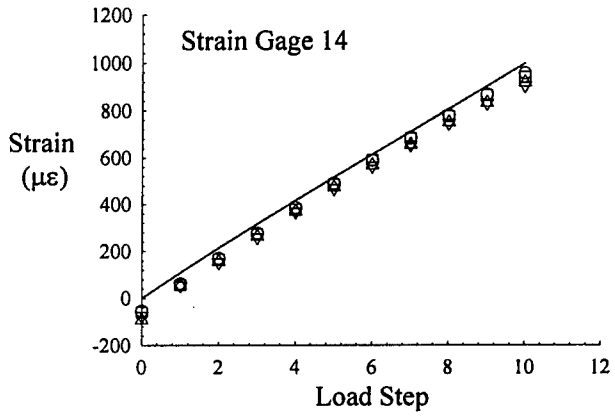


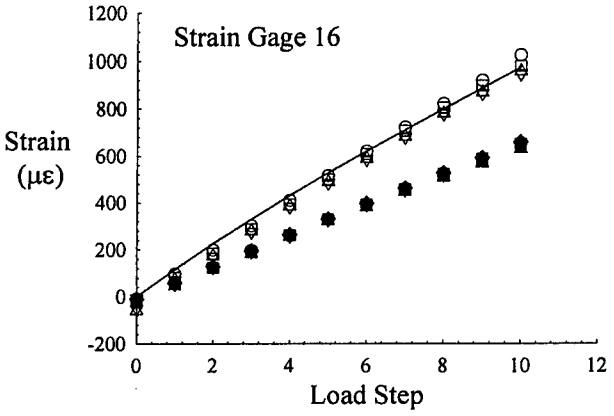
FIGURE D-50. MEASURED AND PREDICTED STRAINS FOR GROUP 2 GAGES IN FRAME INNER CAPS OF CVP3 AND CVP4, LOAD CONDITION 1c (Continued)

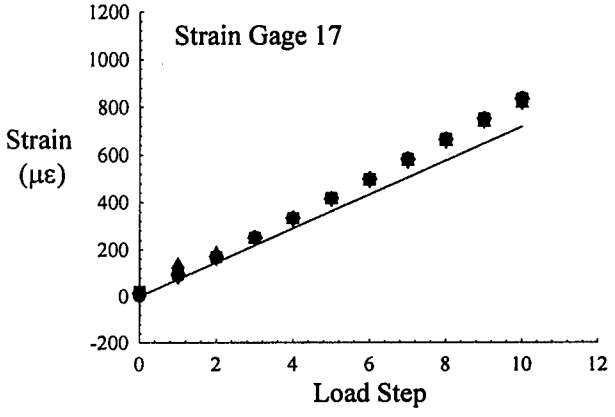
Load Cond. 1c	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	875.7 lb/in











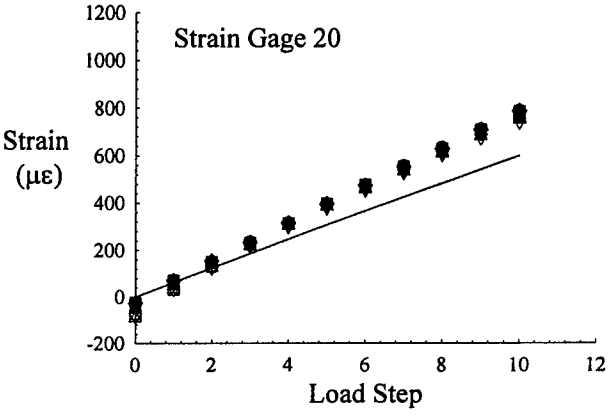
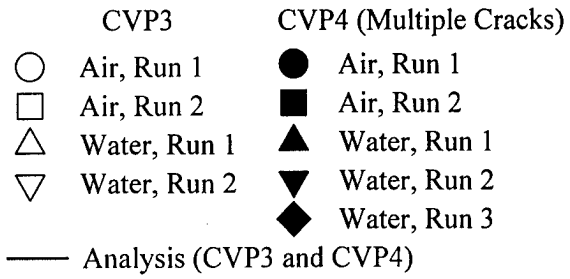
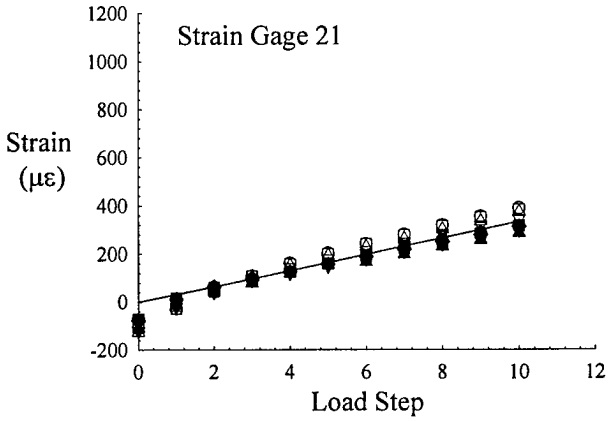
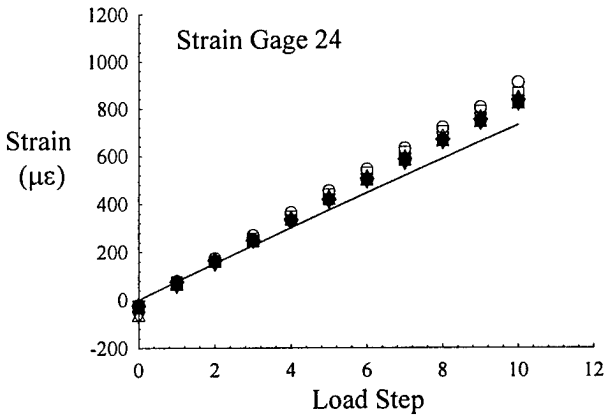


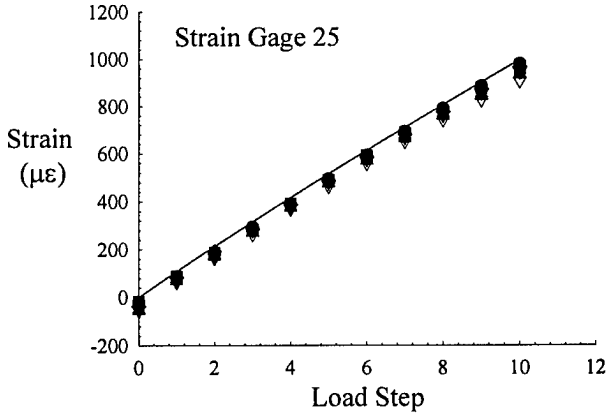
FIGURE D-51. MEASURED AND PREDICTED STRAINS FOR GROUP 3 GAGES IN STRINGER HATS OF CVP3 AND CVP4, LOAD CONDITION 1c

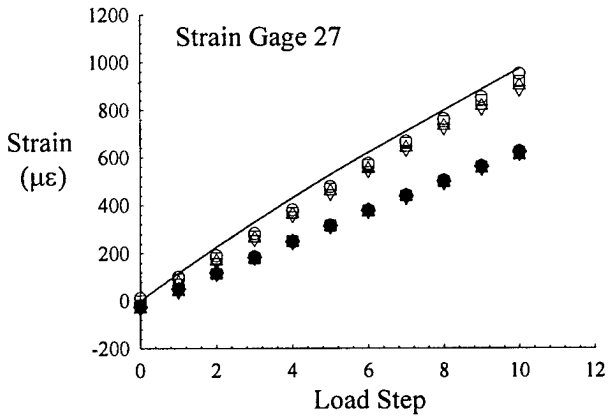
Load Cond. 1c	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	875.7 lb/in











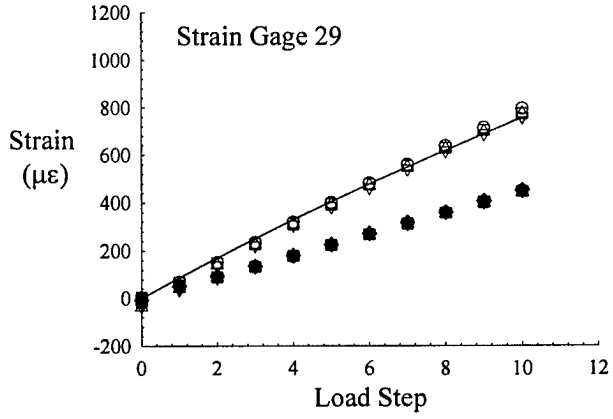


FIGURE D-51. MEASURED AND PREDICTED STRAINS FOR GROUP 3 GAGES IN STRINGER HATS OF CVP3 AND CVP4, LOAD CONDITION 1c (Continued)

Load Cond. 1c	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	875.7 lb/in

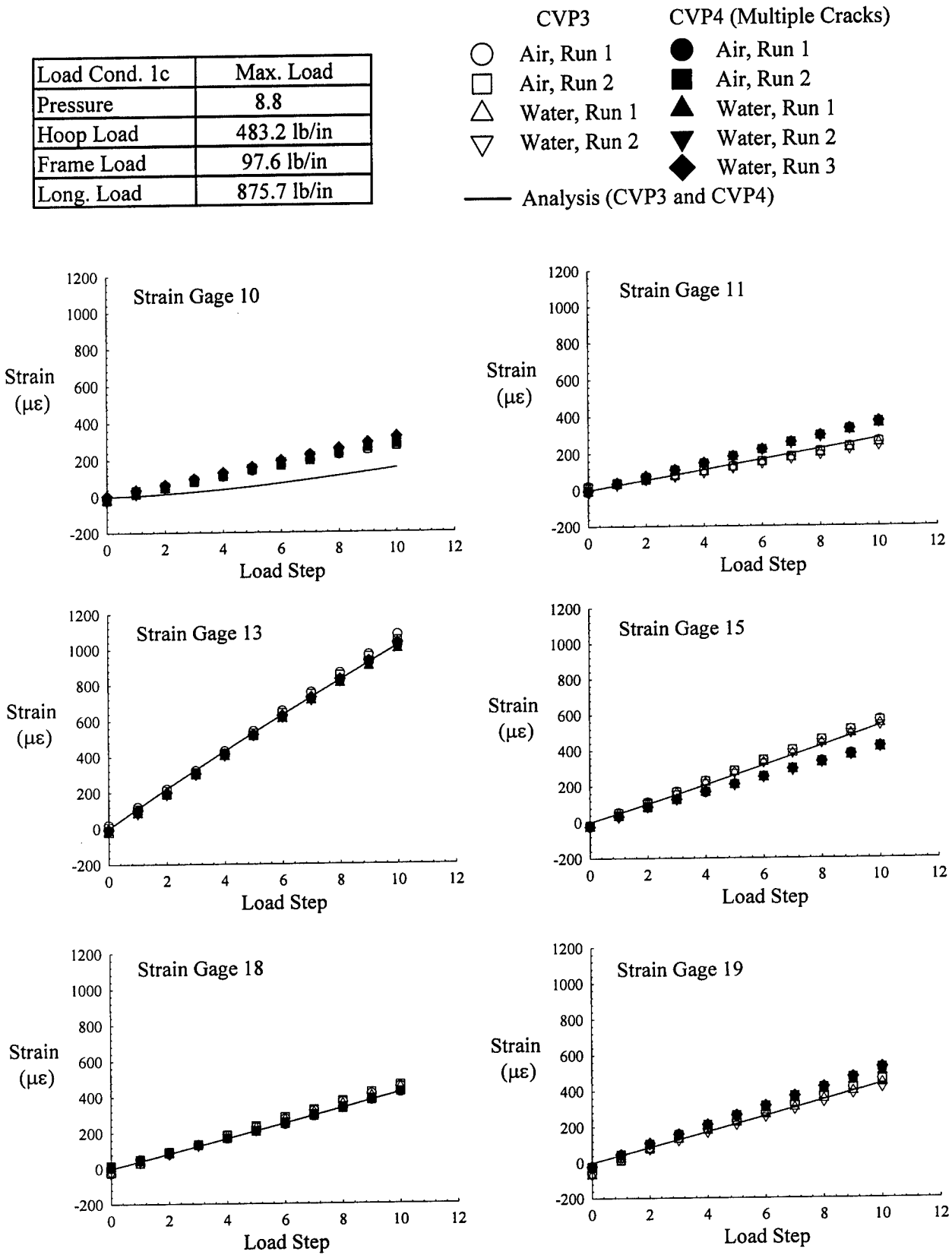


FIGURE D-52. MEASURED AND PREDICTED STRAINS FOR GROUP 4 GAGES IN STRINGER FLANGES OF CVP3 AND CVP4, LOAD CONDITION 1c

Load Cond. 1c	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	875.7 lb/in

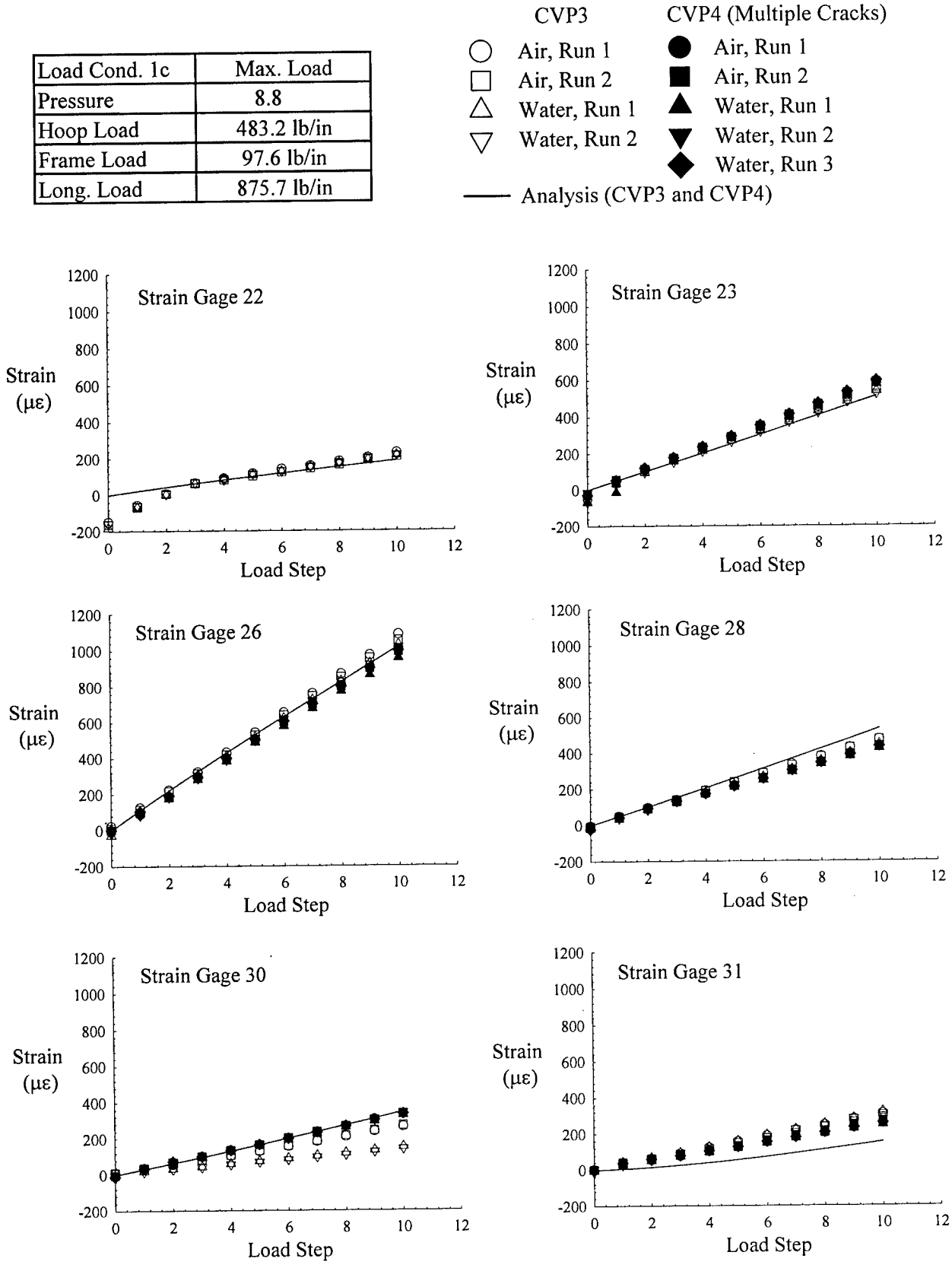


FIGURE D-52. MEASURED AND PREDICTED STRAINS FOR GROUP 4 GAGES IN STRINGER FLANGES OF CVP3 AND CVP4, LOAD CONDITION 1c (Continued)

Load Cond. 1c	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	875.7 lb/in

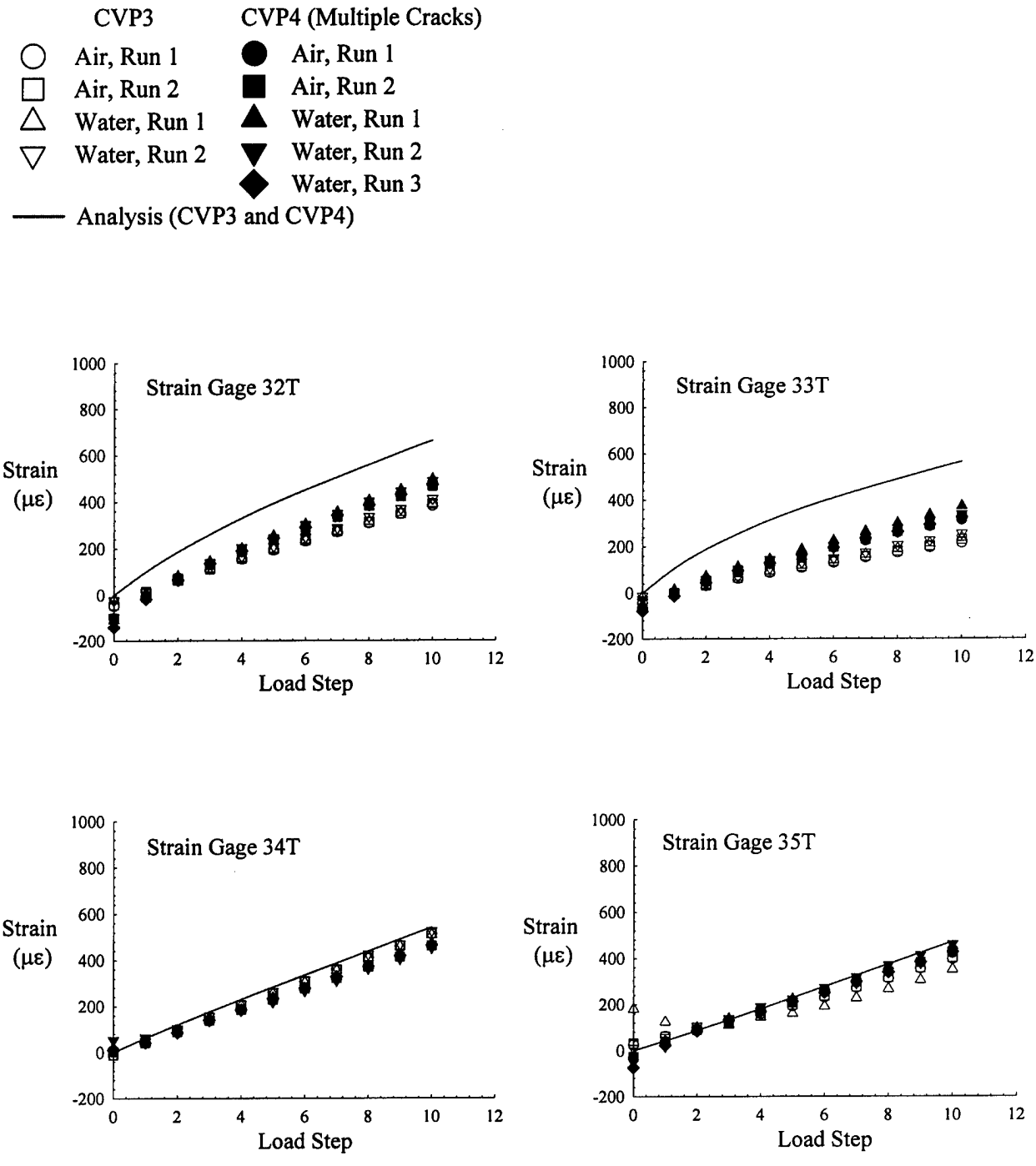
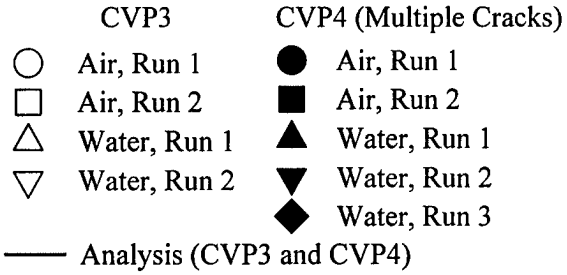
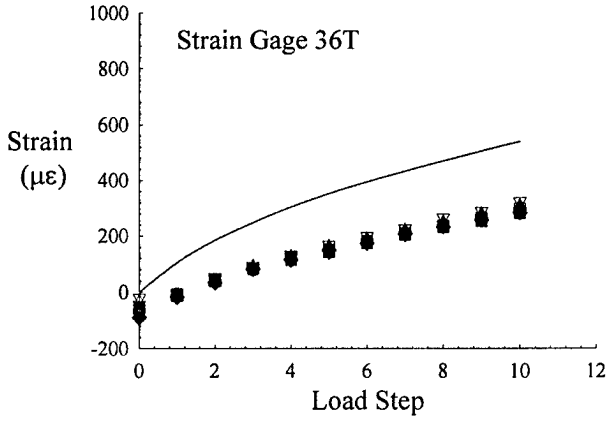
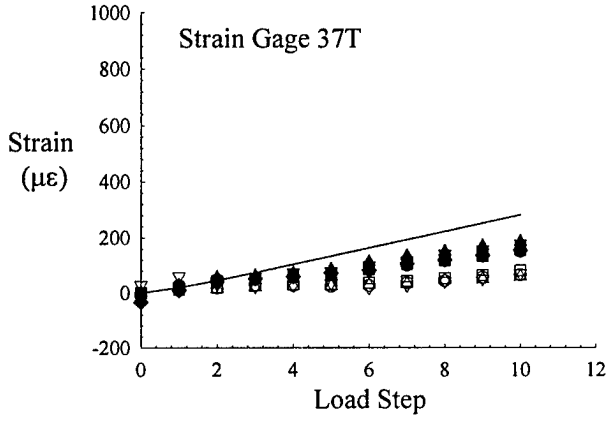


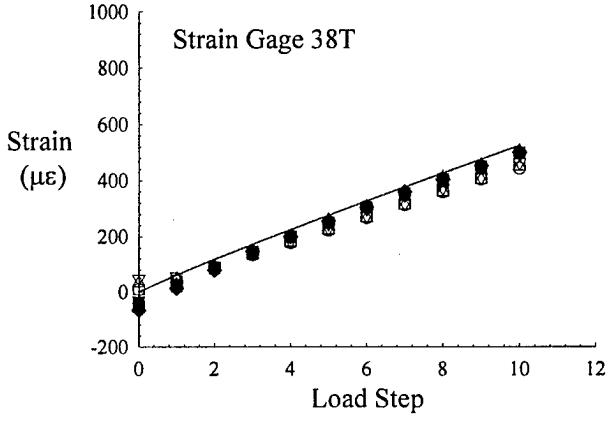
FIGURE D-53. MEASURED AND PREDICTED HOOP STRAINS FOR GROUP 5 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1c

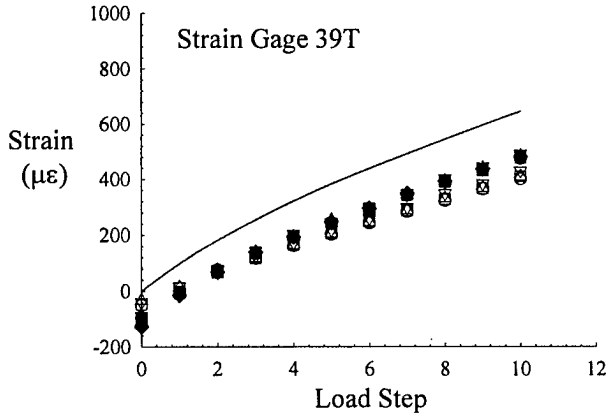
Load Cond. 1c	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	875.7 lb/in











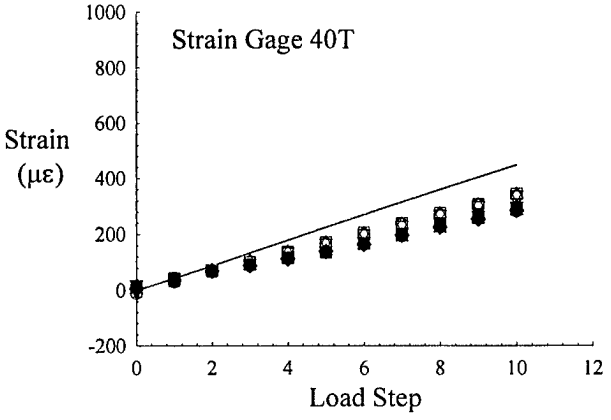
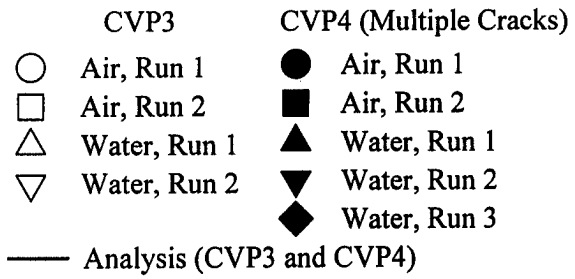
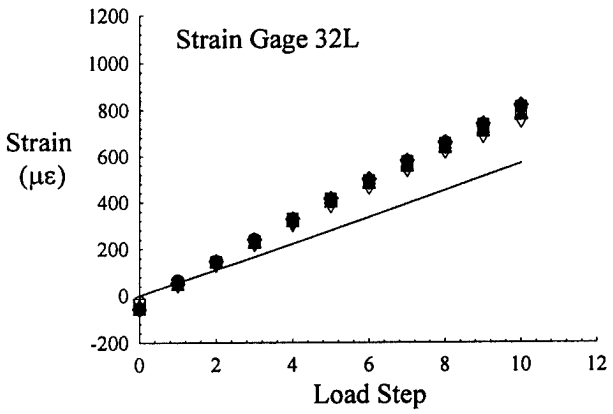
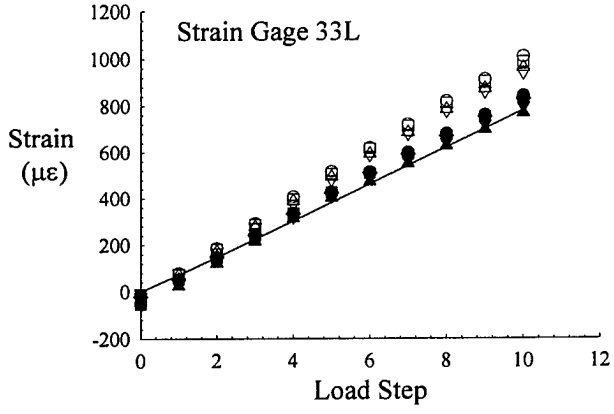


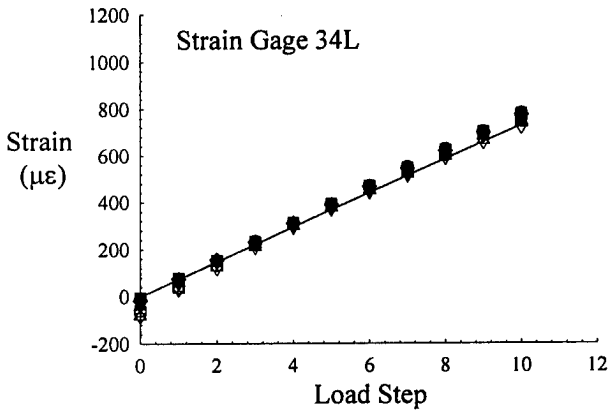
FIGURE D-53. MEASURED AND PREDICTED HOOP STRAINS FOR GROUP 5 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1c (Continued)

Load Cond. 1c	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	875.7 lb/in









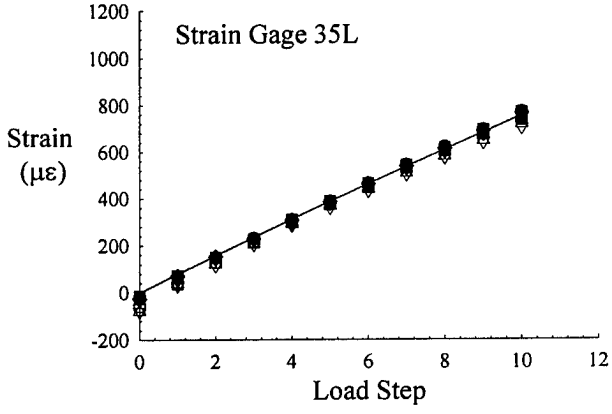
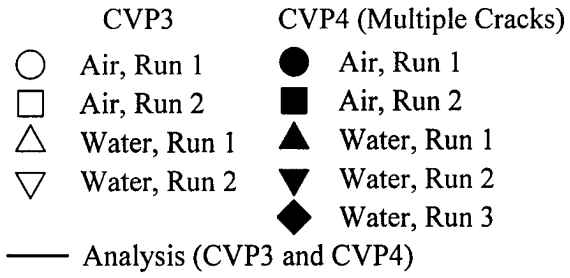
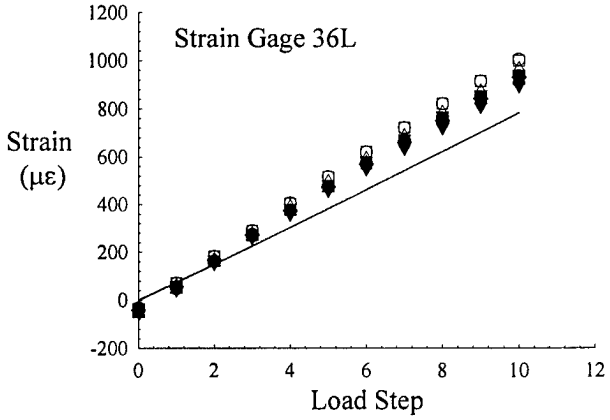
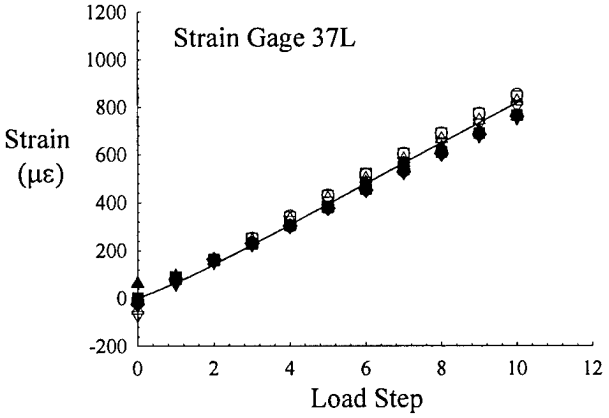


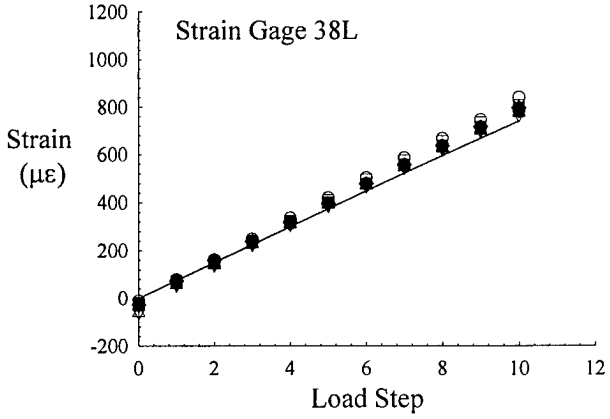
FIGURE D-54. MEASURED AND PREDICTED LONGITUDINAL STRAINS FOR GROUP 6 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1c

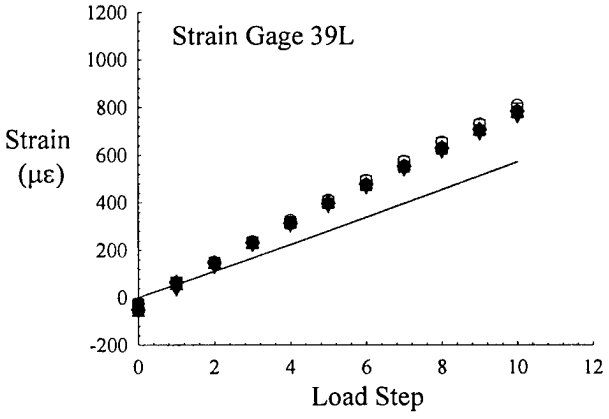
Load Cond. 1c	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	875.7 lb/in











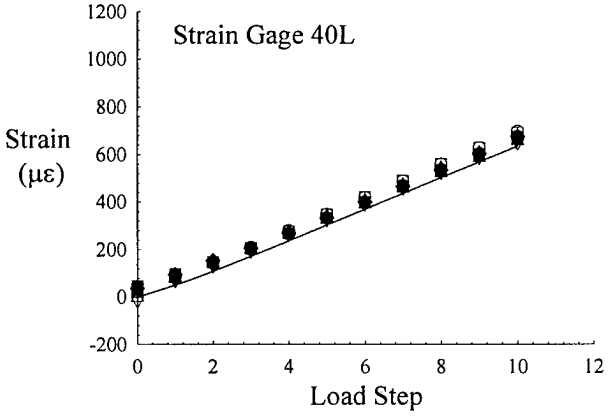


FIGURE D-54. MEASURED AND PREDICTED LONGITUDINAL STRAINS FOR GROUP 6 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1c (Continued)

Load Cond. 1c	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	875.7 lb/in

CVP3	CVP4 (Multiple Cracks)
○ Air, Run 1	● Air, Run 1
□ Air, Run 2	■ Air, Run 2
△ Water, Run 1	▲ Water, Run 1
▽ Water, Run 2	▼ Water, Run 2
	◆ Water, Run 3

—— Analysis (CVP3 and CVP4)

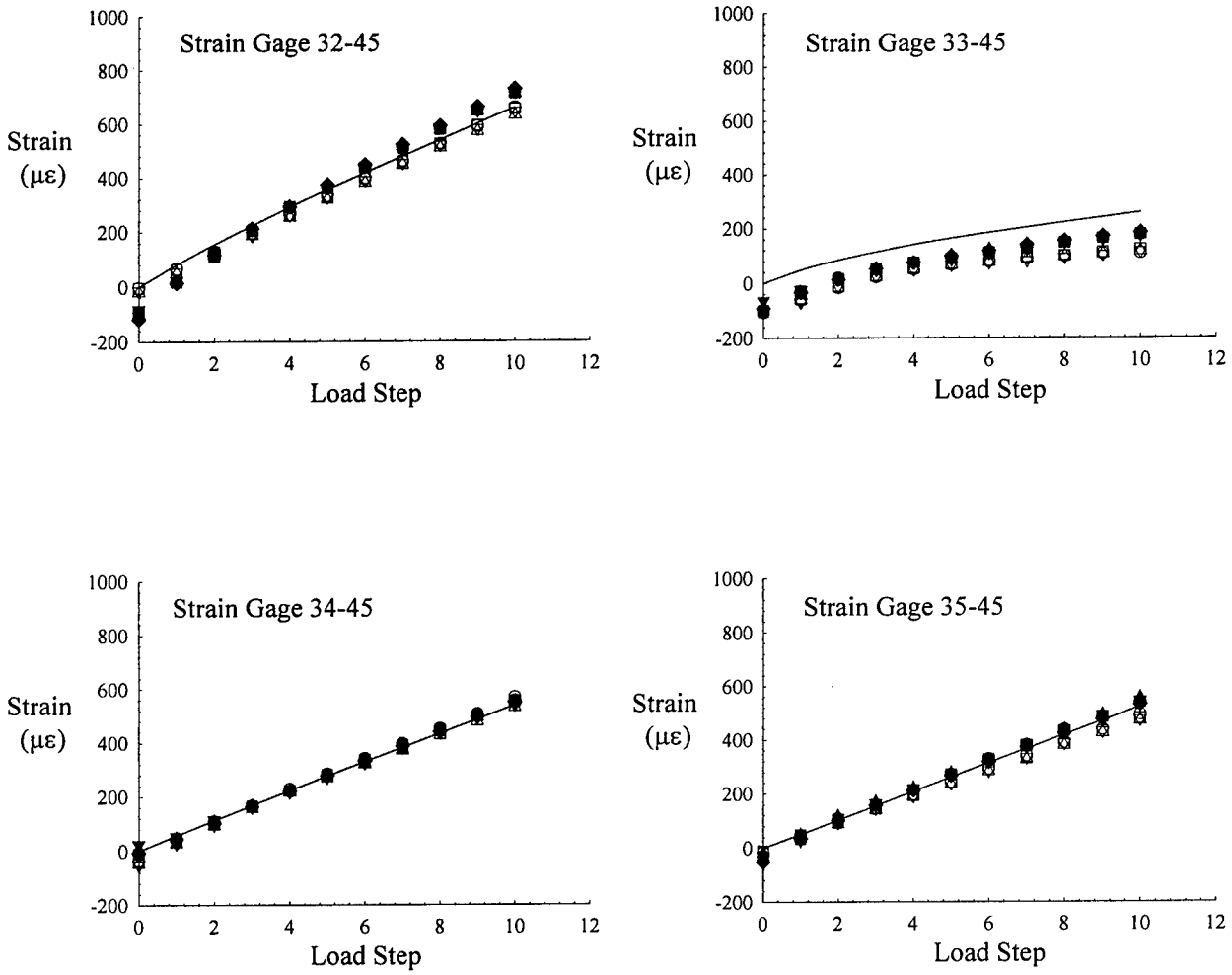
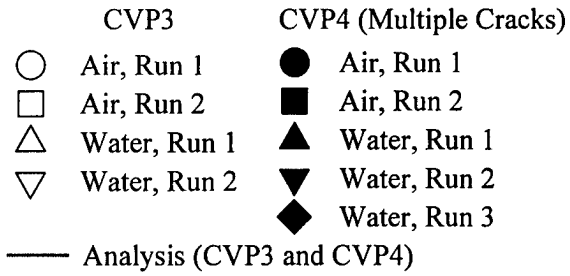
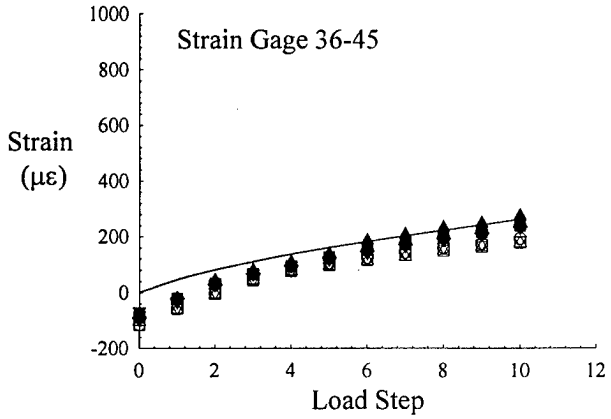
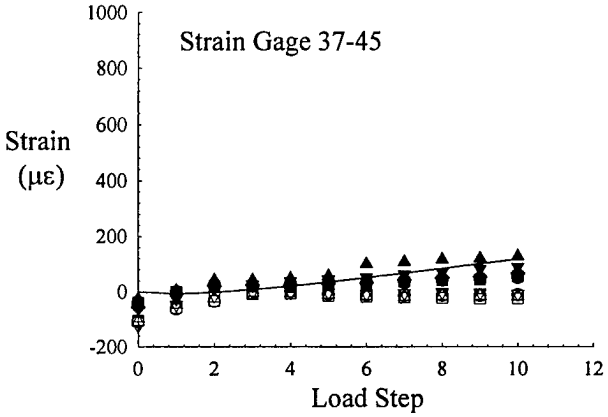


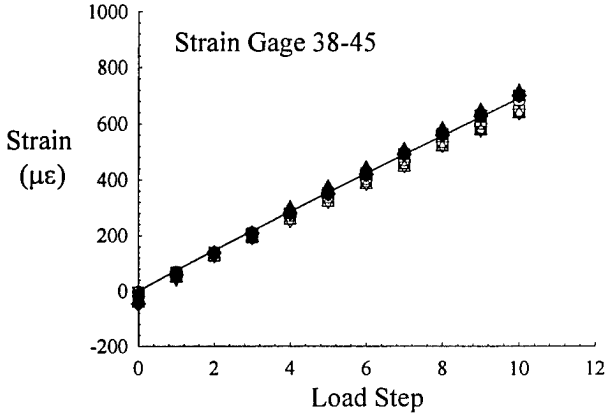
FIGURE D-55. MEASURED AND PREDICTED 45° STRAINS FOR GROUP 7 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1c

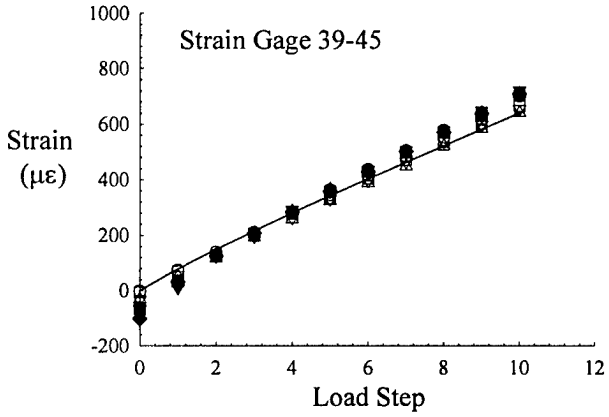
Load Cond. 1c	Max. Load
Pressure	8.8
Hoop Load	483.2 lb/in
Frame Load	97.6 lb/in
Long. Load	875.7 lb/in











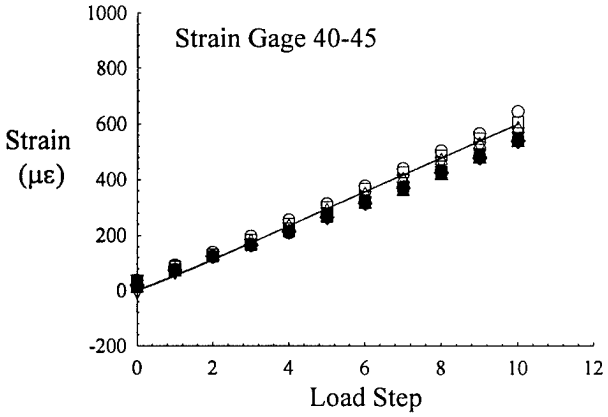


FIGURE D-55. MEASURED AND PREDICTED 45° STRAINS FOR GROUP 7 GAGES IN SKIN MID-BAY OF CVP3 AND CVP4, LOAD CONDITION 1c (Continued)

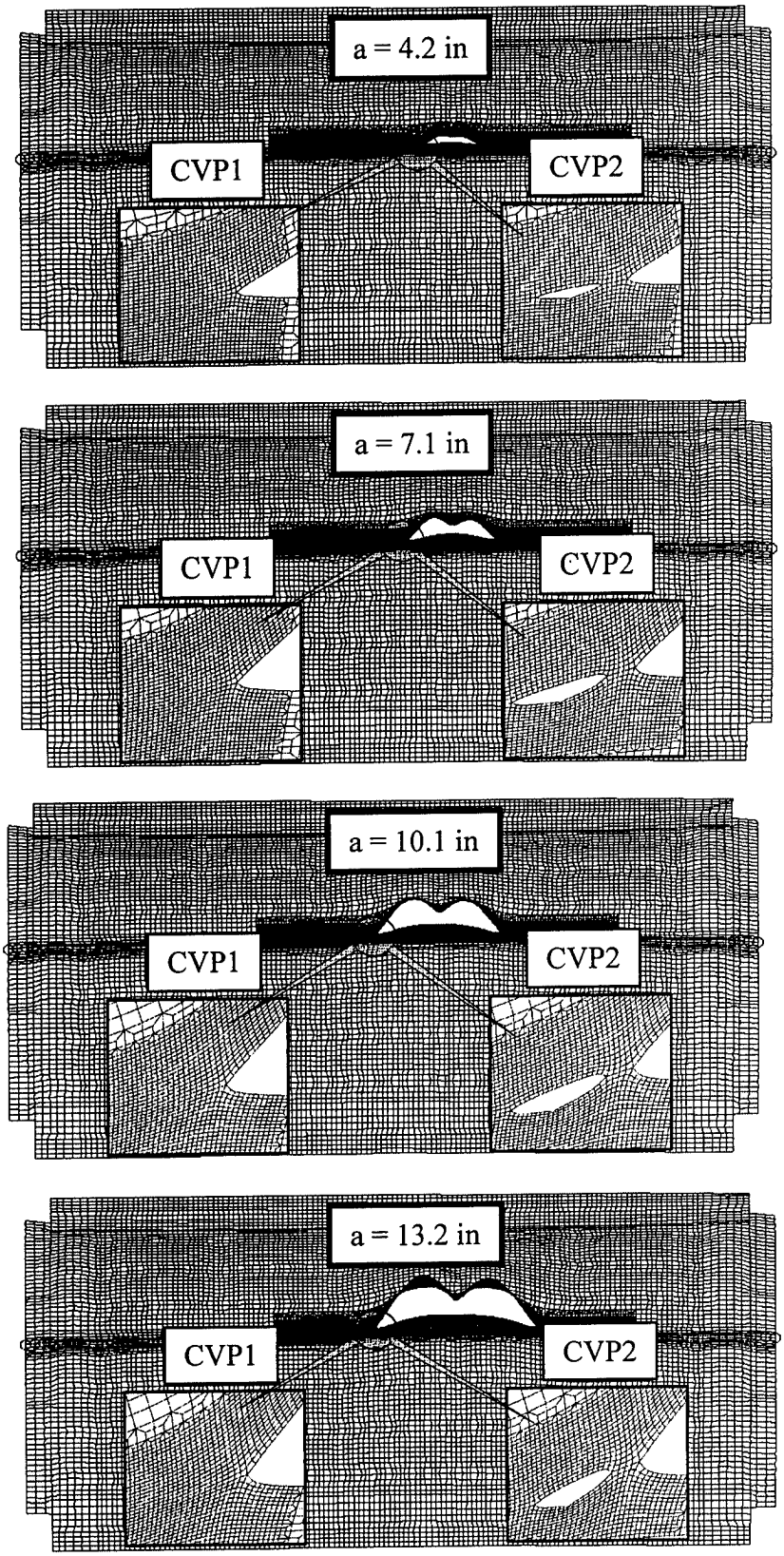


FIGURE D-56. FINITE ELEMENT SIMULATIONS OF DEFORMATION PROCESSES AT CRACK TIPS FOR CVP1 AND CVP2 DISPLACEMENTS SCALED BY 25

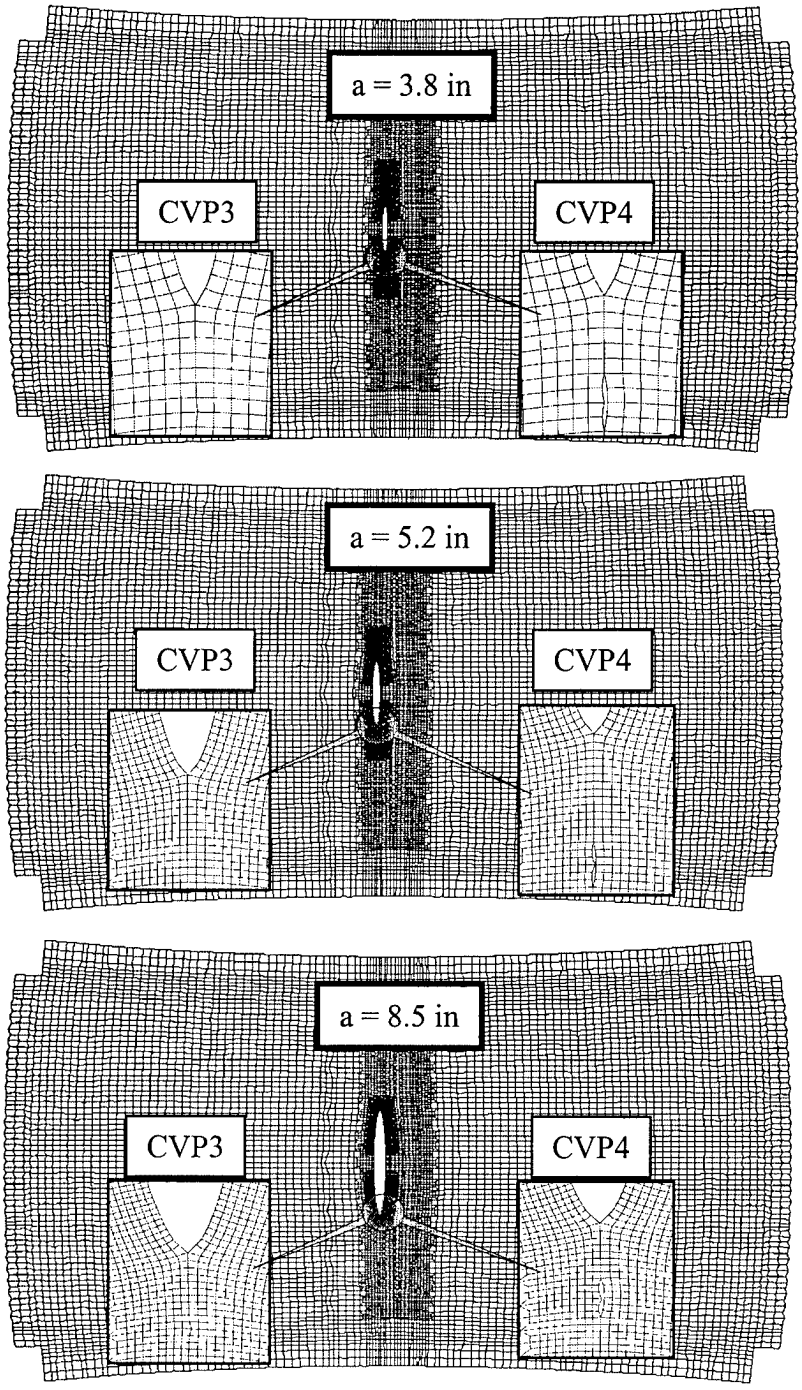


FIGURE D-57. FINITE ELEMENT SIMULATIONS OF DEFORMATION PROCESSES AT CRACK TIPS FOR CVP3 AND CVP4 DISPLACEMENTS SCALED BY 40

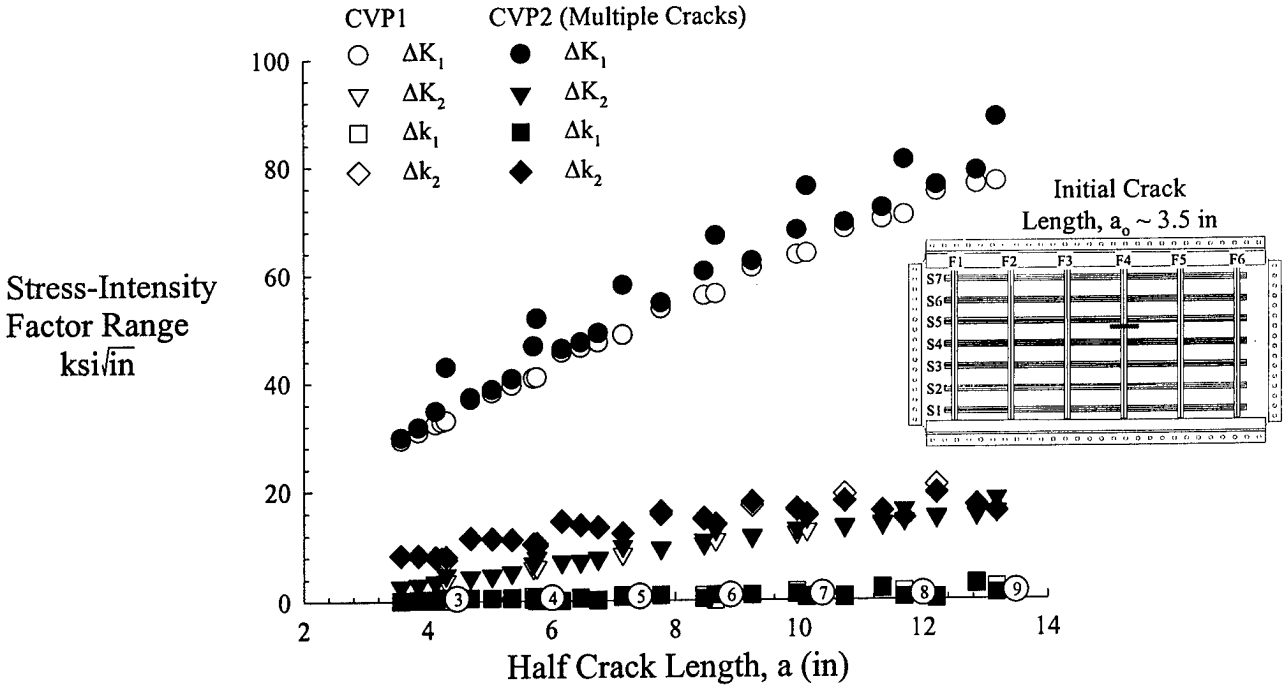


FIGURE D-58. MIXED-MODE STRESS-INTENSITY FACTOR RANGES AS A FUNCTION OF HALF CRACK LENGTH FOR PANELS CVP1 AND CVP2

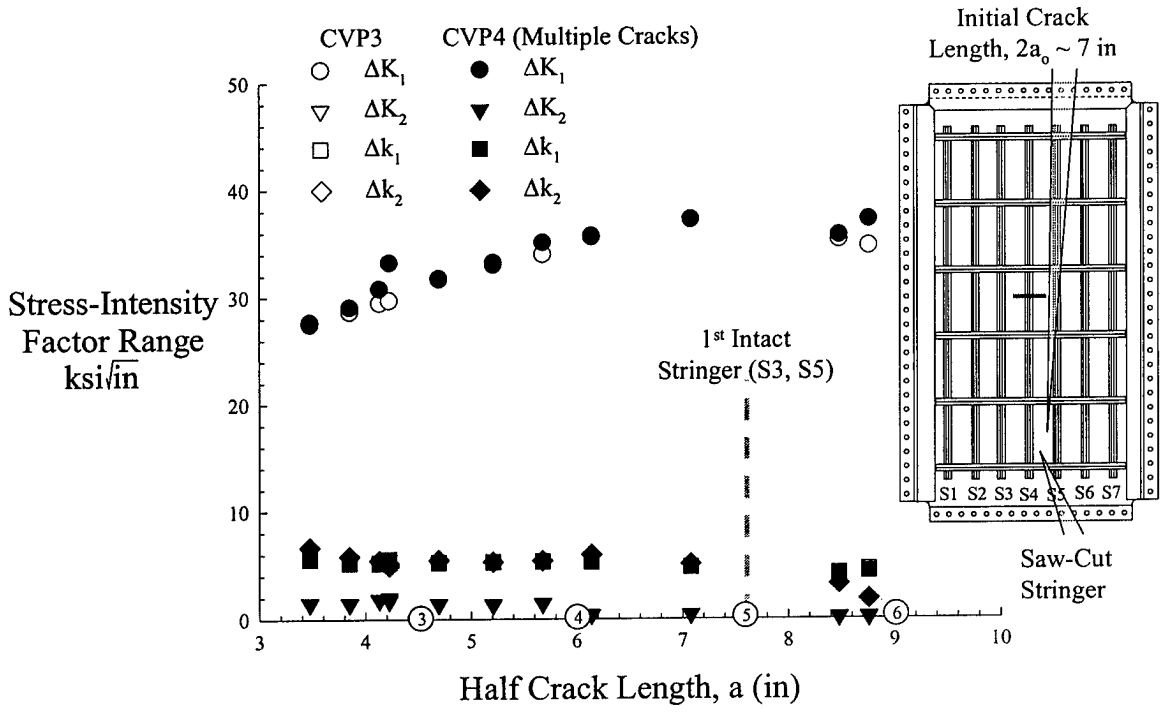


FIGURE D-59. MIXED-MODE STRESS-INTENSITY FACTOR RANGES AS A FUNCTION OF HALF CRACK LENGTH FOR PANELS CVP3 AND CVP4

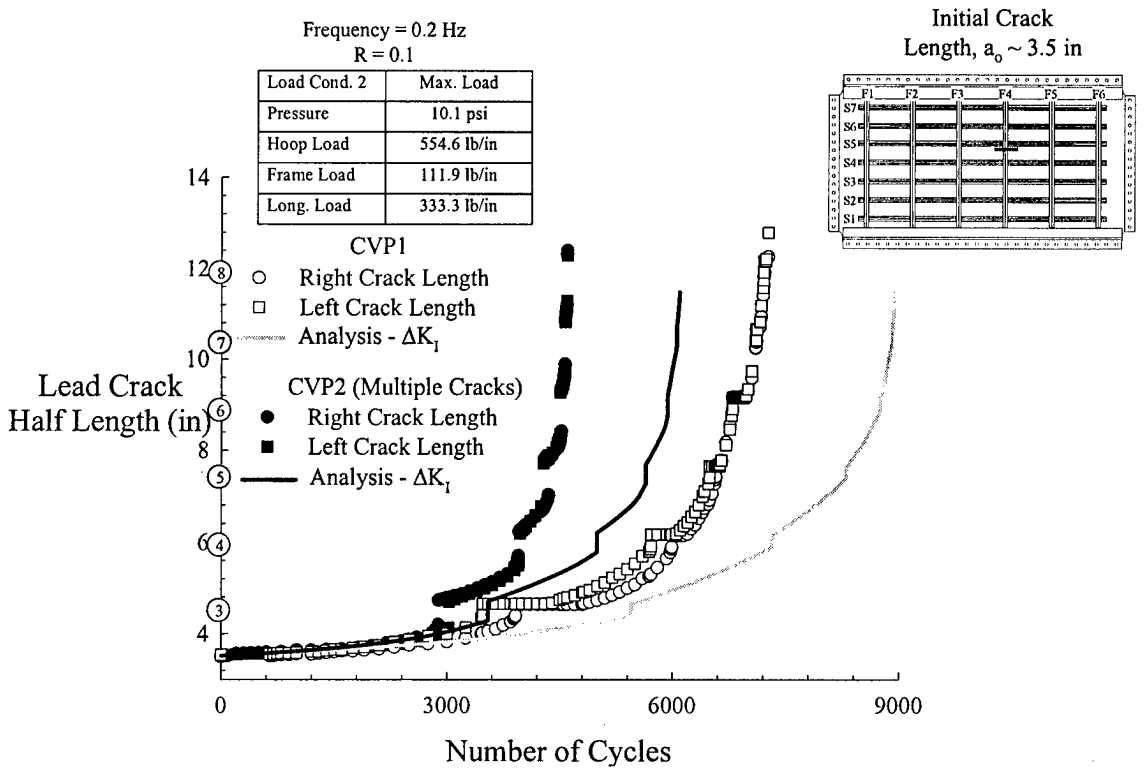


FIGURE D-60. HALF LENGTH OF THE LEAD CRACK AS A FUNCTION OF NUMBER OF FATIGUE CYCLES FOR PANELS CVP1 AND CVP2

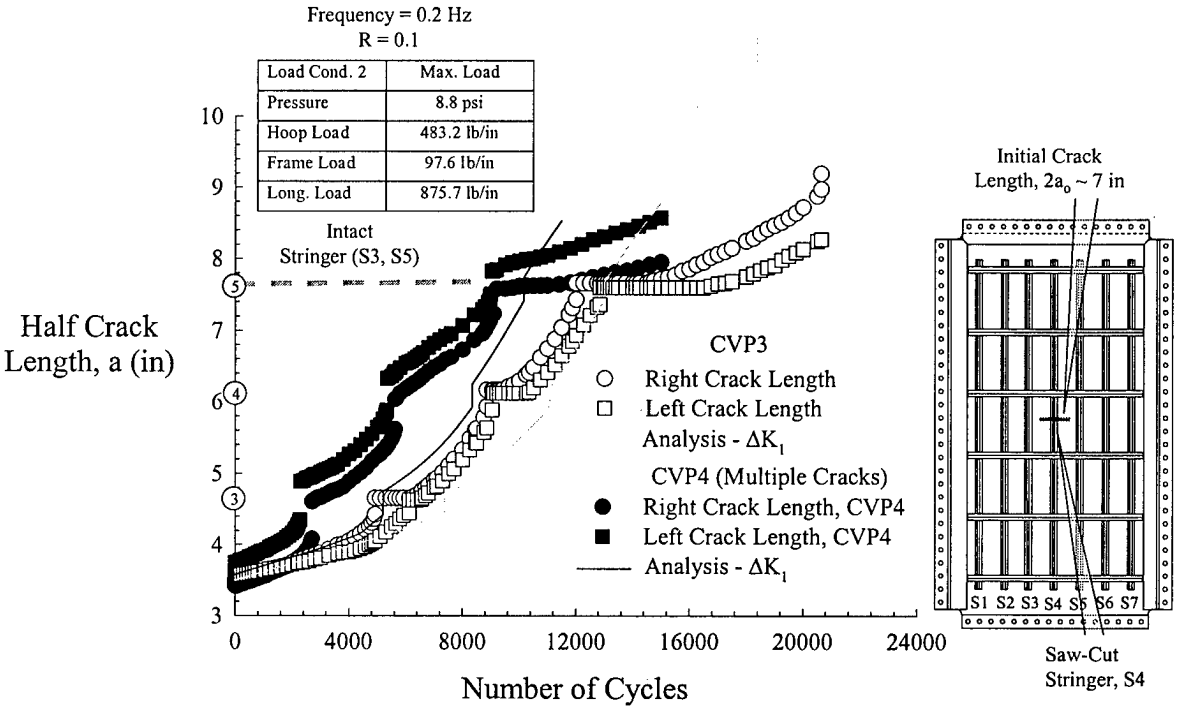


FIGURE D-61. HALF LENGTH OF THE LEAD CRACK AS A FUNCTION OF NUMBER OF FATIGUE CYCLES FOR PANELS CVP3 AND CVP4

APPENDIX E—RAW STRAIN GAGE DATA

SUMMARY.

The strain distribution was measured and predicted at ten equal load increments up to the maximum values for load sequences 1a through 1c in tables E-1 and E-2 for the longitudinal lap joint and circumferential butt joint panels, respectively. In general, for each panel, the strain survey test was repeated twice using water and twice using air to determine the repeatability of the results and the effect of the pressurizing media. For panel CVP1, load condition 1b was conducted twice only using water.

The raw data from the strain survey for the strain gages in each panel is provided in the tables of this appendix. In these tables, for each test condition (1a, 1b, and 1c) and run (Air 1 and 2, Water 1 and 2), applied loads and strains were measured at each gage at each of the ten equal load increments up to the maximum loads listed. For the applied loads, the pressure is in units of psi, the 12 frame load assemblies, frames 1-12, are in units of lbs., the 14 hoop load assemblies, hoops 1-14, are in units of lbs., and the 8 longitudinal load assembles, long. 1-8, are in units of lbs. The strains measured at the gages are in units of με.

For all tests, the applied loads were within ±2% of the prescribed values listed in table E-1 and E-2. Valid strain readings were obtained from all gages in CVP1, tables E-3 through E-12. For CVP2, tables E-13 through E-24, bad strain readings were obtained for gages 7 and 26; for CVP3, tables E-25 through E-36, bad strain readings were obtained for gage 17; and for CVP4, tables E-37 through E-48, bad strain readings were obtained for gages 7 and 22. These gages short-circuited due to moisture absorption during panel pressurization using water. Apparently, the coating of these gages was not sufficient to protect the gages from the environment.

TABLE E-1. LOADING CONDITIONS OF PANELS CVP1 AND CVP2 FOR THE STRAIN SURVEY

Load Condition	Maximum Load			
	Pressure (psi)	Hoop (lb.)	Frame (lb.)	Long. (lb.)
1a	10.1	8874	2089	0
1b	0	0	0	4667
1c	10.1	8874	2089	4667

TABLE E-2. LOADING CONDITIONS OF PANELS CVP3 AND CVP4 FOR THE STRAIN SURVEY

Load Condition	Maximum Load			
	Pressure (psi)	Hoop (lb.)	Frame (lb.)	Long. (lb.)
1a	8.8	7731	1822	0
1b	0	0	0	12260
1c	8.8	7731	1822	12260

TABLE E-3. CVP1, AIR 1, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.01	1.00	2.03	3.07	4.04	5.06	6.06	7.05	8.10	9.09	10.10
Frame-1	-12.26	214.37	412.52	624.79	825.34	1043.59	1279.62	1464.69	1668.99	1904.09	2098.13
Frame-2	-91.70	202.82	407.85	620.18	862.31	1058.06	1278.67	1460.01	1676.50	1899.61	2081.36
Frame-3	-12.19	192.44	554.02	617.31	838.88	1042.00	1283.46	1455.26	1670.20	1891.87	2079.47
Frame-4	3.53	213.32	423.92	619.33	825.43	1045.79	1271.89	1469.38	1674.07	1890.61	2086.75
Frame-5	36.05	208.19	417.38	621.72	822.94	1041.90	1249.34	1438.50	1659.02	1881.05	2091.29
Frame-6	-17.20	190.24	427.25	625.51	824.26	1062.41	1270.62	1442.19	1686.87	1890.82	2091.56
Frame-7	-80.41	189.50	420.62	622.67	838.93	1065.95	1243.55	1451.10	1687.53	1904.88	2081.34
Frame-8	-40.96	206.30	423.40	630.39	837.80	1059.42	1266.08	1457.91	1673.43	1880.21	2077.11
Frame-9	27.35	196.53	415.47	627.67	838.42	1096.81	1270.21	1454.71	1722.71	1894.46	2071.95
Frame-10	29.97	198.11	415.30	674.01	805.74	1058.43	1265.17	1451.90	1658.89	1907.07	2095.45
Frame-11	-54.76	225.91	414.23	624.72	830.75	1064.13	1269.34	1451.56	1672.07	1924.81	2106.88
Frame-12	-45.96	217.10	444.70	636.19	829.80	1020.42	1280.74	1455.24	1669.16	1875.97	2110.94
Hoop-1	17.07	910.35	1807.35	2648.63	3547.13	4425.91	5334.58	6199.47	7122.46	8000.89	8909.92
Hoop-2	16.59	900.40	1795.26	2690.11	3562.52	4443.00	5312.61	6186.68	7105.48	7976.40	8879.50
Hoop-3	51.59	880.40	1769.54	2655.14	3543.94	4463.61	5321.35	6192.22	7109.76	8000.68	8876.52
Hoop-4	-30.01	892.05	1812.25	2656.23	3535.18	4422.28	5313.26	6180.88	7162.43	7998.98	8907.05
Hoop-5	-16.17	764.98	1789.06	2672.99	3549.09	4446.45	5315.96	6186.28	7122.53	7997.11	8872.58
Hoop-6	186.80	900.23	1792.50	2681.05	3550.62	4433.93	5326.74	6164.47	7131.25	7995.59	8892.48
Hoop-7	-50.80	894.19	1791.74	2751.31	3542.70	4433.30	5305.84	6188.27	7120.48	7990.66	8885.45
Hoop-8	5.81	871.58	1788.78	2669.17	3541.81	4466.94	5273.35	6167.92	7130.30	8011.49	8883.68
Hoop-9	9.75	874.63	1773.75	2663.94	3551.96	4458.89	5287.19	6173.12	7111.26	8004.07	8889.83
Hoop-10	-1.13	887.03	1787.53	2659.21	3543.21	4449.68	5317.73	6201.47	7122.69	8007.86	8876.92
Hoop-11	-39.94	899.85	1782.06	2664.45	3546.48	4431.07	5309.77	6167.55	7122.55	8007.58	8887.33
Hoop-12	44.86	888.31	1786.99	2646.94	3551.01	4440.96	5323.15	6197.30	7117.17	8000.16	8896.37
Hoop-13	76.73	907.53	1760.22	2620.51	3547.18	4430.07	5327.44	6164.86	7122.17	8020.34	8909.49
Hoop-14	-67.07	902.15	1781.56	2676.07	3540.40	4457.62	5337.21	6186.37	7133.67	8028.97	8900.31
Long-1	2.74	-10.99	-7.24	5.24	-7.24	-7.24	31.47	2.74	7.74	8.99	2.74
Long-2	-1.46	108.13	11.79	-18.32	34.67	-12.30	-15.92	3.36	51.53	-14.71	-15.91
Long-3	10.28	-1.24	-14.05	-19.17	7.72	17.97	17.97	-21.73	1.32	14.13	-34.53
Long-4	-18.09	-15.56	-18.09	91.79	-5.46	141.03	-7.99	-28.19	-20.61	17.27	-0.41
Long-5	-48.59	-1.41	-37.15	31.47	-22.86	60.06	100.11	-52.88	-47.16	14.31	128.68
Long-6	-28.79	26.49	-28.79	130.80	-13.71	-26.28	51.64	83.04	-23.77	-23.77	22.73
Long-7	85.01	157.31	-35.10	-24.07	103.39	35.98	206.38	89.91	21.28	9.02	-27.75
Long-8	-48.48	17.97	32.74	-16.49	8.13	-18.95	-2.95	-0.49	19.20	4.44	-20.18
SG1	-97.46	-196.03	-163.27	-141.63	-58.45	33.52	149.71	196.44	313.35	378.00	474.51
SG2	8.06	50.20	102.61	154.27	209.42	269.10	331.11	386.09	450.04	507.16	569.76
SG3	-74.91	-167.83	-148.95	-132.59	-70.34	13.59	111.12	155.38	268.88	325.23	413.16
SG4	5.13	57.86	110.98	167.55	221.57	281.21	341.55	397.59	461.14	519.32	580.79
SG5	-24.99	-200.18	-156.64	-118.00	-60.28	34.60	107.30	154.99	273.87	331.33	419.17
SG6	3.30	47.42	104.57	161.70	218.83	283.60	345.58	407.30	479.09	543.68	612.84
SG7	-10.16	-228.65	-172.99	-122.67	-82.85	5.49	85.69	142.27	258.54	321.68	405.13
SG8	8.78	54.13	112.18	169.69	223.10	282.07	338.95	395.34	458.45	514.64	574.49
SG9	-67.58	-162.92	-131.35	-123.44	-49.41	38.20	133.56	178.20	297.79	352.69	447.61
SG10	463.35	1593.65	6315.49	4973.32	5092.95	5435.31	5018.59	5784.11	6184.11	6413.93	5956.13

TABLE E3. CVP1, AIR 1, LOAD CONDITION 1a (Continued)

SG11	-31.76	-212.99	-183.10	-157.01	-111.65	-38.00	26.81	58.40	163.63	207.51	282.95
SG12	35.01	118.25	202.67	285.85	370.37	462.65	555.11	647.76	751.32	846.59	947.15
SG13	25.69	-181.45	-131.79	-80.02	-36.46	50.19	129.45	180.52	298.98	360.83	446.16
SG14	22.16	82.11	151.28	217.67	278.63	342.86	403.60	461.72	529.33	587.53	648.65
SG15	-49.75	-79.49	-19.66	-9.21	45.04	115.08	171.89	205.48	287.65	323.77	395.62
SG16	-119.00	-102.16	-34.43	-1.65	59.14	118.08	175.43	228.72	288.97	340.95	399.13
SG17	-49.93	-87.94	-51.78	-12.49	26.81	72.69	124.50	162.87	240.18	282.02	348.45
SG18	281.67	313.60	362.02	412.50	461.18	513.33	567.26	619.75	683.88	735.70	795.58
SG19	33.65	-37.52	1.66	52.24	99.69	163.66	219.63	259.36	339.38	386.07	455.73
SG20	84.75	105.54	147.49	198.05	249.17	305.56	357.70	407.90	468.41	520.58	577.16
SG21	8.28	-8.47	-45.30	-72.91	-100.71	-134.37	-161.30	-191.49	-223.71	-250.76	-280.92
SG22	9.53	22.54	12.83	11.18	8.98	5.86	8.43	6.23	1.83	-0.92	-3.48
SG23	68.94	71.14	43.47	24.57	3.30	-22.92	-42.18	-64.56	-92.43	-113.33	-137.70
SG24	-14.68	-11.38	-26.06	-31.01	-37.43	-44.40	-44.96	-51.75	-60.56	-67.16	-73.94
SG25	1574.13	1575.20	1550.68	1536.36	1515.58	1490.26	1471.39	1446.92	1414.91	1390.12	1361.29
SG26	535.12	535.36	522.44	521.28	516.70	512.93	514.73	509.23	502.25	498.17	490.41
SG27	2140.69	602.48	1048.64	136.25	2595.56	438.19	599.30	32.79	397.73	860.63	594.49
SG28	-11.63	-14.58	-30.03	-30.03	-35.18	-41.06	-44.75	-52.11	-63.15	-69.77	-74.91
SG29T	14.27	132.66	247.81	352.28	445.43	541.58	630.15	718.00	808.78	894.71	981.72
SG29-45	34.88	91.00	147.51	198.86	243.54	290.81	327.71	364.84	409.07	447.66	481.44
SG29L	-64.23	-61.99	-72.76	-82.77	-89.22	-100.55	-109.46	-119.89	-131.20	-144.45	-157.61
SG30T	25.05	104.94	194.21	276.47	355.28	438.20	516.60	596.33	681.18	760.10	842.30
SG30-45	7.05	58.14	98.79	139.15	174.66	213.10	243.22	277.59	314.20	348.58	378.32
SG30L	6.73	17.59	8.06	3.57	-3.53	-12.05	-18.97	-28.59	-40.00	-51.00	-63.54
SG31T	96.38	180.95	252.49	328.97	404.60	482.66	560.09	644.44	730.62	816.35	901.70
SG31-45	99.91	139.94	171.37	205.41	243.04	278.93	309.82	348.69	385.55	424.02	458.63
SG31L	105.06	100.30	77.95	66.94	53.18	38.87	30.26	15.22	-3.30	-18.52	-35.21
SG32T	11.22	102.06	206.54	299.06	386.10	476.72	560.25	646.20	737.47	822.42	910.10
SG32-45	8.04	56.45	102.70	143.80	186.74	227.44	258.94	297.86	334.05	371.11	405.23
SG32L	-0.18	1.60	-18.88	-28.54	-42.15	-57.21	-65.57	-81.19	-100.48	-116.42	-134.13
SG33T	14.02	95.61	198.46	291.40	379.19	470.91	555.55	643.90	737.01	824.54	914.07
SG33-45	3.99	46.92	92.85	131.00	174.67	213.07	250.61	289.15	325.80	361.64	394.67
SG33L	4.95	9.31	-9.63	-18.58	-31.19	-45.91	-51.66	-67.95	-87.08	-102.89	-119.40
SG34T	22.96	105.52	204.58	290.33	368.86	453.58	529.00	610.15	694.83	773.66	854.35
SG34-45	41.59	98.82	144.39	183.18	232.43	269.03	307.15	339.64	375.19	407.83	438.89
SG34L	10.68	13.80	-12.01	-22.47	-26.96	-44.38	-47.28	-66.72	-85.89	-101.88	-118.33
SG35T	16.34	80.77	174.30	267.28	359.82	457.40	549.59	644.80	745.41	838.20	933.85
SG35-45	18.65	54.04	104.84	153.51	205.58	258.24	304.89	354.40	403.91	452.64	498.42
SG35L	25.72	31.81	24.95	26.82	22.88	20.41	21.24	18.26	11.12	8.51	2.79
SG36T	0.92	105.31	212.48	307.70	396.54	487.47	571.88	658.15	747.72	831.17	916.06
SG36-45	20.53	66.64	117.07	161.43	203.37	247.50	286.45	323.40	360.39	397.43	433.14
SG36L	40.14	25.84	9.40	2.15	-10.77	-20.34	-28.28	-41.16	-55.23	-66.40	-78.67

TABLE E-4. CVP1, AIR 1, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.01	1.01	2.03	3.03	4.03	5.04	6.06	7.08	8.07	9.09	10.10
Frame-1	18.69	206.26	411.63	632.16	846.95	1043.93	1256.16	1469.55	1683.16	1883.61	2085.73
Frame-2	3.79	210.29	415.63	627.57	835.43	1047.94	1256.73	1468.44	1671.64	1898.06	2060.16
Frame-3	68.43	215.24	415.84	628.11	826.10	1042.35	1270.38	1475.53	1677.49	1883.48	2091.13
Frame-4	20.71	206.92	416.12	618.09	817.75	1042.68	1269.09	1458.74	1665.84	1892.52	2089.85
Frame-5	-24.39	187.99	483.76	642.90	832.51	1047.41	1265.52	1477.89	1678.39	1889.87	2090.94
Frame-6	3.17	205.99	404.30	636.25	826.93	1054.31	1249.19	1458.80	1663.57	1887.62	2104.79
Frame-7	75.39	224.55	416.63	626.69	834.79	1052.63	1253.25	1466.57	1651.93	1881.09	2093.72
Frame-8	40.72	217.23	421.14	615.48	844.00	1047.84	1268.89	1463.03	1667.11	1882.26	2089.49
Frame-9	14.13	207.62	402.70	635.16	835.94	1034.42	1246.87	1444.27	1669.13	1891.31	2103.70
Frame-10	-24.83	205.60	409.59	624.66	839.49	1029.63	1259.37	1450.14	1673.24	1867.80	2099.22
Frame-11	42.04	206.18	418.80	637.24	819.97	1044.35	1241.66	1442.96	1667.66	1882.84	2091.95
Frame-12	25.23	224.63	419.94	621.19	816.99	1046.81	1264.53	1458.67	1680.09	1898.79	2085.33
Hoop-1	5.93	884.18	1773.92	2657.92	3523.34	4421.75	5316.00	6209.37	7103.89	7984.97	8865.34
Hoop-2	3.70	879.97	1778.69	2642.24	3527.89	4424.15	5318.14	6202.03	7079.70	7999.29	8888.71
Hoop-3	-47.80	885.54	1767.77	2678.22	3546.07	4415.25	5347.97	6212.36	7092.01	7987.28	8897.82
Hoop-4	-30.01	689.28	1756.48	2672.96	3533.68	4453.43	5333.71	6207.53	7086.21	7994.20	8892.18
Hoop-5	49.24	1302.92	1779.72	2652.44	3547.57	4410.50	5325.31	6226.14	7094.50	7984.83	8883.79
Hoop-6	225.90	808.79	1786.91	2654.97	3541.66	4418.59	5324.88	6211.66	7095.86	8001.97	8879.43
Hoop-7	24.00	864.83	1786.26	2649.15	3555.82	4443.80	5327.74	6219.90	7105.88	7989.63	8883.62
Hoop-8	-8.98	915.70	1781.56	2654.11	3549.56	4444.75	5325.14	6227.72	7085.92	7988.50	8877.17
Hoop-9	-101.30	958.10	1764.83	2652.76	3537.75	4431.58	5321.78	6211.97	7102.16	7994.17	8885.25
Hoop-10	11.56	901.26	1773.21	2649.88	3543.57	4429.74	5310.48	6223.84	7093.70	7985.31	8870.56
Hoop-11	144.67	940.19	1771.16	2643.88	3552.38	4444.00	5335.61	6223.54	7083.78	7990.17	8878.98
Hoop-12	35.60	875.07	1764.93	2661.50	3521.71	4433.55	5308.32	6197.92	7087.52	7999.36	8882.43
Hoop-13	24.82	885.02	1767.81	2664.74	3451.13	4422.66	5320.02	6224.80	7085.09	7982.46	8895.54
Hoop-14	29.83	886.97	1796.65	2660.89	3563.11	4435.25	5337.21	6224.26	7118.76	7975.99	8863.92
Long-1	-4.75	474.68	1313.41	1398.85	1876.75	2577.16	2800.92	3261.99	3752.01	4205.21	4674.65
Long-2	114.15	467.02	1001.53	1398.23	1886.91	2442.10	2803.67	3268.91	3723.49	4189.56	4655.63
Long-3	-47.34	471.27	929.52	1392.25	1870.89	2319.08	2803.40	3262.20	3743.03	4192.50	4668.85
Long-4	56.42	537.56	928.86	1409.21	1869.87	2330.81	2793.29	3259.65	3711.10	4190.98	4646.87
Long-5	55.77	520.40	936.23	1405.62	1869.96	2324.58	2800.93	3265.93	3738.48	4198.82	4664.88
Long-6	-28.79	467.53	942.31	1397.63	1863.52	2327.18	2797.39	3261.42	3730.71	4206.93	4668.07
Long-7	2.89	540.91	947.61	1402.76	1879.23	2353.52	2777.84	3256.18	3744.53	4196.76	4656.35
Long-8	42.58	464.67	928.41	1387.88	1879.83	2327.76	2801.82	3251.35	3719.55	4198.24	4656.02
SG1	-99.68	-206.33	-167.14	-85.21	5.86	110.12	185.96	265.34	346.33	409.00	466.31
SG2	15.39	52.77	99.88	151.91	203.95	257.79	312.73	367.95	422.92	476.42	530.98
SG3	-61.34	-179.62	-196.72	-139.40	-60.61	17.08	90.71	143.81	202.40	247.21	287.95
SG4	15.57	60.07	104.03	155.30	206.94	258.93	313.65	366.64	419.75	473.04	526.10
SG5	-14.10	-197.29	-182.61	-120.11	-33.55	50.12	136.15	187.86	247.87	300.56	350.97
SG6	13.55	47.98	94.33	146.88	199.44	254.54	312.55	370.49	429.28	488.80	548.99
SG7	11.72	-216.25	-183.03	-107.85	10.99	111.50	224.44	285.28	359.80	424.62	489.94
SG8	20.35	56.20	103.22	155.62	208.71	262.51	318.95	372.70	426.25	480.26	535.04
SG9	-51.81	-175.44	-184.65	-122.72	-45.74	40.78	113.51	173.79	233.31	282.91	324.03
SG10	5607.23	5679.15	5856.62	5477.32	5530.16	5200.09	5840.92	5362.08	5972.00	5682.09	5319.72

TABLE E-4. CVP1, AIR 1, LOAD CONDITION 1c (Continued)

SG11	-33.61	-217.08	-217.47	-171.35	-94.76	-18.73	56.19	97.34	145.45	186.41	221.10
SG12	62.03	130.24	199.02	276.07	352.07	433.63	519.48	605.40	693.70	783.09	872.17
SG13	48.23	-169.35	-131.57	-59.78	55.29	159.62	274.05	333.61	408.55	475.70	538.91
SG14	37.05	86.34	145.75	205.01	264.37	323.88	385.02	441.21	497.63	553.88	609.69
SG15	-38.54	-83.22	-60.17	0.78	52.33	125.55	168.97	232.06	278.80	326.32	362.17
SG16	-110.24	-99.99	-63.73	-10.62	40.65	93.20	146.47	199.97	247.77	298.86	346.07
SG17	-47.93	-81.71	-56.19	-29.38	25.16	86.48	138.79	186.56	236.51	286.64	327.18
SG18	285.51	313.48	356.97	396.86	447.47	501.65	555.00	607.78	658.94	713.04	763.57
SG19	44.52	-39.55	13.80	58.50	124.72	200.67	271.82	314.92	370.10	427.12	471.41
SG20	89.93	105.19	153.58	197.15	245.33	301.39	354.87	403.67	456.08	510.34	559.93
SG21	11.05	14.36	14.92	7.18	4.05	4.42	-2.21	-4.42	-5.34	-7.00	-8.84
SG22	11.55	48.93	75.33	94.20	118.39	144.95	163.99	188.22	212.23	232.75	256.00
SG23	68.59	100.87	117.39	123.98	132.05	142.85	147.42	156.07	165.06	172.39	181.00
SG24	-15.05	18.54	48.64	71.02	99.28	128.08	150.27	175.63	200.58	223.34	248.09
SG25	1586.37	1622.98	1654.98	1676.15	1698.41	1722.15	1741.11	1763.35	1784.51	1803.83	1824.80
SG26	539.68	571.43	605.98	634.18	664.82	697.42	722.48	750.33	777.67	803.72	830.06
SG27	606.65	2752.89	335.76	1237.13	6854.88	490.36	587.15	924.09	1095.12	4536.32	868.52
SG28	-7.95	20.75	53.87	78.15	106.86	134.08	158.35	178.25	201.80	229.77	248.88
SG29T	6.95	121.71	221.48	316.08	403.38	487.16	571.28	654.31	733.92	814.63	894.16
SG29-45	22.80	87.90	144.46	211.38	265.13	312.94	365.22	416.34	464.97	513.27	563.11
SG29L	-62.46	-50.02	-26.32	-2.93	22.06	49.74	66.02	88.36	108.64	128.68	150.08
SG30T	19.57	90.34	160.03	234.62	303.93	372.65	444.10	515.87	585.91	658.14	729.20
SG30-45	-4.72	69.79	119.88	173.62	224.71	270.69	319.31	367.77	413.77	461.15	509.90
SG30L	6.69	51.37	86.80	110.16	137.20	165.73	184.91	207.58	229.21	248.82	270.38
SG31T	98.79	176.90	239.41	301.91	365.08	433.57	505.80	580.31	654.71	731.90	809.02
SG31-45	96.23	158.03	208.71	254.07	300.83	348.29	396.29	447.90	497.41	549.13	601.88
SG31L	104.54	132.60	159.03	176.99	199.91	222.81	238.56	257.13	275.47	290.70	307.36
SG32T	10.31	91.50	174.95	258.41	336.66	413.41	491.79	569.96	645.83	724.27	802.26
SG32-45	3.84	72.91	133.78	189.32	243.04	293.45	343.85	395.45	446.25	499.24	550.35
SG32L	-3.34	31.20	59.48	78.76	101.49	124.75	140.04	158.67	176.31	190.42	206.76
SG33T	10.59	84.86	169.42	251.34	330.66	409.06	488.19	567.28	644.45	724.00	803.46
SG33-45	-4.77	61.75	121.63	179.42	236.71	289.49	340.55	394.25	444.39	494.48	545.99
SG33L	0.64	38.08	65.61	89.23	112.36	135.14	152.06	172.09	191.08	206.77	223.54
SG34T	23.61	92.98	171.54	244.88	317.41	388.71	460.91	532.39	602.86	675.35	748.08
SG34-45	34.46	111.35	175.66	235.07	296.56	352.66	407.28	463.22	515.96	569.67	622.57
SG34L	0.64	38.38	59.71	82.68	104.14	127.10	144.33	166.64	187.19	206.31	225.04
SG35T	6.92	65.90	141.61	226.50	310.90	396.09	482.31	570.38	655.51	742.71	829.36
SG35-45	8.30	61.01	121.49	186.85	247.31	305.96	366.61	429.21	488.44	548.40	609.03
SG35L	26.69	60.28	92.20	117.18	143.36	171.86	194.96	219.67	244.15	266.77	289.81
SG36T	-0.37	96.53	185.76	271.83	352.80	432.25	510.04	589.09	665.84	743.51	820.73
SG36-45	14.03	70.27	128.55	190.60	244.00	292.75	342.76	392.98	439.65	486.03	533.10
SG36L	42.44	54.72	77.78	96.06	116.82	137.02	154.60	170.49	187.26	200.60	215.61
SG37T	-66.94	11.63	81.96	156.81	231.36	303.25	376.84	450.48	523.19	595.01	668.51
SG37-45	35.00	65.68	106.84	154.32	206.02	254.54	300.59	348.95	401.60	448.34	490.58
SG37L	10.83	32.01	56.71	83.83	110.10	137.18	160.44	186.23	212.12	231.67	255.77

TABLE E-5. CVP1, AIR 2, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.02	1.02	2.04	3.05	4.04	5.05	6.06	7.06	8.08	9.08	10.08
Frame-1	9.50	206.90	420.22	614.65	827.89	1062.64	1251.99	1406.03	1675.71	1869.98	2096.62
Frame-2	41.49	205.73	426.06	622.09	837.07	1058.15	1249.06	1449.49	1678.03	1870.39	2107.60
Frame-3	-103.78	202.15	405.52	620.95	837.99	1076.44	1230.19	1472.31	1675.20	1866.47	2083.12
Frame-4	6.35	209.29	416.11	628.15	831.43	1059.69	1240.79	1460.66	1703.20	1868.53	2074.89
Frame-5	-47.39	185.18	395.76	616.73	846.19	1047.18	1257.89	1464.28	1674.38	1967.65	2079.42
Frame-6	-7.66	201.52	411.05	610.47	847.16	1064.24	1224.70	1469.24	1671.50	1877.60	2093.51
Frame-7	83.17	218.67	437.32	615.01	833.54	1052.49	1237.42	1463.67	1655.66	1864.41	2092.91
Frame-8	22.67	202.75	410.83	612.41	818.65	1044.25	1239.29	1479.07	1674.28	1881.08	2095.56
Frame-9	-14.55	219.12	413.21	598.92	824.22	1076.17	1244.79	1467.45	1664.18	1874.38	2087.12
Frame-10	14.41	198.00	442.32	604.37	843.41	1051.86	1253.87	1466.18	1694.19	1873.51	2089.79
Frame-11	-36.24	215.62	396.79	627.43	810.26	1035.72	1268.40	1462.18	1669.63	1866.49	2045.54
Frame-12	-25.25	218.73	392.29	612.92	822.66	1088.18	1271.11	1474.77	1675.18	1880.30	2079.30
Hoop-1	-38.64	884.35	1783.21	2658.18	3573.13	4429.18	5341.47	6190.18	7115.03	7988.15	8870.91
Hoop-2	27.64	874.62	1789.73	2666.44	3529.38	4431.51	5319.45	6236.40	7088.91	8007.94	8861.09
Hoop-3	9.00	839.58	1810.36	2671.38	3554.59	4431.22	5342.11	6224.16	7113.31	7988.44	8851.67
Hoop-4	14.61	1109.55	1808.53	2667.65	3533.32	4432.99	5318.31	6229.22	7088.07	7980.65	8845.70
Hoop-5	58.59	854.68	1802.15	2678.87	3547.22	4444.14	5339.72	6218.04	7103.84	7969.36	8870.71
Hoop-6	-8.82	855.52	1816.72	2677.59	3537.58	4442.80	5318.76	6199.86	7097.72	7993.99	8858.94
Hoop-7	36.77	894.19	1799.03	2676.78	3540.87	4425.56	5310.78	6195.56	7082.17	7992.71	8883.62
Hoop-8	28.00	908.40	1788.78	2668.91	3519.27	4407.76	5308.75	6204.91	7077.10	7988.50	8891.08
Hoop-9	244.56	894.48	1788.32	2665.50	3529.77	4429.76	5305.62	6156.74	7089.82	7990.53	8867.98
Hoop-10	4.31	894.11	1787.53	2660.75	3533.80	4438.80	5330.63	6223.21	7114.03	7978.06	8869.67
Hoop-11	-34.41	892.28	1979.58	2653.11	3531.36	4495.68	5321.10	6202.62	7093.44	7964.32	8861.48
Hoop-12	-116.36	880.72	1772.17	2683.74	3521.01	4440.96	5328.97	6212.13	7108.34	7984.53	8859.30
Hoop-13	24.82	870.27	1752.81	2627.66	3554.24	4430.07	5318.43	6164.86	7098.50	7982.46	8864.99
Hoop-14	-52.16	879.61	1796.47	2690.71	3540.04	4457.62	5343.06	6216.18	7117.34	7975.99	8863.04
Long-1	-3.50	2.74	0.25	-3.50	-2.25	1.49	2.74	1.49	-4.75	2.74	-3.50
Long-2	-5.07	-15.91	3.36	82.83	134.63	-2.67	-1.46	-8.69	-12.30	-9.89	-5.07
Long-3	20.53	-19.17	-19.17	-6.36	3.88	-2.52	-33.25	25.65	-26.85	-39.65	-34.53
Long-4	40.00	22.32	159.97	156.17	-24.40	-28.19	-28.19	109.46	-18.09	130.91	-7.99
Long-5	1.45	-65.75	-61.46	68.63	127.25	197.30	-19.99	70.07	-30.01	-28.57	-24.28
Long-6	-18.74	3.88	-26.28	20.21	78.01	-37.59	162.17	134.56	85.55	-32.56	-35.07
Long-7	103.39	-25.30	-35.10	31.08	-22.84	72.75	24.95	-13.04	108.29	131.56	4.12
Long-8	-22.64	-5.41	16.74	-5.41	1.97	-16.48	0.74	8.13	-12.79	6.90	-10.33
SG1	-182.69	-212.18	-186.03	-130.47	-28.77	41.23	112.88	188.70	299.76	378.84	440.20
SG2	8.80	55.33	105.38	158.50	215.12	272.45	329.65	386.19	449.44	509.51	566.63
SG3	-104.87	-170.24	-172.13	-131.87	-48.49	14.51	80.44	149.10	246.82	315.41	375.08
SG4	11.17	62.08	114.67	166.84	222.51	280.54	338.44	395.31	455.96	515.08	572.91
SG5	-77.45	-187.93	-161.94	-97.96	-19.13	41.10	105.05	176.47	271.92	342.19	403.78
SG6	5.68	51.64	106.06	161.34	218.85	280.91	342.47	405.75	473.37	539.45	606.07
SG7	-46.87	-214.39	-182.09	-126.89	-55.21	24.53	90.64	165.49	268.04	336.98	400.31
SG8	47.19	91.04	144.49	197.69	252.16	311.85	368.50	425.12	485.84	543.07	601.55
SG9	-106.37	-172.30	-175.48	-126.21	-39.68	31.23	96.81	167.51	272.60	339.20	405.49
SG10	6261.91	6259.82	7083.16	6965.77	7925.05	9034.62	7452.39	8996.29	8499.62	8690.10	7681.41

TABLE E-5. CVP1, AIR 2, LOAD CONDITION 1a (Continued)

SG11	-88.70	-204.75	-191.22	-139.58	-72.54	-19.65	25.53	82.81	168.03	219.88	269.08
SG12	46.30	129.86	208.76	289.54	372.79	462.83	553.69	646.81	745.33	842.76	940.06
SG13	-9.53	-167.77	-132.77	-77.09	-3.66	74.98	137.15	208.97	313.15	384.53	444.87
SG14	30.09	87.06	152.60	214.03	275.22	339.72	400.08	459.25	523.78	584.22	643.16
SG15	-72.40	-85.09	-71.64	-16.73	41.06	98.24	143.11	195.91	275.52	312.59	365.68
SG16	-118.48	-96.31	-54.40	2.56	60.80	123.23	181.29	236.00	295.17	345.99	403.65
SG17	-61.70	-78.03	-40.41	7.90	48.29	99.88	131.29	180.28	247.13	292.57	349.10
SG18	292.07	323.34	374.20	426.66	474.38	529.02	577.11	630.26	691.33	743.62	801.50
SG19	6.25	-39.91	0.74	51.32	115.52	174.18	222.21	273.47	345.97	412.67	453.47
SG20	83.31	102.24	144.21	194.57	249.38	302.31	354.94	407.64	465.23	526.63	573.29
SG21	5.52	-19.52	-49.36	-76.60	-106.43	-139.74	-167.92	-197.34	-227.74	-257.09	-285.79
SG22	13.56	15.39	8.62	11.73	10.45	3.12	2.93	0.55	0.37	-0.73	-6.05
SG23	69.87	60.15	40.54	23.47	1.28	-24.76	-44.93	-67.84	-91.51	-114.46	-137.75
SG24	-16.15	-22.75	-31.20	-31.75	-35.97	-46.79	-51.02	-57.80	-61.66	-67.36	-76.90
SG25	1645.24	1629.81	1613.56	1599.80	1579.38	1553.65	1534.49	1511.01	1484.86	1460.83	1432.35
SG26	538.58	529.17	523.83	524.27	521.89	514.50	512.71	509.31	506.06	500.15	492.21
SG27	1783.29	1518.60	1259.98	1821.50	1337.98	664.08	11269.7	13292.2	9066.53	8665.02	90.53
SG28	11.92	3.08	-1.33	0.14	-7.95	-16.05	-16.79	-23.41	-30.77	-39.61	-49.17
SG29T	3.48	128.84	240.54	341.89	435.41	532.73	623.01	710.90	799.36	886.37	973.23
SG29-45	29.16	89.31	147.63	193.80	236.88	283.73	323.96	363.90	401.38	439.69	479.16
SG29L	-69.88	-73.35	-79.50	-83.70	-89.78	-105.97	-115.82	-126.60	-137.77	-149.67	-162.15
SG30T	13.72	99.65	184.92	266.80	346.17	429.88	510.02	589.63	671.24	752.28	834.51
SG30-45	3.62	50.08	97.39	133.85	167.25	203.80	240.01	275.20	306.15	341.76	375.41
SG30L	4.90	7.06	4.54	3.57	-2.11	-15.07	-22.64	-31.61	-41.97	-51.29	-64.11
SG31T	97.46	177.11	250.07	321.30	393.50	475.97	557.39	639.18	722.11	807.80	895.37
SG31-45	105.95	136.79	174.02	208.78	239.13	275.68	314.59	352.66	388.26	429.47	466.47
SG31L	105.27	91.33	76.86	68.78	56.67	39.06	27.14	13.02	-1.47	-15.59	-34.67
SG32T	-0.73	97.03	196.09	287.73	374.78	465.27	551.63	637.46	724.56	811.48	899.38
SG32-45	16.08	60.66	110.94	154.60	191.14	230.59	270.27	308.40	344.43	384.19	420.52
SG32L	-7.15	-14.16	-27.08	-34.04	-45.41	-63.04	-75.37	-90.34	-104.82	-120.39	-139.90
SG33T	0.18	90.67	189.97	281.35	369.33	461.29	548.95	636.62	725.21	814.34	904.99
SG33-45	-0.46	39.95	85.99	129.82	169.09	210.82	249.97	288.54	327.01	366.47	399.93
SG33L	1.38	-5.37	-18.13	-24.09	-35.60	-51.56	-61.75	-76.65	-89.36	-105.40	-124.30
SG34T	11.92	100.67	194.16	279.40	361.24	443.22	523.27	603.61	682.43	762.89	844.80
SG34-45	36.06	82.29	131.72	178.57	216.05	258.87	290.88	327.06	366.31	405.75	436.14
SG34L	6.97	-9.72	-20.41	-26.60	-40.95	-49.75	-63.60	-80.60	-87.48	-101.87	-122.36
SG35T	3.11	73.17	162.88	255.90	348.41	447.65	542.49	636.98	733.48	829.15	925.25
SG35-45	15.08	44.65	95.32	147.24	194.37	246.37	300.67	350.85	400.57	450.39	497.11
SG35L	21.10	20.69	20.14	22.29	20.46	15.74	14.01	11.58	7.37	4.40	-3.11
SG36T	-3.30	103.48	206.30	300.96	389.25	479.87	566.38	651.06	737.94	823.17	908.83
SG36-45	21.59	59.81	107.01	154.25	195.05	238.07	282.23	320.77	359.21	396.45	430.57
SG36L	35.20	13.79	3.80	-3.57	-13.15	-26.12	-35.61	-45.96	-58.98	-70.00	-85.12

TABLE E-6. CVP1, AIR 2, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.02	1.00	2.02	3.02	4.04	5.05	6.05	7.08	8.07	9.10	10.08
Frame-1	25.65	222.10	419.94	631.03	831.25	1061.91	1248.22	1462.87	1665.65	1862.74	2095.94
Frame-2	-77.76	203.67	437.91	643.79	821.34	1040.03	1253.93	1456.48	1673.08	1880.48	2091.27
Frame-3	-73.96	210.44	412.11	613.27	827.60	1029.38	1255.60	1472.31	1656.60	1897.01	2080.73
Frame-4	-5.06	191.75	415.83	627.30	834.79	1034.83	1262.87	1464.12	1669.00	1871.63	2089.72
Frame-5	29.18	207.31	447.23	640.04	846.11	1049.90	1247.21	1459.11	1669.47	1886.21	2087.36
Frame-6	13.37	235.23	426.10	653.85	836.88	1044.87	1249.87	1470.89	1666.68	1867.04	2087.77
Frame-7	-47.22	220.03	417.97	622.45	826.41	1036.52	1261.05	1472.46	1674.95	1877.81	2066.74
Frame-8	-6.07	207.55	419.04	631.90	837.34	1042.07	1247.42	1451.70	1688.40	1892.75	2095.23
Frame-9	-54.16	222.21	412.76	615.13	844.91	1035.56	1244.29	1474.65	1676.74	1884.49	2078.04
Frame-10	76.92	288.90	421.26	616.98	831.11	1046.24	1234.45	1462.92	1675.59	1883.46	2106.68
Frame-11	-12.03	213.63	421.83	602.66	838.78	1025.13	1273.03	1467.38	1653.06	1881.31	2089.23
Frame-12	37.53	225.27	431.65	603.08	829.33	1032.37	1261.98	1469.78	1672.07	1874.74	2080.69
Hoop-1	-47.92	882.41	1770.03	2650.22	3541.56	4410.61	5334.04	6215.56	7088.33	7977.80	8858.88
Hoop-2	25.80	870.85	1793.24	2676.96	3538.59	4392.85	5328.65	6184.22	7075.31	7990.33	8862.05
Hoop-3	10.77	873.21	1765.82	2658.43	3543.94	4406.38	5345.66	6204.02	7087.76	7989.24	8866.76
Hoop-4	3.45	912.41	1760.02	2655.97	3538.90	4416.26	5312.73	6241.60	7094.80	7985.17	8874.56
Hoop-5	-25.51	940.55	1772.07	2648.43	3526.67	4414.24	5321.04	6208.08	7101.26	7970.15	8854.88
Hoop-6	4.22	874.06	1766.25	2658.43	3541.31	4424.18	5328.07	6210.41	7087.70	7992.92	8852.47
Hoop-7	34.95	859.44	1780.61	2678.07	3544.52	4421.92	5318.08	6224.13	7088.75	7978.92	8869.97
Hoop-8	-38.58	893.60	1788.78	2676.30	3549.21	4429.51	5338.87	6204.29	7091.90	7972.91	8861.49
Hoop-9	144.46	885.38	1757.37	2658.22	3541.04	4416.58	5327.99	6210.73	7084.36	7986.09	8864.34
Hoop-10	16.99	874.17	1774.84	2662.56	3541.40	4411.18	5323.91	6215.35	7085.04	7991.76	8869.67
Hoop-11	-54.71	871.98	1796.83	2664.18	3540.95	4417.71	5310.56	6200.15	7093.44	8017.06	8857.79
Hoop-12	-51.51	882.57	1779.58	2668.91	3528.77	4455.35	5329.50	6204.10	7086.10	7991.15	8881.54
Hoop-13	32.24	877.69	1797.30	2664.74	3554.60	4399.97	5341.20	6216.15	7091.09	7974.24	8872.41
Hoop-14	-29.80	887.06	1811.38	2675.80	3540.40	4434.81	5336.14	6223.01	7109.89	7997.55	8870.49
Long-1	2.74	474.68	947.67	1402.04	1875.69	2328.71	2802.86	3265.09	3728.42	4184.41	4669.19
Long-2	-1.46	463.41	944.94	1403.70	1938.89	2331.30	2787.46	3250.19	3741.64	4198.41	4676.84
Long-3	-1.24	469.99	932.08	1390.42	1872.36	2344.69	2811.80	3252.59	3722.71	4196.76	4663.27
Long-4	58.94	522.41	925.07	1417.48	1873.84	2310.60	2793.99	3284.26	3736.50	4193.92	4659.03
Long-5	-2.84	639.06	919.08	1399.34	1854.42	2336.02	2800.37	3263.85	3735.93	4200.67	4665.84
Long-6	139.58	457.48	923.46	1402.10	1858.68	2333.46	2798.09	3259.51	3720.80	4199.81	4667.60
Long-7	-37.55	451.45	935.36	1403.43	1863.48	2343.71	2807.92	3272.69	3739.73	4188.60	4673.04
Long-8	6.90	462.21	937.03	1384.87	1884.94	2326.53	2808.64	3280.23	3730.74	4220.81	4666.63
SG1	-182.71	-170.43	-132.50	-56.26	29.69	138.18	234.58	302.14	382.43	420.14	520.60
SG2	11.91	56.81	102.44	154.10	206.37	262.06	317.77	371.94	426.22	478.21	535.06
SG3	-127.84	-167.33	-163.29	-121.77	-59.70	25.72	106.72	159.22	228.66	247.92	326.00
SG4	14.65	58.79	104.03	153.47	204.05	258.25	312.46	365.14	418.10	470.61	524.68
SG5	-114.40	-186.51	-152.45	-93.93	-34.48	53.84	140.45	199.60	280.10	310.83	385.79
SG6	6.59	46.16	92.68	143.58	195.45	251.47	308.99	366.97	426.35	485.82	545.20
SG7	-102.00	-191.59	-133.54	-70.40	2.93	102.92	217.18	292.02	404.11	448.93	529.17
SG8	49.03	90.60	139.49	190.15	241.18	294.67	350.33	403.67	459.96	513.27	567.93
SG9	-130.08	-172.52	-158.56	-111.14	-47.04	41.16	124.57	184.24	255.36	277.37	360.44
SG10	8704.65	8361.12	9243.42	9521.40	10589.9	9875.42	9128.92	7999.85	7139.72	6279.63	6453.47

TABLE E-6. CVP1, AIR 2, LOAD CONDITION 1c (Continued)

SG11	-132.43	-206.26	-186.24	-140.31	-91.66	-17.08	61.16	110.18	177.04	192.45	258.58
SG12	53.37	127.46	197.37	271.71	347.51	430.46	514.32	601.58	689.66	778.24	867.49
SG13	-68.26	-145.36	-84.06	-20.43	52.83	159.42	272.90	352.58	457.38	502.13	586.74
SG14	30.19	87.72	149.24	208.99	265.61	325.82	385.69	442.81	500.93	556.02	611.95
SG15	-75.67	-84.65	-50.14	-2.20	50.23	117.46	174.61	236.94	291.45	318.59	385.30
SG16	-113.92	-100.55	-62.45	-11.90	39.56	95.05	147.61	200.50	252.16	299.93	350.50
SG17	-69.42	-75.66	-36.54	0.92	39.30	81.17	142.32	194.62	249.91	282.94	348.33
SG18	294.20	320.98	367.06	412.27	458.11	507.12	561.86	616.02	669.16	719.38	775.56
SG19	-11.96	-34.40	20.42	71.19	126.76	205.12	267.49	336.59	396.40	434.07	504.01
SG20	81.85	100.97	145.67	194.02	243.35	297.04	347.25	404.37	454.98	505.14	560.36
SG21	5.71	10.31	9.21	4.23	1.10	-3.68	-5.52	-9.21	-11.23	-10.31	-12.70
SG22	13.20	47.47	72.40	94.57	120.25	141.68	165.33	187.28	212.59	234.20	256.95
SG23	69.51	97.21	112.62	121.59	131.34	138.11	145.27	152.75	161.57	171.28	178.26
SG24	-19.09	16.33	45.15	70.10	98.75	123.70	149.03	172.67	199.85	223.13	247.75
SG25	1659.39	1696.74	1731.51	1758.20	1787.99	1814.86	1838.23	1861.77	1887.72	1912.18	1932.05
SG26	538.64	572.40	604.88	633.63	665.69	695.35	723.25	749.89	779.69	805.66	831.98
SG27	1205.65	3138.44	1398.38	2640.65	3658.38	812.85	1044.16	2294.31	2425.16	2746.00	2919.70
SG28	15.60	50.93	78.90	107.59	133.38	159.13	184.89	209.14	233.45	253.29	277.61
SG29T	1.28	112.02	212.14	307.30	394.31	479.93	563.77	646.55	725.50	807.23	883.82
SG29-45	30.63	84.25	149.63	210.32	260.97	314.65	364.78	412.27	462.49	512.07	559.14
SG29L	-72.54	-57.30	-29.75	-8.01	17.85	39.45	59.82	79.52	104.01	123.86	146.16
SG30T	11.70	83.21	153.81	226.57	295.94	367.23	437.28	508.87	578.59	650.76	720.32
SG30-45	2.02	62.19	117.82	168.62	217.93	264.42	312.49	358.25	407.72	456.11	501.38
SG30L	3.80	47.11	81.85	107.14	135.53	158.75	181.30	202.29	226.55	247.29	268.39
SG31T	101.55	166.10	228.04	291.87	356.63	425.40	496.19	571.22	644.12	723.95	796.27
SG31-45	106.83	154.24	207.51	254.07	301.99	346.53	395.31	445.47	497.96	552.01	601.21
SG31L	103.45	133.72	158.11	177.90	201.05	220.29	238.82	256.56	276.94	292.87	309.59
SG32T	-3.16	79.68	165.14	247.23	325.18	403.59	480.94	558.91	634.65	713.57	788.96
SG32-45	16.45	77.49	142.73	199.19	253.33	300.64	352.54	403.26	456.12	508.69	558.82
SG32L	-10.40	26.07	52.19	72.76	96.42	116.21	134.86	151.88	171.46	187.11	203.07
SG33T	-3.90	74.61	160.21	242.63	321.01	399.61	478.07	557.33	634.55	714.94	791.45
SG33-45	-10.09	53.54	116.12	172.67	230.11	278.81	332.99	384.85	438.56	489.20	538.70
SG33L	-1.51	34.92	62.08	85.10	108.94	129.67	149.26	168.04	187.96	204.28	221.27
SG34T	4.72	85.15	162.18	235.84	307.38	379.25	450.78	522.62	593.05	666.43	736.10
SG34-45	11.96	98.89	167.64	227.88	288.46	344.57	400.62	456.99	511.97	563.93	616.95
SG34L	-8.99	28.98	54.85	77.13	99.25	120.34	139.83	161.21	182.65	201.06	222.04
SG35T	-0.50	55.46	133.23	217.48	302.03	387.28	473.62	561.58	646.77	735.03	819.05
SG35-45	10.32	53.73	117.37	179.24	239.48	298.50	359.57	420.55	482.39	543.94	602.13
SG35L	19.27	55.02	84.37	110.22	136.57	163.75	187.28	212.05	237.06	261.34	283.84
SG36T	-3.66	87.75	178.06	264.69	345.36	424.83	502.87	581.89	657.97	736.66	811.29
SG36-45	19.39	68.67	127.90	184.60	236.76	287.85	337.82	386.52	435.47	482.78	527.61
SG36L	35.84	52.66	73.29	91.25	110.70	131.23	148.05	164.38	181.81	196.27	211.42

TABLE E-7. CVP1, WATER 1, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.01	1.01	1.96	3.03	4.09	5.04	6.04	7.09	8.06	9.09	10.15
Frame-1	4.33	222.62	427.83	626.41	820.57	1013.93	1271.95	1454.84	1670.20	1868.20	2105.03
Frame-2	67.51	207.67	426.67	635.66	852.35	1031.56	1250.04	1465.78	1698.50	1885.99	2107.51
Frame-3	199.98	207.52	406.28	673.87	840.96	1050.22	1268.97	1466.01	1683.45	1873.27	2096.61
Frame-4	56.33	209.51	406.47	626.12	849.96	1040.23	1262.48	1456.09	1675.27	1878.82	2086.77
Frame-5	66.47	202.65	405.08	642.31	826.80	1043.23	1258.90	1452.80	1665.40	1876.15	2115.47
Frame-6	-67.06	196.66	411.94	640.79	838.12	1048.52	1256.33	1449.35	1671.20	1869.02	2120.32
Frame-7	-208.34	228.89	408.67	631.58	837.82	1041.84	1265.60	1471.10	1672.16	1885.26	2097.83
Frame-8	44.65	212.96	428.68	632.41	847.02	1035.33	1253.68	1452.06	1682.16	1888.15	2093.59
Frame-9	-27.21	243.41	413.68	654.05	858.33	1061.86	1226.18	1447.14	1668.64	1865.86	2107.96
Frame-10	-13.54	191.00	396.46	629.55	856.29	1029.17	1244.16	1468.44	1660.74	1890.91	2101.60
Frame-11	-4.43	232.46	402.70	628.53	836.29	1043.93	1242.01	1464.29	1680.81	1863.26	2106.00
Frame-12	62.53	209.96	444.75	620.90	837.37	1016.95	1266.53	1435.56	1724.59	1870.11	2117.16
Hoop-1	37.49	901.16	1753.32	2696.65	3586.12	4425.91	5326.08	6214.95	7108.75	7951.54	8936.95
Hoop-2	-53.36	885.76	1750.89	2673.28	3580.93	4395.13	5329.96	6218.61	7101.08	7973.51	8893.41
Hoop-3	156.27	882.26	1756.95	2686.82	3577.66	4426.34	5329.16	6219.46	7101.95	7969.53	8928.87
Hoop-4	66.65	858.67	1780.47	2659.69	3583.51	4429.71	5338.23	6250.29	7091.08	7997.92	8917.39
Hoop-5	23.07	963.17	1744.04	2685.80	3586.46	4424.03	5346.66	6229.88	7105.00	7986.70	8924.11
Hoop-6	371.12	872.37	1727.13	2701.27	3587.87	4420.90	5325.68	6222.83	7108.90	7998.25	8951.27
Hoop-7	-65.37	890.63	1769.67	2670.78	3548.17	4449.72	5333.97	6221.72	7100.41	8011.53	8917.44
Hoop-8	-16.38	915.79	1759.02	2683.43	3571.40	4428.63	5338.87	6270.86	7108.11	7987.70	8935.47
Hoop-9	384.72	890.84	1742.63	2668.87	3568.34	4402.96	5318.89	6232.57	7107.62	7976.99	8938.98
Hoop-10	-26.50	892.29	1783.73	2669.55	3563.15	4424.79	5345.65	6244.33	7115.45	7970.02	8913.17
Hoop-11	87.42	888.59	1759.73	2673.14	3566.79	4426.06	5327.17	6231.53	7094.86	7978.29	8933.48
Hoop-12	-18.15	886.28	1771.99	2668.65	3551.01	4417.40	5336.91	6226.33	7109.76	7998.56	8903.78
Hoop-13	-19.68	959.27	1752.63	2679.30	3591.68	4399.09	5348.62	6216.15	7099.92	7952.00	8931.74
Hoop-14	-7.44	916.88	1759.03	2675.53	3577.67	4396.67	5343.60	6230.47	7111.31	7945.38	8922.67
Long-1	-6.00	-1.00	-2.25	-2.25	2.74	-7.24	0.25	2.74	0.25	-13.49	1.49
Long-2	-31.57	98.50	-18.32	32.26	-13.50	25.03	127.40	10.58	-33.98	120.19	74.40
Long-3	0.04	-11.49	-10.20	-3.80	-8.92	73.02	-11.49	62.78	5.16	41.02	-3.80
Long-4	-26.93	-43.35	79.13	50.10	-34.51	-39.55	-40.82	-33.24	-38.29	-39.56	-15.56
Long-5	-20.00	35.76	8.59	34.33	110.10	-17.14	-2.84	12.88	-20.00	-14.28	11.45
Long-6	6.39	57.91	-2.40	1.36	-6.17	2.62	-1.15	6.39	0.11	5.13	10.16
Long-7	4.12	-0.78	-4.46	-5.69	29.86	5.34	0.44	70.29	-6.91	-3.24	55.58
Long-8	49.96	80.73	-7.87	8.13	0.74	-7.87	-7.87	-0.49	84.42	-2.95	-7.87
SG1	205.38	38.15	89.83	148.64	217.92	307.27	409.92	441.25	531.05	611.98	674.89
SG2	15.02	50.44	100.64	158.72	217.37	270.58	333.50	389.17	448.52	510.76	576.84
SG3	249.00	16.73	56.04	114.26	178.56	256.68	351.53	378.13	459.48	530.32	590.66
SG4	8.61	51.51	106.08	166.50	226.58	280.51	342.10	399.76	458.34	520.00	586.58
SG5	262.42	34.36	76.47	112.03	182.22	273.62	364.78	396.94	480.52	548.25	618.42
SG6	8.06	46.38	100.22	157.90	218.89	275.93	342.84	405.08	469.71	540.53	617.54
SG7	342.15	71.66	97.45	147.43	219.59	316.57	414.55	446.41	527.90	593.37	669.62
SG8	16.60	56.71	108.70	167.91	227.37	283.75	345.81	402.50	460.92	521.91	587.86
SG9	271.84	41.19	78.11	139.10	203.77	283.96	383.40	414.80	500.04	573.64	636.74
SG10	3277.73	28278.1	18831.0	13092.5	12758.4	35893.0	5015.66	17051.9	24541.3	24445.3	10814.6

TABLE E-7. CVP1, WATER 1, LOAD CONDITION 1a (Continued)

SG11	258.53	27.21	55.49	80.82	141.81	224.12	301.92	321.70	394.58	448.89	497.88
SG12	29.06	116.04	197.98	285.80	373.56	459.85	554.52	648.16	741.89	844.30	953.90
SG13	373.25	111.04	134.04	186.15	257.99	350.39	445.52	479.10	557.26	623.51	697.59
SG14	26.28	78.99	141.40	210.64	277.84	338.20	405.39	465.39	526.40	588.80	655.56
SG15	67.49	-5.27	17.01	77.60	126.37	179.56	240.72	281.99	334.39	401.22	441.30
SG16	-100.15	-90.18	-48.36	15.02	74.18	125.40	187.52	240.17	294.12	348.11	405.81
SG17	38.00	-33.08	1.65	40.59	95.50	151.66	213.92	251.48	310.91	372.21	420.31
SG18	276.33	293.25	340.06	396.71	454.26	505.10	562.12	616.01	672.29	729.17	785.10
SG19	166.44	75.85	101.40	156.57	210.66	272.17	337.36	377.79	431.66	493.04	544.30
SG20	98.19	117.62	156.01	206.57	260.09	308.93	367.07	419.29	471.49	527.70	584.45
SG21	2.95	-17.88	-44.76	-76.61	-107.37	-137.33	-162.77	-193.04	-223.32	-252.56	-278.22
SG22	6.96	4.04	2.38	4.77	2.20	0.18	2.38	-0.55	-2.20	-2.20	-1.28
SG23	58.87	60.03	39.26	16.14	-9.17	-31.21	-52.64	-74.49	-99.10	-122.02	-142.50
SG24	-10.83	-13.96	-21.85	-27.17	-34.88	-41.15	-43.13	-52.32	-60.05	-64.81	-69.37
SG25	1257.43	1250.84	1233.46	1210.76	1178.56	1152.55	1126.26	1100.58	1072.38	1051.18	1030.60
SG26	546.66	542.56	536.23	533.37	524.19	518.42	514.36	508.88	501.32	497.55	493.08
SG27	2492.21	17296.1	1528.36	2504.10	8171.85	3723.29	5327.91	1749.63	2985.54	3101.10	3837.13
SG28	-95.54	-93.41	-98.52	-99.24	-107.33	-117.01	-113.20	-125.76	-135.37	-138.29	-143.38
SG29T	1.28	117.42	225.76	334.45	435.86	520.54	612.21	705.47	789.93	877.67	973.86
SG29-45	11.90	73.73	130.30	183.49	233.12	280.63	316.45	364.07	395.97	438.08	475.08
SG29L	-48.28	-49.88	-58.51	-62.71	-73.28	-80.90	-88.91	-102.96	-116.86	-125.36	-145.38
SG30T	24.69	96.09	176.35	263.20	347.88	420.14	501.24	583.58	661.53	743.36	833.14
SG30-45	5.64	44.58	88.66	131.58	168.47	205.78	237.40	277.24	307.13	343.24	376.98
SG30L	15.72	23.80	19.99	16.77	6.97	2.02	-6.87	-15.54	-28.16	-38.79	-56.64
SG31T	70.32	160.45	228.61	304.45	382.94	456.12	537.63	626.31	708.75	797.03	894.73
SG31-45	90.18	126.55	157.86	191.07	221.06	257.10	294.96	336.54	372.43	411.25	454.14
SG31T	118.66	108.31	94.31	84.38	67.87	53.98	43.28	28.62	10.64	-7.89	-30.26
SG32T	6.51	94.33	186.69	283.94	377.61	458.67	545.59	635.09	718.54	808.25	905.16
SG32-45	-26.13	15.91	61.79	107.11	143.48	181.66	221.66	261.06	296.24	334.58	373.34
SG32L	13.75	15.27	4.22	-4.26	-19.43	-33.12	-44.67	-59.22	-77.72	-98.15	-123.16
SG33T	15.17	91.22	181.71	278.84	371.24	452.31	541.26	631.87	717.72	809.45	907.65
SG33-45	8.03	58.18	100.05	148.53	187.57	224.67	262.40	302.57	338.10	372.92	408.79
SG33L	15.74	18.37	7.39	-1.74	-12.66	-20.94	-34.23	-46.91	-64.55	-84.78	-108.82
SG34T	33.42	107.52	192.78	283.08	367.46	443.57	523.22	604.30	682.25	764.49	850.31
SG34-45	50.18	100.26	147.52	197.63	236.67	267.30	302.25	341.15	373.07	407.43	443.93
SG34L	17.52	13.22	6.65	-4.04	-13.03	-27.54	-40.35	-51.15	-69.11	-86.02	-102.58
SG35T	50.33	67.79	147.34	242.81	341.29	430.90	525.18	625.22	718.21	815.11	917.00
SG35-45	47.31	56.21	100.94	152.77	201.01	246.12	296.09	349.41	397.04	445.76	499.62
SG35L	44.67	51.08	50.65	50.59	48.39	45.14	42.02	39.93	35.36	31.83	27.24
SG36T	3.48	91.67	191.31	296.62	392.81	473.67	562.90	652.37	734.68	821.22	912.22
SG36-45	20.99	65.93	110.01	159.46	203.34	240.28	280.26	322.56	358.67	393.96	434.97
SG36L	40.24	42.52	26.96	11.18	-0.50	-7.39	-20.07	-31.18	-44.26	-55.67	-69.25

TABLE E-8. CVP1, WATER 1, LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.09	0.02	-0.02	-0.03	0.00	0.03	0.03	0.00	0.04	-0.01	0.01
Frame-1	28.98	10.55	-29.98	-4.13	2.49	-0.41	-5.36	11.61	-5.38	0.87	13.92
Frame-2	50.82	37.32	8.52	-252.12	-69.89	26.28	2.17	-36.36	7.38	93.54	-13.16
Frame-3	193.61	192.44	-242.63	117.79	38.56	-10.70	137.11	121.43	-1.92	-96.91	56.80
Frame-4	24.14	138.41	82.33	80.62	70.01	48.15	50.09	13.63	122.47	-33.32	2.15
Frame-5	58.41	129.64	-204.27	-111.09	43.92	137.64	41.24	3.02	110.24	-16.36	122.66
Frame-6	6.29	-118.69	33.34	-15.86	2.48	62.36	-56.30	30.13	-12.19	39.96	66.36
Frame-7	152.40	46.10	-189.17	19.27	-41.32	74.76	90.44	-99.25	78.49	41.68	-140.22
Frame-8	121.12	-38.47	32.83	-25.69	-15.67	-47.71	-25.15	55.55	66.20	-153.07	-42.21
Frame-9	160.38	-27.68	-18.33	-37.53	-140.70	-173.08	-73.47	95.47	101.12	2.65	106.34
Frame-10	-76.53	85.84	-120.07	-216.47	7.06	59.38	-55.81	-166.22	80.33	59.03	-40.15
Frame-11	75.55	-133.55	6.04	-154.67	83.52	46.85	150.24	-15.71	-12.12	-175.02	-33.98
Frame-12	47.76	87.99	81.76	-89.45	17.49	121.96	84.09	44.07	113.61	-136.12	-116.39
Hoop-1	2.22	78.34	89.50	4.07	28.22	20.79	-33.07	-12.64	98.80	69.07	-14.50
Hoop-2	-95.71	-64.40	-79.15	82.88	-44.17	-27.60	57.10	-69.94	64.47	-27.59	-16.55
Hoop-3	149.19	150.93	135.00	76.44	-47.80	88.86	32.07	56.91	28.52	32.06	-38.92
Hoop-4	142.86	-28.14	111.27	163.33	310.19	100.12	-28.15	-2.12	25.76	-70.90	-57.89
Hoop-5	99.69	13.73	-44.20	8.13	8.13	-59.15	-23.64	-59.14	-42.33	23.08	-18.03
Hoop-6	-3.23	-49.78	253.84	-55.39	69.42	235.21	171.87	-3.23	-92.65	-103.81	192.35
Hoop-7	-103.69	-28.89	-41.67	-74.51	-36.20	-7.01	76.91	-47.14	9.41	-61.73	177.23
Hoop-8	20.61	20.61	-8.98	-8.98	20.61	72.39	79.79	72.39	-68.17	42.80	5.81
Hoop-9	-101.28	47.98	166.29	78.92	-39.39	291.89	-103.11	-101.28	266.43	138.99	2.47
Hoop-10	-26.50	24.24	-4.75	-39.18	24.24	0.68	33.30	9.74	-2.94	22.43	6.12
Hoop-11	139.10	-67.64	-99.01	179.71	122.49	-65.78	-17.79	-80.55	-4.87	-51.02	246.18
Hoop-12	59.68	-105.26	-45.94	-83.01	-90.42	-64.48	-16.30	59.68	46.72	154.19	-12.59
Hoop-13	69.31	32.24	24.82	-41.92	17.40	-4.84	-79.01	-79.00	24.82	-93.83	-41.93
Hoop-14	-14.89	164.01	74.55	89.46	-37.25	104.36	-37.26	-14.89	-52.16	0.01	96.92
Long-1	-15.99	454.75	946.61	1389.97	1869.45	2315.21	2797.46	3308.20	3708.68	4159.43	4676.83
Long-2	50.33	458.63	917.43	1406.53	1859.39	2312.26	2803.95	3273.73	3734.70	4189.98	4673.42
Long-3	0.04	475.16	941.23	1447.18	1862.12	2320.59	2813.93	3281.41	3745.96	4208.28	4665.94
Long-4	137.25	374.69	906.31	1481.06	1854.90	2272.94	2830.20	3317.75	3774.62	4212.87	4638.95
Long-5	15.74	664.86	945.00	1392.61	1854.42	2330.54	2786.91	3303.11	3737.43	4210.68	4658.66
Long-6	12.67	461.30	921.14	1412.57	1829.78	2322.38	2785.11	3286.56	3759.98	4199.81	4631.30
Long-7	-2.01	283.57	924.51	1402.62	1847.55	2332.92	2833.28	3286.83	3722.84	4211.89	4660.96
Long-8	75.82	472.10	891.68	1402.51	1867.72	2348.92	2825.48	3304.27	3746.99	4212.20	4628.64
SG1	184.62	202.65	240.17	247.45	225.92	201.51	190.23	200.33	193.56	207.21	204.22
SG2	16.32	13.02	9.72	6.42	3.48	1.47	-3.67	-7.15	-11.37	-15.95	-19.27
SG3	196.62	203.29	228.96	218.07	181.95	138.20	105.62	92.77	78.15	79.77	72.27
SG4	9.34	0.92	-2.93	-10.08	-12.46	-15.94	-22.53	-28.39	-32.27	-36.65	-42.18
SG5	196.15	211.60	240.71	235.22	207.69	180.55	155.47	138.36	136.67	132.34	143.87
SG6	9.89	0.00	-6.96	-11.72	-16.68	-21.62	-29.31	-36.64	-42.54	-48.20	-53.18
SG7	243.10	286.24	350.64	361.74	363.35	380.17	363.87	352.36	359.32	394.32	438.19
SG8	13.22	6.45	2.97	-2.65	-5.22	-9.15	-15.73	-21.31	-24.54	-29.93	-32.24
SG9	220.75	224.12	239.68	243.30	198.91	158.64	124.57	113.37	92.70	92.65	86.27
SG10	14978.5	23165.8	20950.0	12444.8	22631.7	16631.6	11761.1	10208.2	35488.0	24749.9	31567.1

TABLE E-8. CVP1, WATER 1, LOAD CONDITION 1b (Continued)

SG11	194.40	209.53	233.72	227.61	200.51	175.68	148.22	133.91	134.23	128.83	140.68
SG12	34.31	20.46	10.50	3.26	1.74	-1.70	-10.96	-19.95	-22.21	-33.72	-38.83
SG13	279.29	320.49	376.63	390.48	395.36	413.88	394.71	381.37	389.50	424.97	468.30
SG14	23.55	14.94	9.67	5.68	4.90	2.43	-4.99	-11.32	-14.31	-19.89	-21.46
SG15	62.17	54.39	34.20	82.88	51.31	34.48	35.56	35.38	24.22	12.89	21.52
SG16	-104.80	-113.26	-136.68	-126.03	-136.52	-139.99	-139.37	-143.60	-149.06	-158.47	-154.99
SG17	21.49	21.13	29.21	29.94	18.56	8.64	1.47	-0.92	-3.86	-4.59	-2.02
SG18	276.34	269.64	267.72	265.24	261.26	255.96	251.71	248.34	245.01	241.44	238.93
SG19	134.90	147.46	139.87	156.22	160.70	177.43	164.10	153.26	166.30	171.19	188.05
SG20	96.05	94.05	78.93	87.01	89.07	95.32	89.75	85.90	89.49	82.82	83.97
SG21	2.95	29.30	57.84	84.17	106.13	137.81	165.36	194.11	216.06	246.90	270.47
SG22	8.43	37.60	66.19	88.73	114.44	148.54	172.66	199.99	224.59	251.26	277.10
SG23	58.35	98.01	134.86	166.57	196.01	233.79	264.67	296.61	322.98	355.67	384.35
SG24	-10.65	29.20	67.75	99.31	130.02	170.59	200.97	232.93	260.36	292.00	323.60
SG25	1276.10	1326.01	1373.47	1420.49	1467.64	1526.03	1580.64	1636.74	1689.40	1748.57	1807.65
SG26	543.63	585.11	622.75	654.38	685.86	726.73	758.85	791.96	821.23	853.68	886.90
SG27	6588.50	4023.14	3526.04	1715.83	4903.68	1423.34	1639.06	904.43	1299.86	3027.63	1527.17
SG28	-83.07	-44.79	-6.49	25.17	53.17	95.14	126.74	160.62	182.88	215.20	249.23
SG29T	11.54	-15.02	-33.33	-49.98	-56.78	-65.56	-80.72	-96.29	-103.90	-123.08	-136.53
SG29-45	19.65	8.84	12.41	20.01	26.62	32.20	42.76	48.40	62.84	66.80	71.28
SG29L	-49.17	-36.68	-13.51	16.85	43.18	74.96	106.82	137.13	169.11	200.48	234.65
SG30T	32.75	6.04	-10.06	-21.40	-30.19	-44.28	-56.33	-71.33	-81.29	-96.44	-109.68
SG30-45	8.76	21.00	34.20	53.40	62.32	77.07	92.11	105.04	122.86	135.32	142.23
SG30L	12.01	57.00	93.21	124.95	156.83	197.76	229.46	263.04	296.10	327.23	362.57
SG31T	73.98	64.09	53.52	41.87	39.45	35.78	27.65	18.52	12.85	1.51	-8.03
SG31-45	87.42	105.85	122.01	138.91	149.74	171.88	185.32	199.97	215.64	229.80	236.41
SG31T	113.40	155.65	193.41	224.37	256.21	298.76	330.53	364.50	394.61	427.45	460.95
SG32T	18.34	-5.96	-23.38	-31.21	-40.81	-54.14	-65.89	-80.93	-88.58	-104.17	-114.37
SG32-45	-15.54	-5.85	7.68	27.78	35.48	55.95	67.25	80.79	95.50	106.43	114.73
SG32L	11.28	52.51	88.48	117.97	151.63	193.98	225.96	260.35	292.17	323.21	357.35
SG33T	18.70	-0.96	-16.41	-28.19	-36.68	-47.32	-60.86	-76.63	-83.50	-100.01	-107.64
SG33-45	8.72	20.43	32.27	52.45	64.36	88.96	102.40	116.54	133.24	144.47	152.55
SG33L	16.85	51.20	89.28	122.35	156.05	197.07	231.62	266.19	299.35	331.93	364.52
SG34T	35.28	24.32	3.76	-12.93	-22.62	-33.58	-52.73	-73.65	-83.27	-103.97	-113.39
SG34-45	54.42	64.11	79.18	101.99	119.45	144.61	162.37	177.55	192.36	206.48	218.81
SG34L	16.75	43.32	86.48	123.25	156.16	195.92	234.03	271.25	303.66	339.25	371.00
SG35T	45.13	36.53	27.31	19.24	-0.82	-23.87	-36.04	-45.53	-63.69	-68.42	-83.18
SG35-45	44.12	55.79	68.06	87.45	87.25	98.66	109.76	123.25	131.72	147.16	148.08
SG35L	42.50	77.56	108.45	131.87	161.74	198.27	227.29	256.15	286.70	314.27	346.08
SG36T	9.16	-14.48	-34.09	-39.94	-49.31	-61.03	-72.18	-85.19	-93.90	-108.52	-118.85
SG36-45	27.79	32.39	33.71	52.23	54.59	69.72	80.91	90.92	102.80	108.72	110.80
SG36L	39.30	80.45	112.07	136.94	165.24	202.10	231.56	259.86	291.88	318.47	349.18

TABLE E-9. CVP1, WATER 1, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.01	1.01	2.00	3.02	4.03	5.05	6.06	7.05	8.08	9.08	10.10
Frame-1	-28.40	212.10	412.13	636.46	832.98	1052.87	1248.44	1465.41	1664.77	1897.64	2098.75
Frame-2	83.15	216.18	403.94	640.57	826.54	1050.02	1262.86	1460.74	1670.47	1882.66	2080.23
Frame-3	148.50	214.20	428.37	654.72	834.48	1077.00	1257.54	1464.56	1679.74	1888.88	2073.22
Frame-4	63.23	228.29	416.62	634.45	831.34	1041.29	1244.13	1466.66	1690.53	1885.87	2101.16
Frame-5	-14.62	235.25	410.07	642.02	851.29	1046.01	1262.96	1458.20	1670.32	1879.76	2116.06
Frame-6	16.15	213.46	416.74	633.74	833.52	1047.82	1248.37	1458.17	1664.10	1898.08	2081.98
Frame-7	65.72	218.36	412.05	634.11	832.07	1056.80	1250.04	1464.54	1677.26	1909.06	2087.92
Frame-8	-161.75	217.93	423.45	624.61	846.45	1043.39	1251.91	1461.01	1666.60	1896.44	2090.58
Frame-9	-204.98	213.55	415.45	626.94	820.96	1033.42	1255.83	1454.37	1663.39	1900.41	2097.81
Frame-10	12.46	204.57	415.34	645.85	853.99	1068.23	1250.99	1465.34	1665.84	1866.49	2095.14
Frame-11	-127.78	206.87	405.90	631.03	820.69	1029.81	1262.20	1457.98	1655.30	1891.74	2096.42
Frame-12	80.00	230.51	408.40	621.71	847.12	1042.35	1261.31	1453.17	1674.39	1894.00	2089.88
Hoop-1	54.21	899.12	1779.31	2659.51	3560.84	4452.35	5321.58	6227.33	7094.61	8020.51	8869.14
Hoop-2	-64.42	854.28	1769.30	2662.23	3533.77	4439.76	5318.14	6214.30	7125.73	7982.96	8859.32
Hoop-3	51.58	835.94	1762.27	2660.20	3546.42	4435.66	5312.47	6241.91	7097.34	7996.34	8896.04
Hoop-4	-46.74	743.26	1771.18	2642.96	3556.34	4424.58	5309.55	6197.61	7110.38	7981.45	8877.39
Hoop-5	-29.24	1482.44	1773.94	2670.86	3562.88	4428.21	5325.31	6208.70	7109.45	7988.84	8880.15
Hoop-6	-74.01	747.40	1784.87	2684.51	3558.78	4441.83	5319.29	6211.04	7105.17	8004.10	8853.45
Hoop-7	-58.08	843.02	1758.72	2659.83	3536.11	4441.04	5300.37	6210.16	7109.53	8011.75	8867.26
Hoop-8	35.41	937.90	1773.81	2676.57	3556.61	4430.39	5368.99	6212.92	7122.20	8003.29	8868.89
Hoop-9	171.77	925.34	1786.32	2667.59	3550.14	4437.49	5310.32	6210.15	7121.47	8005.10	8869.80
Hoop-10	-2.94	901.26	1771.04	2670.08	3555.90	4441.06	5302.70	6209.34	7114.74	7992.56	8869.67
Hoop-11	-78.71	899.58	1774.50	2666.29	3550.18	4448.13	5309.24	6214.31	7105.22	8006.78	8863.33
Hoop-12	-114.52	882.48	1831.29	2676.59	3551.01	4433.99	5330.03	6205.33	7109.05	7999.36	8881.54
Hoop-13	24.82	907.26	1767.46	2672.42	3554.60	4445.35	5304.66	6209.97	7128.88	8012.12	8879.82
Hoop-14	82.01	894.43	1773.93	2668.61	3540.40	4458.06	5314.32	6216.80	7110.60	7998.35	8863.04
Long-1	0.25	459.70	932.97	1402.60	1860.71	2349.93	2796.90	3269.16	3756.50	4196.47	4628.13
Long-2	90.09	467.02	930.77	1406.67	1897.94	2324.07	2791.35	3266.18	3755.55	4214.85	4662.58
Long-3	3.88	458.47	934.92	1401.22	1876.20	2358.78	2791.60	3265.72	3745.06	4198.90	4658.26
Long-4	-31.99	440.32	931.66	1407.95	1878.89	2334.59	2799.32	3251.75	3734.58	4188.45	4671.79
Long-5	17.18	388.87	933.65	1398.47	1867.29	2336.02	2793.50	3271.32	3740.66	4195.96	4670.10
Long-6	7.65	468.79	932.54	1400.15	1862.45	2333.46	2793.35	3259.84	3737.74	4198.13	4665.23
Long-7	5.34	365.66	930.74	1403.99	1869.61	2347.39	2798.40	3261.99	3734.25	4197.99	4673.21
Long-8	11.82	465.90	927.46	1421.11	1870.18	2338.84	2797.84	3262.10	3723.98	4182.24	4654.48
SG1	111.39	42.37	46.40	143.75	265.68	340.49	402.81	497.81	534.37	597.56	662.73
SG2	6.42	52.27	96.64	149.61	203.15	257.79	311.09	367.62	420.70	475.28	530.83
SG3	146.40	-3.31	-6.25	71.30	167.78	220.34	257.57	331.71	355.35	397.57	441.97
SG4	2.38	49.67	99.52	152.64	204.32	256.73	308.16	363.38	416.80	470.07	524.84
SG5	162.04	4.35	22.36	90.92	188.80	253.47	297.47	380.66	419.37	469.79	521.26
SG6	4.77	48.03	95.31	146.05	196.08	249.77	305.41	366.13	424.68	484.18	544.47
SG7	225.72	67.81	90.16	201.35	319.34	401.06	462.07	561.00	617.13	677.14	735.17
SG8	8.11	55.20	102.84	156.68	209.25	263.15	317.14	373.61	429.40	484.80	540.80
SG9	172.75	23.90	14.16	93.75	193.19	246.32	291.66	369.11	394.03	440.12	486.58
SG10	40190.2	27943.1	24488.0	21895.0	19771.2	23554.8	30875.8	19859.3	17126.8	20320.3	29618.1

TABLE E-9. CVP1, WATER 1, LOAD CONDITION 1c (Continued)

SG11	165.52	-3.86	6.25	65.05	157.85	212.43	248.73	318.28	341.36	377.89	416.76
SG12	32.59	115.77	191.46	269.31	344.44	421.55	506.02	593.38	682.92	773.42	864.09
SG13	254.40	106.69	131.39	248.65	364.98	447.48	512.54	610.37	662.49	726.02	781.19
SG14	16.92	79.90	138.20	202.29	260.86	320.48	378.97	439.45	497.83	556.06	612.02
SG15	51.86	8.49	18.25	82.12	143.06	190.57	241.33	295.25	328.15	374.41	419.54
SG16	-118.10	-98.79	-62.31	-9.89	42.69	93.08	146.28	197.89	246.77	299.13	349.94
SG17	6.25	-37.31	-9.00	42.81	106.57	154.52	199.43	256.31	297.77	342.56	391.69
SG18	268.97	289.49	332.67	387.19	441.78	493.06	544.97	598.61	651.13	702.79	756.33
SG19	118.63	73.46	98.12	184.79	251.61	305.90	364.40	426.83	466.31	523.85	567.12
SG20	86.00	113.20	150.00	203.71	253.02	303.44	359.53	413.11	462.89	517.30	566.99
SG21	12.17	11.79	13.27	5.71	-2.76	-5.71	-9.22	-9.76	-9.58	-10.87	-14.19
SG22	18.17	33.20	59.98	83.99	106.73	131.85	153.73	177.88	203.88	227.14	250.78
SG23	72.73	91.41	112.70	122.58	129.19	131.02	135.85	144.42	155.40	163.64	170.18
SG24	-1.10	18.92	50.69	79.69	103.93	126.15	147.33	172.79	199.20	223.04	245.98
SG25	1367.71	1390.41	1425.99	1443.74	1467.67	1487.19	1506.01	1523.08	1535.66	1551.70	1568.81
SG26	546.69	569.01	605.68	636.40	671.10	702.13	729.22	755.19	779.27	804.15	829.14
SG27	1018.66	2588.42	3362.18	2782.12	16052.8	22501.8	1767.97	557.24	4551.00	6913.54	3148.81
SG28	-82.40	-42.58	0.88	26.65	58.32	83.36	98.12	126.07	150.34	173.15	193.16
SG29T	-0.55	113.03	210.64	304.18	386.96	473.22	555.85	635.65	718.29	798.22	876.64
SG29-45	8.80	82.30	147.08	203.30	251.31	306.01	356.18	404.41	455.67	504.44	552.73
SG29L	-49.26	-43.28	-18.82	6.69	34.02	57.01	77.73	101.01	123.92	144.33	163.99
SG30T	17.03	88.04	154.46	225.98	290.20	359.73	429.25	498.25	570.41	641.33	712.07
SG30-45	4.59	57.79	117.03	170.33	216.96	266.02	313.55	359.46	408.85	455.97	502.39
SG30L	17.53	49.67	85.90	114.81	143.29	169.65	191.83	214.45	238.47	259.12	278.57
SG31T	77.35	157.01	219.02	280.86	341.95	411.63	485.76	557.08	635.07	711.58	789.17
SG31-45	94.34	142.11	187.38	231.33	276.98	325.05	376.76	425.79	480.19	532.05	583.64
SG31T	116.63	132.72	160.79	182.78	207.92	229.21	246.74	265.91	284.39	301.06	315.22
SG32T	5.55	91.03	169.61	251.23	324.03	401.60	478.26	552.52	631.61	708.17	785.90
SG32-45	-17.93	42.25	99.31	153.04	204.24	255.99	308.41	359.11	413.34	465.58	516.94
SG32L	14.68	38.11	68.14	91.92	117.14	139.15	156.22	174.95	193.34	209.46	223.09
SG33T	8.86	88.15	164.50	245.62	317.83	396.51	474.10	550.20	628.94	707.16	785.45
SG33-45	11.53	70.25	127.82	184.11	239.70	291.85	344.82	393.20	445.12	494.72	543.84
SG33L	16.03	37.70	71.21	96.68	123.76	148.05	165.97	185.23	207.13	225.38	241.38
SG34T	30.99	103.94	172.16	246.86	311.09	381.83	452.06	520.65	592.97	664.77	736.38
SG34-45	49.19	114.16	178.85	240.90	300.64	356.81	412.68	462.26	514.06	565.07	617.76
SG34L	11.62	35.02	66.77	87.82	117.32	141.05	161.03	182.62	203.09	221.55	241.12
SG35T	40.63	64.68	131.40	213.03	290.61	376.11	461.85	545.38	634.20	720.62	808.96
SG35-45	43.15	64.14	118.92	176.64	234.80	296.08	357.32	414.79	475.79	534.26	593.19
SG35L	44.46	69.59	104.77	131.36	161.31	189.52	214.89	238.85	264.22	287.77	309.42
SG36T	-7.34	82.87	170.49	258.80	339.45	420.82	500.57	577.90	656.77	733.66	809.72
SG36-45	25.94	67.54	129.46	185.30	233.33	285.02	333.72	379.96	427.81	473.34	520.57
SG36L	51.82	66.88	93.71	111.85	123.91	142.02	154.92	169.77	187.06	203.55	219.33

TABLE E-10. CVP1, WATER 2, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.02	0.98	2.03	3.03	4.02	5.03	6.03	7.08	8.06	9.09	10.08
Frame-1	8.33	199.64	402.10	648.83	831.08	1040.67	1239.44	1473.12	1677.14	1882.15	2077.76
Frame-2	0.27	224.42	399.08	621.79	814.19	1020.31	1267.62	1484.20	1663.80	1872.26	2081.62
Frame-3	-87.77	191.51	390.90	644.72	846.33	1037.40	1228.00	1458.50	1656.05	1890.60	2096.94
Frame-4	98.26	205.47	413.49	627.87	843.24	1029.07	1254.08	1472.65	1666.71	1889.34	2087.04
Frame-5	-112.41	210.68	425.91	621.63	825.23	1028.61	1248.76	1452.13	1670.63	1914.28	2063.98
Frame-6	-136.07	202.95	405.08	622.14	838.46	1029.05	1251.47	1484.39	1664.46	1891.27	2078.31
Frame-7	-212.39	187.21	415.76	619.53	831.39	1019.20	1244.87	1490.99	1656.83	1899.42	2069.70
Frame-8	23.39	205.74	404.77	627.25	838.88	1024.75	1251.90	1468.50	1668.57	1904.02	2074.10
Frame-9	55.86	206.36	414.03	613.93	818.51	1033.67	1229.58	1484.71	1637.41	1885.43	2081.05
Frame-10	90.89	218.21	406.99	633.00	832.65	1037.53	1257.87	1495.22	1666.08	1879.24	2080.37
Frame-11	-121.70	213.59	406.07	638.69	860.65	1038.63	1255.52	1480.50	1672.52	1889.02	2075.22
Frame-12	106.88	219.97	410.41	639.93	822.22	1046.09	1243.98	1526.44	1669.42	1872.22	2059.46
Hoop-1	-1.50	886.21	1796.21	2660.04	3523.34	4414.23	5295.04	6212.47	7096.02	8003.54	8833.76
Hoop-2	-60.74	859.89	1775.00	2688.54	3524.21	4420.39	5282.62	6236.40	7088.48	7986.40	8864.77
Hoop-3	168.72	821.83	1774.87	2674.93	3533.64	4429.44	5313.72	6236.58	7081.00	8003.26	8865.87
Hoop-4	-54.18	765.64	1771.35	2667.65	3533.68	4445.92	5307.16	6223.64	7104.36	7988.62	8856.86
Hoop-5	-49.80	1405.97	1768.51	2658.31	3549.44	4423.48	5306.09	6231.13	7079.09	7997.91	8852.02
Hoop-6	125.31	764.24	1773.87	2655.24	3545.38	4405.45	5303.86	6225.94	7069.33	8003.84	8853.35
Hoop-7	109.75	837.64	1771.67	2684.08	3566.77	4414.56	5319.91	6226.58	7089.06	7980.51	8878.15
Hoop-8	42.80	893.60	1766.59	2654.91	3527.02	4393.40	5488.99	6243.14	7085.92	8011.49	8876.29
Hoop-9	62.55	885.38	1771.93	2660.83	3531.94	4410.18	5271.86	6228.97	7063.93	8004.07	8866.16
Hoop-10	-2.94	881.42	1776.66	2659.74	3537.78	4421.12	5289.79	6231.71	7093.70	7986.11	8855.17
Hoop-11	20.97	873.82	1772.83	2657.59	3533.56	4433.36	5297.91	6218.63	7067.17	7990.97	8850.41
Hoop-12	33.74	897.40	1764.75	2677.13	3551.01	4411.75	5309.38	6220.78	7065.28	7992.74	8859.30
Hoop-13	-116.09	788.69	1760.22	2650.70	3532.35	4393.43	5276.58	6218.01	7085.09	8005.50	8857.57
Hoop-14	7.47	872.15	1796.47	2669.15	3532.94	4405.88	5308.45	6239.79	7066.58	7984.24	8885.40
Long-1	-29.72	-3.50	-1.00	1.50	-4.75	5.24	1.49	3.99	-3.50	-3.50	-6.00
Long-2	-26.75	-17.12	8.17	15.40	115.37	15.40	-23.14	21.42	-7.48	-21.94	-21.94
Long-3	-5.08	-2.52	3.88	-1.24	-7.64	23.09	76.86	-5.08	-11.49	5.16	17.97
Long-4	-28.19	-23.14	3.38	139.79	-28.19	100.63	-21.88	139.78	-25.67	84.21	134.74
Long-5	-21.43	-15.71	-30.01	-31.44	-30.01	1.45	-14.28	5.74	-32.87	98.67	25.76
Long-6	-9.95	0.11	169.74	227.58	-20.00	171.01	3.88	-4.92	-13.72	-6.18	-8.69
Long-7	-8.14	-8.14	23.73	-3.24	-9.36	172.04	-5.69	-14.27	-14.27	-11.82	-16.72
Long-8	6.90	1.97	-14.02	22.90	5.67	-20.18	-7.87	4.44	-2.95	15.51	-7.87
SG1	160.32	55.02	41.63	160.75	351.57	424.97	539.37	576.84	636.11	695.69	766.58
SG2	13.39	57.96	107.45	165.70	223.80	280.86	341.18	401.42	458.65	518.78	577.30
SG3	225.21	29.96	28.30	131.36	306.99	376.70	487.87	522.31	571.79	620.66	684.69
SG4	6.97	55.91	112.16	171.10	224.59	283.45	344.29	406.32	463.34	523.25	581.74
SG5	256.50	60.11	62.48	156.83	302.02	377.15	494.57	531.79	579.93	635.93	701.93
SG6	8.25	55.91	110.69	169.45	220.93	280.71	346.67	411.64	475.25	543.04	609.61
SG7	293.99	93.47	83.00	182.43	323.83	411.83	543.54	572.92	615.30	675.75	736.49
SG8	10.80	60.19	114.27	172.41	223.05	282.21	343.79	404.88	461.24	521.63	580.10
SG9	233.91	51.67	45.78	152.16	324.90	396.64	511.34	549.27	602.07	654.08	719.98
SG10	30050.1	25113.4	18962.3	16002.6	16029.7	15680.5	15105.5	12510.8	18748.1	16148.8	21291.2

TABLE E-10. CVP1, WATER 2, LOAD CONDITION 1a (Continued)

SG11	241.75	47.79	38.23	121.80	256.46	323.76	431.25	453.21	490.36	528.76	580.99
SG12	28.45	123.47	208.36	292.24	370.02	454.44	551.72	644.70	740.89	840.18	936.27
SG13	329.63	138.00	126.74	226.77	371.10	459.49	590.15	617.89	660.11	717.67	775.72
SG14	20.59	85.91	150.88	218.72	274.85	340.38	407.79	473.59	532.11	594.05	652.60
SG15	43.12	-2.80	16.46	85.54	162.04	216.50	283.62	331.19	378.99	420.57	470.50
SG16	-126.12	-97.14	-47.83	12.27	76.20	131.37	189.63	246.74	301.00	354.12	405.58
SG17	31.25	-15.62	2.39	62.63	132.07	184.63	259.04	298.48	341.86	383.93	441.23
SG18	269.55	295.91	343.15	399.00	456.27	510.26	568.83	625.48	679.43	733.50	789.22
SG19	146.38	96.29	116.70	186.58	261.65	327.77	410.77	450.07	495.01	537.89	582.11
SG20	81.55	115.04	153.12	204.38	253.31	307.46	365.23	419.98	473.01	527.10	575.35
SG21	6.45	-15.11	-40.72	-69.99	-121.38	-147.74	-176.11	-205.92	-234.67	-261.56	-290.97
SG22	14.49	10.09	15.59	12.28	-2.02	-2.20	-0.55	-3.12	-5.13	-5.13	-7.52
SG23	61.68	51.21	40.38	18.71	-9.54	-34.68	-59.82	-83.65	-106.41	-126.59	-149.96
SG24	-10.29	-19.84	-19.10	-24.60	-31.39	-38.19	-43.70	-52.32	-61.14	-66.28	-73.65
SG25	1372.69	1358.19	1351.29	1333.63	1337.86	1321.93	1287.88	1255.60	1229.41	1208.98	1186.45
SG26	542.98	531.91	532.54	528.47	536.36	537.75	526.37	514.70	507.41	504.47	498.80
SG27	2300.89	1367.32	925.47	2295.97	743.18	833.02	6739.95	1169.69	1180.65	1190.76	1140.12
SG28	-61.74	-63.21	-53.62	-52.87	-58.02	-61.71	-66.87	-77.16	-87.48	-91.89	-100.77
SG29T	-2.56	119.99	233.70	334.85	417.05	510.34	595.67	693.13	779.62	868.79	953.58
SG29-45	13.24	79.64	134.56	186.21	219.73	265.44	309.05	351.21	390.08	430.16	469.10
SG29L	-54.14	-61.38	-65.44	-72.69	-70.81	-80.49	-90.56	-104.09	-116.83	-129.88	-142.20
SG30T	21.42	100.85	184.09	266.34	334.57	412.76	488.32	576.75	654.75	737.07	816.79
SG30-45	5.64	38.25	88.91	127.93	160.65	199.15	234.31	272.17	302.36	338.94	373.84
SG30L	6.61	7.57	11.14	4.77	7.56	1.38	-7.24	-20.67	-32.46	-41.58	-53.11
SG31T	63.97	152.47	227.21	296.27	360.01	437.04	512.99	605.33	691.11	782.09	867.74
SG31-45	83.47	118.62	154.60	184.72	216.13	251.63	288.87	328.07	362.78	406.62	445.88
SG31L	105.93	90.50	83.69	70.26	68.80	58.72	42.02	23.85	7.16	-7.52	-25.70
SG32T	4.40	98.96	194.45	286.17	362.06	447.21	529.72	623.66	707.69	796.61	882.59
SG32-45	-12.80	32.01	81.56	123.39	158.66	199.10	238.05	276.75	308.95	350.45	387.72
SG32L	-0.09	-4.68	-8.53	-21.17	-24.29	-34.43	-51.66	-68.80	-85.67	-101.81	-120.33
SG33T	10.96	96.31	188.33	278.50	355.14	440.85	525.39	620.44	706.13	797.45	885.27
SG33-45	-9.32	45.18	92.69	132.30	172.08	210.03	250.10	288.04	321.57	360.49	395.66
SG33L	2.57	-3.21	-3.90	-13.22	-16.75	-22.86	-40.94	-53.46	-68.75	-84.50	-101.43
SG34T	29.83	112.43	199.08	283.15	355.75	431.10	510.69	596.44	673.56	755.02	833.46
SG34-45	39.77	95.53	144.03	183.76	232.11	269.75	301.89	335.11	365.81	402.71	436.81
SG34L	8.08	2.89	-0.14	-13.35	-18.71	-18.31	-43.08	-59.17	-73.12	-87.53	-101.88
SG35T	65.05	76.73	159.39	249.93	328.95	422.31	513.35	618.51	712.22	809.25	903.12
SG35-45	51.07	52.95	102.25	151.28	194.84	246.15	293.49	345.52	391.05	443.51	491.58
SG35L	33.68	33.86	38.25	37.04	42.31	43.87	37.09	30.31	25.37	23.95	18.55
SG36T	-4.77	90.57	194.30	288.41	374.52	461.83	544.67	638.19	722.55	809.78	893.33
SG36-45	26.80	61.34	119.86	166.86	197.67	240.55	276.09	319.64	354.76	394.42	430.41
SG36L	42.85	32.25	28.39	19.35	-2.89	-11.74	-22.74	-34.52	-48.10	-58.27	-71.23

TABLE E-11. CVP1, WATER 2, LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.02	0.01	0.02	0.00	0.01	-0.01	-0.03	-0.01	0.00	0.00	0.00
Frame-1	-19.95	11.81	-11.32	13.33	3.37	6.52	26.44	-0.43	5.59	7.57	1.19
Frame-2	27.33	80.28	53.48	-13.77	-42.92	-187.48	-7.55	1.87	37.50	56.87	-29.49
Frame-3	-26.70	-225.04	174.09	232.98	211.04	-38.08	-282.52	81.98	190.95	-105.69	35.53
Frame-4	9.62	-134.43	33.78	32.59	91.58	-0.09	-159.44	-27.73	-11.36	-155.91	77.32
Frame-5	-142.47	-146.87	88.75	104.81	-24.20	-34.86	-180.54	118.63	-134.13	-101.09	18.46
Frame-6	70.40	45.59	-121.57	-131.19	-98.58	-119.18	77.10	18.28	-35.23	-121.57	-109.20
Frame-7	-17.00	75.23	122.54	-81.81	39.27	7.70	-185.93	-42.31	68.66	-5.15	61.03
Frame-8	-46.45	-55.85	34.48	-2.77	52.83	98.75	55.01	-35.59	-98.56	73.85	-44.21
Frame-9	-178.92	-73.22	0.88	-171.23	-181.17	125.25	147.18	106.02	-137.47	-140.70	25.78
Frame-10	-178.70	-129.55	-27.15	40.62	97.95	69.84	-204.64	111.10	-84.46	-20.49	-114.47
Frame-11	-0.82	99.83	49.85	150.34	118.66	60.66	102.32	-135.71	110.33	137.67	82.52
Frame-12	-48.04	-54.00	112.85	85.80	60.37	-78.57	-62.00	9.58	72.57	105.69	96.05
Hoop-1	-7.07	7.79	15.22	-49.79	15.22	0.36	-51.64	-31.22	-57.21	20.79	-5.21
Hoop-2	-66.27	-27.60	-64.43	108.67	-58.90	75.52	95.76	1.86	101.29	3.70	-60.75
Hoop-3	145.67	-47.80	138.57	-95.72	-10.53	-49.58	44.49	115.49	85.31	-60.22	158.11
Hoop-4	265.60	-39.30	-57.90	196.81	61.09	-13.28	27.62	3.45	-52.32	75.95	23.91
Hoop-5	-34.86	-21.77	-4.95	4.39	-14.30	112.79	-31.11	77.28	-6.82	15.60	34.30
Hoop-6	-79.61	250.11	214.74	-72.16	41.48	-87.06	115.98	-42.35	140.21	67.56	-46.08
Hoop-7	18.53	45.90	-38.03	18.53	69.62	-79.99	-78.15	20.36	-90.93	-21.60	-43.50
Hoop-8	94.58	-38.58	57.60	94.59	64.99	-1.59	35.40	5.81	28.01	42.81	-23.78
Hoop-9	-124.95	75.30	46.16	195.44	7.93	55.26	-75.80	-57.60	22.50	-106.77	-46.69
Hoop-10	-4.75	-19.25	-8.38	-12.00	53.23	85.86	-1.13	-6.57	75.00	51.43	22.43
Hoop-11	246.16	-28.87	-39.95	-41.79	-69.48	-54.71	-71.32	-21.49	-71.34	57.90	212.98
Hoop-12	-97.83	24.48	-5.18	-71.90	-88.57	-107.11	169.02	0.38	119.02	-75.61	-32.98
Hoop-13	-86.42	-86.43	24.82	84.15	61.89	61.90	-79.00	32.24	24.82	61.91	-130.93
Hoop-14	29.83	-7.44	-52.16	0.01	-14.89	29.83	-74.52	-22.35	-59.63	29.83	22.38
Long-1	5.24	479.72	927.98	1382.62	1879.44	2338.93	2800.64	3275.73	3750.26	4201.89	4669.81
Long-2	-12.30	481.52	936.80	1427.14	1858.19	2305.04	2793.76	3268.91	3743.51	4192.39	4641.37
Long-3	2.60	461.08	951.57	1383.29	1855.71	2312.91	2808.24	3245.55	3784.76	4177.55	4694.59
Long-4	154.95	449.21	932.93	1414.26	1871.32	2344.93	2796.80	3243.23	3788.89	4193.92	4684.89
Long-5	151.59	504.72	929.36	1425.64	1888.74	2327.68	2806.37	3293.10	3743.52	4223.55	4683.44
Long-6	197.42	478.89	925.00	1410.20	1864.97	2343.75	2785.81	3262.68	3744.02	4217.40	4689.58
Long-7	-11.82	395.11	935.64	1418.70	1869.61	2339.05	2798.40	3303.99	3750.18	4191.05	4682.26
Long-8	-53.41	489.33	942.23	1434.65	1866.48	2312.00	2805.23	3263.65	3747.37	4177.74	4643.87
SG1	294.28	231.42	248.84	241.82	223.19	227.41	218.99	205.91	210.60	225.82	203.10
SG2	18.33	12.84	11.55	8.80	4.03	2.02	-3.85	-5.50	-9.54	-9.35	-14.48
SG3	329.14	256.57	265.03	234.65	186.75	182.16	168.02	137.83	124.66	95.72	64.85
SG4	7.33	1.28	-4.95	-9.53	-15.40	-19.43	-23.83	-28.59	-34.28	-35.91	-41.22
SG5	332.25	284.10	294.13	261.41	213.39	208.90	200.72	174.23	177.21	129.12	119.97
SG6	5.13	-2.02	-6.05	-11.18	-17.60	-24.01	-30.61	-35.73	-41.25	-46.90	-51.84
SG7	381.82	370.13	397.43	394.06	373.83	371.82	382.30	372.66	396.31	368.15	376.21
SG8	8.10	2.33	-0.78	-4.16	-10.39	-14.28	-19.00	-22.74	-26.37	-31.24	-34.95
SG9	339.70	258.29	275.39	252.36	201.51	194.15	169.17	150.18	139.22	106.40	77.73
SG10	18858.3	21997.1	23501.3	15559.3	23688.8	24549.7	26088.9	21319.3	30482.2	10402.3	11316.3

TABLE E-11. CVP1, WATER 2, LOAD CONDITION 1b (Continued)

SG11	329.85	274.20	283.39	257.79	206.04	200.34	188.96	165.75	167.49	121.25	111.14
SG12	15.18	11.97	8.53	5.14	0.18	-8.81	-17.25	-20.18	-26.94	-33.75	-39.62
SG13	418.97	410.85	441.06	438.82	414.29	414.65	420.24	416.40	436.10	405.51	415.41
SG14	16.13	11.92	10.54	7.97	1.74	-2.06	-7.38	-9.12	-13.71	-17.82	-20.98
SG15	76.71	39.85	80.48	88.49	72.88	60.72	33.62	56.26	62.71	24.66	25.67
SG16	-117.82	-135.97	-121.68	-122.57	-131.77	-139.65	-154.01	-142.37	-141.16	-158.08	-156.16
SG17	70.00	47.41	48.69	44.46	18.93	21.68	14.70	9.74	7.72	-3.49	-7.35
SG18	282.66	275.53	273.10	271.16	262.48	261.15	255.67	253.39	249.53	246.48	243.09
SG19	165.47	170.64	197.15	199.68	180.96	184.09	166.44	179.09	177.70	161.55	173.15
SG20	79.68	80.42	90.36	92.37	84.66	84.48	71.79	81.70	73.09	73.03	77.26
SG21	-1.84	26.72	52.51	82.35	110.75	136.92	163.47	189.95	216.03	244.59	270.20
SG22	7.52	39.43	67.67	97.55	126.74	151.32	175.92	204.10	230.26	257.21	279.94
SG23	58.36	98.37	130.12	163.49	196.03	225.39	255.70	288.11	318.18	350.94	381.03
SG24	-11.38	30.30	63.91	98.23	131.50	159.97	189.38	223.11	254.08	288.21	317.76
SG25	1433.99	1483.47	1525.63	1572.44	1625.94	1674.18	1727.56	1780.43	1837.49	1898.59	1955.08
SG26	552.13	592.39	625.26	659.10	692.17	721.92	752.29	785.30	818.39	851.69	883.07
SG27	1532.71	2463.26	3460.57	3923.41	2020.05	2237.73	2135.36	2470.73	2632.34	3040.57	2170.46
SG28	-39.63	1.61	33.28	70.09	102.52	129.78	160.73	196.03	228.55	266.65	296.09
SG29T	-11.72	-28.57	-40.48	-53.47	-63.74	-79.68	-94.89	-102.92	-116.16	-126.14	-138.22
SG29-45	4.21	5.82	12.74	15.34	22.73	29.19	38.77	41.23	56.60	61.92	73.37
SG29L	-53.07	-38.65	-15.20	14.06	42.91	71.58	101.86	133.75	166.30	196.83	230.25
SG30T	22.32	2.38	-6.04	-18.30	-33.13	-48.13	-60.22	-69.90	-81.28	-93.84	-105.73
SG30-45	0.09	19.85	36.09	48.37	61.91	74.93	87.97	99.08	117.89	125.59	142.14
SG30L	7.93	55.67	88.46	122.50	158.77	190.41	220.84	255.53	288.96	322.51	355.20
SG31T	50.96	51.61	39.41	33.89	28.49	19.50	11.84	4.45	-4.18	-7.52	-15.36
SG31-45	79.59	102.49	116.21	132.47	147.97	162.47	174.14	187.02	204.74	220.21	236.22
SG31L	113.96	155.64	188.49	224.05	258.07	288.18	319.78	354.37	387.23	423.06	454.25
SG32T	-6.42	-21.14	-27.65	-39.61	-50.94	-63.14	-76.72	-83.44	-94.99	-108.21	-116.46
SG32-45	-10.61	7.50	24.69	39.31	54.13	67.30	76.09	91.42	109.03	121.01	137.46
SG32L	3.58	47.14	79.55	114.97	150.87	180.17	212.01	246.89	280.04	315.38	346.36
SG33T	-1.74	-11.51	-19.44	-32.60	-44.02	-55.49	-70.17	-78.91	-91.10	-103.04	-111.79
SG33-45	-16.85	3.49	24.24	42.13	57.66	69.37	78.98	98.55	114.49	129.86	145.47
SG33L	13.63	50.32	85.03	120.45	155.47	185.45	220.28	256.52	290.59	324.87	358.14
SG34T	19.96	19.36	5.83	-11.06	-25.60	-44.37	-62.96	-76.11	-91.06	-109.52	-124.15
SG34-45	33.15	58.46	79.83	98.29	115.98	129.37	143.32	166.07	182.48	197.10	214.10
SG34L	12.30	46.94	84.11	119.84	155.35	189.91	225.91	263.88	298.44	334.39	371.18
SG35T	87.02	55.31	44.09	27.99	6.55	-2.34	-14.81	-32.08	-44.24	-60.83	-73.84
SG35-45	63.99	64.18	78.67	88.98	93.36	104.46	112.92	121.60	136.12	142.56	155.72
SG35L	39.25	76.82	102.05	131.02	161.39	187.00	214.64	244.90	274.21	306.18	333.88
SG36T	-11.36	-27.50	-33.18	-43.07	-56.28	-69.11	-84.15	-89.63	-99.57	-111.95	-119.83
SG36-45	24.40	26.51	43.07	54.48	61.43	66.98	73.13	86.32	101.37	103.35	118.26
SG36L	39.39	81.04	108.51	136.14	168.52	194.71	223.21	252.68	283.31	311.74	340.21

TABLE E-12. CVP1, WATER 2, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.02	1.03	2.03	3.01	4.03	5.06	6.07	7.07	8.08	9.08	10.10
Frame-1	9.39	224.52	411.72	624.48	843.16	1051.91	1245.63	1450.91	1645.72	1889.39	2098.39
Frame-2	50.05	220.05	426.15	645.85	833.35	1040.38	1254.82	1480.90	1668.63	1862.17	2114.63
Frame-3	52.28	200.82	409.07	637.64	832.62	1048.58	1246.15	1448.38	1665.92	1896.11	2100.32
Frame-4	-48.93	218.31	393.81	627.63	838.09	1052.40	1248.22	1455.60	1661.12	1886.24	2080.11
Frame-5	35.31	211.46	425.20	642.10	823.53	1045.06	1246.35	1454.04	1685.75	1871.50	2100.18
Frame-6	72.06	247.74	429.87	618.55	829.98	1050.26	1262.56	1457.40	1674.19	1889.95	2074.84
Frame-7	82.88	205.31	406.40	619.27	829.65	1048.82	1246.07	1463.86	1661.47	1863.25	2098.96
Frame-8	105.02	213.49	407.47	626.99	842.31	1062.96	1241.05	1468.93	1674.93	1867.87	2079.23
Frame-9	53.17	292.83	406.29	618.86	827.25	1049.78	1244.85	1458.97	1675.32	1876.69	2095.02
Frame-10	24.46	189.81	387.31	710.22	825.75	1058.53	1229.80	1468.10	1658.67	1856.85	2088.95
Frame-11	-65.26	207.55	423.97	621.57	843.69	1049.03	1239.64	1482.62	1668.56	1889.05	2078.51
Frame-12	-13.44	224.34	416.58	643.11	842.97	1053.37	1259.05	1469.79	1667.19	1877.40	2094.04
Hoop-1	-68.35	890.01	1764.81	2647.30	3558.63	4470.92	5319.72	6218.66	7095.31	7961.89	8865.34
Hoop-2	-62.58	880.24	1771.50	2657.50	3524.21	4450.81	5314.45	6207.56	7098.82	7972.71	8864.77
Hoop-3	95.96	896.46	1748.42	2643.25	3554.94	4471.16	5321.35	6221.23	7130.00	7981.16	8848.12
Hoop-4	176.34	955.35	1756.66	2658.62	3550.41	4452.46	5311.40	6198.23	7101.79	7969.23	8860.57
Hoop-5	138.94	849.16	1757.47	2652.97	3532.62	4450.63	5336.52	6214.93	7097.07	7982.16	8881.93
Hoop-6	88.05	907.77	1801.99	2642.46	3543.52	4449.28	5326.74	6217.24	7122.65	7967.64	8881.30
Hoop-7	-63.56	888.80	1770.02	2684.35	3557.65	4433.75	5331.38	6219.90	7099.29	7985.19	8876.33
Hoop-8	50.21	878.80	1789.32	2669.44	3550.27	4459.99	5325.67	6212.92	7094.02	7958.91	8868.00
Hoop-9	15.22	887.20	1774.28	2658.75	3547.56	4446.59	5322.31	6208.33	7099.23	7988.71	8867.09
Hoop-10	58.69	886.86	1782.63	2652.22	3547.90	4477.31	5332.76	6209.34	7101.66	7985.31	8883.28
Hoop-11	56.06	888.59	1777.05	2648.10	3551.24	4453.67	5328.76	6210.62	7115.87	7984.63	8867.98
Hoop-12	198.73	899.25	1780.11	2684.27	3552.07	4456.23	5338.51	6220.16	7103.06	7984.53	8873.24
Hoop-13	-79.02	885.10	1790.42	2665.27	3563.08	4452.77	5313.14	6224.80	7085.80	7967.62	8908.60
Hoop-14	-7.44	916.88	1797.01	2653.97	3534.00	4472.97	5315.38	6231.71	7104.56	7998.35	8869.61
Long-1	-19.73	477.18	914.34	1391.36	1856.96	2342.44	2782.89	3278.82	3737.02	4200.22	4679.33
Long-2	-1.46	469.43	935.68	1393.42	1895.53	2336.12	2813.95	3287.53	3742.76	4184.74	4685.47
Long-3	51.26	445.66	920.92	1392.25	1854.43	2335.73	2800.28	3284.60	3721.26	4204.02	4673.63
Long-4	110.72	484.52	921.65	1382.68	1875.11	2351.01	2881.12	3253.95	3742.67	4217.50	4655.37
Long-5	-2.84	713.40	932.32	1395.61	1855.85	2336.02	2806.09	3270.99	3742.77	4194.53	4662.95
Long-6	145.86	463.76	925.09	1391.35	1867.48	2328.43	2808.14	3279.62	3730.71	4195.62	4662.72
Long-7	66.62	309.28	933.28	1386.83	1873.29	2353.52	2803.02	3277.59	3738.40	4210.24	4662.18
Long-8	-26.33	476.98	915.24	1380.50	1865.25	2326.53	2806.18	3270.39	3726.93	4213.01	4656.95
SG1	93.85	31.90	52.06	150.86	316.68	428.64	502.26	555.25	638.01	681.58	751.42
SG2	10.08	55.91	101.00	152.13	205.92	260.15	315.03	369.30	426.98	478.81	535.27
SG3	180.78	-17.27	3.31	84.88	217.24	309.63	362.07	397.36	468.76	492.78	544.78
SG4	8.24	49.83	100.57	154.25	199.76	254.50	308.80	362.50	419.23	470.67	525.44
SG5	210.67	24.00	31.46	111.17	231.92	332.49	393.12	436.08	514.72	550.34	602.23
SG6	11.72	49.83	97.09	148.75	192.25	247.91	304.96	362.69	424.54	481.30	542.31
SG7	276.57	57.70	95.79	200.93	346.31	472.28	546.22	607.42	708.24	754.88	812.03
SG8	11.21	54.40	102.70	156.81	202.91	260.75	316.63	371.68	429.94	483.47	539.51
SG9	194.24	1.65	18.93	92.98	233.84	330.84	382.93	421.17	504.17	528.19	584.43
SG10	15357.2	12512.8	11966.8	14606.9	19084.2	16001.4	25443.2	22431.9	16160.0	18159.9	17444.0

TABLE E-12. CVP1, WATER 2, LOAD CONDITION 1c (Continued)

SG11	203.00	7.90	10.29	83.40	193.71	287.56	336.69	369.58	441.35	460.42	500.65
SG12	35.45	115.71	190.95	268.03	337.64	416.97	501.51	587.16	679.55	767.17	858.16
SG13	310.80	98.34	145.07	252.84	397.70	526.35	598.15	660.49	769.25	812.61	873.47
SG14	24.33	80.78	142.35	205.62	257.17	321.23	381.01	440.23	502.83	559.05	616.60
SG15	51.02	-2.80	23.38	75.45	147.48	214.57	264.32	302.57	385.72	411.26	469.62
SG16	-120.53	-99.84	-62.46	-11.36	44.71	100.04	148.62	198.28	257.60	301.91	356.69
SG17	22.41	-27.92	2.76	59.51	114.66	182.43	228.22	272.14	352.18	381.91	434.26
SG18	277.30	295.21	341.59	394.55	448.70	503.70	554.12	607.02	668.17	715.16	769.64
SG19	140.39	64.59	117.39	190.44	258.99	345.26	400.18	447.49	544.57	573.96	633.21
SG20	82.41	103.03	148.82	195.92	243.11	300.10	352.42	403.40	467.90	512.38	568.86
SG21	4.97	13.63	14.55	9.58	-15.29	-18.61	-20.64	-19.35	-22.84	-21.00	-22.29
SG22	12.47	41.07	72.05	92.95	103.44	126.15	151.49	176.98	200.78	225.15	248.61
SG23	61.46	90.27	109.34	116.49	131.04	125.14	131.40	142.05	146.42	157.79	164.94
SG24	-13.03	18.18	51.03	75.08	105.78	124.49	148.20	173.55	197.01	221.96	245.64
SG25	1496.31	1533.82	1568.45	1591.08	1655.79	1681.22	1701.44	1721.88	1729.82	1750.81	1768.29
SG26	538.01	572.58	607.21	634.00	682.55	713.44	740.57	767.75	784.67	809.74	834.89
SG27	1774.45	1773.16	1634.98	22844.9	1454.00	1338.47	1352.34	1398.30	1077.84	916.19	744.72
SG28	-31.52	11.19	42.10	73.76	106.20	126.79	147.44	168.06	191.59	217.34	237.22
SG29T	1.10	109.67	208.89	300.43	376.74	462.18	544.87	626.38	708.65	786.58	866.78
SG29-45	20.79	83.59	146.00	203.66	244.37	303.19	354.56	403.03	453.43	503.21	553.68
SG29L	-55.71	-43.58	-19.50	3.39	34.99	62.72	83.53	105.92	126.36	147.50	170.30
SG30T	27.07	87.08	155.12	226.09	282.36	352.01	421.81	491.53	564.06	632.43	705.42
SG30-45	6.23	56.11	116.88	169.41	215.24	270.44	318.18	364.04	410.04	457.44	504.56
SG30L	4.68	50.84	86.82	111.66	150.73	178.48	199.89	222.08	241.93	264.33	284.86
SG31T	64.33	146.61	209.01	267.84	326.71	395.03	467.41	542.73	617.75	693.86	772.37
SG31-45	81.99	137.45	186.55	226.40	279.39	329.97	378.30	427.66	476.38	527.88	579.98
SG31L	104.39	133.02	160.53	178.14	217.30	238.18	254.38	272.91	287.72	306.04	322.37
SG32T	11.23	86.12	166.04	247.12	311.04	389.27	466.19	542.67	621.04	695.04	774.61
SG32-45	-0.73	59.05	118.27	168.17	224.56	279.73	328.98	378.17	429.29	479.70	530.34
SG32L	-1.83	35.98	65.27	84.42	121.92	143.26	160.07	178.36	192.90	211.36	226.62
SG33T	13.93	84.03	162.08	241.33	306.13	385.47	462.58	539.98	618.91	694.40	774.71
SG33-45	-6.01	58.19	122.43	175.94	233.99	289.61	337.78	387.64	439.10	488.39	539.47
SG33L	6.33	35.89	68.98	91.78	130.57	152.99	171.52	191.63	209.03	231.04	247.93
SG34T	30.91	101.00	171.25	241.92	300.89	372.66	442.15	511.71	584.27	653.14	726.03
SG34-45	39.60	104.98	178.07	234.32	301.72	359.29	408.43	459.56	513.56	562.01	615.55
SG34L	11.70	30.64	64.54	84.72	121.10	144.34	164.01	186.12	205.13	225.89	245.80
SG35T	53.83	63.82	132.53	212.55	281.70	368.10	454.20	540.17	627.76	711.76	799.59
SG35-45	43.75	61.96	118.40	173.84	236.11	297.71	355.20	413.00	473.82	532.11	592.46
SG35L	28.66	67.04	98.85	123.03	163.71	190.19	213.36	238.14	259.30	284.82	307.81
SG36T	-2.02	79.53	167.84	253.23	330.31	413.82	491.26	569.71	648.58	722.92	801.17
SG36-45	25.95	74.52	132.01	185.89	233.99	283.52	331.97	378.90	425.65	472.75	520.12
SG36L	39.75	71.11	93.02	110.30	122.64	134.17	152.22	168.91	182.54	200.40	215.99

TABLE E-13. CVP2, AIR 1, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.03	1.01	2.04	3.02	4.04	5.04	6.05	7.06	8.07	9.08	10.10
Frame-1	9.49	176.05	423.10	643.32	832.49	1048.36	1254.45	1457.43	1655.31	1872.60	2093.19
Frame-2	493.82	209.90	434.71	632.39	847.44	1059.86	1253.74	1458.40	1656.17	1838.75	2071.60
Frame-3	56.75	196.39	433.37	636.77	828.09	1035.72	1250.77	1462.73	1676.46	1859.76	2087.54
Frame-4	19.49	198.46	425.24	644.13	825.04	1049.92	1261.55	1478.71	1680.41	1875.68	2086.32
Frame-5	71.82	207.93	422.97	654.24	835.44	1039.93	1262.23	1460.72	1659.27	1856.56	2091.67
Frame-6	18.96	263.99	416.79	646.80	834.24	1046.34	1241.99	1446.48	1577.98	1861.10	2067.64
Frame-7	58.16	252.40	442.68	557.97	838.30	1037.28	1229.54	1458.49	1684.95	1897.58	2074.54
Frame-8	-9.86	206.54	413.81	623.62	829.65	1037.01	1237.66	1471.53	1666.77	1886.05	2097.22
Frame-9	-74.29	269.44	433.03	593.88	819.00	1034.98	1251.15	1453.88	1791.91	1866.46	2067.15
Frame-10	-24.05	214.82	417.00	623.43	829.54	1021.48	1248.04	1457.89	1649.75	1831.23	2047.65
Frame-11	42.33	201.33	402.02	622.21	828.46	1037.76	1257.35	1470.69	1671.42	1868.72	2093.55
Frame-12	-42.05	196.91	418.08	612.36	828.82	1034.50	1252.46	1438.08	1648.88	1878.64	2074.33
Hoop-1	49.72	880.39	1822.98	2685.07	3542.59	4415.79	5304.65	6193.94	7060.06	7972.29	8852.58
Hoop-2	-70.50	870.95	1832.10	2755.67	3515.73	4437.56	5324.19	6200.42	7079.16	7959.89	8865.21
Hoop-3	23.21	882.75	1789.48	2721.12	3518.56	4430.99	5323.24	6193.13	7068.99	7962.57	8822.11
Hoop-4	12.79	915.70	1794.38	2680.82	3536.77	4423.29	5310.78	6191.32	7061.46	7959.52	8836.53
Hoop-5	171.64	897.68	1795.00	2707.26	3532.91	4428.84	5373.13	6195.67	7051.74	7880.62	8849.25
Hoop-6	-73.51	872.46	1786.85	2694.20	3552.63	4436.05	5333.37	6194.18	7079.71	7959.88	8848.58
Hoop-7	321.94	893.60	1799.25	2714.40	3489.87	4428.83	5348.65	6194.05	7098.59	7961.30	8863.48
Hoop-8	95.85	890.38	1766.19	2633.94	3568.61	4429.00	5319.17	6201.37	7077.45	7960.26	8866.04
Hoop-9	-20.51	889.81	1756.95	2543.61	3610.24	4431.34	5283.63	6191.51	7084.31	7936.60	8815.16
Hoop-10	29.39	881.90	1767.27	2633.87	3537.31	4470.74	5267.25	6162.49	7109.53	8084.86	8880.46
Hoop-11	-91.46	875.81	1767.88	2567.13	3529.22	4426.12	5179.66	6166.57	7036.81	7911.95	8865.36
Hoop-12	-37.82	918.97	1765.06	2630.81	3541.68	4429.64	5303.14	6242.64	7064.95	7975.47	8849.86
Hoop-13	37.84	875.66	1780.56	2603.19	3530.33	4412.28	5309.41	6191.10	7066.60	7956.32	8854.34
Hoop-14	90.25	859.81	1762.91	2650.51	3487.01	4322.81	5314.36	6231.29	7082.86	7941.22	8859.65
Long-1	118.31	120.69	79.17	0.82	-2.74	-0.36	-21.72	2.01	6.76	-3.92	-5.11
Long-2	26.89	-37.52	-48.47	-13.22	12.30	-8.35	-21.72	-1.06	-3.49	-12.00	7.44
Long-3	-7.72	-46.25	49.46	-36.30	-45.00	-46.24	-42.51	3.47	54.42	2.22	2.22
Long-4	1.75	82.51	-39.86	64.16	77.62	104.53	13.99	-44.75	119.22	-15.38	-19.05
Long-5	379.99	296.07	272.14	270.89	267.29	299.63	321.21	334.43	372.80	369.20	385.98
Long-6	-31.41	-37.53	-3.30	85.94	76.16	-42.41	-41.19	48.05	7.71	8.93	27.27
Long-7	100.44	104.05	113.69	105.25	106.45	107.65	113.65	117.27	167.75	160.54	165.35
Long-8	20.21	58.37	17.75	-26.57	-19.19	54.67	-17.95	12.82	0.51	9.13	1.74
SG1	62.18	-27.01	38.05	144.93	185.12	258.10	338.20	424.98	491.84	605.94	699.32
SG2	15.48	63.54	124.00	184.67	242.89	302.84	364.00	426.23	486.97	552.04	616.13
SG3	116.71	39.81	87.03	192.91	254.55	334.43	416.81	499.83	568.23	678.56	775.71
SG4	15.80	67.21	126.08	186.82	245.57	306.60	367.14	428.52	488.09	553.00	616.88
SG5	38.81	-33.24	5.76	112.75	172.35	261.16	346.41	413.29	492.22	566.22	654.20
SG6	22.36	76.35	138.80	205.66	272.19	343.31	414.34	485.08	557.26	629.31	703.12
SG7	########	########	########	########	########	########	########	########	########	########	########
SG8	-52.71	6.91	65.80	128.35	188.73	251.29	313.07	374.30	435.37	498.68	559.72
SG9	49.62	-28.09	15.48	108.88	178.30	254.72	333.85	416.33	487.18	586.69	677.27
SG10	3.72	63.86	126.96	188.01	252.05	313.49	374.67	437.01	498.78	562.62	625.85

TABLE E-13. CVP2, AIR 1, LOAD CONDITION 1a (Continued)

SG11	31.04	-60.45	-21.65	78.88	137.31	213.76	290.02	353.27	416.18	481.89	558.99
SG12	33.70	117.64	208.88	300.45	395.32	503.26	609.52	716.11	819.94	927.80	1033.44
SG13	104.83	-35.34	-23.69	90.89	187.52	281.15	370.20	451.88	521.66	608.62	712.28
SG14	30.92	92.01	153.05	217.89	283.00	347.13	408.87	472.11	535.59	597.51	662.22
SG15	-52.13	-68.53	-33.99	10.74	70.80	113.64	161.28	226.31	284.24	340.94	400.38
SG16	-19.81	22.56	76.03	126.87	184.23	236.23	291.58	352.55	412.03	469.01	527.32
SG17	-393.79	-420.08	-377.57	-302.77	-231.49	-172.65	-107.04	-29.06	49.96	108.86	182.79
SG18	-2.14	31.12	75.09	125.46	179.61	230.41	282.64	337.82	393.40	444.58	497.55
SG19	-340.28	-379.70	-353.81	-283.44	-211.24	-165.18	-110.41	-51.07	7.39	59.19	128.92
SG20	30.08	59.48	111.61	172.03	234.89	288.68	345.18	404.29	463.96	519.60	580.73
SG21	24.42	-14.06	-50.32	-89.17	-122.48	-154.86	-187.57	-216.88	-250.17	-281.44	-313.98
SG22	54.24	43.36	40.45	37.95	37.08	35.14	36.42	35.79	33.94	31.77	31.08
SG23	-34.24	-56.98	-79.07	-106.36	-127.54	-150.69	-172.24	-192.51	-217.35	-241.38	-266.21
SG24	32.63	15.79	13.12	9.52	7.63	3.48	2.83	1.12	-5.89	-9.99	-13.45
SG25	229.54	220.70	218.40	209.40	202.70	196.21	190.88	185.11	175.83	166.35	156.89
SG26	24852.0	24833.4	24777.6	24831.0	24848.2	24859.9	24825.5	24847.3	24853.6	24924.2	25004.1
SG27	-141.91	-179.17	-205.60	-234.03	-260.48	-282.33	-303.33	-325.22	-349.90	-372.91	-395.79
SG28	48.26	38.66	37.92	34.96	32.74	28.31	25.34	19.44	12.78	4.65	-0.52
SG29T	7.85	82.32	163.34	242.57	322.78	402.68	481.74	562.23	644.55	725.02	807.54
SG29-45	31.20	40.11	70.85	108.40	143.52	174.82	215.58	252.77	287.20	321.19	359.51
SG29L	26.62	5.68	-1.89	-10.48	-19.49	-30.55	-38.81	-46.54	-56.43	-68.36	-78.25
SG30T	15.24	86.52	165.08	243.70	323.97	404.25	483.79	565.41	648.92	731.17	814.24
SG30-45	8.90	23.38	60.42	94.02	129.40	163.24	204.74	241.27	273.46	309.25	347.98
SG30L	10.56	-8.25	-13.77	-22.68	-28.77	-38.01	-43.05	-49.34	-58.48	-70.17	-78.51
SG31T	18.63	113.45	197.47	273.13	360.11	443.62	524.28	608.20	692.36	775.27	858.09
SG31-45	35.96	13.58	2.44	-8.76	-17.12	-27.15	-33.13	-40.81	-52.51	-61.98	-71.08
SG31L	40.27	66.23	103.72	136.45	171.35	207.58	246.92	286.61	313.32	357.14	396.13
SG32T	1.55	82.04	165.64	248.48	333.64	419.06	503.96	590.94	681.29	768.67	858.66
SG32-45	58.50	77.25	119.17	157.93	192.45	227.32	267.70	306.96	337.17	378.91	419.68
SG32L	38.86	16.57	8.09	-4.94	-16.78	-30.99	-42.82	-55.47	-72.83	-88.22	-104.39
SG33T	-5.31	45.89	112.24	186.76	266.49	347.80	431.24	517.55	607.95	696.14	787.13
SG33-45	19.35	32.45	59.62	93.34	126.42	157.30	192.52	229.86	266.06	303.69	344.40
SG33L	13.91	-3.60	-11.75	-25.82	-41.01	-58.43	-75.04	-89.80	-111.50	-127.52	-144.32
SG34T	19.49	51.93	113.98	182.99	257.29	330.88	405.97	482.72	562.04	640.24	720.38
SG34-45	-13.13	3.48	33.19	62.75	90.83	118.45	149.43	183.33	213.30	247.27	281.83
SG34L	19.14	10.53	1.36	-10.51	-23.92	-37.05	-49.84	-62.30	-76.73	-91.16	-104.74
SG35T	0.27	33.42	85.96	148.44	220.11	293.62	370.04	450.59	535.51	619.49	706.05
SG35-45	34.07	27.58	51.59	79.04	109.14	140.22	181.62	218.11	251.73	289.63	333.45
SG35L	32.66	6.97	-1.77	-8.74	-13.25	-16.04	-15.76	-15.90	-22.27	-26.13	-29.19
SG36T	-8.48	66.29	145.98	225.19	307.00	387.21	466.95	549.46	631.89	714.48	798.85
SG36-45	-8.71	13.99	57.29	97.18	135.93	173.63	219.60	259.83	300.68	336.72	381.20
SG36L	6.98	-9.25	-13.91	-22.72	-30.46	-39.04	-45.69	-55.13	-65.48	-76.90	-86.91
SG37T	-64.60	18.79	105.78	188.80	272.69	355.77	437.09	519.39	604.01	686.44	770.29
SG37-45	33.79	58.47	101.12	140.51	176.81	214.72	255.93	296.65	325.62	369.90	410.52
SG37L	22.30	2.76	-5.09	-13.36	-18.98	-26.31	-29.79	-35.09	-44.24	-51.53	-57.98

TABLE E-14. CVP2, AIR 1, LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.05	0.04	0.06	0.09	0.11	0.12	0.11	0.10	0.10	0.10	0.09
Frame-1	30.80	31.64	-3.97	21.04	-1.95	0.32	-5.13	-12.35	4.19	3.06	8.33
Frame-2	113.96	-52.03	-352.04	45.09	6.29	-34.85	56.95	60.08	-555.74	56.51	1125.26
Frame-3	110.58	137.17	-28.76	-177.19	74.47	66.44	105.63	69.26	-103.02	-14.91	-86.88
Frame-4	318.37	258.88	-56.04	475.83	-86.77	56.87	-79.60	-57.53	-37.52	7.89	16.62
Frame-5	-8.62	54.33	22.11	197.28	-70.74	100.62	3.71	-38.03	-12.83	-34.67	-56.99
Frame-6	165.56	186.81	83.71	-17.35	87.28	-12.39	-70.38	71.95	-42.47	2.24	80.49
Frame-7	-137.57	31.69	-18.82	90.52	-63.56	-71.45	-49.43	57.03	-15.29	-51.58	-34.16
Frame-8	-91.85	-12.21	-36.87	-39.50	-62.65	-36.11	-65.75	-2.38	32.07	83.60	68.30
Frame-9	69.47	0.12	31.01	14.45	-5.47	1090.86	-123.76	-47.35	60.81	-33.48	80.09
Frame-10	21.36	47.64	10.93	-5.48	112.55	34.07	-30.01	-7.96	69.54	62.55	81.68
Frame-11	-72.18	39.98	8.91	63.78	22.33	38.25	26.06	-26.69	-8.03	-6.47	-28.25
Frame-12	67.57	52.45	34.61	-14.71	81.38	-26.85	-87.76	-101.93	3.58	25.96	-8.44
Hoop-1	-20.11	-23.79	-1.73	-29.30	51.56	14.80	-32.97	-9.08	-16.43	0.10	14.80
Hoop-2	45.14	23.46	19.85	34.30	7.20	-72.31	59.59	9.00	131.85	28.88	77.66
Hoop-3	-13.62	16.20	116.18	-57.48	-59.23	137.22	-34.67	-106.60	151.24	81.09	-64.49
Hoop-4	33.14	-100.07	92.35	-113.02	-0.16	-63.06	-81.55	-111.17	-138.90	-88.96	158.94
Hoop-5	-14.40	180.78	-50.89	350.43	-34.47	166.17	-1.64	144.30	-50.88	-38.11	-83.71
Hoop-6	-80.90	129.72	-34.71	-18.09	9.63	22.56	-77.19	-21.78	-1.46	-128.93	65.05
Hoop-7	-143.71	312.84	-140.07	-132.77	318.32	13.33	157.58	-156.51	-74.31	-21.36	-161.97
Hoop-8	66.43	22.28	7.56	117.92	-21.86	73.78	-36.58	-21.86	22.28	-7.15	-7.15
Hoop-9	70.17	99.17	-35.01	-15.07	445.48	200.72	122.75	-24.14	-15.07	256.96	322.22
Hoop-10	-113.31	123.31	119.69	31.20	-75.36	-109.68	-97.04	-22.98	25.78	51.07	-77.17
Hoop-11	41.20	30.14	177.52	37.51	-39.86	63.31	-28.81	89.09	-104.34	85.42	89.10
Hoop-12	-50.77	23.26	63.96	-30.41	-58.17	8.45	1.05	-56.32	60.26	-21.16	-69.28
Hoop-13	-43.72	-36.30	30.42	-36.30	-43.71	0.77	-21.48	8.18	67.49	-80.80	-43.72
Hoop-14	60.66	53.25	-50.34	-35.55	260.41	-28.15	260.44	-42.94	23.65	201.26	16.25
Long-1	2.01	486.17	922.86	1396.48	1869.01	2334.05	2764.85	3188.85	3448.78	3862.63	4370.57
Long-2	-35.10	478.93	950.42	1403.83	1913.23	2349.33	2794.13	3257.49	3724.21	4169.85	4558.75
Long-3	-69.87	443.37	935.48	1423.99	1831.81	2354.85	2787.35	3281.07	3723.55	4161.89	4804.42
Long-4	31.12	423.86	952.42	1416.28	1842.29	2323.00	2779.41	3281.44	3737.90	4242.89	4687.07
Long-5	329.67	694.02	1060.84	1527.31	2032.24	2450.44	2964.75	3459.03	3787.56	4218.77	4747.48
Long-6	41.94	412.31	953.81	1402.55	1814.71	2374.42	2787.62	3285.50	3725.64	4227.70	4715.47
Long-7	101.66	450.17	948.92	1403.35	1841.05	2340.87	2820.45	3279.92	3730.69	4203.89	4678.66
Long-8	2.97	436.23	950.73	1384.13	1832.38	2338.13	2786.20	3297.39	3744.28	4273.22	4707.75
SG1	54.82	120.80	132.41	114.71	143.27	134.25	150.65	153.59	171.85	202.97	216.45
SG2	13.27	12.07	8.57	5.53	4.84	2.99	0.14	-2.81	-4.10	-5.16	-7.47
SG3	91.10	155.85	117.47	61.57	72.08	60.65	44.23	42.20	35.56	41.65	47.74
SG4	13.13	12.30	5.53	-3.63	-9.67	-13.54	-20.91	-26.25	-30.40	-36.98	-41.08
SG5	11.15	31.22	0.60	-16.67	15.01	-9.58	-24.86	-28.36	-24.17	0.05	-9.99
SG6	21.63	16.66	10.76	3.21	0.81	-6.93	-14.85	-21.29	-27.19	-31.24	-38.25
SG7	########	########	########	########	########	########	########	########	#######	########	########
SG8	-54.20	-53.45	-59.34	-60.82	-65.23	-65.97	-68.91	-72.59	-76.27	-79.21	-83.64
SG9	37.45	88.03	56.28	6.62	23.05	6.80	-5.93	-7.04	-25.50	-9.62	-15.35
SG10	4.45	-1.63	-7.91	-15.84	-20.27	-25.07	-32.63	-38.35	-46.65	-51.08	-58.83

TABLE E-14. CVP2, AIR 1, LOAD CONDITION 1b (Continued)

SG11	6.59	27.40	-1.95	-25.75	3.45	-15.23	-26.17	-31.06	-25.34	4.79	-14.82
SG12	30.94	26.97	17.87	8.87	5.03	-3.78	-12.74	-21.42	-28.95	-34.44	-44.28
SG13	39.41	123.83	65.71	71.33	77.26	83.58	72.34	87.67	94.26	120.18	143.03
SG14	27.15	26.09	19.04	16.14	11.94	10.29	4.11	0.98	-3.81	-7.82	-10.86
SG15	-35.47	-17.41	-25.60	-48.91	-26.34	-34.72	-33.76	-30.39	-59.97	-42.41	-60.34
SG16	-11.02	-16.46	-21.29	-30.13	-23.22	-27.00	-29.90	-31.65	-45.10	-41.60	-52.38
SG17	-389.98	-399.96	-394.79	-405.82	-401.39	-399.64	-408.13	-409.24	-406.79	-387.41	-407.76
SG18	0.22	-6.52	-4.58	-8.79	-11.42	-12.34	-17.65	-20.93	-23.94	-22.55	-30.40
SG19	-356.94	-323.29	-327.68	-315.70	-323.44	-312.93	-329.20	-324.50	-322.82	-312.62	-308.58
SG20	27.88	30.83	29.72	32.49	25.65	28.61	19.18	18.07	15.12	14.38	11.98
SG21	22.02	47.18	74.38	105.65	135.61	161.16	192.43	217.75	242.57	270.11	297.33
SG22	50.98	75.72	102.81	138.59	174.95	198.70	230.69	253.97	283.08	311.35	339.82
SG23	-38.26	-6.43	27.14	65.42	104.33	134.27	172.78	203.43	235.59	269.00	302.83
SG24	26.68	61.46	94.86	138.41	182.49	212.59	254.11	285.26	320.17	356.30	392.13
SG25	225.42	252.88	281.01	314.67	348.47	373.78	406.97	433.68	461.57	490.07	519.76
SG26	25112.5	25048.2	25101.2	25101.2	25107.5	25051.2	25010.0	25001.6	25077.6	25033.9	25092.3
SG27	-147.77	-113.90	-86.41	-53.98	-16.38	11.20	47.65	77.49	107.66	138.55	171.36
SG28	33.49	72.66	103.71	141.42	185.76	214.61	255.27	287.03	321.06	354.30	388.34
SG29T	12.41	-9.20	-23.94	-42.02	-57.68	-74.42	-89.90	-107.08	-120.16	-135.16	-152.00
SG29-45	29.22	40.53	52.17	69.09	93.24	102.57	123.95	133.25	149.17	160.98	169.99
SG29L	21.52	56.40	88.31	124.91	163.91	198.53	234.39	271.20	305.50	340.34	375.36
SG30T	18.89	5.30	-6.94	-25.11	-39.35	-50.00	-65.42	-77.69	-91.24	-104.28	-119.13
SG30-45	-0.99	12.43	16.33	37.49	58.42	66.18	85.63	92.44	97.09	110.60	119.33
SG30L	3.06	44.56	78.89	123.40	168.94	200.97	242.28	276.63	311.88	351.30	389.54
SG31T	21.99	14.40	9.55	-1.43	-10.51	-22.80	-33.55	-42.72	-49.66	-57.29	-68.97
SG31-45	30.86	60.91	91.00	130.43	170.68	196.89	234.36	261.04	293.58	326.23	358.13
SG31L	30.42	48.19	50.28	57.82	72.60	81.35	98.70	103.90	114.09	119.58	128.88
SG32T	5.87	-8.03	-18.59	-33.88	-47.97	-55.88	-74.43	-84.56	-99.17	-111.49	-124.79
SG32-45	42.38	65.01	63.52	71.50	89.48	100.81	116.58	123.43	130.86	138.47	149.78
SG32L	30.98	70.05	104.78	150.76	197.12	229.10	274.49	308.01	345.73	384.80	423.68
SG33T	-3.99	-15.24	-30.82	-44.32	-59.70	-71.19	-90.34	-102.95	-116.65	-128.79	-141.87
SG33-45	10.86	25.25	29.48	38.63	53.16	58.88	68.31	76.94	84.43	94.18	108.07
SG33L	8.14	40.56	76.19	115.09	154.57	188.92	230.51	264.21	299.64	334.48	370.77
SG34T	13.25	4.73	-24.08	-41.76	-57.31	-77.28	-99.48	-116.74	-134.44	-149.01	-164.92
SG34-45	-16.94	-12.34	-16.10	-13.32	-12.62	-9.51	-6.59	-4.36	-4.36	-1.39	3.48
SG34L	16.68	39.07	73.89	106.62	138.40	173.24	210.02	242.59	276.27	309.47	343.50
SG35T	6.83	-5.31	-15.59	-31.26	-43.81	-52.69	-68.22	-77.93	-89.52	-99.79	-111.70
SG35-45	22.28	49.87	49.18	63.85	83.87	93.35	111.14	118.47	128.14	139.85	153.78
SG35L	23.60	64.64	96.84	140.99	185.68	216.65	261.40	294.97	331.44	369.55	406.21
SG36T	-2.76	-16.01	-24.06	-38.98	-47.30	-56.09	-71.25	-80.87	-92.13	-101.15	-112.82
SG36-45	-19.85	4.43	4.34	22.61	38.27	45.36	57.20	64.56	69.60	80.04	93.04
SG36L	0.08	36.02	61.80	98.16	138.43	163.99	202.73	232.03	261.47	293.87	325.52
SG37T	-64.11	-74.80	-84.29	-93.88	-105.59	-109.46	-123.37	-131.68	-144.91	-156.77	-166.63
SG37-45	22.09	36.68	36.68	45.78	58.74	71.52	86.53	92.05	98.29	101.35	111.20
SG37L	17.52	48.03	78.67	118.88	160.01	186.95	224.66	251.56	284.04	317.10	349.19

TABLE E-15. CVP2, AIR 1, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.05	1.02	2.01	3.03	4.04	5.06	6.05	7.06	8.09	9.08	10.09
Frame-1	-14.47	214.70	418.54	622.91	840.60	1028.35	1257.24	1459.70	1680.62	1847.43	2091.14
Frame-2	12.52	248.90	360.56	632.65	822.60	1025.80	1253.10	1471.12	1666.10	1834.20	2208.53
Frame-3	-28.86	195.42	411.67	630.15	825.86	1048.39	1246.69	1466.70	1682.78	1844.98	2107.81
Frame-4	9.28	225.07	422.39	632.31	853.84	1040.24	1240.22	1449.95	1676.44	1860.83	2096.33
Frame-5	56.42	206.97	427.01	642.42	829.76	1042.32	1252.96	1459.55	1667.38	1865.85	2075.80
Frame-6	-87.68	256.23	425.93	628.35	859.21	1038.47	1254.93	1445.30	1687.78	1878.74	2097.90
Frame-7	30.53	289.12	439.73	622.01	848.42	1030.79	1249.58	1483.25	1645.47	1848.65	2104.01
Frame-8	-58.12	184.71	422.92	623.92	829.44	1032.24	1228.43	1461.85	1692.72	1888.79	2083.64
Frame-9	-139.09	198.49	409.06	625.60	785.65	1030.19	1217.37	1452.79	1668.23	1820.41	2074.30
Frame-10	10.32	217.08	420.94	627.18	836.22	1028.77	1266.35	1446.47	1648.16	1976.89	2066.78
Frame-11	40.81	239.07	434.73	620.80	850.25	1039.79	1251.65	1478.07	1717.19	1866.33	2078.55
Frame-12	-24.89	244.16	422.02	631.69	832.07	1036.64	1255.29	1466.40	1683.62	1864.11	2121.21
Hoop-1	7.46	885.73	1762.34	2666.42	3544.78	4444.75	5325.92	6215.99	7125.09	7946.81	8888.38
Hoop-2	-70.51	912.33	1779.70	2645.18	3564.86	4437.12	5310.80	6211.26	7114.20	7969.14	8844.41
Hoop-3	-41.69	917.65	1766.68	2675.24	3564.52	4435.81	5354.12	6200.15	7118.81	7962.73	8903.69
Hoop-4	234.82	954.37	1762.93	2663.90	3570.42	4439.50	5324.80	6206.12	7104.72	7991.23	8852.22
Hoop-5	-74.60	904.80	1787.70	2675.98	3582.51	4428.40	5334.07	6248.56	7127.23	7926.46	8892.10
Hoop-6	-114.16	922.16	1781.31	2658.83	3547.44	4430.07	5334.43	6208.96	7134.00	7961.99	8875.34
Hoop-7	46.21	975.59	1813.86	2664.82	3543.18	4424.74	5335.11	6272.56	7022.59	7976.14	8895.42
Hoop-8	29.64	838.88	1780.55	2670.19	3560.54	4466.23	5312.35	6201.99	7114.23	7974.98	8910.18
Hoop-9	-25.95	862.61	1783.80	2655.51	3569.63	4433.60	5271.46	6192.13	7091.57	7874.95	8969.31
Hoop-10	-71.75	860.23	1792.20	2662.24	3489.64	4442.28	5303.90	6206.45	7058.96	7969.26	8880.46
Hoop-11	-93.30	757.89	1802.54	2656.88	3557.99	4404.45	5294.42	6198.51	7357.38	7956.17	8817.45
Hoop-12	217.57	869.00	1846.14	2667.29	3548.38	4422.68	5311.07	6191.45	7131.58	7975.47	8849.86
Hoop-13	-80.79	846.00	1772.79	2654.56	3551.87	4375.65	5324.77	6199.13	7162.99	7897.01	8846.92
Hoop-14	53.25	874.60	1784.75	2679.57	3575.10	4582.26	5322.29	6209.71	7393.65	7896.82	8867.05
Long-1	175.30	594.16	934.92	1404.93	1885.63	2318.62	2800.73	3269.56	3775.18	4175.94	4672.95
Long-2	25.68	459.49	940.89	1394.24	1884.06	2305.58	2789.55	3262.35	3687.75	4172.28	4655.69
Long-3	30.81	448.34	923.23	1420.40	1867.86	2287.74	2767.74	3264.91	3903.77	4145.73	4700.96
Long-4	-21.50	404.29	958.73	1394.39	1872.88	2316.88	2785.81	3247.17	3715.87	4158.46	4662.31
Long-5	347.65	636.48	953.14	1412.36	1899.15	2308.97	2782.80	3289.98	3749.19	4199.59	4662.09
Long-6	136.08	433.09	936.88	1400.25	1858.72	2324.30	2801.35	3270.83	3735.42	4198.36	4646.72
Long-7	118.49	454.97	931.08	1390.27	1857.87	2358.90	2806.30	3289.53	3770.36	4184.66	4660.36
Long-8	-4.41	431.31	922.60	1397.81	1911.17	2333.21	2791.41	3262.92	3750.43	4198.13	4666.83
SG1	98.86	66.62	107.71	224.37	372.15	423.23	522.57	576.81	706.69	752.76	866.66
SG2	21.33	70.51	124.78	182.84	245.12	300.35	359.01	415.27	477.52	530.98	590.70
SG3	165.81	102.54	115.44	204.00	347.12	381.84	474.27	512.14	603.04	658.01	753.02
SG4	23.45	71.32	120.37	174.54	233.38	284.63	340.55	394.02	451.14	505.78	562.89
SG5	48.95	21.09	45.17	114.38	236.55	282.11	367.94	410.99	469.33	525.60	625.47
SG6	24.58	81.70	135.86	194.26	258.90	319.54	385.13	448.00	511.15	574.34	640.67
SG7	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG8	-46.83	10.59	65.06	120.27	179.87	235.84	291.04	349.97	404.41	460.35	522.18
SG9	94.86	26.19	43.36	129.93	262.82	304.38	391.33	429.40	522.21	566.88	669.33
SG10	9.07	64.98	119.03	176.59	236.53	290.24	346.33	400.06	458.51	509.80	569.58

TABLE E-15. CVP2, AIR 1, LOAD CONDITION 1c (Continued)

SG11	57.53	-12.97	16.97	82.08	200.04	239.65	316.47	348.81	407.09	453.05	542.93
SG12	38.00	121.90	201.86	283.44	373.81	466.74	563.70	661.46	759.79	852.82	951.16
SG13	122.36	16.98	22.00	114.62	261.78	334.03	438.16	508.03	566.74	652.22	764.41
SG14	34.75	95.43	150.93	211.00	273.02	329.07	388.50	445.43	502.10	558.67	619.89
SG15	-38.59	-48.27	-15.52	41.55	112.29	150.86	210.23	241.90	307.65	351.46	418.85
SG16	-20.65	18.14	69.03	124.12	180.43	232.22	287.35	336.99	394.07	445.29	503.65
SG17	-371.07	-410.29	-364.88	-296.02	-207.75	-157.05	-79.83	-31.97	40.87	106.87	178.45
SG18	-1.17	26.46	68.58	118.27	169.61	216.37	268.28	315.61	367.31	416.82	466.52
SG19	-330.92	-353.47	-330.31	-265.71	-184.59	-140.03	-70.85	-25.16	29.22	81.75	153.89
SG20	29.91	62.07	111.05	169.09	228.77	280.74	338.96	392.79	448.76	502.18	561.32
SG21	15.73	8.33	4.63	-3.14	-11.47	-13.69	-20.35	-20.35	-19.24	-27.56	-29.41
SG22	42.39	68.48	92.98	121.65	150.21	177.83	203.87	230.94	258.02	281.79	308.33
SG23	-40.51	-28.07	-11.78	-0.39	7.77	21.51	28.85	43.24	56.38	60.71	70.91
SG24	25.11	51.64	83.98	119.96	154.26	188.05	218.13	249.70	282.53	307.62	337.33
SG25	233.04	252.68	275.35	293.07	310.81	334.92	354.44	377.45	397.30	412.45	429.85
SG26	25115.9	25186.1	25071.7	25060.0	25010.4	25010.0	25048.2	25150.8	25192.4	25239.4	25110.0
SG27	-135.01	-143.94	-140.37	-140.83	-139.62	-130.02	-123.92	-112.94	-103.46	-99.21	-91.26
SG28	55.66	83.02	114.06	141.42	173.93	205.00	229.39	258.25	284.10	304.06	329.93
SG29T	0.93	64.94	130.71	203.04	273.71	345.51	416.76	490.16	563.46	635.46	708.81
SG29-45	31.07	61.26	105.40	158.77	214.63	271.45	325.38	379.44	434.39	487.21	542.67
SG29L	25.89	37.04	62.95	86.55	114.87	136.85	164.02	189.73	215.53	238.71	264.16
SG30T	11.79	73.26	133.55	203.79	274.48	342.88	413.60	485.01	556.33	627.27	698.73
SG30-45	7.46	41.49	79.46	126.62	176.54	230.54	279.37	330.00	382.84	425.87	476.69
SG30L	9.48	32.87	63.70	93.88	124.66	154.81	183.34	212.59	242.33	263.78	291.37
SG31T	12.72	97.26	177.32	249.56	319.35	394.61	467.08	545.25	620.23	690.38	765.69
SG31-45	24.87	42.52	64.34	88.49	112.30	137.16	158.29	182.14	206.41	224.29	246.49
SG31L	41.03	69.54	113.02	157.72	205.74	254.09	298.60	348.16	401.43	445.57	488.54
SG32T	-6.91	68.23	137.37	211.40	286.60	360.47	436.92	514.34	591.85	668.85	747.39
SG32-45	67.05	95.07	135.13	182.61	234.72	282.41	329.71	378.72	431.55	477.93	523.19
SG32L	38.48	54.86	81.89	110.11	135.55	162.21	182.73	207.42	231.47	248.05	270.15
SG33T	-15.71	33.04	86.50	151.15	220.02	289.45	363.90	440.74	517.54	594.81	673.39
SG33-45	2.40	34.55	69.38	115.04	164.58	211.23	259.54	310.98	362.65	411.05	458.15
SG33L	9.25	18.99	44.56	69.90	93.46	116.39	133.81	153.02	175.08	191.48	209.88
SG34T	7.62	35.09	82.19	142.28	206.26	270.84	338.89	408.70	477.97	548.02	620.02
SG34-45	-31.98	-6.63	30.45	65.08	101.27	139.20	179.72	222.35	263.68	305.50	346.11
SG34L	15.74	26.59	50.66	73.47	94.79	117.93	136.93	157.34	180.41	198.43	217.19
SG35T	-21.58	10.55	56.25	115.30	178.89	243.26	313.15	385.12	457.80	531.22	606.97
SG35-45	28.55	40.40	70.82	109.89	155.44	203.02	252.63	306.17	360.21	404.99	454.41
SG35L	49.12	56.23	77.88	104.42	131.92	168.04	196.95	231.78	263.22	288.50	316.71
SG36T	-15.83	54.62	121.11	193.83	265.55	334.53	406.79	478.86	552.00	624.21	698.04
SG36-45	-26.24	25.04	77.75	127.63	180.93	230.78	282.80	335.74	390.94	433.45	483.93
SG36L	-1.46	21.66	47.35	69.12	91.86	116.48	136.20	159.39	179.46	194.57	215.36
SG37T	-66.94	11.63	81.96	156.81	231.36	303.25	376.84	450.48	523.19	595.01	668.51
SG37-45	35.00	65.68	106.84	154.32	206.02	254.54	300.59	348.95	401.60	448.34	490.58
SG37L	10.83	32.01	56.71	83.83	110.10	137.18	160.44	186.23	212.12	231.67	255.77

TABLE E-16. CVP2, AIR 2, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.03	1.01	2.02	3.06	4.07	5.06	6.07	7.10	8.07	9.11	10.11
Frame-1	0.99	183.22	405.19	629.21	820.09	1057.72	1264.62	1471.92	1684.41	1872.50	2107.76
Frame-2	-55.26	246.67	303.66	625.16	848.88	1045.00	1262.30	1457.44	1718.54	1878.65	2114.13
Frame-3	-42.64	200.10	417.24	631.26	836.31	1053.62	1262.61	1458.25	1676.27	1892.26	2108.91
Frame-4	45.45	210.80	398.68	631.73	836.77	1059.29	1242.43	1460.46	1657.82	1873.86	2116.42
Frame-5	49.48	228.92	510.25	622.86	857.53	1054.49	1282.78	1470.07	1709.12	1878.90	2097.64
Frame-6	-23.24	281.25	382.18	634.49	842.32	1050.44	1257.07	1447.06	1662.70	1876.23	2087.05
Frame-7	-3.83	250.68	381.55	543.58	882.85	1136.12	1215.60	1454.24	1683.31	1863.67	2086.10
Frame-8	-2.94	211.71	430.19	610.96	825.97	1049.72	1258.16	1465.56	1672.01	1893.47	2095.00
Frame-9	30.27	276.42	409.47	554.98	848.50	1098.49	1216.14	1451.41	1666.38	1888.01	2094.59
Frame-10	-99.78	221.70	469.54	617.66	839.64	1042.80	1347.74	1457.08	1670.49	1859.32	2083.31
Frame-11	-23.46	201.33	416.46	618.10	843.37	1046.82	1248.67	1468.08	1681.65	1870.86	2121.79
Frame-12	-9.21	209.01	432.79	646.37	847.63	1036.90	1252.32	1452.87	1674.90	1870.56	2098.05
Hoop-1	35.02	883.98	1773.54	2675.88	3572.35	4451.15	5349.81	6220.91	7086.49	7975.17	8912.28
Hoop-2	-41.59	888.93	1750.97	2685.20	3563.05	4447.04	5336.10	6232.38	7094.33	7978.97	8905.85
Hoop-3	88.11	942.30	1761.59	2719.37	3596.09	4487.56	5340.09	6231.21	7083.73	7968.79	8894.92
Hoop-4	-61.21	904.51	1761.26	2697.47	3566.72	4425.59	5356.25	6231.41	7093.62	8056.78	8907.73
Hoop-5	20.25	839.22	1780.58	2723.68	3562.44	4454.82	5332.25	6220.62	7083.45	7991.09	8893.92
Hoop-6	63.20	861.29	1768.55	2649.86	3565.92	4453.12	5327.04	6224.98	7100.75	7968.32	8890.12
Hoop-7	-132.76	882.55	1810.39	2701.62	3570.57	4427.45	5331.46	6215.38	7141.30	8009.81	8884.46
Hoop-8	103.20	831.53	1802.80	2619.49	3561.25	4443.71	5327.60	6238.77	7122.30	7969.21	8880.75
Hoop-9	-38.64	855.35	1890.98	2643.61	3626.56	4440.41	5315.52	6282.80	7108.60	7976.28	8916.72
Hoop-10	31.20	889.12	1781.54	2657.62	3568.01	4450.87	5326.11	6228.13	7103.02	7985.31	8887.68
Hoop-11	-61.98	1032.41	1880.10	2633.72	3571.60	4424.28	5333.65	6274.05	7245.72	7937.49	9088.31
Hoop-12	-74.83	992.99	1787.10	2668.09	3556.49	4429.64	5326.41	6228.46	7110.08	7984.47	8864.66
Hoop-13	-58.55	801.51	1780.38	2647.94	3530.33	4449.35	5288.23	6258.44	7104.39	7980.16	8884.00
Hoop-14	112.45	1030.00	1762.73	2665.57	3575.81	4522.60	5300.62	6209.71	7179.78	8039.02	8830.05
Long-1	44.74	134.93	18.63	10.32	-2.74	7.94	-1.55	2.01	2.01	15.07	5.57
Long-2	70.65	19.60	65.79	-18.08	-4.71	6.23	41.48	3.80	-15.65	-10.79	-8.36
Long-3	-12.69	-12.69	42.00	-40.04	-31.34	85.49	2.22	9.68	90.47	27.08	25.84
Long-4	40.91	16.43	-15.38	-17.83	-14.16	23.78	25.00	-12.94	9.09	9.09	-5.59
Long-5	335.66	348.82	316.51	300.89	242.14	332.03	334.46	350.09	366.84	400.41	365.67
Long-6	82.29	16.26	-46.09	89.62	67.61	39.49	30.94	-16.75	103.07	0.37	7.71
Long-7	111.27	113.67	116.09	111.27	111.27	113.67	120.89	125.71	144.93	160.56	173.80
Long-8	-1.95	58.37	4.20	-6.88	-31.50	11.59	-6.88	-9.34	2.97	11.59	18.98
SG1	152.14	32.33	44.32	105.14	182.94	290.57	390.84	492.77	581.79	635.36	773.12
SG2	18.94	69.17	125.03	185.21	244.41	306.32	368.58	433.15	493.79	554.38	621.72
SG3	211.95	86.12	113.80	154.20	256.81	367.30	475.42	565.64	647.75	701.18	837.78
SG4	21.43	71.50	127.84	188.70	248.98	309.39	372.55	434.05	494.03	554.05	620.44
SG5	48.91	9.44	63.50	88.23	202.91	300.19	387.41	483.47	570.32	623.99	745.26
SG6	21.63	86.31	149.14	213.63	282.20	351.27	423.68	497.38	568.32	638.64	714.62
SG7	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG8	-49.04	10.59	67.27	130.59	193.92	253.53	316.10	379.42	438.31	500.10	560.52
SG9	138.25	21.39	41.51	80.47	182.21	290.01	384.17	482.20	555.86	606.39	741.77
SG10	7.96	70.70	130.67	194.69	258.01	321.09	382.35	447.67	506.53	566.44	633.48

TABLE E-16. CVP2, AIR 2, LOAD CONDITION 1a (Continued)

SG11	59.75	-18.79	37.46	56.52	170.24	256.98	341.61	425.04	494.63	534.81	645.24
SG12	33.52	129.38	219.61	311.27	410.59	512.32	618.66	728.19	833.74	939.44	1047.54
SG13	142.96	3.26	76.03	89.71	230.72	324.99	430.28	525.35	605.12	651.30	768.73
SG14	33.32	97.87	163.01	224.52	289.92	352.51	416.08	481.60	542.46	603.35	669.16
SG15	-19.30	-45.65	-18.84	10.51	69.34	134.29	191.73	263.28	300.17	342.29	432.43
SG16	-16.87	25.83	77.65	127.95	183.71	243.25	300.56	364.22	414.89	469.66	535.39
SG17	-365.61	-400.78	-346.27	-303.94	-222.12	-145.24	-53.57	18.48	72.91	123.35	220.71
SG18	-4.03	28.03	73.43	121.61	173.73	227.85	283.09	337.97	387.85	439.17	497.05
SG19	-321.38	-362.49	-286.41	-284.56	-204.44	-146.70	-68.27	-12.03	45.69	77.50	149.10
SG20	28.98	58.93	127.88	168.00	230.50	287.60	351.93	410.17	468.21	518.44	580.05
SG21	15.92	-9.62	-45.89	-82.15	-113.07	-145.07	-181.89	-213.90	-242.77	-274.38	-309.94
SG22	46.45	40.59	37.45	37.77	38.84	40.87	37.91	36.80	37.22	38.55	33.66
SG23	-35.35	-48.64	-71.97	-94.94	-115.48	-138.44	-167.59	-191.57	-211.40	-234.58	-264.26
SG24	31.94	23.22	18.56	16.53	17.23	16.12	8.83	3.89	2.56	-2.15	-10.41
SG25	218.42	214.83	206.04	199.41	194.27	189.00	177.91	169.11	164.18	155.65	141.03
SG26	24168.1	24168.1	24168.1	24103.3	23949.8	23932.7	23847.4	23915.0	23879.7	23868.5	23797.3
SG27	-144.54	-181.59	-214.54	-243.18	-267.37	-289.57	-318.44	-343.34	-361.50	-382.99	-412.23
SG28	62.32	54.93	50.49	48.27	49.76	46.79	38.66	32.01	28.31	18.70	8.35
SG29T	2.51	72.57	151.46	238.43	316.94	395.89	477.10	559.38	637.95	721.04	801.86
SG29-45	36.73	43.73	70.72	109.45	144.89	178.59	213.28	249.22	281.49	320.46	351.47
SG29L	29.56	8.14	2.66	-12.81	-19.78	-26.79	-36.36	-47.74	-57.91	-69.47	-79.98
SG30T	13.14	77.51	153.97	238.71	316.46	396.21	479.87	562.97	642.10	726.57	809.27
SG30-45	-0.66	20.46	46.41	87.08	120.84	157.82	191.48	231.17	266.08	305.32	334.88
SG30L	8.58	-3.73	-10.94	-21.60	-24.90	-28.96	-41.55	-50.13	-56.03	-66.07	-78.80
SG31T	8.44	107.46	195.30	279.94	362.56	441.11	522.95	607.95	688.82	772.91	856.55
SG31-45	31.79	15.63	3.74	-4.67	-10.85	-17.63	-30.17	-39.69	-46.24	-54.50	-67.88
SG31L	36.75	62.71	97.50	136.43	171.29	203.60	242.44	278.07	313.74	351.99	384.91
SG32T	-8.68	73.02	156.26	243.64	326.78	411.57	500.25	588.65	673.06	763.61	853.16
SG32-45	61.49	81.15	116.22	157.22	192.11	227.90	267.04	302.85	339.39	377.20	411.74
SG32L	38.28	21.51	8.28	-2.37	-11.65	-24.08	-42.83	-59.01	-69.67	-86.83	-106.77
SG33T	-15.90	36.29	107.68	184.11	261.37	342.52	428.46	516.51	600.56	691.32	780.62
SG33-45	6.02	35.15	63.90	98.23	129.83	163.45	198.24	234.80	273.92	311.46	350.10
SG33L	14.10	-2.86	-19.91	-32.25	-43.95	-58.53	-78.42	-97.01	-109.82	-126.90	-144.85
SG34T	10.83	43.14	110.45	180.93	254.74	328.49	405.72	483.74	558.69	638.69	717.84
SG34-45	-23.07	-1.62	23.91	58.12	87.88	117.77	151.84	184.24	219.79	250.59	284.41
SG34L	17.51	3.31	-12.75	-22.25	-33.57	-45.67	-59.68	-73.00	-82.73	-97.06	-110.30
SG35T	-7.68	27.47	83.46	150.98	221.08	295.88	375.45	457.80	537.65	624.64	710.17
SG35-45	24.93	18.38	38.91	65.02	95.46	129.46	166.62	203.41	241.13	280.87	314.16
SG35L	32.34	0.88	-18.27	-27.19	-31.20	-33.98	-41.32	-45.04	-44.67	-50.75	-59.17
SG36T	-14.57	62.06	143.91	226.07	303.86	383.16	465.70	548.52	626.50	711.62	795.21
SG36-45	-20.46	14.41	60.28	99.06	139.12	181.53	222.18	263.48	304.09	344.37	378.86
SG36L	-0.34	-10.04	-20.02	-27.06	-31.21	-37.08	-49.02	-60.07	-65.43	-78.29	-92.38
SG37T	-73.70	11.40	95.28	183.67	265.25	347.85	433.13	516.91	597.31	680.98	764.79
SG37-45	27.85	53.97	90.44	134.26	171.22	207.31	249.60	286.35	323.39	363.22	397.74
SG37L	17.01	3.82	-4.77	-10.48	-13.92	-18.14	-28.40	-35.18	-39.41	-45.21	-56.31

TABLE E-17. CVP2, AIR 2, LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.06	0.02	-0.01	0.00	-0.01	0.01	0.00	0.00	0.00	0.00	0.00
Frame-1	43.75	-21.47	-19.89	-17.64	-9.05	-25.48	35.60	5.71	7.17	-7.61	19.62
Frame-2	-19.11	0.37	-83.24	51.12	1604.54	-43.67	49.21	10.37	55.29	5.63	163.41
Frame-3	-15.45	43.07	-34.28	-33.76	0.54	20.20	110.25	87.33	-50.23	84.35	63.43
Frame-4	-37.60	-4.60	43.52	-19.74	497.41	-20.69	-28.51	-80.84	-25.94	-39.00	-66.92
Frame-5	-78.49	-29.93	23.40	4.95	4.93	-4.63	30.67	-59.65	-65.09	-17.78	-78.50
Frame-6	-81.20	-23.45	61.41	66.98	24.53	-17.18	85.53	3.41	-27.42	66.68	47.69
Frame-7	43.93	42.22	54.44	25.55	56.71	12.54	-43.50	44.39	11.05	21.80	28.23
Frame-8	62.01	-61.94	-13.57	-21.78	9.35	-38.23	57.25	19.42	-98.25	-8.31	-60.42
Frame-9	-45.28	22.97	-22.32	-14.89	-13.02	-26.32	93.09	-44.69	-31.34	2.25	12.23
Frame-10	66.77	65.06	-98.36	-10.15	58.88	-107.53	-67.12	144.71	-91.79	30.87	-84.95
Frame-11	20.16	-56.24	86.17	-59.01	-38.52	-65.04	50.85	59.36	-30.93	21.91	-19.13
Frame-12	-30.46	37.07	54.50	13.40	-81.58	67.79	27.07	49.60	-54.78	47.69	-56.55
Hoop-1	-67.89	58.91	-32.97	27.67	-77.07	150.79	27.67	-60.54	9.29	-58.70	31.34
Hoop-2	-81.34	27.07	220.40	-56.05	93.92	140.90	-47.02	52.37	-72.31	70.43	-21.71
Hoop-3	-57.47	-43.45	-78.52	-20.64	-43.44	-78.52	-43.45	145.99	-46.95	-13.62	21.46
Hoop-4	245.90	240.37	108.99	94.20	-92.66	34.99	-100.08	-127.81	-125.97	5.39	-94.51
Hoop-5	-76.42	100.52	49.44	20.25	399.64	120.57	-16.23	27.55	-49.06	-118.37	-50.88
Hoop-6	44.73	159.28	-73.51	-29.17	-31.02	-31.02	168.54	-69.81	-18.09	-101.22	-43.95
Hoop-7	33.42	-138.25	139.33	9.68	163.07	-161.97	42.56	-138.23	276.32	115.59	-90.76
Hoop-8	-21.86	-51.29	-73.37	-29.22	88.49	-43.94	-43.94	-29.22	22.28	-51.29	-51.29
Hoop-9	374.77	342.17	278.75	-54.98	-18.70	-15.07	71.98	97.37	48.40	44.78	242.45
Hoop-10	-102.45	-41.05	72.75	117.92	-50.08	121.52	74.55	49.27	-88.02	128.74	83.59
Hoop-11	48.56	30.14	81.75	262.34	13.56	302.85	240.20	-91.47	-102.52	-89.62	-50.93
Hoop-12	112.08	169.46	45.47	199.11	54.72	4.75	245.36	32.51	-63.73	-39.67	-54.48
Hoop-13	-36.30	156.47	104.59	0.77	149.05	297.37	-103.04	37.84	45.26	-36.31	-36.31
Hoop-14	-5.95	-57.74	-5.95	-5.95	-5.95	-42.95	-42.95	90.26	216.06	238.26	275.26
Long-1	-30.04	468.46	958.75	1421.41	1914.31	2331.90	2819.10	3205.47	3736.01	4113.45	4467.59
Long-2	-38.75	463.23	950.71	1423.27	1890.32	2310.67	2831.44	3312.18	3731.50	4164.19	4573.03
Long-3	7.20	475.78	958.13	1432.69	1874.26	2331.47	2785.70	3295.98	3660.16	4180.95	4662.43
Long-4	2.97	470.45	958.83	1396.70	1837.58	2370.96	2801.06	3308.36	3673.04	4180.90	4703.92
Long-5	270.95	724.14	1088.74	1510.52	2028.84	2438.69	2939.26	3496.20	3953.02	4437.41	4821.57
Long-6	-42.42	477.19	943.09	1436.78	1835.68	2388.11	2811.69	3252.49	3709.74	4197.56	4704.19
Long-7	101.67	485.12	925.16	1397.34	1836.42	2379.57	2811.67	3297.95	3727.09	4194.69	4686.80
Long-8	5.44	470.79	928.85	1414.90	1838.72	2335.90	2810.44	3288.77	3692.57	4182.55	4701.31
SG1	126.89	132.03	194.15	193.43	192.12	252.02	225.32	223.45	207.79	245.80	261.44
SG2	19.45	18.48	15.48	12.53	8.89	11.06	5.62	2.44	-1.11	-1.38	-3.18
SG3	229.48	176.86	220.97	181.32	168.21	195.33	157.15	111.94	82.97	101.81	97.01
SG4	25.89	20.22	16.08	9.49	0.74	0.60	-9.90	-20.26	-27.86	-32.48	-38.00
SG5	69.81	42.50	44.62	15.06	50.19	20.86	31.45	20.40	23.16	30.67	26.85
SG6	25.32	23.47	15.92	9.47	5.97	-1.03	-7.48	-14.85	-22.22	-26.46	-32.91
SG7	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG8	-46.10	-47.56	-51.98	-56.40	-59.34	-63.02	-65.24	-72.59	-74.07	-78.50	-82.17
SG9	149.33	104.82	142.12	102.99	98.37	116.64	86.56	52.95	22.50	45.76	42.99
SG10	9.99	6.11	-1.45	-8.65	-15.10	-18.24	-27.47	-34.48	-43.15	-46.66	-52.56

TABLE E-17. CVP2, AIR 2, LOAD CONDITION 1b (Continued)

SG11	79.45	43.50	46.87	15.64	36.40	21.08	20.57	10.47	15.13	21.36	21.86
SG12	39.16	36.98	26.00	17.04	11.87	3.19	-6.42	-15.79	-24.79	-31.17	-38.97
SG13	179.34	119.58	162.75	133.61	177.53	153.81	189.52	150.82	167.58	183.65	177.27
SG14	38.11	35.80	29.59	24.20	22.08	17.20	13.51	6.19	1.67	-1.88	-6.81
SG15	-19.20	-23.53	-7.55	-21.37	-10.31	-14.83	-8.65	-19.80	-41.13	-16.26	-16.95
SG16	-16.41	-17.79	-20.83	-26.78	-23.73	-30.13	-29.17	-33.59	-43.54	-37.10	-40.69
SG17	-368.43	-379.84	-380.07	-390.12	-407.80	-392.11	-405.35	-403.74	-400.60	-400.92	-395.29
SG18	-3.61	-3.75	-8.69	-11.97	-22.60	-19.23	-26.20	-28.28	-30.54	-33.64	-35.02
SG19	-320.96	-328.48	-302.25	-305.65	-289.85	-294.71	-281.83	-297.48	-298.87	-289.31	-295.11
SG20	28.43	28.61	29.72	27.51	27.87	24.91	24.18	17.89	13.09	13.46	9.57
SG21	10.37	37.00	66.06	94.93	123.23	148.76	178.75	208.89	241.09	264.82	290.70
SG22	36.57	66.57	98.11	123.51	161.12	183.05	214.32	251.97	285.39	310.01	337.13
SG23	-35.86	-4.50	31.06	64.18	100.05	129.80	166.29	203.91	242.09	271.76	303.65
SG24	28.99	61.27	101.32	134.18	176.42	206.13	245.46	287.51	329.58	360.65	394.39
SG25	218.93	246.78	278.11	306.04	338.01	362.45	394.21	426.77	459.91	485.47	513.14
SG26	24591.7	24413.2	24480.4	24503.5	24465.7	24409.8	24365.2	24430.4	24415.7	24500.0	24485.8
SG27	-149.11	-121.14	-84.52	-55.70	-20.49	7.37	41.33	75.18	109.83	139.19	169.90
SG28	53.45	84.48	126.63	159.92	196.86	227.17	266.38	300.36	342.50	372.89	404.64
SG29T	4.18	-13.20	-30.58	-48.30	-67.07	-76.32	-98.60	-114.53	-132.34	-146.40	-159.87
SG29-45	26.67	37.19	54.44	65.67	90.52	101.13	117.75	141.10	160.02	171.14	179.28
SG29L	24.68	50.92	88.13	122.83	158.91	190.96	232.46	268.81	303.88	339.34	371.22
SG30T	15.71	2.91	-10.72	-25.21	-40.10	-49.68	-67.66	-83.12	-100.82	-110.79	-123.86
SG30-45	-6.65	3.38	15.08	25.75	47.52	48.26	65.54	82.80	106.05	112.99	118.41
SG30L	4.48	40.31	83.89	119.64	160.70	192.15	235.70	275.95	318.43	353.40	388.50
SG31T	11.05	14.12	2.11	-4.55	-19.63	-22.38	-34.62	-46.44	-58.83	-67.40	-74.52
SG31-45	23.94	54.82	91.56	120.64	161.22	187.41	222.50	262.46	301.05	328.43	358.77
SG31L	37.87	44.88	57.40	69.31	81.12	91.30	99.73	105.35	124.05	128.35	132.38
SG32T	-6.08	-14.07	-30.12	-42.49	-56.44	-67.32	-81.83	-97.59	-114.93	-123.09	-135.82
SG32-45	62.42	65.37	80.22	91.36	104.15	110.64	122.52	126.22	144.96	152.78	155.73
SG32L	33.94	68.27	112.48	148.21	191.81	225.16	267.81	311.20	356.98	390.21	426.48
SG33T	-13.60	-25.73	-42.72	-57.65	-72.56	-86.25	-99.58	-116.93	-132.79	-143.74	-157.13
SG33-45	4.26	15.17	28.13	42.12	56.19	62.36	78.68	82.15	98.45	107.72	111.89
SG33L	9.11	41.81	82.90	118.59	159.43	193.20	230.77	271.37	312.26	345.22	378.87
SG34T	14.18	-11.04	-26.50	-50.75	-65.88	-87.94	-101.77	-125.27	-142.30	-158.44	-176.02
SG34-45	-26.36	-29.75	-23.34	-20.84	-23.11	-18.05	-10.95	-18.52	-8.91	-6.08	-5.33
SG34L	11.60	38.64	71.05	105.56	139.35	174.45	206.78	243.78	278.46	312.09	346.09
SG35T	-6.85	-17.68	-30.28	-41.63	-54.04	-62.87	-75.20	-88.73	-104.12	-111.30	-122.12
SG35-45	22.51	30.96	48.62	61.63	75.33	83.97	100.51	105.89	128.14	136.34	143.02
SG35L	28.58	61.61	106.37	141.38	182.07	215.81	256.22	296.63	340.73	373.34	407.69
SG36T	-10.06	-17.08	-30.10	-40.06	-53.07	-59.58	-71.58	-85.80	-100.87	-106.66	-116.83
SG36-45	-25.78	-10.16	1.92	14.27	25.13	32.77	47.27	49.69	70.85	75.44	82.38
SG36L	-8.92	20.17	59.14	88.57	123.48	153.22	189.27	221.47	260.95	288.94	319.49
SG37T	-69.88	-76.98	-91.27	-100.40	-111.09	-121.69	-132.64	-146.16	-157.75	-165.83	-177.63
SG37-45	29.43	31.84	42.02	52.81	67.30	71.94	81.29	86.39	105.68	109.55	110.94
SG37L	8.42	40.41	77.79	107.66	148.60	175.25	210.98	251.40	290.26	318.10	348.76

TABLE E-18. CVP2, AIR 2, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.03	1.00	2.01	3.05	4.06	5.06	6.06	7.07	8.09	9.09	10.13
Frame-1	-27.09	281.69	424.33	629.15	837.58	1040.32	1264.33	1441.24	1666.41	1879.44	2110.14
Frame-2	-340.76	253.91	474.13	637.25	824.80	1056.99	1255.05	1455.98	1716.06	1840.46	2093.96
Frame-3	-56.89	208.99	403.72	629.49	836.58	1036.28	1258.90	1465.46	1680.63	1871.72	2094.11
Frame-4	-24.03	242.14	454.05	626.50	828.42	1043.60	1269.73	1471.12	1669.11	1839.43	2099.84
Frame-5	-23.50	208.51	403.49	653.86	804.31	1047.41	1272.14	1468.66	1665.22	1872.04	2112.10
Frame-6	-20.37	257.80	453.73	685.39	810.34	1053.66	1248.31	1461.04	1697.53	1825.36	2111.44
Frame-7	43.62	292.41	476.62	633.70	993.48	1023.81	1229.39	1432.00	1732.39	1778.61	1976.52
Frame-8	99.56	193.16	382.33	632.16	845.29	1056.25	1251.28	1460.56	1688.35	1875.60	2092.22
Frame-9	-76.93	262.84	413.28	623.54	929.11	1038.82	1258.00	1437.55	1751.03	1894.28	2056.91
Frame-10	-62.68	318.52	440.60	638.86	815.92	1044.18	1256.50	1453.79	1702.33	1851.77	2102.90
Frame-11	-29.31	215.29	425.29	640.67	820.09	1051.54	1245.33	1427.71	1682.41	1919.33	2058.09
Frame-12	-84.36	238.80	400.26	631.34	858.39	1053.84	1260.97	1454.74	1713.81	1878.53	2076.24
Hoop-1	-51.35	928.26	1742.47	2666.42	3539.98	4440.12	5338.79	6204.99	7104.87	7976.77	8910.44
Hoop-2	-9.07	907.18	1736.69	2661.44	3542.08	4438.01	5328.87	6164.33	7126.85	7985.99	8987.18
Hoop-3	219.68	944.24	1723.17	2745.40	3575.76	4422.66	5331.32	6226.57	7136.36	7991.43	8912.46
Hoop-4	101.60	1032.37	1580.09	2671.30	3523.03	4458.89	5317.40	6248.69	7076.96	7951.07	8794.86
Hoop-5	346.78	945.21	1691.37	2710.64	3499.30	4535.08	5341.37	6250.43	7183.78	7947.08	8893.92
Hoop-6	-116.01	976.02	1781.66	2712.41	3513.04	4480.84	5332.58	6207.12	7128.46	7969.92	8910.44
Hoop-7	168.57	1027.02	1785.00	2736.04	3416.03	4469.45	5316.85	6248.88	7172.35	8044.29	8939.25
Hoop-8	-29.22	868.40	1795.81	2641.56	3568.97	4422.53	5333.89	6188.51	7086.22	8020.72	8881.64
Hoop-9	-40.46	811.91	1757.13	2614.59	3556.19	4410.46	5325.34	6175.23	7134.70	7856.57	8904.92
Hoop-10	-24.79	851.28	1769.25	2650.39	3525.01	4422.85	5325.05	6186.02	7110.95	7920.28	8881.34
Hoop-11	295.45	1084.11	1723.83	2653.99	3516.67	4417.79	5363.90	6196.07	7157.99	8129.13	8888.36
Hoop-12	63.97	832.07	1735.62	2653.28	3542.04	4445.33	5340.15	6200.09	7118.19	7969.66	8872.95
Hoop-13	23.01	771.93	1877.15	2640.53	3530.68	4420.58	5331.66	6200.37	7171.84	8039.49	8877.47
Hoop-14	75.45	845.09	1711.27	2813.58	3546.57	4427.29	5351.36	6144.34	7247.10	7883.60	8838.33
Long-1	44.74	455.41	927.89	1402.42	1942.79	2329.76	2789.77	3258.55	3770.81	4164.90	4668.92
Long-2	-120.19	630.96	917.89	1377.09	1839.27	2309.69	2912.02	3223.13	3804.81	4141.51	4672.24
Long-3	37.03	468.32	888.52	1402.86	1941.39	2326.73	2901.68	3270.80	3745.05	4279.57	4658.23
Long-4	-8.04	493.70	920.89	1416.28	1826.56	2332.03	2798.99	3259.08	3754.18	4247.41	4659.39
Long-5	275.74	624.62	953.24	1409.82	1918.52	2338.21	2788.52	3275.26	3712.39	4201.63	4690.40
Long-6	98.19	472.30	930.86	1400.11	1862.58	2329.66	2793.73	3268.06	3727.23	4197.98	4671.93
Long-7	101.67	458.67	920.36	1422.58	1793.14	2348.55	2774.77	3251.95	3740.68	4255.22	4668.30
Long-8	-10.57	467.10	916.54	1422.29	1848.57	2334.90	2791.13	3241.66	3745.88	4202.66	4689.76
SG1	163.96	126.90	57.96	272.66	337.94	434.70	527.34	634.94	751.89	816.59	883.15
SG2	27.05	71.34	119.13	186.39	241.02	300.15	357.96	419.69	480.25	537.22	594.07
SG3	251.83	201.45	94.98	267.27	297.38	398.11	467.03	563.85	664.30	702.13	761.95
SG4	31.93	75.70	120.06	179.19	228.87	285.81	340.33	398.90	456.12	509.43	565.90
SG5	66.92	91.33	2.58	179.11	187.05	297.71	355.98	437.23	540.08	559.51	620.00
SG6	29.01	87.24	134.95	200.71	255.45	320.86	383.40	449.70	516.83	577.65	642.39
SG7	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG8	-43.16	12.80	59.18	123.21	174.76	234.39	288.92	349.27	408.95	461.96	522.97
SG9	162.45	108.54	25.64	183.10	222.07	314.38	380.36	474.31	574.44	611.18	664.79
SG10	15.90	67.38	119.41	180.84	236.03	292.67	347.54	406.75	464.18	516.97	571.66

TABLE E-18. CVP2, AIR 2, LOAD CONDITION 1c (Continued)

SG11	76.05	55.00	-21.56	142.98	153.06	253.79	304.57	377.82	474.05	477.74	523.60
SG12	44.98	127.69	202.30	290.28	370.74	468.03	565.99	665.13	764.08	856.77	954.77
SG13	165.36	112.94	13.71	216.31	217.71	362.98	426.82	525.40	651.68	673.98	746.62
SG14	40.61	99.81	147.72	214.50	267.00	328.64	385.16	445.20	506.72	560.03	617.51
SG15	-29.94	-27.41	-21.65	55.69	99.46	144.33	191.59	252.29	313.78	359.67	388.21
SG16	-18.16	21.41	66.46	126.61	178.81	229.29	280.67	337.81	392.49	446.44	494.53
SG17	-375.53	-383.79	-365.06	-270.91	-219.84	-157.61	-96.10	-27.63	65.44	95.54	141.27
SG18	-6.76	24.84	66.55	115.87	162.26	208.82	258.39	309.18	362.80	406.60	455.29
SG19	-331.21	-320.76	-332.01	-223.17	-207.75	-131.90	-83.82	-25.35	57.17	83.81	130.04
SG20	25.84	63.93	106.07	173.16	216.62	277.07	329.45	385.99	447.60	496.22	550.10
SG21	9.26	9.26	9.63	-2.96	-6.10	-11.47	-11.66	-20.35	-20.91	-24.80	-27.38
SG22	33.02	65.20	96.13	124.79	152.04	176.83	204.76	229.99	260.17	282.52	308.27
SG23	-46.20	-24.61	0.07	0.85	15.24	22.99	36.65	41.17	52.38	61.75	71.56
SG24	17.00	54.65	91.92	126.05	158.36	189.73	222.07	250.10	283.16	309.93	337.55
SG25	212.14	239.35	268.38	282.07	303.60	324.83	348.38	364.64	384.07	402.99	421.01
SG26	23761.5	23767.4	23806.2	23839.1	23879.7	23906.2	23955.1	23970.4	24002.2	24022.8	24029.8
SG27	-150.05	-149.87	-144.54	-148.41	-142.65	-134.56	-125.16	-121.08	-113.56	-103.72	-94.51
SG28	57.15	94.12	127.38	156.20	186.53	217.59	247.21	269.37	297.50	319.68	345.49
SG29T	4.74	58.30	126.49	200.34	269.58	340.15	409.68	483.80	556.80	630.45	706.47
SG29-45	21.06	64.05	106.99	162.25	213.69	267.81	322.14	375.39	435.22	478.49	537.94
SG29L	15.67	47.82	60.77	85.34	112.01	137.24	170.81	188.58	217.22	238.04	262.56
SG30T	17.30	70.00	127.63	201.13	268.41	337.55	407.79	479.73	551.50	622.84	697.12
SG30-45	-5.35	28.03	71.11	124.16	169.66	221.65	269.94	322.00	376.45	418.06	469.50
SG30L	-1.75	35.32	65.93	96.29	127.14	156.29	188.30	211.62	241.36	265.23	290.74
SG31T	9.37	88.52	179.01	241.60	319.74	393.06	468.76	540.09	613.38	687.70	765.21
SG31-45	16.37	42.06	70.06	93.14	115.86	137.87	161.45	181.88	207.07	225.84	246.65
SG31L	38.24	65.04	119.03	160.14	200.57	250.95	298.27	347.87	397.22	441.14	488.22
SG32T	-3.75	64.89	128.55	206.61	279.64	353.95	430.35	507.56	585.24	663.14	744.67
SG32-45	70.59	98.97	136.99	193.19	233.28	286.34	333.71	383.96	435.58	480.11	529.92
SG32L	24.47	55.26	88.41	115.24	139.53	164.39	188.90	207.64	232.53	252.07	271.76
SG33T	-11.71	29.47	75.73	147.06	213.34	284.45	358.69	434.48	512.14	589.39	671.67
SG33-45	4.82	44.31	77.61	126.60	162.48	212.55	260.12	309.02	362.53	409.31	461.58
SG33L	2.64	27.19	57.05	75.96	95.07	115.42	134.46	151.68	173.41	192.70	208.64
SG34T	11.39	33.46	76.42	141.91	203.88	269.33	337.36	405.39	475.08	544.55	619.57
SG34-45	-23.44	-4.08	25.58	62.38	92.70	135.08	175.55	215.68	259.49	300.20	346.70
SG34L	10.34	27.43	50.53	71.42	87.49	110.64	130.12	150.65	173.85	196.72	212.74
SG35T	-12.33	16.50	56.49	118.37	179.53	244.27	312.73	384.09	458.08	531.52	609.35
SG35-45	21.59	34.36	60.65	106.45	144.32	195.61	245.64	294.49	347.31	392.10	444.42
SG35L	22.17	38.85	65.67	90.24	118.65	152.25	184.92	212.51	243.86	274.64	302.93
SG36T	-13.88	53.23	116.56	191.46	260.53	329.17	400.35	473.18	546.35	618.44	694.58
SG36-45	-23.40	28.40	74.36	130.42	175.98	229.13	282.93	331.34	386.63	429.24	480.62
SG36L	-8.83	21.99	49.68	70.05	92.44	118.17	141.79	159.12	180.92	199.99	219.11
SG37T	-65.14	7.21	73.69	152.76	224.89	298.26	371.88	445.13	517.95	591.66	666.90
SG37-45	33.11	62.48	107.64	159.06	197.60	249.60	296.78	348.14	398.28	442.20	489.88
SG37L	1.41	30.99	61.78	87.87	112.90	136.96	162.58	184.99	211.95	232.34	254.77

TABLE E-19. CVP2, WATER 1, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.02	1.02	2.06	3.08	4.17	5.07	6.04	7.08	8.02	9.06	10.05
Frame-1	-172.91	158.93	465.84	616.31	759.48	1044.99	1247.88	1442.25	1664.90	1844.26	2158.95
Frame-2	-70.78	244.75	529.99	594.79	836.54	1030.45	1254.05	1441.36	1684.87	1841.39	2169.15
Frame-3	-39.20	206.78	465.64	640.71	827.33	1034.07	1252.81	1468.18	1675.74	1883.02	2153.10
Frame-4	-108.02	193.30	533.45	584.26	808.79	998.20	1275.58	1466.87	1677.84	1898.94	2150.33
Frame-5	42.63	187.33	365.72	575.44	831.35	960.66	1250.47	1474.84	1687.84	1876.47	2209.28
Frame-6	-1279.20	185.00	541.12	559.63	832.29	1028.40	1278.73	1495.02	1710.56	1918.85	2168.99
Frame-7	-107.27	209.22	326.82	603.27	844.37	1075.03	1164.41	1429.22	1705.16	1840.87	2157.97
Frame-8	129.52	228.81	415.08	589.69	818.49	1055.80	1229.38	1464.65	1668.04	1893.07	2066.99
Frame-9	-144.16	215.25	481.47	648.60	872.56	1062.82	1309.02	1434.74	1688.39	1875.28	2093.96
Frame-10	-996.96	188.87	485.42	577.45	866.60	1088.49	1310.35	1454.45	1671.68	1852.03	2084.56
Frame-11	121.82	219.83	416.73	592.08	791.71	1052.76	1296.62	1441.88	1664.38	1838.45	2102.91
Frame-12	-26.56	203.71	381.32	567.94	793.50	1110.48	1354.82	1406.97	1580.93	1897.79	2135.57
Hoop-1	22.66	897.17	1742.11	2705.80	3578.01	4461.35	5299.65	6273.46	7065.38	8049.19	8763.13
Hoop-2	-104.71	932.21	1645.61	2557.00	3481.50	4290.46	5235.77	6301.69	7037.00	8078.45	8850.89
Hoop-3	756.04	784.10	1676.53	2933.19	3877.91	4556.18	5296.74	6070.17	7127.73	8052.79	8860.49
Hoop-4	343.16	1229.16	2235.15	2874.38	3506.45	4294.06	5441.41	6388.53	7119.23	7551.00	8865.49
Hoop-5	40.82	859.63	1700.15	2545.42	3303.62	4649.12	5251.44	6159.70	6956.70	7885.81	8858.94
Hoop-6	-68.46	792.27	1987.11	2767.60	3531.80	4672.93	5484.33	6199.21	6925.18	8148.86	8600.62
Hoop-7	234.35	1024.89	1744.05	2765.64	3566.66	4407.97	5116.86	6057.21	6930.00	7715.91	8701.13
Hoop-8	375.58	964.06	1787.94	2670.67	3774.46	4399.35	5481.23	6378.13	7011.45	7958.88	8739.42
Hoop-9	94.83	1102.97	1739.40	2731.22	3386.13	4611.51	5551.30	6303.23	7212.36	8115.61	8700.28
Hoop-10	-32.31	505.87	1795.34	2759.73	3641.41	4327.32	5236.25	6109.82	7172.45	8001.68	9093.29
Hoop-11	4.04	925.15	1901.53	3008.70	3841.77	4436.42	5280.69	6440.76	7065.98	7908.22	8767.48
Hoop-12	676.27	591.15	1773.59	3327.97	4038.95	4504.86	5245.57	6310.91	6940.76	7953.32	8857.14
Hoop-13	-165.93	1116.62	2206.41	2591.92	3652.42	4267.38	5253.91	6194.91	6944.38	8003.02	8745.18
Hoop-14	690.47	853.25	1637.52	2695.56	3428.39	4338.11	5359.68	6224.81	6773.01	7903.56	8858.81
Long-1	211.35	7.22	-11.77	-20.08	6.03	15.52	3.66	14.34	-5.84	4.84	10.78
Long-2	195.20	-87.95	42.08	91.90	-60.00	-61.22	84.60	66.37	78.52	91.90	50.57
Long-3	-58.16	143.16	77.31	342.03	277.37	304.71	-4.71	139.44	-22.11	-13.41	110.84
Long-4	-47.47	-20.55	205.83	-49.91	49.20	-43.79	-19.32	-41.35	-46.23	77.34	67.54
Long-5	418.09	319.75	397.70	353.35	305.36	314.95	277.79	348.52	252.59	311.39	396.43
Long-6	100.07	-19.73	-25.85	65.84	-14.84	-18.51	175.85	-16.06	-16.06	164.86	8.38
Long-7	128.56	51.63	105.72	111.73	118.93	110.52	73.26	118.93	120.12	117.74	122.52
Long-8	-31.50	102.67	20.21	37.44	79.28	65.75	-51.19	75.59	-52.41	-19.19	145.74
SG1	608.89	298.99	339.31	410.48	437.52	586.96	662.02	757.85	802.63	906.47	1005.34
SG2	26.35	67.41	128.26	191.95	245.60	311.76	371.41	437.21	492.96	561.39	623.07
SG3	692.74	381.99	423.26	470.53	499.26	652.16	731.73	820.65	889.08	968.87	1062.67
SG4	26.53	72.59	135.77	194.05	249.15	314.51	373.68	439.17	496.93	556.26	618.29
SG5	409.53	204.14	247.81	296.86	322.38	465.18	551.97	618.22	697.78	761.94	852.10
SG6	24.20	71.55	140.07	203.27	262.01	336.79	404.43	477.94	549.23	623.16	699.74
SG7	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG8	-60.80	-5.61	60.63	118.05	176.91	248.30	307.94	369.04	430.86	492.00	551.57
SG9	597.96	286.63	324.62	377.44	406.01	544.80	631.06	715.04	773.56	856.89	950.20
SG10	8.14	60.35	128.04	191.15	249.05	315.27	379.87	445.73	502.55	562.38	622.28

TABLE E-19. CVP2, WATER 1, LOAD CONDITION 1a (Continued)

SG11	432.66	205.07	251.87	295.59	308.66	443.18	529.22	585.14	641.24	700.55	770.79
SG12	25.90	110.34	206.62	294.59	379.08	484.74	588.48	700.90	805.78	915.94	1030.20
SG13	548.40	312.81	294.45	341.36	398.88	558.53	658.79	724.00	809.47	877.34	948.91
SG14	24.19	85.46	152.51	214.48	278.62	349.96	413.65	477.54	538.39	601.00	662.71
SG15	164.32	35.15	78.34	126.62	164.51	220.69	282.84	341.20	372.65	439.39	489.41
SG16	0.49	23.20	77.72	133.78	191.28	240.42	303.81	362.67	413.93	473.89	528.19
SG17	-224.29	-281.04	-205.88	-174.34	-131.50	-54.39	34.49	101.55	156.79	241.41	293.63
SG18	-12.16	22.39	79.46	118.44	169.97	218.54	279.53	333.28	383.16	439.54	488.64
SG19	185.67	108.19	108.18	166.45	223.21	285.72	368.79	419.09	479.20	539.00	606.63
SG20	84.42	112.15	158.52	223.04	284.01	334.09	400.84	459.43	516.17	574.63	636.68
SG21	7.40	-23.86	-63.82	-97.86	-130.59	-157.05	-187.22	-218.11	-249.38	-275.12	-306.36
SG22	74.13	72.75	62.59	49.95	58.76	73.25	75.89	68.28	64.21	66.58	63.57
SG23	-21.10	-34.70	-66.56	-85.29	-113.63	-130.60	-154.04	-177.10	-197.71	-213.92	-241.84
SG24	21.97	16.21	0.71	-4.04	-6.49	4.49	3.62	-4.04	-6.67	-8.10	-12.39
SG25	190.88	196.70	188.62	189.61	178.73	168.19	156.83	145.23	129.90	117.58	104.72
SG26	619.31	617.72	610.31	615.52	615.09	609.94	605.59	596.95	585.36	591.49	585.55
SG27	27.32	-2.89	-37.11	-58.32	-103.99	-119.65	-144.93	-171.95	-198.46	-216.08	-240.17
SG28	88.91	90.40	84.48	88.92	75.61	82.26	79.31	70.44	58.61	62.31	54.92
SG29T	18.92	70.28	151.36	224.49	305.93	377.64	453.21	537.47	613.32	695.61	774.83
SG29-45	70.89	45.35	72.88	91.76	122.72	160.13	211.80	232.89	263.77	308.27	341.34
SG29L	10.93	-18.98	-29.57	-32.17	-44.20	-50.37	-57.44	-70.25	-82.98	-91.07	-101.09
SG30T	41.34	72.40	153.37	224.79	303.59	375.17	453.76	539.83	617.17	699.85	779.08
SG30-45	19.16	18.88	50.67	79.35	109.60	146.96	188.75	214.23	240.55	288.10	322.74
SG30L	2.21	-5.71	-22.30	-24.14	-29.00	-35.97	-45.88	-59.83	-73.32	-76.53	-82.47
SG31T	-47.23	70.29	163.74	257.45	345.33	409.70	485.84	579.16	661.96	748.10	829.43
SG31-45	36.28	26.49	5.17	-8.76	-13.17	-8.52	-14.70	-27.66	-35.46	-37.32	-53.94
SG31L	27.90	60.37	98.03	138.22	173.59	204.65	240.16	282.80	313.03	356.50	390.27
SG32T	7.82	57.81	149.80	230.62	311.12	390.71	471.37	561.99	646.84	732.88	824.82
SG32-45	96.34	99.32	139.55	175.73	207.80	238.96	274.59	307.24	322.63	378.50	415.19
SG32L	35.51	29.79	7.30	-5.53	-6.12	-24.86	-34.93	-55.45	-80.71	-83.28	-108.13
SG33T	-0.32	32.90	102.05	171.09	244.09	322.19	401.46	490.39	573.39	663.56	752.56
SG33-45	10.48	17.12	46.19	80.24	118.22	143.90	178.70	216.55	252.03	300.36	335.35
SG33L	16.94	1.10	-18.60	-30.85	-30.06	-58.88	-72.16	-89.49	-109.75	-120.52	-139.75
SG34T	45.27	56.77	112.05	174.10	247.38	315.04	385.95	465.35	537.44	616.81	694.75
SG34-45	-3.01	-16.33	17.40	47.62	71.56	104.55	138.53	167.17	203.28	242.79	265.74
SG34L	22.02	-0.41	-14.10	-24.53	-39.79	-54.87	-66.47	-81.74	-95.61	-105.82	-121.45
SG35T	32.16	23.75	77.16	137.47	206.26	279.34	355.15	438.23	516.20	599.25	682.13
SG35-45	50.42	34.45	55.30	81.91	108.19	145.39	172.72	206.34	230.50	276.78	313.73
SG35L	36.84	21.42	1.48	-1.59	-1.07	-21.66	-32.67	-42.29	-56.00	-50.34	-52.28
SG36T	3.42	57.40	140.56	215.75	303.41	369.00	445.05	529.76	607.31	687.63	769.76
SG36-45	28.06	28.85	20.65	17.06	-2.51	4.94	-2.42	-13.70	-28.24	-29.03	-40.59
SG36L	21.75	58.25	105.51	141.97	177.15	236.15	271.74	312.11	340.92	392.93	436.29
SG37T	-64.23	-1.68	92.50	174.14	261.01	331.56	410.39	497.74	573.56	658.46	748.63
SG37-45	56.18	67.52	109.97	146.36	182.54	218.68	257.54	298.51	326.90	367.45	402.07
SG37L	16.68	8.56	-9.92	-21.67	-25.19	-16.70	-19.67	-31.14	-38.61	-42.24	-50.03

TABLE E-20. CVP2, WATER 1, LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.05	0.11	0.02	0.00	-0.02	-0.02	0.06	-0.01	0.01	0.00	-0.02
Frame-1	-21.23	-49.25	236.19	89.38	99.35	354.15	-133.72	78.10	382.72	17.63	44.33
Frame-2	96.05	-90.10	220.36	-1382.23	110.03	-472.17	-432.58	236.31	2114.54	72.79	645.32
Frame-3	-140.28	-219.79	-120.64	-570.68	-143.70	-52.83	-1115.68	126.87	-46.69	39.14	65.76
Frame-4	-1573.22	-1227.15	-120.87	47.65	-368.17	226.49	34.65	429.41	710.20	198.22	273.21
Frame-5	46.19	125.14	212.65	-455.46	-580.04	287.69	106.06	-92.37	2084.73	-27.00	-134.83
Frame-6	-609.84	99.12	430.03	-991.65	133.90	181.36	66.89	-116.34	1398.13	189.11	512.66
Frame-7	-107.15	-42.02	217.42	25.75	-3.89	87.66	138.59	-88.58	-21.65	-105.86	-1308.70
Frame-8	-70.04	-120.31	-0.47	157.45	124.38	136.70	-29.33	53.52	-34.53	106.83	140.75
Frame-9	-220.95	70.42	148.06	-0.77	40.70	197.97	-57.31	232.35	198.99	153.80	93.91
Frame-10	5.29	-170.68	-219.55	-44.39	-53.35	187.96	44.30	-51.91	200.94	-151.84	-128.25
Frame-11	633.18	-924.38	-114.25	161.19	-82.77	51.17	116.16	153.81	-665.48	30.20	16.24
Frame-12	-35.13	-166.79	-112.18	164.05	-95.74	414.72	203.03	-78.72	140.69	104.55	-22.23
Hoop-1	683.99	-63.69	502.22	6.13	-148.21	9.81	-161.06	406.72	55.74	386.47	261.53
Hoop-2	-122.76	121.10	-130.01	-37.87	184.35	283.74	278.27	63.31	648.73	-66.78	-41.48
Hoop-3	21.26	1203.22	521.10	493.04	799.96	45.82	689.40	-41.88	165.09	343.97	-61.16
Hoop-4	280.24	-69.32	13.92	108.26	69.42	-87.83	435.65	972.24	-122.98	289.55	-98.92
Hoop-5	6.17	1264.47	349.05	-54.02	-97.79	927.29	-163.43	20.76	-77.73	-154.33	622.62
Hoop-6	485.61	-219.92	-74.01	-201.47	151.35	-197.79	-197.75	295.47	-179.32	-144.20	-120.19
Hoop-7	-222.06	475.34	364.01	953.78	-189.24	351.26	668.87	-258.65	811.44	842.40	75.52
Hoop-8	-146.72	-117.27	-73.14	353.48	552.12	-124.62	22.49	309.37	-14.29	15.13	-131.99
Hoop-9	1142.97	352.27	-48.41	-86.48	-44.79	-6.71	111.14	-48.41	887.20	794.73	-37.53
Hoop-10	-109.98	1368.99	-5.22	411.92	-126.22	276.48	1233.55	253.03	-43.15	-144.28	1123.51
Hoop-11	-124.93	-137.79	645.14	-152.53	315.38	1184.79	269.30	431.44	9.57	993.31	-108.33
Hoop-12	78.58	444.91	393.15	-119.42	71.17	-136.07	98.91	4.55	-112.03	-89.82	124.83
Hoop-13	390.13	493.83	1035.07	1049.79	-47.31	-91.78	93.54	108.37	397.50	-136.27	264.06
Hoop-14	1016.12	-115.99	-167.80	-152.98	209.55	76.36	76.36	742.26	-27.22	609.08	-49.41
Long-1	142.50	619.54	1369.51	1579.71	1853.67	2269.01	2803.91	3122.53	3845.70	4229.38	4289.90
Long-2	-63.65	114.98	1179.48	1376.48	2160.13	2258.56	2745.57	3086.41	3783.23	4067.96	4719.30
Long-3	123.28	359.39	1083.87	1436.94	1787.23	2371.29	2755.00	3557.16	3583.79	3995.47	4465.20
Long-4	-45.02	741.71	653.61	1051.36	2154.87	2289.46	2543.69	3390.96	3588.47	4231.18	4680.21
Long-5	312.55	487.57	818.43	1348.41	1890.11	2333.65	2887.18	3179.09	3438.55	3869.25	4559.73
Long-6	238.19	669.68	1384.76	1345.77	1829.69	2224.51	2452.85	3287.07	3921.98	4073.94	4518.88
Long-7	60.04	477.07	1333.97	1159.83	2112.76	2515.37	3167.64	3479.58	3720.43	4325.32	4520.01
Long-8	209.75	347.61	1279.36	1755.88	2027.72	2273.89	2549.35	3267.52	3730.85	4219.87	4819.29
SG1	775.43	655.02	731.05	681.26	709.82	724.31	718.30	833.59	707.54	778.49	715.76
SG2	35.25	29.90	31.28	20.14	15.21	15.53	18.15	21.70	8.94	10.60	5.44
SG3	822.57	815.67	762.28	721.84	717.05	766.60	716.86	738.56	620.87	678.79	599.78
SG4	25.06	34.87	21.97	9.77	2.77	5.12	1.25	-7.41	-17.77	-20.31	-26.66
SG5	509.80	562.37	453.58	458.00	434.61	500.91	456.02	418.59	368.00	414.96	336.29
SG6	18.13	33.97	13.34	6.34	-3.24	-1.03	-2.87	-19.27	-27.37	-28.29	-37.13
SG7	########	########	########	########	########	########	########	########	########	########	########
SG8	-64.50	-46.09	-66.69	-70.39	-77.01	-72.59	-69.65	-82.15	-82.89	-83.63	-88.03
SG9	724.90	693.26	640.59	615.43	610.45	639.55	608.79	627.55	513.48	571.07	493.86
SG10	-0.16	7.59	-9.75	-17.87	-23.04	-29.12	-25.07	-36.69	-46.46	-49.41	-56.42

TABLE E-20. CVP2, WATER 1, LOAD CONDITION 1b (Continued)

SG11	544.41	572.22	470.67	481.10	463.94	516.30	466.89	449.68	389.70	430.67	356.27
SG12	9.10	33.01	6.33	-2.17	-11.96	-16.76	-14.68	-33.33	-42.52	-46.35	-56.92
SG13	656.46	735.23	615.44	696.07	670.64	750.89	711.73	668.74	689.92	731.55	649.70
SG14	18.35	36.63	16.27	10.56	3.56	8.99	8.95	-4.04	-9.43	-8.60	-13.44
SG15	190.66	156.51	152.72	165.51	149.57	150.94	155.74	156.23	120.45	158.58	125.59
SG16	-4.62	-9.13	-18.02	-15.21	-24.65	-29.49	-22.72	-31.19	-37.55	-31.01	-40.12
SG17	-164.80	-184.17	-217.97	-203.11	-207.86	-186.75	-216.82	-208.16	-237.19	-233.18	-252.26
SG18	-7.49	-9.76	-19.27	-16.41	-22.00	-23.84	-26.61	-27.95	-34.05	-38.11	-44.34
SG19	229.36	244.69	218.03	245.82	244.71	275.76	254.14	248.01	250.60	262.07	235.78
SG20	92.75	96.25	87.93	83.51	81.85	87.75	79.26	75.92	70.93	69.82	66.86
SG21	12.40	8.51	69.74	86.41	115.09	129.69	158.20	193.70	226.26	248.09	266.94
SG22	86.20	77.32	133.49	161.16	187.29	188.43	227.27	265.74	308.07	317.86	340.12
SG23	-14.97	-18.15	54.94	77.09	114.21	128.31	166.46	212.33	253.23	275.09	301.66
SG24	35.63	23.36	100.19	129.37	167.01	176.41	218.31	269.03	316.81	335.45	359.58
SG25	194.28	195.04	252.56	272.08	305.64	316.29	348.96	388.47	425.11	441.64	465.58
SG26	636.72	629.30	701.49	726.45	763.96	776.39	813.61	861.88	904.90	923.28	946.54
SG27	42.94	40.35	96.69	117.27	154.41	170.19	199.41	244.65	278.19	298.84	324.99
SG28	111.85	104.44	169.48	194.65	231.61	245.63	281.14	326.21	369.08	389.04	413.39
SG29T	30.59	16.36	-20.73	-36.63	-56.80	-72.69	-83.81	-100.90	-123.03	-137.57	-156.20
SG29-45	67.89	44.10	69.73	85.51	116.30	99.32	129.65	140.81	167.10	166.82	172.83
SG29L	3.68	6.10	75.66	94.16	146.14	165.86	201.09	238.96	281.14	306.96	347.56
SG30T	30.56	41.77	12.30	-2.46	-17.40	-29.50	-42.30	-64.06	-82.97	-91.66	-108.32
SG30-45	14.38	-1.87	28.16	42.28	50.44	40.88	62.19	78.38	97.08	94.44	98.75
SG30L	19.47	10.04	84.72	113.31	155.99	178.23	217.81	266.02	308.22	334.58	364.48
SG31T	-62.74	-37.69	-63.65	-74.61	-90.66	-89.31	-86.80	-110.53	-108.16	-121.70	-116.99
SG31-45	49.90	35.87	106.12	134.47	166.42	171.09	209.98	255.24	301.95	315.70	338.56
SG31L	10.28	14.47	61.01	57.68	53.30	53.90	66.05	80.69	110.27	103.20	109.42
SG32T	-1.10	17.82	-23.42	-38.81	-51.83	-49.78	-63.27	-87.63	-114.36	-114.27	-127.69
SG32-45	91.35	92.27	125.46	124.74	122.88	134.93	141.06	153.10	167.20	171.47	173.86
SG32L	50.32	36.89	119.95	149.97	192.20	203.82	246.27	300.90	352.40	372.73	399.52
SG33T	6.83	16.52	-32.50	-41.45	-58.67	-50.62	-70.96	-95.46	-118.05	-123.27	-134.79
SG33-45	7.14	26.92	50.28	39.42	32.87	69.74	71.70	68.86	88.69	96.49	102.24
SG33L	18.38	21.50	103.14	120.91	165.67	174.97	213.74	263.14	308.18	329.37	352.39
SG34T	55.24	42.48	-10.16	-0.43	-33.11	-37.94	-61.17	-93.19	-102.68	-119.76	-138.09
SG34-45	3.39	15.13	6.82	-3.94	-18.42	15.78	13.93	-7.00	16.57	17.41	15.55
SG34L	22.45	30.87	99.43	93.91	149.73	170.94	207.55	245.85	274.47	305.76	324.48
SG35T	39.23	35.70	9.89	1.15	-14.56	-9.12	-28.75	-46.13	-68.08	-67.84	-79.92
SG35-45	71.05	49.91	86.83	92.79	90.28	113.92	113.28	134.45	145.78	152.84	165.45
SG35L	59.76	45.16	123.08	152.15	192.34	206.59	244.16	297.62	345.86	365.56	391.45
SG36T	0.45	5.56	-15.27	-27.08	-47.03	-39.77	-49.96	-73.48	-85.80	-86.12	-96.67
SG36-45	46.29	36.08	97.68	119.80	154.94	173.01	202.72	245.39	288.27	303.84	329.11
SG36L	43.15	26.51	55.64	56.35	50.19	85.94	77.00	100.25	104.17	110.46	133.01
SG37T	-78.67	-67.08	-94.79	-106.30	-114.62	-116.89	-128.25	-144.94	-165.59	-166.99	-180.04
SG37-45	38.07	36.39	81.27	77.43	76.64	75.84	79.93	96.93	114.86	113.80	110.44
SG37L	30.75	15.89	87.85	116.47	149.57	154.90	193.64	239.58	285.78	300.77	322.38

TABLE E-21. CVP2, WATER 1, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.04	0.91	2.05	3.08	4.04	5.02	6.00	7.07	8.13	9.15	10.13
Frame-1	36.24	154.75	456.06	662.74	813.31	1068.21	1255.10	1571.65	1691.15	1851.34	2091.28
Frame-2	37.77	233.43	504.46	669.44	803.76	1076.38	1224.78	1493.71	1694.14	1845.20	2067.99
Frame-3	174.36	206.12	397.56	657.80	815.84	1021.20	1241.16	1478.72	1694.97	1883.16	2049.58
Frame-4	-941.61	216.68	356.44	663.49	793.69	1036.95	1220.75	1487.80	1673.11	1881.91	2023.99
Frame-5	421.25	205.54	487.04	653.01	845.56	989.08	1254.25	1442.29	1690.01	1881.87	1970.72
Frame-6	149.62	216.81	404.15	744.66	883.99	939.35	1291.05	1451.13	1688.64	1895.06	1998.49
Frame-7	67.61	231.29	384.03	618.94	883.03	1146.49	1274.87	1481.39	1691.85	1898.46	2110.79
Frame-8	68.44	211.28	398.23	472.80	893.29	1118.61	1241.65	1490.97	1646.11	1907.57	2193.70
Frame-9	27.78	249.57	453.91	626.09	864.31	1042.60	1272.52	1443.93	1563.49	1893.66	2144.05
Frame-10	104.20	176.50	423.80	556.96	800.22	1118.60	1243.42	1408.46	1627.37	1885.48	2099.38
Frame-11	38.03	235.07	425.59	597.34	813.18	1079.12	1254.66	1425.48	1684.82	1901.53	2068.16
Frame-12	71.21	220.60	412.81	658.05	787.26	1016.15	1209.73	1388.44	1650.65	1900.32	2109.02
Hoop-1	-161.06	818.26	1799.42	2662.99	3641.96	4557.34	5233.50	6188.94	7362.30	8097.77	8865.96
Hoop-2	-66.77	775.13	1869.96	2668.50	3529.93	4339.66	5385.72	6316.15	7233.21	8086.48	8867.12
Hoop-3	419.34	433.41	2020.61	2709.86	3365.45	4267.25	5247.63	5886.02	6823.63	8025.53	8700.88
Hoop-4	-24.92	870.41	2004.37	2342.89	3446.91	4091.01	5025.19	6264.59	6931.70	7986.56	8793.26
Hoop-5	1403.07	1186.17	1631.18	2668.93	3520.30	4521.92	5342.63	6152.40	7131.08	8133.06	9039.48
Hoop-6	-59.22	784.96	1669.78	2765.20	3487.12	4760.21	5550.83	6206.60	7227.40	8242.26	8933.06
Hoop-7	-251.30	657.98	1592.85	2535.02	3741.58	4435.80	4983.57	6115.64	7080.84	7821.04	9122.92
Hoop-8	522.70	772.81	1868.86	2803.08	3383.87	4487.62	5274.72	6150.09	7150.51	8041.40	9153.19
Hoop-9	-52.04	747.58	1806.49	3139.19	3376.39	4160.02	5302.34	6049.38	7253.34	8088.22	8767.30
Hoop-10	359.58	865.26	1714.07	2678.46	3660.54	4542.23	5228.50	6254.29	7251.19	8089.98	8965.05
Hoop-11	-132.28	809.09	1663.88	2669.74	3430.23	4309.31	5401.75	6166.27	7240.28	8038.77	8957.18
Hoop-12	6.40	937.18	1818.00	2602.59	3616.28	4401.24	5171.03	6140.67	6866.05	8051.15	8918.14
Hoop-13	871.97	745.94	1909.87	2777.26	3681.34	4734.44	5394.25	6283.87	7217.98	8063.94	8910.06
Hoop-14	-153.00	653.48	1829.89	2702.96	3597.86	4574.87	5558.92	6143.43	7075.68	7971.74	8786.57
Long-1	-3.46	193.56	1128.51	1630.58	2100.71	2288.95	2653.49	3310.90	3873.77	4215.14	4515.37
Long-2	536.60	91.91	383.50	1217.15	1952.53	2439.38	2991.31	3251.36	3444.92	4399.71	4931.96
Long-3	-45.72	757.20	1132.22	1114.94	1953.94	2142.42	2572.60	3437.51	3782.11	4368.28	4738.59
Long-4	-29.11	435.91	884.77	1582.26	1710.90	1748.49	3056.60	3269.49	3870.63	4088.03	4641.06
Long-5	441.97	642.34	881.87	1264.36	1830.36	1931.87	3022.93	3443.69	3674.22	4118.59	4619.67
Long-6	18.16	184.44	877.39	1571.78	2048.70	2110.62	2777.02	3433.42	4024.23	4342.86	4539.66
Long-7	114.11	471.16	1238.91	1562.32	2067.29	2587.22	2776.17	3350.64	3293.28	4328.92	4967.09
Long-8	-37.64	255.35	612.18	1479.99	2007.00	2412.74	2696.07	3134.26	3735.29	4361.42	4628.51
SG1	683.77	432.04	494.32	450.65	561.77	685.06	753.43	816.61	905.46	978.99	1043.59
SG2	16.26	54.69	124.40	178.31	238.30	299.07	356.62	416.60	480.98	537.00	592.54
SG3	824.34	493.96	485.84	442.86	523.84	641.71	688.01	735.75	810.68	882.63	941.57
SG4	10.28	45.88	111.79	164.39	221.73	281.33	334.76	390.29	449.49	506.28	561.23
SG5	539.82	266.66	254.60	276.15	337.29	441.80	495.11	530.39	601.09	695.20	771.89
SG6	14.44	50.73	121.84	182.45	241.58	306.61	367.41	434.18	503.91	572.44	638.46
SG7	########	########	########	########	########	########	########	########	########	########	########
SG8	-71.11	-24.01	42.24	105.53	163.68	222.56	279.24	339.66	402.89	463.25	525.13
SG9	711.91	392.76	393.32	366.92	433.56	545.41	596.54	636.17	708.77	784.45	843.04
SG10	-12.33	29.91	107.95	166.80	222.33	283.21	339.29	394.34	451.82	507.72	561.09

TABLE E-21. CVP2, WATER 1, LOAD CONDITION 1c (Continued)

SG11	577.02	277.50	254.89	289.31	331.94	443.22	476.63	497.39	561.70	643.27	702.39
SG12	8.54	82.36	188.68	272.98	356.45	454.46	548.96	646.09	751.68	853.01	948.81
SG13	723.81	423.56	365.77	440.32	515.85	640.00	683.10	728.93	828.26	925.70	1014.22
SG14	20.92	68.97	139.31	204.76	261.51	326.64	382.10	439.77	505.45	568.51	628.69
SG15	169.08	76.78	98.66	134.22	169.08	235.08	280.72	319.89	373.58	422.81	477.21
SG16	-9.32	13.53	70.45	127.47	173.52	231.37	281.52	335.79	393.20	446.17	499.59
SG17	-162.75	-248.04	-238.53	-158.09	-129.43	-36.25	13.40	56.15	129.24	192.56	259.96
SG18	-11.74	16.29	61.96	115.67	151.51	207.67	252.37	302.12	356.19	404.96	452.66
SG19	239.88	166.45	181.06	225.64	279.09	346.78	393.20	426.39	500.66	563.36	606.14
SG20	92.56	113.07	170.74	226.00	275.90	331.53	383.84	433.83	497.32	554.98	602.17
SG21	-4.62	-14.43	-13.13	-3.88	-3.33	-14.06	-18.87	-19.98	-29.60	-27.56	-30.89
SG22	66.06	71.88	114.85	157.87	191.47	213.82	238.88	265.70	287.53	317.67	342.54
SG23	-33.87	-20.36	2.37	27.41	43.09	40.42	50.15	68.15	66.43	78.88	88.11
SG24	14.41	31.94	75.30	124.19	163.67	186.00	216.26	246.94	270.69	305.93	333.64
SG25	156.33	184.08	212.39	254.05	278.45	286.05	307.82	333.85	343.96	365.96	385.06
SG26	606.69	633.72	671.04	-850.70	-805.11	-782.68	-745.91	-705.79	-682.66	-649.02	-619.48
SG27	11.75	6.86	13.93	-148.07	-137.03	-144.97	-127.74	-117.84	-118.46	-108.71	-101.61
SG28	87.44	124.40	157.67	203.50	241.20	254.50	288.51	317.40	337.29	365.38	396.47
SG29T	17.15	50.99	125.44	186.05	246.19	315.35	384.09	462.13	544.07	612.25	683.20
SG29-45	79.94	40.15	90.92	160.38	212.45	264.75	320.34	361.12	407.92	470.98	522.08
SG29L	30.95	6.33	25.51	71.86	117.79	138.51	164.93	185.78	196.56	241.66	268.67
SG30T	34.30	39.85	112.15	177.20	241.13	311.75	379.51	453.85	531.75	603.67	674.21
SG30-45	16.56	10.90	66.22	120.38	176.22	221.75	268.16	314.92	360.85	411.53	457.43
SG30L	15.65	43.14	64.83	92.93	132.16	149.37	178.51	208.63	229.01	257.11	283.49
SG31T	-49.70	65.55	148.86	226.87	295.20	362.82	436.78	517.73	599.97	672.20	744.42
SG31-45	27.60	32.43	63.31	102.51	132.27	148.43	169.00	190.03	205.36	231.18	251.41
SG31L	22.70	59.90	116.69	168.12	228.34	268.15	307.63	358.77	398.55	449.61	493.00
SG32T	2.25	28.61	108.16	183.57	253.22	329.14	403.35	479.00	566.12	645.68	722.60
SG32-45	102.65	105.07	154.03	204.11	266.80	306.87	348.23	398.76	440.41	492.72	538.03
SG32L	39.06	73.00	98.85	121.35	152.52	163.18	185.47	219.26	228.29	249.01	269.36
SG33T	8.52	9.46	61.08	123.89	188.17	257.71	329.00	408.13	494.29	569.76	647.04
SG33-45	20.00	29.57	62.59	102.72	164.44	192.86	246.64	305.87	349.52	400.60	454.24
SG33L	17.03	40.92	68.64	85.40	110.65	120.71	140.74	162.85	169.10	196.44	215.28
SG34T	59.93	40.06	72.50	128.30	186.24	249.12	315.54	384.35	465.31	529.30	598.01
SG34-45	-4.59	-12.99	19.87	53.79	101.82	120.67	167.91	220.17	261.56	296.98	338.22
SG34L	16.95	21.51	56.99	70.86	95.53	108.05	120.39	147.51	146.78	187.47	209.09
SG35T	44.25	12.73	51.78	104.88	160.67	225.76	291.03	364.71	441.95	514.57	587.53
SG35-45	72.11	53.07	65.61	109.69	169.93	207.27	252.60	306.17	354.41	402.35	452.00
SG35L	37.68	49.20	65.24	102.04	138.65	151.48	183.36	215.51	243.44	279.59	308.53
SG36T	-6.43	33.27	106.91	174.14	238.67	310.04	378.15	453.47	531.95	606.01	677.21
SG36-45	8.53	50.25	81.33	119.97	152.74	160.66	189.00	211.92	227.68	246.42	267.46
SG36L	34.39	72.00	105.98	171.29	239.95	285.59	336.40	388.12	439.79	493.95	544.21
SG37T	-59.26	-14.14	71.44	62.56	135.26	208.89	281.87	359.95	441.04	513.83	585.90
SG37-45	41.70	49.03	109.89	161.46	224.55	268.83	308.64	358.56	398.40	451.41	495.46
SG37L	3.68	12.27	51.50	95.75	128.16	147.10	169.94	193.24	210.75	237.73	259.53

TABLE E-22. CVP2, WATER 2, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.01	0.98	2.07	3.08	4.13	5.15	6.20	6.98	8.03	9.08	10.03
Frame-1	-175.05	212.92	479.34	614.74	815.77	1028.96	1304.92	1506.37	1661.44	1890.08	2068.65
Frame-2	147.73	314.81	498.45	806.94	994.05	1101.28	1242.36	1340.84	1712.68	1845.96	2111.03
Frame-3	-101.39	217.70	322.92	524.16	806.21	1121.01	1311.27	1588.76	1691.16	1844.58	2052.83
Frame-4	312.20	231.82	353.89	822.31	1146.12	1028.71	1217.21	1522.43	1636.46	1848.27	2085.79
Frame-5	35.31	189.65	506.92	610.09	920.51	1011.90	1167.92	1570.11	1746.48	1853.37	2098.11
Frame-6	-111.28	272.28	355.72	547.90	731.65	1109.19	1146.08	1380.17	1671.44	1885.86	2103.77
Frame-7	-88.44	332.23	369.11	663.73	743.68	875.17	1308.11	1491.82	1615.75	1892.27	2083.50
Frame-8	22.67	327.64	357.50	534.78	759.18	1093.62	1242.15	1479.03	1781.81	1804.99	2095.86
Frame-9	-27.41	276.95	449.32	695.88	849.00	994.90	1212.44	1520.62	1751.40	1979.71	2133.64
Frame-10	-27.67	136.21	364.12	615.51	886.48	1002.34	1348.95	1300.08	1709.72	1913.73	2037.67
Frame-11	-25.47	254.47	351.63	561.80	855.35	1018.62	1246.08	1501.97	1693.24	1853.34	2109.34
Frame-12	-128.72	178.46	401.31	677.08	745.99	1015.36	1123.92	1359.08	1684.87	1866.39	2098.84
Hoop-1	-80.24	924.82	1869.06	2528.86	3676.87	4448.05	5224.31	6271.58	7238.48	8014.51	8914.74
Hoop-2	95.83	634.21	1851.71	2796.78	3701.54	4560.97	5264.67	6373.86	7060.89	7843.80	8866.26
Hoop-3	771.98	864.85	1587.26	2690.57	3688.12	4382.13	5470.37	5998.22	7056.16	7860.03	8677.23
Hoop-4	321.03	324.70	2076.31	3047.69	2823.57	4430.50	5271.22	5700.53	6877.37	8126.59	8986.69
Hoop-5	-106.92	775.82	1959.27	2612.39	3485.65	4444.43	5455.71	6088.57	7318.18	7948.06	8847.11
Hoop-6	844.15	770.18	1941.13	2427.15	3897.16	4384.35	5517.58	6243.52	6977.35	8077.05	8886.05
Hoop-7	-207.52	1466.86	1654.77	2345.13	3770.79	4664.93	5587.95	6084.60	6822.73	7971.80	8671.05
Hoop-8	-43.72	552.12	2000.87	2545.62	3516.27	4685.76	5443.36	6407.55	6980.63	8040.60	8937.14
Hoop-9	105.71	994.18	1856.89	2818.26	3856.83	4328.22	5044.36	5619.65	6953.47	8109.17	8926.03
Hoop-10	272.90	1230.06	1753.45	2427.43	3926.00	4585.11	5394.11	5885.88	7004.88	7619.61	8211.15
Hoop-11	77.73	348.54	1215.98	3021.60	3638.38	4518.87	5242.79	6262.06	6773.52	7923.75	8877.13
Hoop-12	480.12	496.77	2061.85	2706.22	3727.30	4393.40	5429.55	6214.69	7124.40	7746.87	8774.84
Hoop-13	723.70	664.39	1739.01	2436.23	3555.33	4748.79	5453.01	6024.40	7083.83	7870.38	8803.61
Hoop-14	-79.01	934.63	1910.90	2843.54	3782.81	4677.99	5299.43	6224.81	6867.83	8207.71	8902.31
Long-1	6.03	33.33	13.15	4.84	38.07	45.19	44.00	32.14	26.20	21.46	30.95
Long-2	-51.50	43.29	96.74	339.72	67.58	74.88	110.11	8.05	-15.04	10.48	67.60
Long-3	155.59	240.12	144.39	-38.26	-15.90	135.71	143.15	-61.88	182.93	-33.29	102.17
Long-4	49.20	10.04	260.84	125.03	100.57	229.05	103.02	-59.70	-41.35	-22.99	-40.13
Long-5	314.95	276.62	266.97	257.36	245.40	352.11	326.91	330.53	396.47	403.62	456.45
Long-6	12.05	251.66	67.05	205.14	106.16	103.73	172.16	-35.62	-33.18	-29.51	-14.84
Long-7	13.17	17.98	52.82	129.72	62.44	118.93	116.51	123.74	126.14	124.93	136.97
Long-8	155.60	209.78	288.50	154.34	188.81	209.75	74.35	-63.49	145.75	-68.41	-67.19
SG1	632.72	191.16	307.52	374.99	466.31	511.88	539.11	689.55	783.73	820.22	961.49
SG2	22.12	49.39	122.49	180.10	246.55	309.24	369.38	429.78	493.01	552.36	614.90
SG3	757.19	287.51	349.96	413.80	533.06	556.18	607.96	724.80	834.93	878.10	994.43
SG4	17.92	47.16	117.38	178.33	245.91	302.59	369.07	418.12	482.42	541.70	604.23
SG5	486.46	167.89	206.35	247.51	376.70	392.53	433.19	541.16	635.23	699.32	788.91
SG6	15.00	49.99	127.21	192.44	267.93	337.23	412.91	473.19	550.39	623.72	692.87
SG7	########	########	########	########	########	########	########	########	########	########	########
SG8	-71.11	-21.06	43.72	105.56	179.87	239.52	302.79	353.61	420.60	481.70	540.64
SG9	639.73	188.60	250.69	316.59	421.74	470.89	498.34	625.58	711.24	762.93	877.47
SG10	-8.09	33.60	112.95	179.56	245.20	312.02	373.97	430.46	490.06	549.28	611.34

TABLE E-22. CVP2, WATER 2, LOAD CONDITION 1a (Continued)

SG11	501.91	155.18	193.16	268.10	379.74	364.83	389.34	495.31	566.56	622.85	700.80
SG12	9.33	83.51	198.65	283.98	389.37	495.60	608.89	696.30	810.90	919.40	1022.88
SG13	618.26	324.70	261.84	248.48	462.80	470.40	517.69	639.51	701.96	792.23	865.45
SG14	19.31	67.81	148.92	212.68	288.69	345.61	411.72	464.78	530.38	596.26	654.69
SG15	137.58	-10.72	25.16	65.24	139.79	226.86	241.30	317.42	342.38	391.58	456.43
SG16	-10.28	8.32	66.83	123.95	181.35	250.18	297.87	354.88	401.35	455.28	512.17
SG17	-310.53	-409.34	-359.19	-188.91	-132.52	-170.29	-130.82	-24.49	17.65	89.56	154.33
SG18	-23.89	7.61	58.10	138.61	191.23	211.38	261.61	317.98	361.58	417.93	467.30
SG19	193.27	92.28	127.45	130.97	261.33	261.91	296.47	407.67	448.36	488.50	548.49
SG20	79.44	95.14	163.38	204.42	283.85	324.54	378.29	449.87	505.69	554.49	611.85
SG21	-19.61	-24.60	-66.98	-105.10	-133.94	-160.41	-197.76	-224.43	-260.32	-291.03	-319.93
SG22	19.63	44.27	39.39	25.86	31.49	43.31	39.70	35.09	35.78	40.17	38.47
SG23	-44.38	-23.86	-57.91	-90.10	-110.37	-124.17	-152.29	-174.67	-203.54	-223.83	-245.67
SG24	-6.90	27.46	9.38	-8.29	-3.12	6.98	-4.04	-7.78	-10.50	-7.23	-10.22
SG25	165.72	201.79	179.98	169.71	157.29	160.07	148.45	133.55	118.77	110.67	100.14
SG26	-876.81	-839.22	-863.19	-880.85	-874.79	-865.87	-872.95	-876.35	-882.60	-883.15	-884.53
SG27	-168.76	-173.36	-217.72	-257.87	-283.13	-294.85	-320.32	-345.57	-370.93	-390.57	-411.35
SG28	131.79	171.69	146.61	128.12	139.19	140.68	130.32	124.41	113.32	109.63	103.72
SG29T	18.45	47.26	138.49	213.01	299.69	378.74	462.83	526.46	611.39	693.75	769.97
SG29-45	25.87	40.57	70.54	116.12	130.89	172.08	201.87	232.96	258.79	319.35	345.68
SG29L	20.87	28.16	9.49	8.75	-14.94	-23.91	-35.89	-47.08	-58.88	-66.36	-74.96
SG30T	39.25	43.26	135.71	216.57	298.62	378.15	465.58	529.28	611.63	694.02	775.36
SG30-45	-13.52	8.81	38.10	69.62	104.93	150.06	184.71	215.46	242.75	294.37	328.33
SG30L	-13.91	19.99	-7.50	-26.41	-33.57	-36.07	-52.20	-59.37	-63.80	-68.42	-81.45
SG31T	-38.11	74.29	167.65	250.42	339.51	419.09	504.83	571.07	658.26	738.79	819.21
SG31-45	-2.44	20.40	1.83	-21.25	-22.36	-18.04	-33.83	-42.94	-52.83	-53.15	-60.27
SG31L	14.42	54.27	89.27	116.10	167.14	207.72	254.80	275.57	304.69	348.03	388.30
SG32T	-4.91	23.44	125.29	216.35	303.48	388.65	479.55	544.51	640.25	731.16	814.61
SG32-45	105.62	120.26	145.71	179.66	227.67	259.04	309.46	330.46	359.39	403.36	436.98
SG32L	18.15	58.59	29.80	0.59	-9.87	-20.33	-41.05	-46.38	-70.65	-85.45	-97.89
SG33T	-5.45	4.24	78.74	158.75	240.96	319.15	409.31	477.12	569.35	659.79	744.62
SG33-45	5.65	19.86	35.15	68.27	113.54	144.30	189.66	212.99	246.11	292.61	325.90
SG33L	3.80	23.13	2.59	-27.32	-45.66	-53.72	-75.33	-91.69	-113.95	-125.51	-139.12
SG34T	42.15	43.36	97.42	159.98	240.98	312.45	390.84	451.81	533.54	613.00	687.45
SG34-45	-11.09	-6.63	-5.20	30.22	80.20	101.09	137.05	157.07	191.37	223.53	253.73
SG34L	7.46	2.29	-15.82	-29.89	-49.90	-57.40	-70.57	-83.47	-100.74	-111.36	-123.05
SG35T	30.40	-0.75	63.51	136.01	207.95	279.63	362.87	426.05	511.18	595.62	675.57
SG35-45	50.01	40.34	40.49	62.00	106.07	133.90	175.69	203.76	236.65	280.13	315.09
SG35L	31.13	49.66	1.71	-32.03	-28.82	-24.59	-37.41	-44.85	-49.03	-44.43	-45.46
SG36T	-22.24	20.58	113.21	201.66	279.82	358.20	444.26	507.54	594.87	679.07	756.70
SG36-45	-30.24	12.82	58.55	100.32	157.35	185.19	232.16	265.60	307.78	357.66	397.09
SG36L	-21.13	14.85	-8.27	-33.17	-21.69	-26.17	-39.13	-45.89	-61.37	-68.78	-75.17
SG37T	-75.91	-25.91	75.50	166.22	251.26	331.44	420.57	485.23	571.94	654.18	733.34
SG37-45	26.59	42.57	86.22	120.70	170.80	213.89	265.02	286.23	317.13	363.96	403.45
SG37L	-14.70	11.57	-4.21	-24.41	-24.03	-15.63	-28.72	-35.78	-43.17	-40.61	-46.93

TABLE E-23. CVP2, WATER 2, LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.10	-0.04	-0.04	0.06	-0.09	0.05	-0.01	-0.02	0.11	0.09	-0.11
Frame-1	-77.39	-308.77	22.48	-32.12	76.13	401.16	85.37	40.71	-149.14	-4.22	76.96
Frame-2	-61.46	-385.20	-652.19	-62.46	-810.13	46.28	179.36	-98.57	-57.08	-32.53	-435.74
Frame-3	-131.00	81.17	267.10	456.33	75.18	74.63	32.84	106.77	30.77	271.30	-1.21
Frame-4	92.75	-47.49	342.70	-27.41	87.82	273.55	55.70	157.53	38.19	-42.58	7.61
Frame-5	-96.34	-141.79	-34.23	-38.86	150.62	-34.41	-47.14	151.39	125.14	49.47	-65.95
Frame-6	143.20	-112.25	12.28	294.44	43.23	57.71	28.35	74.37	58.37	-39.82	54.29
Frame-7	-101.08	-222.58	-30.83	-219.79	152.15	-22.55	90.68	507.61	-94.35	30.14	-81.60
Frame-8	37.59	-27.03	-102.23	-136.15	-17.47	-19.94	-264.84	57.16	-107.19	-12.04	144.86
Frame-9	-49.17	780.43	214.02	-306.87	13.68	-56.52	-1.29	73.76	-116.90	108.57	-17.26
Frame-10	-107.45	-1293.00	45.42	37.32	292.04	-166.71	6.74	-53.44	50.79	-3.84	65.27
Frame-11	158.72	-449.82	-49.96	-68.36	-25.73	223.55	-3.47	-77.78	20.86	34.93	155.90
Frame-12	-937.06	-50.71	-152.20	-84.16	-25.58	-107.50	-90.71	23.51	-103.45	-21.71	-80.43
Hoop-1	336.76	379.08	-72.87	101.67	-63.68	59.41	-78.39	-113.29	241.29	-36.13	171.48
Hoop-2	202.36	-50.51	498.66	75.95	812.90	-59.54	175.32	570.92	-59.54	827.52	52.46
Hoop-3	-5.04	-13.81	198.38	258.03	536.78	10.74	973.59	438.63	61.60	417.63	-34.85
Hoop-4	-8.27	446.74	208.14	287.70	-37.87	-0.88	71.27	-71.17	-48.97	-13.83	-41.57
Hoop-5	905.04	-179.84	-134.25	-88.67	-33.95	197.65	155.72	1062.05	-63.13	-137.91	855.98
Hoop-6	293.50	1233.71	755.33	-27.83	520.70	-96.17	22.05	-153.42	-33.37	-72.16	-116.48
Hoop-7	-54.11	60.90	-165.49	382.27	-150.87	931.78	248.98	358.50	513.68	597.73	743.73
Hoop-8	-117.28	235.79	588.85	0.42	412.32	279.95	294.60	0.42	301.99	66.62	-21.65
Hoop-9	568.08	-73.79	-62.91	354.12	-37.53	747.58	997.61	1137.42	-55.66	-13.96	912.49
Hoop-10	296.37	563.60	16.45	-26.90	294.54	310.82	-37.72	-135.25	-8.84	38.12	-43.15
Hoop-11	-1.48	-80.69	-14.38	85.10	969.27	-14.38	-93.58	309.85	683.75	9.57	-51.22
Hoop-12	-69.47	966.69	567.03	1207.35	-13.95	-1.00	58.20	631.86	-58.36	-21.36	24.90
Hoop-13	849.73	-32.48	12.00	-39.90	19.41	34.24	308.48	219.58	-62.13	212.16	56.47
Hoop-14	653.48	357.49	964.13	98.56	683.00	68.97	520.19	9.78	-12.42	586.89	372.28
Long-1	6.03	696.74	415.47	1339.85	1928.24	2404.29	2796.79	3466.35	3893.17	4389.14	4536.73
Long-2	-16.26	344.69	1331.51	1687.43	1875.59	2240.33	2927.83	3326.70	3650.79	4169.62	4704.72
Long-3	-65.60	627.87	816.78	1021.74	1334.76	2342.71	2788.55	3305.78	3484.38	4487.12	4660.31
Long-4	154.40	198.48	657.35	1024.34	1968.70	1943.20	3034.28	3442.01	3806.24	3998.31	4676.54
Long-5	398.82	623.09	1035.50	1462.16	1834.78	2301.28	2830.85	3117.63	3764.58	4342.32	4670.01
Long-6	-33.17	680.75	787.10	1328.53	1714.62	2201.29	2986.97	3576.44	3662.86	4138.31	4727.90
Long-7	11.97	318.46	1218.72	1083.99	1774.87	2432.44	2887.65	3466.01	3535.37	4409.00	4417.86
Long-8	27.59	487.98	463.36	1377.83	1938.91	2032.65	2681.04	3472.74	3995.45	4214.52	4613.74
SG1	538.87	515.89	511.09	379.11	653.18	293.27	533.63	557.66	291.98	404.76	580.75
SG2	27.04	22.25	17.42	11.15	19.95	-1.34	8.11	7.51	-6.50	-0.42	-3.50
SG3	624.31	590.43	525.32	390.25	641.34	281.45	459.32	503.87	187.19	218.36	457.80
SG4	24.32	20.13	9.63	7.33	6.68	-12.66	-12.71	-12.38	-30.21	-36.34	-36.20
SG5	349.73	343.18	257.09	151.04	341.89	118.00	212.17	268.11	40.24	83.01	236.65
SG6	22.92	21.44	8.92	6.52	3.94	-10.98	-15.40	-16.50	-29.58	-34.19	-43.03
SG7	########	########	########	########	########	########	########	########	########	########	########
SG8	-61.54	-60.81	-70.38	-70.37	-72.59	-72.59	-77.01	-76.26	-90.99	-98.35	-89.52
SG9	517.30	473.61	430.60	288.63	536.74	194.15	373.60	401.03	102.79	132.69	351.23
SG10	1.69	-7.17	-9.75	-15.28	-15.10	-34.10	-30.42	-35.94	-52.37	-56.61	-63.99

TABLE E-23. CVP2, WATER 2, LOAD CONDITION 1b (Continued)

SG11	371.58	358.15	286.17	171.88	359.44	133.05	242.79	287.25	51.99	79.85	257.57
SG12	30.56	27.70	17.27	14.40	3.74	-6.00	-13.25	-15.56	-29.64	-37.58	-52.07
SG13	496.64	515.29	439.77	318.35	525.98	433.32	470.40	554.11	290.34	264.36	596.71
SG14	31.98	30.00	20.19	17.05	16.00	10.93	4.25	8.16	-7.59	-15.19	-11.55
SG15	112.93	111.69	112.94	59.55	141.86	32.84	95.68	90.82	0.10	-19.94	62.60
SG16	-9.50	-14.24	-9.32	-18.80	-11.94	-27.92	-20.88	-25.94	-41.42	-52.56	-48.46
SG17	-323.37	-338.35	-349.85	-378.93	-326.63	-409.79	-362.48	-372.42	-430.61	-450.82	-387.87
SG18	-13.03	-14.10	-14.93	-12.71	-21.16	-26.01	-26.61	-35.94	-33.12	-47.07	-50.67
SG19	154.97	170.89	155.72	119.46	186.43	155.72	169.98	203.05	120.21	93.95	202.89
SG20	81.09	81.47	76.11	70.74	72.04	69.27	65.40	73.51	60.95	47.83	57.26
SG21	-2.77	25.35	53.28	73.26	101.76	136.72	164.86	193.31	223.67	258.64	272.33
SG22	37.99	62.60	96.30	111.15	134.47	183.40	218.78	237.70	264.91	314.07	324.18
SG23	-31.10	6.20	45.07	68.36	95.34	150.17	183.20	212.03	255.95	303.08	312.76
SG24	10.44	45.50	89.87	106.47	138.77	199.28	238.24	263.28	304.27	359.80	375.12
SG25	197.09	225.56	237.67	265.35	254.93	350.40	376.13	398.51	427.32	398.87	419.31
SG26	-877.27	-841.51	-800.88	-784.62	-753.26	-695.90	-660.67	-634.80	-594.60	-543.85	-528.96
SG27	-163.20	-132.04	-98.14	-83.67	-50.83	-7.00	29.22	55.35	88.25	132.55	153.24
SG28	127.35	165.06	201.28	216.78	248.59	303.29	335.85	361.65	406.04	453.35	469.61
SG29T	25.79	0.47	-28.03	-40.48	-45.45	-81.52	-90.36	-109.91	-127.44	-141.11	-165.09
SG29-45	46.50	37.28	86.24	76.96	103.40	98.53	139.39	132.64	141.46	177.53	183.19
SG29L	23.28	43.39	108.55	123.17	144.87	187.83	232.02	264.34	293.44	339.93	375.83
SG30T	33.59	21.22	6.88	-6.47	-12.36	-53.83	-53.23	-65.22	-94.13	-109.96	-118.98
SG30-45	-5.67	1.85	27.51	18.88	28.90	45.61	68.41	67.23	77.64	108.87	109.48
SG30L	-9.67	30.36	73.84	93.25	128.15	188.36	224.64	254.82	296.62	350.84	374.75
SG31T	-23.82	-23.21	-38.71	-16.18	-61.47	-34.52	-65.90	-74.40	-53.19	-73.67	-107.41
SG31-45	15.44	44.46	83.70	99.76	127.44	182.66	219.50	241.19	277.02	329.35	341.93
SG31L	21.21	46.23	54.14	72.45	46.65	83.53	86.23	97.42	118.17	133.71	127.29
SG32T	0.90	-9.70	-28.07	-34.81	-39.51	-75.63	-82.10	-89.80	-112.78	-133.47	-144.12
SG32-45	99.31	120.09	125.84	127.87	129.92	141.60	152.19	164.40	167.02	184.26	198.73
SG32L	20.32	57.02	104.18	121.93	156.07	221.98	261.66	288.44	334.84	393.84	411.40
SG33T	3.02	-13.45	-37.59	-50.66	-54.81	-80.60	-95.19	-102.09	-130.85	-151.55	-147.46
SG33-45	5.19	29.62	18.84	34.86	35.75	49.91	46.90	67.60	82.05	98.31	98.44
SG33L	-3.09	36.59	81.73	97.13	133.29	181.35	224.09	254.31	293.14	347.58	356.11
SG34T	42.80	19.81	-11.51	-29.14	-42.51	-56.61	-83.70	-98.76	-126.14	-156.81	-138.01
SG34-45	-9.42	-0.32	-23.90	-15.17	-16.75	-4.41	-15.22	-0.04	-9.60	-10.21	14.67
SG34L	3.45	20.72	77.56	74.62	118.06	156.19	197.31	232.04	254.27	313.53	314.37
SG35T	14.87	7.24	-10.84	-19.12	-19.86	-55.71	-59.67	-68.25	-92.25	-109.83	-107.50
SG35-45	39.46	59.25	61.99	65.65	68.49	91.34	96.46	109.35	120.14	137.05	163.61
SG35L	16.07	54.87	96.60	113.09	147.30	210.82	246.49	274.13	319.28	374.20	393.72
SG36T	-16.94	-20.99	-39.63	-36.23	-50.14	-69.43	-82.55	-91.55	-100.49	-123.36	-132.24
SG36-45	-2.75	12.73	5.92	15.15	8.35	38.73	30.44	46.33	66.28	71.50	96.57
SG36L	-3.93	28.93	60.02	75.58	106.87	157.21	186.13	211.22	253.70	297.38	314.58
SG37T	-71.91	-79.87	-88.94	-96.32	-103.68	-127.40	-134.49	-143.06	-156.34	-172.80	-186.34
SG37-45	29.14	49.59	60.55	64.26	56.14	69.24	81.93	92.41	98.79	115.47	116.58
SG37L	2.80	31.35	72.58	88.27	117.76	172.49	210.12	231.57	267.58	320.37	333.60

TABLE E-24. CVP2, WATER 1, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.11	1.07	2.24	3.12	4.02	5.07	6.00	7.11	8.17	9.18	10.14
Frame-1	660.51	165.10	460.14	576.09	859.98	938.83	1218.89	1414.63	1667.56	1892.49	2130.27
Frame-2	674.69	249.32	567.96	439.59	650.98	883.36	1238.64	1562.98	1640.87	1812.06	2088.23
Frame-3	221.49	204.31	387.77	595.45	943.02	1026.09	1321.78	1452.65	1659.42	1831.46	2088.43
Frame-4	-120.19	227.06	450.20	612.96	857.64	1005.70	1272.42	1439.24	1637.43	1823.11	2090.61
Frame-5	644.66	217.68	332.46	593.82	852.62	971.62	1249.03	1414.40	1614.63	1828.20	2071.89
Frame-6	401.60	243.60	402.60	665.91	816.28	1066.37	1294.40	1396.40	1685.64	1845.52	2035.20
Frame-7	840.26	219.03	355.90	656.08	769.44	1072.59	1266.37	1352.00	1811.86	1912.60	2076.59
Frame-8	651.27	193.85	299.53	620.09	809.04	1060.25	1258.98	1409.86	1659.31	1863.17	2181.90
Frame-9	2748.67	281.13	431.08	698.70	829.47	917.28	1316.24	1394.97	1674.66	1857.48	2228.06
Frame-10	227.41	272.72	480.05	614.75	789.98	1110.16	1314.13	1523.62	1578.59	1865.17	2118.57
Frame-11	607.33	249.61	372.00	640.45	850.56	1055.45	1285.23	1443.77	1679.05	1862.85	2132.68
Frame-12	492.49	253.38	388.17	723.04	716.43	1066.51	1296.32	1415.94	1688.16	1907.63	2162.89
Hoop-1	-23.27	1027.72	2190.79	2637.01	3840.38	4643.70	5165.52	6342.65	7061.00	8127.39	8946.87
Hoop-2	113.88	863.65	2310.79	2675.46	3325.80	4545.62	5371.27	6519.65	7291.01	7846.39	8789.46
Hoop-3	724.47	840.30	2069.72	2627.17	3223.41	4272.51	5049.45	5950.32	7235.74	8076.54	8806.13
Hoop-4	393.10	946.25	1516.01	2779.18	3609.68	4745.86	5561.65	5945.82	7449.61	8229.14	8761.90
Hoop-5	-57.66	1239.06	2005.06	2668.66	3551.30	4148.04	5183.96	6624.11	7085.49	8030.93	9176.28
Hoop-6	988.05	1158.10	2007.83	3093.70	3612.72	4496.06	5406.75	6466.41	6904.17	8112.95	9064.28
Hoop-7	-172.79	783.97	1841.17	2604.15	3571.78	4559.96	5073.04	6359.68	7057.10	8109.54	9048.06
Hoop-8	868.44	883.15	2052.56	2788.09	3325.36	4568.08	5392.95	6400.19	7156.44	7776.56	9291.13
Hoop-9	684.12	937.97	2098.21	2451.75	3443.81	4527.65	4994.60	6286.91	7231.95	7961.29	8671.26
Hoop-10	-117.19	1293.27	2349.54	2855.16	3810.81	3904.33	5864.79	6001.46	6996.96	8429.53	8537.05
Hoop-11	136.68	1321.23	2126.07	2562.63	3375.31	4638.60	4436.87	6184.69	7693.77	8309.60	9522.79
Hoop-12	-63.92	716.98	1758.61	2417.31	3631.45	4245.38	5438.04	6177.68	7034.88	7910.50	8649.89
Hoop-13	560.60	1175.93	2280.32	2562.01	3948.60	4526.41	5179.77	6120.78	6964.53	8049.11	8292.95
Hoop-14	535.09	327.93	1800.12	2569.52	3627.82	4322.88	5248.69	6365.39	7296.19	7897.74	9065.97
Long-1	-3.46	657.51	499.63	1334.97	1879.97	2381.98	2797.98	3489.25	3671.28	4219.47	4581.82
Long-2	51.79	202.47	1247.41	1652.02	1920.93	2363.30	2908.39	3226.17	3599.76	4280.19	4608.72
Long-3	115.81	775.69	515.92	1338.49	1953.94	1999.93	2761.21	3112.24	3844.72	4109.39	4739.84
Long-4	1.48	275.55	577.70	1615.14	1453.94	2275.00	2957.20	3078.93	3631.29	4185.49	4724.26
Long-5	276.56	672.18	768.00	1506.36	2085.71	2381.84	2875.20	3424.85	3865.27	4300.37	4665.22
Long-6	-23.40	322.53	609.72	1426.17	1893.44	2201.51	2666.74	3221.06	3601.75	4127.31	4841.58
Long-7	22.78	382.13	1027.41	1649.89	2061.28	2269.22	3278.20	3239.19	3887.47	3990.81	4596.93
Long-8	-45.03	638.09	713.10	1237.39	1696.79	2526.47	2729.03	3106.26	3588.08	4325.29	4578.04
SG1	682.36	347.49	383.94	330.50	533.39	572.65	675.54	792.84	864.45	919.19	987.01
SG2	16.40	51.75	119.52	169.74	237.52	294.47	348.68	416.00	477.52	533.00	584.98
SG3	801.91	448.81	398.59	332.73	484.55	523.10	616.32	705.13	759.11	815.75	866.30
SG4	0.05	44.92	107.00	150.43	211.18	271.98	323.32	387.16	440.96	497.67	550.18
SG5	532.69	235.43	169.66	225.73	303.40	338.44	445.80	512.06	571.46	635.60	706.32
SG6	10.21	53.32	124.24	176.92	237.53	302.38	363.57	436.39	504.70	572.13	633.85
SG7	########	########	########	########	########	########	########	########	########	########	########
SG8	-71.86	-21.80	42.97	98.17	154.85	214.47	270.43	334.51	396.31	452.99	514.09
SG9	704.22	330.78	292.17	240.11	400.33	424.88	524.61	591.12	671.00	712.16	762.19
SG10	-14.36	31.39	105.00	150.56	216.24	275.27	328.99	389.18	452.79	501.87	550.57

TABLE E-24. CVP2, WATER 1, LOAD CONDITION 1c (Continued)

SG11	570.62	233.56	169.22	207.01	293.56	322.53	417.80	467.49	520.97	567.85	625.80
SG12	5.50	89.06	197.45	265.64	350.91	452.61	543.75	652.83	754.48	852.91	945.21
SG13	717.44	363.69	193.81	326.30	440.14	507.37	610.96	682.87	733.10	803.10	908.47
SG14	20.88	73.54	146.58	198.96	259.16	319.64	376.10	441.70	501.64	560.92	618.60
SG15	187.80	30.27	37.17	62.78	180.14	181.89	261.13	282.81	368.27	389.92	437.45
SG16	4.32	13.07	65.48	110.47	181.35	219.62	277.77	325.25	392.37	435.99	487.43
SG17	-250.23	-372.45	-343.43	-314.17	-234.05	-193.67	-112.92	-71.94	15.80	63.94	123.07
SG18	-12.71	12.00	60.26	96.65	145.78	190.30	239.09	287.90	343.48	391.14	439.73
SG19	245.64	128.55	79.71	167.56	253.01	273.72	352.36	399.20	445.03	494.60	561.93
SG20	91.46	108.46	144.86	204.56	266.85	308.06	367.98	424.03	481.29	534.52	591.45
SG21	-19.42	-26.27	-31.26	-14.98	-17.20	-23.31	-22.20	-28.86	-33.85	-37.19	-39.59
SG22	34.54	33.61	68.97	123.67	149.75	178.37	213.05	234.36	248.41	274.63	305.38
SG23	-38.76	-26.36	-9.06	28.80	34.98	41.85	56.56	64.69	65.42	71.14	84.93
SG24	18.05	25.76	58.51	120.13	151.68	183.79	219.97	246.01	264.81	291.38	331.98
SG25	151.65	179.68	205.03	259.16	270.90	284.02	307.44	320.87	325.48	347.49	372.35
SG26	-864.58	-842.88	-814.85	-757.12	-727.89	-702.89	-668.76	-639.03	-617.09	-590.06	-553.47
SG27	-168.59	-181.02	-180.63	-147.38	-145.48	-141.05	-128.27	-123.89	-124.43	-117.32	-100.87
SG28	139.20	157.68	182.80	240.46	273.72	297.38	329.93	352.15	363.94	389.08	426.78
SG29T	25.47	51.13	123.35	175.18	242.01	317.49	380.65	463.66	542.59	615.24	685.43
SG29-45	60.61	30.33	115.78	168.17	206.33	262.24	314.85	375.96	414.31	471.81	522.22
SG29L	36.89	30.02	77.67	102.51	119.05	134.65	168.39	183.50	205.59	236.62	262.77
SG30T	24.49	39.53	117.80	174.17	243.10	318.14	379.64	459.37	534.84	608.36	676.17
SG30-45	9.69	1.20	56.98	118.20	170.65	214.83	262.11	324.62	358.56	407.62	460.40
SG30L	25.23	49.04	72.42	105.10	118.20	136.31	174.99	198.12	223.70	248.32	280.19
SG31T	-44.58	87.76	182.23	230.78	296.68	366.59	431.52	516.90	603.19	680.04	742.19
SG31-45	18.97	11.68	40.70	92.75	115.18	138.36	166.51	186.41	202.23	219.04	250.62
SG31L	12.10	56.14	105.06	156.82	220.02	263.97	298.55	365.98	396.59	446.31	494.68
SG32T	-13.33	29.35	110.81	176.92	248.43	326.59	395.67	478.35	565.90	646.53	720.42
SG32-45	108.23	122.70	161.08	218.21	278.86	318.92	356.43	415.64	447.50	500.74	551.20
SG32L	56.04	75.77	103.78	135.16	143.05	160.61	188.85	212.94	223.38	239.36	266.40
SG33T	-11.34	2.12	62.54	119.61	183.23	254.42	320.51	406.67	490.29	572.31	643.70
SG33-45	-1.45	30.87	63.15	113.31	169.08	196.81	240.82	309.13	348.90	411.14	459.40
SG33L	23.93	41.07	65.05	92.81	104.69	122.76	148.53	159.87	172.89	184.31	214.72
SG34T	48.63	34.66	75.34	124.30	180.66	248.80	303.05	384.96	457.49	533.77	598.75
SG34-45	-23.67	-17.22	11.42	53.33	97.88	114.08	153.40	205.96	246.04	297.24	334.55
SG34L	10.71	9.74	37.48	68.76	85.10	95.86	135.90	136.20	161.04	167.84	198.34
SG35T	38.54	8.50	54.90	99.90	157.97	223.20	283.62	362.85	441.72	516.58	584.88
SG35-45	57.26	42.35	63.89	115.50	167.14	198.17	242.41	310.63	343.49	405.73	454.41
SG35L	49.12	46.19	58.92	108.13	130.89	155.34	191.69	218.11	239.28	270.05	312.48
SG36T	-19.69	31.88	109.84	162.85	229.14	300.14	364.10	444.21	525.96	600.45	665.68
SG36-45	-26.05	20.56	75.18	145.75	202.33	234.49	286.95	356.95	385.53	453.07	507.80
SG36L	-19.92	1.06	29.21	78.25	100.30	121.13	149.40	170.53	177.23	195.78	229.77
SG37T	-70.94	-12.94	74.28	133.31	200.61	276.06	342.09	424.61	504.95	581.06	648.04
SG37-45	27.76	40.16	89.96	150.96	215.35	264.55	300.50	367.35	394.17	445.37	496.85
SG37L	3.78	-2.17	31.49	87.44	112.28	139.44	169.49	190.69	206.50	225.91	258.50

TABLE E-25. CVP3, AIR 1 LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.01	0.89	1.76	2.64	3.52	4.40	5.28	6.17	7.04	7.92	8.80
Frame-1	-34.94	190.83	378.58	542.26	735.18	912.58	1087.25	1271.65	1458.09	1627.97	1812.27
Frame-2	-38.75	160.93	369.12	540.88	723.03	906.88	1074.10	1285.89	1468.44	1656.88	1823.36
Frame-3	-48.53	179.28	379.54	538.63	726.87	915.08	1097.14	1311.21	1456.95	1642.82	1824.19
Frame-4	11.48	168.67	379.18	538.00	751.95	919.33	1089.17	1267.01	1441.72	1646.40	1810.35
Frame-5	22.09	181.26	373.07	537.32	715.34	903.68	1096.20	1272.59	1445.84	1652.53	1818.46
Frame-6	16.51	179.17	372.35	540.04	714.52	905.94	1116.75	1259.03	1455.98	1629.80	1833.16
Frame-7	27.23	182.08	352.85	537.36	737.40	915.01	1115.82	1265.15	1465.90	1650.68	1787.09
Frame-8	-33.03	147.46	386.89	548.82	726.27	905.40	1088.78	1279.25	1441.91	1638.54	1814.37
Frame-9	43.19	179.37	364.75	564.09	730.29	901.68	1107.05	1260.31	1448.15	1618.09	1815.79
Frame-10	-2.05	175.07	352.59	580.01	709.32	904.01	1115.01	1238.39	1449.33	1661.53	1785.77
Frame-11	-13.84	184.55	358.06	539.93	708.33	908.83	1103.34	1274.33	1458.66	1623.92	1839.79
Frame-12	16.96	185.19	345.16	539.69	744.63	906.29	1117.18	1266.02	1433.61	1642.26	1830.00
Hoop-1	45.47	768.14	1540.31	2367.47	3088.47	3850.07	4612.28	5417.33	6198.30	6966.25	7748.17
Hoop-2	36.28	771.11	1547.31	2326.97	3069.18	3851.27	4648.42	5402.72	6194.79	6975.86	7723.77
Hoop-3	-73.01	760.53	1546.52	2335.86	3087.08	3885.82	4657.10	5390.22	6191.62	6980.58	7744.41
Hoop-4	5.60	772.19	1547.88	2375.26	3067.95	3842.25	4635.70	5579.68	6203.13	6959.77	7723.04
Hoop-5	-70.94	787.30	1554.08	2324.35	3091.44	3855.03	4646.63	5398.56	6197.82	6995.79	7729.58
Hoop-6	-41.42	768.37	1553.97	2324.62	3082.80	3855.92	4637.05	5392.83	6200.23	6982.29	7736.31
Hoop-7	59.09	791.41	1552.81	2319.53	3094.02	3866.83	4636.62	5408.74	6198.97	6967.82	7761.97
Hoop-8	10.42	760.81	1555.33	2305.48	3085.21	3879.65	4652.03	5424.40	6160.62	6955.14	7734.17
Hoop-9	-245.47	768.85	1552.76	2334.62	3085.79	3860.55	4637.13	5395.56	6187.27	6869.56	7445.86
Hoop-10	40.08	767.14	1564.72	2327.71	3085.43	3857.62	4653.31	5405.61	6194.69	6990.47	7698.66
Hoop-11	-85.18	794.54	1558.09	2349.07	3097.78	3863.10	4650.54	5399.26	6183.63	6998.82	7721.02
Hoop-12	242.19	781.65	1539.79	2325.49	3022.39	3860.15	4646.01	5402.22	6151.63	6982.05	7744.97
Hoop-13	-32.30	761.77	1541.00	2320.00	3091.74	3841.22	4650.05	5399.53	6194.15	6995.64	7714.74
Hoop-14	-25.41	773.57	1550.35	2319.51	3088.82	3865.53	4642.24	5396.76	6122.30	6965.67	7734.28
Long-1	9.41	12.95	5.87	5.87	3.50	8.23	3.50	3.51	4.69	7.05	7.05
Long-2	24.61	29.47	30.69	30.69	27.04	25.83	28.26	30.69	27.04	28.26	25.83
Long-3	-7.40	-7.40	-3.67	-2.42	-1.18	0.07	-2.42	2.56	2.56	3.80	-4.91
Long-4	-15.12	-12.67	2.03	-10.22	-5.32	0.80	21.62	-2.87	9.37	6.92	-10.22
Long-5	29.48	-7.72	-10.12	23.48	10.28	-64.12	-62.92	-35.32	136.28	-18.52	-34.12
Long-6	-52.16	-2.01	-2.01	10.23	1.66	2.89	2.89	0.44	-4.45	1.66	4.11
Long-7	-2.52	-1.32	5.89	-6.12	-6.12	37.13	32.33	41.95	-9.73	37.14	-13.33
Long-8	11.33	17.49	-5.90	-7.13	1.48	-12.06	1.48	-7.13	-9.60	12.57	8.87
SG1	-27.68	-108.01	-132.40	-109.83	-86.19	-45.29	-11.18	13.39	68.78	97.57	113.17
SG2	26.57	-74.14	-100.09	-72.52	-44.24	7.31	47.30	80.49	138.84	170.94	185.81
SG3	427.80	340.09	359.55	414.21	472.82	515.09	556.90	588.97	649.61	688.71	715.96
SG4	338.59	207.75	213.43	263.05	312.45	369.56	423.39	463.41	527.73	572.29	600.77
SG5	53.48	-45.96	-64.24	-34.45	-0.87	55.92	97.75	136.55	190.55	224.96	240.61
SG6	17.16	48.98	89.69	132.77	176.24	222.48	267.20	311.91	356.69	401.07	444.02
SG7	238.98	79.79	69.58	99.39	129.76	199.68	255.04	282.72	338.67	369.86	381.99
SG8	47.70	-25.42	-29.04	-0.70	37.36	91.31	129.68	169.22	214.12	248.74	267.22
SG9	20.41	51.82	94.81	141.83	190.15	241.43	289.91	339.11	387.27	435.40	480.46
SG10	3.98	-1.30	-10.85	-22.88	-39.18	-54.01	-66.63	-84.02	-102.71	-115.66	-134.45
SG11	7.67	-8.50	-26.33	-43.41	-61.61	-79.07	-92.11	-106.06	-120.41	-130.88	-142.65

TABLE E-25. CVP3, AIR 1 LOAD CONDITION 1a (Continued)

SG12	-20.19	-15.42	-17.71	-18.17	-15.74	-14.68	-17.62	-17.53	-18.17	-18.72	-21.25
SG13	-13.19	-24.57	-37.13	-45.47	-50.88	-55.33	-57.39	-62.29	-62.48	-62.02	-65.51
SG14	-31.62	-32.17	-42.08	-50.47	-55.33	-61.44	-71.84	-76.97	-84.36	-91.20	-97.72
SG15	4.96	17.02	17.62	15.97	13.95	10.93	11.38	11.29	9.37	11.61	12.44
SG16	153.61	151.60	145.37	141.32	139.82	138.14	132.76	130.09	126.35	123.55	120.35
SG17	33909.4	34007.0	34315.9	34630.2	34792.6	34390.0	34621.9	34650.8	34766.1	35257.5	36031.9
SG18	14.75	3.10	-14.11	-32.74	-52.25	-72.26	-92.49	-111.16	-132.33	-152.61	-172.91
SG19	22.14	0.98	-28.11	-58.29	-88.29	-118.68	-149.77	-178.10	-209.22	-238.12	-266.86
SG20	81.40	81.04	77.72	74.77	74.23	72.02	67.78	66.12	66.13	64.10	60.79
SG21	31.12	23.95	13.27	2.95	-6.44	-16.38	-29.83	-39.21	-50.27	-60.58	-72.00
SG22	-47.49	-47.45	-52.59	-54.24	-52.91	-49.43	-46.67	-43.91	-35.83	-30.46	-29.45
SG23	-16.23	-36.43	-65.82	-96.10	-127.15	-160.03	-191.60	-222.61	-255.69	-284.15	-313.93
SG24	3.43	-2.81	-9.61	-14.20	-17.32	-17.32	-20.81	-21.91	-23.56	-23.56	-26.32
SG25	6.58	2.26	-4.55	-12.56	-19.65	-27.94	-37.65	-45.15	-52.15	-60.20	-68.31
SG26	41.02	34.96	23.93	16.94	13.08	10.32	7.75	7.01	7.20	6.09	3.70
SG27	28.37	27.18	24.29	21.16	19.92	17.85	14.08	11.96	10.22	7.55	4.75
SG28	-18.61	-9.78	-11.99	-14.20	-19.35	-25.24	-28.18	-28.91	-31.86	-31.12	-31.12
SG29	39.26	38.53	36.51	33.93	33.38	32.10	30.08	28.60	29.71	28.06	26.41
SG30	-30.80	-35.35	-46.79	-57.81	-69.66	-81.52	-90.10	-97.99	-106.96	-114.63	-121.72
SG31	-22.92	-28.94	-37.98	-48.45	-68.61	-83.27	-95.75	-109.88	-125.00	-138.36	-155.46
SG32-T	10.59	93.66	175.53	253.53	329.16	400.86	472.44	540.57	607.16	672.41	738.06
SG32-45	-23.44	11.47	42.39	77.16	115.24	149.81	186.26	220.56	255.12	289.12	323.84
SG32-L	9.37	7.13	-3.88	-7.96	-3.97	-1.49	-5.44	-5.07	-6.26	-8.69	-13.83
SG33-T	27.17	111.63	192.73	268.81	341.82	412.36	481.77	548.96	613.46	678.50	744.44
SG33-45	-22.00	5.03	29.17	57.26	87.01	114.33	143.10	170.99	200.20	228.29	254.39
SG33-T	38.43	19.54	9.64	4.68	4.87	5.97	0.46	-2.29	-4.49	-8.53	-16.23
SG34-T	7.00	97.62	189.51	278.63	364.32	448.19	530.33	609.87	688.81	767.50	845.17
SG34-45	2.84	48.35	88.91	127.45	164.04	201.83	236.09	270.35	307.23	342.80	376.39
SG34-L	32.93	27.99	18.63	7.44	-1.55	-12.74	-24.84	-35.48	-45.02	-56.40	-67.78
SG35-T	46.91	113.40	174.19	231.80	291.28	352.94	418.14	483.43	547.90	616.12	684.78
SG35-45	59.59	93.57	119.83	145.16	172.72	201.76	230.39	260.67	292.28	324.79	356.41
SG35-L	76.52	70.46	61.27	51.16	43.45	33.53	21.58	11.65	2.83	-8.01	-19.22
SG36-T	0.67	100.55	195.47	283.57	369.16	450.54	530.18	606.87	679.27	752.53	824.03
SG36-45	25.18	53.12	91.38	125.77	160.78	198.00	233.12	270.25	303.16	334.91	365.03
SG36-L	29.59	12.51	6.95	2.45	0.11	-2.69	-6.55	-7.70	-8.85	-14.22	-19.32
SG37-T	418.69	458.17	495.78	532.55	570.90	610.54	653.50	698.92	744.44	793.74	844.32
SG37-45	129.57	158.95	179.51	194.72	211.63	230.37	246.13	263.18	281.01	303.21	323.80
SG37-L	89.52	89.52	70.64	53.23	37.65	21.52	3.01	-11.47	-26.14	-39.70	-52.91
SG38-T	36.92	103.00	184.85	265.40	345.08	422.76	499.61	575.72	652.13	727.93	803.99
SG38-45	-12.65	21.13	55.84	89.07	123.60	160.34	192.28	226.04	253.98	289.24	319.02
SG38-L	-2.90	-15.24	-32.09	-45.71	-57.65	-68.03	-79.26	-87.65	-96.70	-105.70	-114.66
SG39-T	-13.27	78.61	165.18	247.13	325.84	401.07	475.68	548.06	616.89	686.59	754.70
SG39-45	-4.03	47.13	95.53	139.60	183.61	229.14	270.31	311.65	350.95	390.99	429.11
SG39-L	45.81	44.53	45.17	45.67	48.01	48.70	46.55	44.44	44.53	41.19	37.03
SG40-T	38.47	95.05	146.54	195.28	243.53	293.14	345.39	399.24	450.63	505.31	560.39
SG40-45	45.86	67.59	85.12	99.73	115.25	135.70	155.24	178.45	199.61	224.47	248.00
SG40-L	50.09	33.46	12.26	-8.21	-27.03	-46.04	-64.32	-79.68	-94.11	-108.92	-122.80

TABLE E-26. CVP3, AIR 1 LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.01	-0.02	-0.02	-0.03	-0.02	-0.03	-0.04	-0.03	-0.02	-0.02	-0.03
Frame-1	-6.90	8.75	3.32	-3.20	-8.98	8.68	0.53	11.06	-17.72	3.54	3.95
Frame-2	-8.73	-8.59	1.57	764.76	-23.01	19.13	902.30	428.13	-125.66	64.35	-296.69
Frame-3	12.01	31.04	46.22	-71.81	16.81	0.09	-20.04	28.20	-7.34	-23.92	-33.80
Frame-4	3.34	-1.68	4.95	10.49	1.26	-1.75	-8.19	2.35	-9.21	1.72	2.13
Frame-5	7.04	34.79	-27.58	14.20	36.01	14.02	-2.78	-12.93	18.63	-35.99	42.06
Frame-6	-23.77	-28.69	25.39	18.99	-32.56	25.61	-18.06	-36.57	6.37	27.31	10.76
Frame-7	22.63	1.84	14.47	-4.50	34.20	39.93	-38.59	-33.27	10.08	27.86	-0.89
Frame-8	1.97	7.02	-21.68	-6.21	13.54	3.77	-0.67	2.92	1.49	-3.13	-14.64
Frame-9	-55.69	15.71	31.97	-20.41	-0.39	-1.57	-39.25	32.45	-9.11	-38.20	23.38
Frame-10	5.41	22.52	36.86	33.39	44.53	-47.89	-4.12	9.81	-26.07	24.41	12.90
Frame-11	-16.65	12.03	-6.02	-24.62	3.23	8.87	26.54	-15.64	-28.92	13.90	38.16
Frame-12	-4.96	5.30	-2.78	-9.73	-7.19	5.49	-2.45	1.17	-15.83	0.29	11.20
Hoop-1	16.04	-9.70	10.53	14.21	-13.38	23.40	-6.02	16.04	5.01	25.23	28.92
Hoop-2	-10.67	34.47	65.16	9.19	-12.47	-28.72	-32.33	-21.50	-17.89	-19.69	-3.45
Hoop-3	30.53	-76.50	-81.77	-123.90	139.33	-2.81	83.17	39.30	-39.67	-74.74	-97.57
Hoop-4	-81.43	51.88	-25.88	51.90	-53.65	-31.43	-44.40	-74.02	51.90	-42.54	-27.73
Hoop-5	301.58	-16.15	-69.10	-12.50	-112.93	-111.10	55.07	-85.53	228.56	-105.60	-83.71
Hoop-6	36.24	12.20	1.11	137.94	6.66	-32.17	-82.09	26.99	-15.53	-17.38	161.96
Hoop-7	37.17	-85.18	-48.66	163.20	11.60	75.52	77.34	84.64	31.69	-21.27	18.90
Hoop-8	-33.71	32.49	-41.07	17.78	-4.29	3.07	10.42	3.07	3.07	-19.00	-11.64
Hoop-9	347.79	-240.05	311.53	-143.89	273.40	-5.99	52.07	-9.62	115.58	131.89	-232.77
Hoop-10	-126.28	85.29	-90.12	14.76	11.15	32.84	0.30	27.42	-5.13	-5.13	-43.10
Hoop-11	471.69	-192.15	82.63	-205.06	-127.59	-111.00	-182.93	-168.17	-99.94	-153.41	322.33
Hoop-12	197.72	134.72	201.44	561.01	-189.62	88.37	219.98	105.06	342.30	82.81	188.45
Hoop-13	-54.56	12.22	-32.31	-32.31	27.06	-10.04	-24.88	4.80	-2.62	-17.46	-32.30
Hoop-14	-40.20	11.57	-18.02	-25.41	4.17	-10.62	-18.02	-18.02	-3.22	-18.01	-32.81
Long-1	3.50	1234.77	2437.95	3704.39	4874.27	6140.39	7340.80	8603.81	9817.06	11022.3	12034.0
Long-2	17.32	1221.36	2475.47	3702.34	4907.60	6137.77	7356.26	8594.19	9817.32	10994.6	12020.0
Long-3	2.56	1205.84	2477.81	3652.23	4881.64	6137.80	7345.96	8585.20	9776.90	11001.3	12067.7
Long-4	-1.65	1227.68	2490.31	3607.97	4935.25	6139.47	7331.94	8588.08	9797.45	11037.8	12223.0
Long-5	27.08	1230.55	2458.27	3709.50	4903.37	6137.46	7344.38	8602.93	9826.46	11038.3	12193.8
Long-6	-2.01	1230.84	2463.94	3667.19	4895.15	6146.96	7345.44	8590.39	9803.31	11045.9	12262.9
Long-7	-3.72	1221.79	2463.17	3663.21	4898.34	6144.89	7354.64	8595.65	9817.21	10952.6	11851.3
Long-8	-0.98	1219.03	2484.83	3646.73	4911.06	6136.60	7344.18	8534.52	9644.58	10752.5	11658.5
SG1	15.23	-16.68	-25.48	-32.27	-39.79	-60.88	-77.93	-105.08	-109.85	-161.19	-162.48
SG2	84.00	38.31	20.70	0.52	-17.45	-54.69	-81.98	-124.26	-119.46	-170.95	-180.12
SG3	456.89	599.98	736.74	855.31	957.85	1062.31	1161.81	1237.81	1302.93	1350.17	1409.47
SG4	398.22	412.48	449.25	477.44	480.23	495.18	509.76	507.51	508.89	466.02	477.71
SG5	113.71	71.12	54.53	29.06	10.27	-29.78	-57.92	-98.06	-95.78	-139.49	-152.78
SG6	25.87	7.76	-11.31	-31.35	-49.55	-68.98	-85.72	-103.18	-125.29	-160.08	-176.45
SG7	300.46	247.91	239.62	219.65	172.04	145.43	122.53	83.32	58.50	-27.11	-42.50
SG8	93.74	66.48	57.59	33.61	22.48	-5.82	-26.71	-49.56	-52.08	-84.63	-95.58
SG9	27.94	12.33	-2.74	-21.11	-34.89	-52.71	-68.32	-83.38	-95.89	-113.70	-126.19
SG10	6.69	41.80	76.27	112.97	155.20	192.98	228.42	265.42	302.77	336.53	367.70
SG11	4.73	40.37	78.59	114.62	151.17	189.39	226.88	264.91	300.96	338.23	369.65

TABLE E-26. CVP3, AIR 1 LOAD CONDITION 1b (Continued)

SG12	-33.56	59.42	147.01	233.18	326.50	409.97	491.42	574.89	657.14	749.82	813.36
SG13	-17.69	95.08	207.47	312.73	426.39	535.68	642.22	751.15	864.74	986.42	1078.29
SG14	-30.89	96.05	216.61	334.53	459.38	572.66	676.95	777.85	870.76	982.58	1057.06
SG15	4.28	64.16	126.19	183.26	245.79	304.85	362.81	421.69	479.15	533.58	581.08
SG16	145.93	255.96	360.38	462.79	571.89	674.76	773.65	874.09	974.12	1093.77	1178.85
SG17	42396.7	46586.4	46268.7	46169.1	45737.8	45281.8	44619.8	44396.2	43906.3	44231.4	43722.4
SG18	14.71	83.58	151.03	214.26	281.79	348.43	412.31	475.63	538.47	604.13	657.55
SG19	34.85	140.66	238.21	328.64	418.43	504.20	585.56	667.28	701.95	716.24	769.80
SG20	81.23	190.17	296.37	395.47	495.38	587.79	674.12	760.45	830.29	904.02	970.47
SG21	9.03	104.04	186.53	266.13	333.50	387.83	434.78	482.66	532.99	595.36	634.03
SG22	-22.79	89.95	198.65	291.70	373.47	452.18	526.91	602.36	448.00	295.90	302.37
SG23	-16.42	89.89	186.10	279.06	371.40	463.58	549.52	636.37	697.77	757.20	822.75
SG24	-1.71	110.85	213.31	316.75	417.72	517.62	609.99	704.56	786.36	872.77	947.70
SG25	1.15	112.86	222.31	329.33	437.93	547.67	651.88	757.20	863.15	979.06	1066.52
SG26	31.28	144.88	255.54	360.76	475.62	583.72	687.96	796.79	907.55	1026.96	1121.45
SG27	11.23	104.08	195.14	284.41	376.51	468.82	557.08	653.30	756.35	868.44	952.66
SG28	-33.33	15.97	67.47	117.52	169.75	220.52	274.23	321.32	365.51	417.71	460.39
SG29	27.14	110.89	195.75	277.91	359.81	442.11	519.44	599.54	681.53	771.48	842.38
SG30	-28.28	3.83	37.26	71.49	107.27	140.57	176.07	210.06	243.02	273.13	303.62
SG31	-20.26	12.11	47.42	74.98	108.87	145.55	181.23	218.66	254.87	291.85	326.34
SG32-T	11.92	-15.28	-42.02	-68.95	-100.31	-127.06	-154.39	-183.33	-210.51	-242.50	-263.70
SG32-45	-31.20	9.13	36.84	81.30	108.96	147.08	181.63	217.55	247.21	274.53	305.31
SG32-L	1.30	101.77	193.75	282.58	382.01	466.39	550.04	636.84	719.14	815.18	879.57
SG33-T	26.39	-18.64	-63.25	-107.88	-156.62	-203.25	-247.13	-292.16	-329.19	-368.13	-403.52
SG33-45	-22.97	-0.80	13.38	38.86	42.16	43.95	36.01	25.59	20.73	-15.58	-26.41
SG33-T	34.40	148.12	260.38	367.02	483.84	593.17	695.90	799.00	904.75	1034.72	1117.09
SG34-T	13.33	-24.45	-61.55	-97.06	-133.78	-168.45	-201.24	-234.85	-271.97	-315.37	-342.84
SG34-45	0.73	31.11	64.57	85.30	118.39	141.40	160.88	179.62	182.58	188.77	200.52
SG34-L	28.91	135.10	240.01	339.86	438.70	534.27	623.79	712.94	795.75	887.85	959.66
SG35-T	41.00	9.61	-21.26	-49.81	-77.47	-104.31	-128.81	-152.72	-161.59	-168.67	-187.40
SG35-45	54.64	83.64	115.41	135.09	167.21	189.43	207.98	227.27	239.60	261.22	273.00
SG35-L	74.33	177.58	279.75	376.48	473.30	565.73	653.21	739.77	820.16	909.12	979.41
SG36-T	-4.66	-47.61	-91.49	-135.03	-182.57	-230.35	-275.89	-319.95	-362.67	-389.31	-422.77
SG36-45	23.17	51.00	77.47	89.23	103.85	102.29	95.41	84.54	49.32	50.41	31.56
SG36-L	34.69	152.23	267.33	380.68	496.04	609.92	717.92	821.52	932.19	1051.19	1137.45
SG37-T	417.54	392.14	363.57	335.94	300.50	263.08	227.86	193.33	148.49	84.90	50.01
SG37-45	136.02	161.87	184.26	191.82	202.27	197.13	188.87	178.04	129.97	70.48	42.04
SG37-L	86.60	187.94	289.30	390.00	493.53	596.18	695.34	791.76	888.08	992.19	1069.28
SG38-T	48.50	9.03	-26.76	-64.39	-104.21	-140.36	-175.05	-210.66	-246.47	-289.36	-317.66
SG38-45	-13.76	27.19	60.98	87.07	128.37	159.23	191.36	222.03	253.27	285.90	305.76
SG38-L	-10.01	99.57	201.03	302.83	402.29	500.92	592.11	685.73	768.78	861.51	938.69
SG39-T	-12.36	-40.23	-68.83	-95.81	-125.15	-154.12	-181.27	-210.34	-237.14	-267.25	-291.99
SG39-45	-8.44	22.19	49.47	65.64	97.55	123.13	148.66	178.88	194.93	223.63	241.84
SG39-L	38.49	127.45	217.02	302.52	387.67	474.90	557.34	643.02	728.22	823.59	897.36
SG40-T	41.44	28.07	12.71	-0.56	-15.88	-31.43	-43.09	-58.32	-72.46	-95.21	-111.00
SG40-45	42.39	83.65	120.55	148.29	190.28	227.19	264.57	305.83	333.79	372.50	398.28
SG40-L	49.18	128.67	207.82	287.29	365.32	446.51	525.54	606.30	688.24	780.16	849.87

TABLE E-27. CVP3, AIR 1 LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.02	0.88	1.75	2.64	3.52	4.40	5.27	6.15	7.05	7.92	8.80
Frame-1	-8.39	176.45	373.92	546.43	724.53	892.66	1112.71	1250.70	1450.42	1622.65	1836.71
Frame-2	-51.95	181.16	383.52	571.15	727.92	916.32	1103.25	1280.36	1443.32	1646.30	1825.43
Frame-3	36.27	173.54	364.60	547.94	726.55	912.40	1096.78	1278.33	1463.03	1632.37	1819.37
Frame-4	27.71	190.48	365.89	545.63	717.15	913.19	1083.62	1263.27	1444.38	1629.01	1827.92
Frame-5	40.06	172.03	370.13	563.94	713.30	904.43	1087.20	1255.05	1460.58	1642.03	1813.61
Frame-6	47.82	170.10	369.46	542.47	726.08	906.69	1087.53	1267.28	1450.10	1639.84	1792.74
Frame-7	21.01	181.81	351.75	536.42	714.62	912.50	1086.08	1303.30	1477.34	1642.21	1813.10
Frame-8	38.23	197.12	373.75	565.10	725.88	913.23	1093.49	1267.45	1420.64	1628.35	1835.20
Frame-9	14.18	175.59	375.84	570.11	712.45	918.32	1066.45	1264.01	1468.47	1623.46	1821.20
Frame-10	50.28	173.08	365.27	584.24	724.42	913.56	1197.20	1248.98	1443.55	1634.12	1820.38
Frame-11	-19.90	175.85	360.38	540.72	718.09	901.31	1099.53	1259.42	1452.97	1656.21	1823.04
Frame-12	-1.40	167.62	333.68	531.83	723.48	915.87	1104.61	1271.45	1429.55	1649.31	1828.44
Hoop-1	1.33	770.05	1538.78	2318.53	3101.66	3870.69	4627.00	5420.46	6174.40	6967.64	7751.08
Hoop-2	38.08	783.82	1545.82	2331.28	3091.16	3853.46	4644.80	5398.57	6178.54	6950.17	7762.72
Hoop-3	-29.14	767.62	1527.52	2340.08	3080.37	3889.72	4627.27	5403.71	6184.60	6932.84	7752.41
Hoop-4	-44.40	794.49	1542.64	2305.60	3073.81	3848.19	4613.47	5408.77	6179.06	6959.31	7794.49
Hoop-5	45.94	626.68	1545.26	2325.05	3080.79	3870.02	4637.50	5412.63	6190.52	6958.14	7739.76
Hoop-6	-13.68	772.15	1545.04	2310.53	3079.41	3860.00	4638.90	5407.09	6172.50	6962.65	7680.07
Hoop-7	55.44	786.01	1551.29	2322.05	3087.02	3854.44	4618.35	5406.37	6173.40	6946.60	7680.83
Hoop-8	-33.71	760.73	1540.31	2305.25	3099.92	3864.17	4659.38	5409.69	6190.04	6939.73	7550.27
Hoop-9	-13.25	765.14	1537.93	2325.32	3091.24	3852.53	4638.94	5404.63	6138.28	6819.89	7511.18
Hoop-10	-15.98	776.10	1537.28	2327.48	3089.05	3853.23	4646.08	5405.61	6187.46	6953.60	7749.30
Hoop-11	43.90	770.49	1539.34	2323.02	3097.78	3864.17	4628.41	5412.17	6192.86	6963.08	7678.61
Hoop-12	-4.29	759.33	1546.89	2310.44	3081.70	3866.79	4623.77	5409.63	6166.45	6944.29	7744.97
Hoop-13	-10.04	746.85	1533.27	2282.67	3076.90	3892.38	4598.11	5488.57	6149.62	6965.26	7699.89
Hoop-14	4.18	773.49	1535.25	2319.28	3088.82	3872.15	4671.83	5418.95	6181.48	6787.44	7512.37
Long-1	10.59	1221.91	2443.86	3684.32	4891.78	6126.79	7365.88	8583.43	9775.54	10983.2	12013.9
Long-2	31.90	1215.41	2466.96	3674.40	4911.01	6122.58	7340.72	8542.81	9783.06	10989.5	11992.1
Long-3	1.31	1229.61	2436.74	3672.14	4905.02	6119.77	7256.58	8373.28	9618.59	10901.4	11943.3
Long-4	2.03	1216.78	2440.11	3686.33	4900.72	6132.74	7371.37	8586.49	9819.25	11025.3	12285.4
Long-5	30.68	1215.08	2451.07	3678.30	4905.55	6130.85	7353.05	8580.99	9804.65	11035.7	11506.2
Long-6	-17.91	1199.16	2449.26	3685.54	4908.36	6130.45	7354.25	8575.35	9804.29	11033.4	12508.7
Long-7	-1.32	1229.13	2445.15	3678.83	4906.53	6123.85	7346.50	8570.07	9794.16	11037.7	13556.2
Long-8	-3.44	1206.84	2428.20	3671.35	4898.49	6133.52	7365.35	8573.54	9810.53	10922.1	11689.4
SG1	-26.40	-105.08	-127.66	-139.57	-141.01	-101.77	-87.64	-102.86	-98.12	-100.86	-97.38
SG2	21.80	-80.92	-104.93	-128.91	-130.94	-89.13	-88.07	-101.60	-111.80	-129.12	-141.93
SG3	386.90	476.86	656.53	784.07	963.99	1140.70	1258.98	1370.59	1460.65	1559.82	1638.74
SG4	313.09	238.69	310.50	357.96	434.62	533.96	576.26	615.68	643.68	671.49	698.70
SG5	42.71	-58.29	-71.22	-92.30	-89.44	-45.64	-46.50	-52.09	-63.06	-83.35	-97.06
SG6	16.75	33.21	54.86	76.12	99.58	127.46	152.39	178.79	203.77	228.51	256.41
SG7	219.08	67.93	51.63	36.79	23.68	64.22	64.99	56.66	57.77	35.09	27.63
SG8	33.88	-37.15	-34.27	-41.55	-28.35	14.10	21.42	30.94	33.38	23.21	25.64
SG9	16.92	36.76	66.53	94.82	126.76	163.70	195.10	228.53	259.99	288.44	321.54
SG10	6.78	36.25	66.98	94.84	123.74	155.15	185.11	215.54	241.53	266.43	289.46
SG11	8.40	27.33	46.81	67.02	91.45	114.79	140.50	166.96	194.56	221.73	249.87

TABLE E-27. CVP3, AIR 1 LOAD CONDITION 1c (Continued)

SG12	-22.30	70.44	156.97	245.07	334.09	420.16	504.55	587.00	669.08	749.09	835.12
SG13	-11.00	89.95	188.92	291.46	400.68	511.66	624.01	726.69	835.22	938.01	1050.33
SG14	-20.89	94.87	202.50	309.12	418.34	522.12	620.85	717.24	811.32	898.56	987.45
SG15	10.33	80.94	139.12	196.66	256.40	312.01	369.75	427.88	484.83	540.36	596.55
SG16	152.89	257.59	359.30	462.51	571.19	677.01	781.04	882.20	981.46	1079.28	1185.20
SG17	30908.8	31903.3	32633.6	33310.1	33915.3	34824.9	35524.6	35962.9	36332.1	35910.6	36396.8
SG18	14.85	70.56	121.66	173.60	223.35	269.31	315.54	360.87	408.68	453.06	493.49
SG19	20.30	94.48	156.17	215.80	267.65	314.06	360.60	406.61	454.55	499.60	543.64
SG20	81.04	185.22	283.57	378.17	468.46	550.42	630.06	706.63	785.56	859.66	931.36
SG21	24.50	102.58	173.33	239.24	292.22	334.05	372.87	411.91	450.30	486.90	521.02
SG22	-42.86	49.55	112.44	171.09	196.31	222.14	246.87	264.09	288.21	307.88	334.60
SG23	-18.99	58.87	122.61	185.96	247.06	301.62	356.86	413.41	468.40	526.20	599.34
SG24	3.43	102.60	196.66	293.06	387.75	478.69	568.24	655.65	743.93	829.43	934.94
SG25	5.80	109.00	211.51	313.87	422.06	524.47	624.94	721.96	817.67	907.99	996.84
SG26	41.02	143.61	239.99	340.90	450.21	560.55	671.89	777.22	885.86	989.64	1102.44
SG27	21.76	111.22	200.85	292.78	390.95	487.44	583.82	677.82	770.88	863.29	961.03
SG28	-12.73	40.99	87.36	130.77	182.98	228.61	279.35	328.65	373.60	420.65	466.32
SG29	34.85	115.86	197.65	280.48	364.74	446.70	527.29	604.80	683.92	760.64	840.45
SG30	-29.80	-4.53	19.36	43.29	68.86	93.53	120.25	146.98	173.47	201.98	227.17
SG31	-20.90	7.06	37.33	66.81	98.66	131.69	163.36	194.44	223.64	256.13	284.77
SG32-T	11.37	70.94	122.21	171.06	214.43	252.83	290.53	330.68	367.84	406.87	441.76
SG32-45	-16.15	53.68	116.51	183.12	250.65	317.11	382.49	448.45	512.23	577.69	646.94
SG32-L	9.60	100.91	184.50	270.93	360.97	446.90	530.03	611.24	690.34	764.19	841.87
SG33-T	28.96	71.92	106.46	137.34	161.73	183.55	205.43	227.60	248.25	270.90	289.84
SG33-45	-18.56	26.74	71.05	110.61	137.94	154.67	165.48	175.76	184.98	195.06	196.91
SG33-T	36.79	131.99	237.89	344.64	459.58	568.04	671.62	772.87	872.46	964.65	1060.51
SG34-T	12.60	67.90	121.67	176.33	228.01	279.58	330.90	382.44	433.15	484.65	535.51
SG34-45	8.56	84.56	145.96	210.63	271.45	327.40	384.75	440.84	497.04	550.71	612.19
SG34-L	31.29	129.06	221.92	310.33	397.39	476.67	554.76	630.33	706.40	778.97	846.75
SG35-T	44.39	81.14	111.68	143.60	177.20	211.45	250.19	291.48	332.65	374.92	416.03
SG35-45	61.24	124.79	172.21	224.72	274.81	319.09	368.64	416.94	466.62	515.05	570.02
SG35-L	75.24	169.52	260.54	347.26	432.27	509.87	586.07	659.76	733.96	804.46	871.62
SG36-T	7.46	66.77	115.44	158.58	192.33	222.46	252.36	282.47	309.70	339.05	366.08
SG36-45	26.84	83.30	138.70	189.70	223.46	247.29	266.44	284.56	301.91	317.02	334.80
SG36-L	27.61	130.06	241.51	350.37	467.02	577.04	679.83	781.03	881.12	974.71	1065.00
SG37-T	405.11	418.87	428.04	436.80	436.30	433.68	436.94	445.52	453.40	465.83	475.47
SG37-45	128.48	174.92	203.41	232.39	238.58	229.43	225.74	224.82	224.13	223.37	226.70
SG37-L	86.78	180.26	264.08	353.88	446.55	531.65	616.83	704.62	790.92	874.25	953.16
SG38-T	42.07	75.47	121.56	167.25	211.81	256.43	300.82	346.51	391.92	438.31	476.54
SG38-45	-9.90	61.53	129.32	197.44	266.07	332.02	398.09	464.93	530.03	595.35	676.95
SG38-L	-5.93	83.38	166.07	252.52	340.17	423.68	506.92	589.48	671.02	749.84	844.24
SG39-T	-5.20	58.81	114.03	164.64	209.36	250.46	290.41	331.86	370.81	411.85	447.84
SG39-45	0.01	75.83	139.87	210.77	280.29	347.23	417.26	485.82	554.07	619.00	701.73
SG39-L	43.71	130.08	217.31	302.98	391.70	476.74	559.98	640.11	719.80	795.89	874.29
SG40-T	36.88	78.46	114.49	150.58	183.40	214.41	248.13	283.40	316.99	353.13	384.71
SG40-45	42.03	99.36	146.11	203.61	262.09	319.73	383.31	446.63	510.22	572.00	650.94
SG40-L	44.79	105.29	167.43	233.20	302.70	370.62	441.94	511.16	581.57	650.90	720.03

TABLE E-28. CVP3, AIR 2 LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.01	0.87	1.75	2.63	3.52	4.40	5.27	6.16	7.04	7.92	8.82
Frame-1	-10.67	178.52	355.46	530.78	726.81	921.12	1098.49	1253.69	1455.21	1640.61	1815.09
Frame-2	-33.36	171.07	373.58	557.08	751.07	903.34	1108.00	1264.28	1449.89	1643.56	1843.60
Frame-3	87.18	185.91	392.53	568.38	721.96	913.29	1089.47	1274.44	1466.10	1622.81	1818.41
Frame-4	9.91	182.21	368.09	538.57	733.23	907.20	1098.69	1259.37	1457.80	1634.91	1818.34
Frame-5	-1.91	196.53	355.08	551.70	755.27	903.62	1109.18	1263.22	1468.83	1646.21	1814.38
Frame-6	-36.00	178.97	358.05	544.04	736.83	922.85	1090.51	1275.29	1451.45	1630.38	1803.64
Frame-7	8.30	178.63	355.60	546.69	729.07	899.50	1088.89	1250.98	1462.53	1634.33	1827.37
Frame-8	-33.01	183.61	344.89	544.37	733.44	919.16	1096.30	1258.19	1464.37	1625.64	1828.80
Frame-9	34.51	153.16	384.97	528.15	730.57	913.89	1088.47	1272.10	1458.70	1622.45	1809.51
Frame-10	3.14	175.07	365.68	553.18	728.54	947.05	1093.26	1251.77	1482.12	1638.29	1822.58
Frame-11	-23.99	184.61	359.09	535.60	725.53	898.67	1097.23	1282.43	1458.74	1631.55	1826.85
Frame-12	-21.06	173.06	290.85	536.94	737.99	909.74	1098.78	1265.62	1490.77	1670.80	1841.04
Hoop-1	30.75	757.26	1597.63	2316.69	3075.91	3845.33	4644.46	5398.39	6135.78	6951.79	7757.37
Hoop-2	-30.53	764.04	1603.60	2325.86	3092.96	3964.00	4663.73	5382.32	6183.95	6959.90	7718.35
Hoop-3	-48.44	799.29	1538.05	2297.96	3078.61	3846.23	4650.91	5391.43	6168.81	6973.90	7744.41
Hoop-4	-51.80	805.68	1513.01	2333.38	3099.74	3859.69	4645.88	5380.99	6188.32	6960.00	7728.60
Hoop-5	106.19	460.54	1539.78	2306.79	3088.10	3857.63	4649.35	5398.02	6177.73	6947.88	7749.67
Hoop-6	-24.78	824.00	1543.19	2308.68	3097.90	3864.09	4658.31	5386.75	6178.05	6950.40	7734.46
Hoop-7	22.56	778.78	1549.47	2329.36	3245.91	3865.78	4611.95	5377.15	6184.36	6938.17	7738.23
Hoop-8	3.07	753.45	1518.39	2305.48	3084.90	3923.40	4637.32	5395.52	6189.42	6947.78	7726.82
Hoop-9	64.77	765.22	1541.72	2316.48	3090.93	3836.58	4655.27	5399.73	6121.33	6742.54	7395.06
Hoop-10	-61.19	756.28	1537.44	2313.24	3094.16	3853.61	4653.31	5398.92	6143.44	6976.00	7742.06
Hoop-11	512.31	746.59	1528.43	2321.40	3075.35	3838.74	4650.54	5394.27	6164.57	6960.09	7745.00
Hoop-12	-45.07	776.09	1532.22	2325.49	3081.39	3837.52	4631.18	5387.93	6195.49	6937.57	7730.15
Hoop-13	-24.88	761.77	1474.06	2312.58	3098.85	3974.39	4635.21	5385.23	6245.47	6958.54	7685.05
Hoop-14	-10.62	766.17	1542.80	2304.72	3081.12	3865.14	4657.04	5404.70	6180.87	6958.27	7571.55
Long-1	30.66	40.11	27.12	23.57	15.31	7.05	4.69	2.32	4.69	5.87	4.69
Long-2	36.76	36.77	34.33	30.69	35.55	41.62	34.34	37.98	40.41	39.20	34.33
Long-3	12.51	0.07	-9.89	2.56	-8.64	-1.18	5.05	-3.67	2.56	-4.91	-3.67
Long-4	0.80	13.05	-4.10	-7.77	2.03	-2.87	8.15	-1.65	9.37	-2.87	-9.00
Long-5	-47.32	135.09	108.68	-62.91	-61.72	89.47	84.69	-24.52	46.27	-6.52	-50.92
Long-6	-19.13	-16.69	-9.34	-0.78	-2.01	-48.48	-0.78	-14.24	-8.12	7.78	7.78
Long-7	4.69	-2.52	-1.32	7.09	10.70	-0.11	-6.12	-3.72	7.09	4.69	2.29
Long-8	-12.06	-15.75	-13.29	15.03	5.18	-12.06	-8.37	-9.60	-2.21	3.95	-5.90
SG1	-13.38	-103.24	-95.53	-93.70	-44.01	-23.47	10.64	25.13	64.01	85.10	110.79
SG2	49.13	-66.43	-55.79	-46.98	12.08	38.68	80.69	94.99	139.75	162.87	182.88
SG3	452.58	365.42	393.10	443.58	537.49	576.36	626.48	631.80	683.76	711.48	722.01
SG4	362.70	227.96	247.65	284.46	375.11	419.26	472.35	489.22	545.15	578.52	599.67
SG5	76.48	-39.50	-24.24	-7.74	53.95	86.11	131.29	149.03	195.13	219.65	237.04
SG6	20.09	50.08	91.88	135.88	181.58	225.21	270.87	313.04	358.52	402.35	445.49
SG7	263.94	94.08	117.34	129.11	189.46	220.59	263.74	288.93	333.77	350.90	368.98
SG8	67.35	-18.78	-0.65	22.75	77.71	112.27	155.04	180.46	222.22	247.22	265.89
SG9	21.88	50.54	95.17	143.11	194.22	241.78	291.19	337.67	386.90	433.57	478.25
SG10	7.46	2.65	-8.46	-21.22	-37.34	-46.93	-64.75	-81.37	-94.49	-111.66	-134.54
SG11	6.20	-11.26	-31.65	-47.45	-65.10	-79.80	-94.31	-108.65	-122.61	-134.37	-147.43

TABLE E-28. CVP3, AIR 2 LOAD CONDITION 1a (Continued)

SG12	-11.19	-3.76	-4.86	-6.00	-5.27	-6.28	-6.42	-6.24	-5.00	-6.97	-10.05
SG13	-1.23	-15.85	-26.67	-35.15	-40.89	-45.33	-50.33	-54.04	-54.78	-59.27	-62.99
SG14	-39.28	-36.80	-46.29	-53.95	-60.43	-68.63	-74.73	-80.10	-85.51	-93.08	-102.40
SG15	6.84	16.47	14.27	15.23	10.83	9.50	7.99	7.72	6.48	6.43	5.38
SG16	168.18	169.21	163.97	159.70	157.58	153.35	150.09	147.43	146.01	141.98	137.09
SG17	-1066.93	-1157.51	-1291.25	-1232.42	-1337.86	23894.4	27604.6	28054.8	27481.0	28084.2	28802.1
SG18	5.48	-7.46	-24.34	-43.16	-64.69	-77.26	-96.44	-114.93	-135.77	-156.01	-176.58
SG19	23.43	0.42	-29.94	-59.57	-91.98	-121.24	-151.24	-179.41	-208.12	-237.02	-267.05
SG20	83.42	81.77	79.19	76.43	75.52	71.46	70.18	68.15	66.49	62.44	57.85
SG21	30.39	25.97	14.00	3.87	-5.70	-17.12	-27.80	-38.30	-47.69	-58.92	-72.00
SG22	-42.81	-45.61	-49.33	-51.16	-48.79	-47.77	-45.20	-42.26	-37.48	-35.97	-34.64
SG23	-16.05	-35.33	-67.46	-97.39	-130.46	-162.22	-193.62	-224.47	-254.58	-283.96	-314.66
SG24	5.27	2.15	-4.65	-9.42	-11.63	-15.12	-17.69	-19.34	-19.71	-21.91	-25.22
SG25	4.79	1.57	-6.03	-13.48	-20.62	-29.09	-36.78	-44.32	-50.63	-59.01	-67.94
SG26	46.72	39.37	29.07	22.82	20.07	15.84	13.63	12.90	12.90	10.14	7.01
SG27	38.49	40.05	36.46	33.66	32.29	29.76	27.41	25.76	24.84	21.39	17.94
SG28	0.52	7.88	2.73	1.99	-3.90	-5.37	-9.05	-11.25	-12.73	-11.25	-11.99
SG29	45.50	47.16	44.77	42.20	42.20	40.36	39.63	39.26	39.26	37.98	35.04
SG30	-31.90	-38.66	-49.36	-59.92	-72.20	-82.16	-91.62	-100.44	-107.93	-115.04	-122.96
SG31	-27.15	-31.23	-37.61	-54.46	-70.64	-81.84	-98.19	-117.01	-130.93	-144.47	-162.49
SG32-T	10.64	92.33	172.35	252.53	327.41	400.18	471.34	540.62	608.21	674.79	742.45
SG32-45	-21.61	19.04	47.30	83.95	120.44	155.94	189.24	224.71	261.87	293.66	328.61
SG32-L	14.14	13.78	6.03	0.07	3.60	1.53	1.40	-0.07	-0.76	-5.16	-10.16
SG33-T	27.99	109.74	189.04	267.25	340.38	412.09	482.55	551.13	617.82	684.93	752.89
SG33-45	-23.70	6.45	30.59	59.19	88.67	116.57	144.38	172.48	202.40	227.92	254.75
SG33-T	38.07	20.64	14.77	8.17	7.80	2.30	-0.64	-5.04	-8.16	-14.40	-21.74
SG34-T	6.64	95.78	187.11	276.62	363.44	445.76	527.02	607.18	686.06	764.93	844.62
SG34-45	14.02	56.33	95.87	133.55	172.31	206.39	242.14	277.53	311.26	346.47	382.62
SG34-L	35.14	29.27	19.91	9.64	-0.45	-12.00	-22.28	-32.73	-42.27	-54.74	-67.23
SG35-T	41.27	106.15	165.18	225.46	283.33	347.07	411.44	477.93	544.23	612.96	682.95
SG35-45	62.52	94.12	119.63	145.53	173.11	199.54	229.84	260.69	290.08	322.22	355.68
SG35-L	77.80	70.46	61.45	51.53	42.53	31.68	21.94	11.47	1.91	-10.03	-22.53
SG36-T	6.73	103.85	197.29	287.80	373.60	456.74	535.87	611.89	685.51	758.77	832.66
SG36-45	27.02	54.31	92.47	127.33	164.56	202.75	237.06	270.14	301.01	332.38	364.12
SG36-L	29.68	14.57	9.93	5.02	4.88	1.76	-0.40	-3.93	-5.72	-11.46	-17.16
SG37-T	399.98	442.67	480.28	521.23	559.20	601.58	646.30	693.12	740.82	791.26	842.62
SG37-45	128.47	158.22	175.82	192.15	206.47	219.34	236.77	256.59	274.76	296.42	318.48
SG37-L	84.75	87.51	67.34	51.58	33.80	15.65	0.07	-14.04	-27.42	-40.99	-56.76
SG38-T	40.41	103.00	185.75	265.40	345.04	422.35	499.80	576.15	651.76	727.93	805.83
SG38-45	-10.63	21.13	57.12	91.64	123.40	158.49	191.18	223.86	256.37	289.05	320.85
SG38-L	-5.24	-12.86	-31.67	-44.66	-56.31	-67.24	-77.70	-87.07	-94.36	-104.09	-113.33
SG39-T	-10.52	79.90	166.08	248.78	327.09	402.87	477.14	548.49	618.18	688.05	757.45
SG39-45	-3.29	51.08	95.98	140.93	185.20	228.38	269.99	312.65	351.87	392.10	433.10
SG39-L	49.61	48.97	50.25	50.52	53.91	52.95	52.59	51.31	50.57	46.50	42.16
SG40-T	32.32	87.59	138.15	188.61	236.32	287.64	339.96	392.00	445.57	501.21	557.79
SG40-45	38.74	65.04	78.18	94.24	108.86	129.48	149.60	172.02	193.93	219.54	245.99
SG40-L	46.26	30.91	10.25	-10.22	-29.77	-47.31	-63.77	-80.21	-93.91	-108.37	-122.80

TABLE E-29. CVP3, AIR 2 LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.00	-0.01	-0.02	-0.03	-0.03	-0.03	-0.03	-0.01	-0.02	-0.03	-0.04
Frame-1	13.11	9.42	25.29	19.01	8.22	-0.28	3.30	-8.82	4.41	-0.48	-9.90
Frame-2	49.70	23.38	-24.92	-20.84	-69.97	22.26	-21.06	-8.94	-33.83	8.14	-32.65
Frame-3	-74.45	-64.39	52.68	-65.12	82.00	6.61	68.51	-19.07	-36.77	42.45	67.39
Frame-4	4.41	-16.52	13.16	-3.47	-10.83	6.52	1.48	-2.03	4.32	2.87	10.68
Frame-5	21.92	4.42	-26.27	3.67	-1.97	-3.58	1.73	-0.06	6.29	-7.23	10.94
Frame-6	6.15	0.84	30.10	-27.03	25.18	4.89	-27.25	25.31	4.41	-15.67	27.70
Frame-7	-35.31	-21.72	3.06	43.03	20.35	13.44	39.76	-1.86	-26.66	-19.57	19.54
Frame-8	-21.50	42.00	-17.58	20.64	-22.68	-2.04	32.86	3.32	-30.07	23.49	-6.27
Frame-9	-49.80	-18.62	-0.52	53.91	-52.82	15.23	33.15	-14.21	25.21	62.02	-25.73
Frame-10	-0.85	-26.87	20.29	44.74	-0.31	34.11	-25.68	-15.63	-30.08	6.27	-8.00
Frame-11	-7.59	-24.68	20.02	-21.94	-20.50	-23.93	-20.07	18.54	0.97	13.04	31.18
Frame-12	-7.78	0.67	-5.59	10.33	-3.80	3.11	-5.06	6.77	4.36	14.92	-2.89
Hoop-1	39.94	-11.54	6.85	-9.70	6.85	-13.38	-4.18	-9.70	-0.51	6.85	-9.70
Hoop-2	-26.91	11.00	-3.45	12.81	32.66	9.20	29.05	50.72	-17.89	-25.11	7.39
Hoop-3	-62.46	18.25	-73.01	177.95	-9.83	58.63	25.27	4.21	12.98	-41.42	105.99
Hoop-4	-38.83	25.96	5.60	113.01	-62.91	-25.89	150.03	33.38	127.80	90.78	-57.36
Hoop-5	-49.01	-58.14	-85.55	-23.46	151.85	-78.26	-74.58	42.29	-16.15	128.11	53.24
Hoop-6	-34.01	-22.92	1.11	-41.42	-63.60	4.81	-26.62	47.33	-26.62	-63.60	-43.26
Hoop-7	190.53	-66.92	-8.49	-24.93	13.43	44.49	-17.62	-21.28	88.29	66.39	-32.23
Hoop-8	-19.00	-11.64	17.78	-11.64	25.14	-26.36	-11.64	-4.29	3.07	3.07	10.42
Hoop-9	345.97	-4.18	-33.21	-36.84	13.97	-5.99	-7.80	-11.43	-4.18	52.07	13.97
Hoop-10	-43.10	20.19	-52.15	-111.82	32.85	-28.64	-21.40	-61.20	-41.30	5.72	23.81
Hoop-11	217.23	-133.14	176.70	512.31	-136.84	174.85	62.34	296.58	241.22	255.98	-153.42
Hoop-12	-232.24	10.54	-35.80	-58.04	14.25	-22.83	-8.00	-8.00	-4.29	-24.68	12.39
Hoop-13	86.41	-2.62	-32.31	-24.88	41.90	-10.04	-2.62	-2.62	-2.62	-2.62	12.22
Hoop-14	159.50	-18.02	-25.42	-10.62	18.97	-18.02	-10.62	-3.22	-10.62	-3.22	26.37
Long-1	100.32	1211.28	2434.65	3669.71	4917.27	6128.59	7335.92	8474.49	9640.94	10811.0	11827.4
Long-2	35.55	1219.05	2459.92	3672.70	4892.29	6136.56	7375.48	8565.54	9813.44	10961.8	12105.1
Long-3	-23.58	1222.14	2448.19	3697.76	4918.22	6142.78	7323.27	8433.85	9660.90	10844.5	11960.6
Long-4	-29.81	1264.54	2445.25	3728.71	4917.37	6135.80	7367.21	8578.78	9791.08	10999.8	12285.5
Long-5	-37.72	1205.48	2435.71	3664.63	4917.06	6137.46	7336.99	8581.85	9808.25	11017.9	12265.8
Long-6	-42.37	1228.52	2461.74	3688.72	4898.08	6127.39	7369.66	8576.21	9809.18	11014.1	12270.2
Long-7	-4.92	1212.30	2463.42	3685.58	4904.83	6140.08	7370.06	8575.74	9794.16	10951.4	11927.0
Long-8	-12.06	1222.84	2448.14	3684.40	4889.38	6132.91	7368.55	8574.39	9657.86	10821.5	11853.0
SG1	-23.65	-25.85	-30.26	-18.88	-38.69	-57.75	-76.47	-97.38	-121.40	-144.15	-179.53
SG2	35.74	25.29	13.55	20.52	-9.20	-38.55	-63.50	-90.84	-121.46	-149.18	-197.87
SG3	438.86	582.97	717.68	853.11	958.40	1049.54	1154.58	1225.27	1291.05	1346.45	1410.20
SG4	348.81	381.35	416.55	473.73	473.40	485.50	504.40	497.98	487.43	484.91	471.07
SG5	65.12	53.16	40.43	43.40	12.51	-18.83	-41.79	-69.47	-95.86	-119.66	-165.43
SG6	19.27	2.12	-17.96	-36.44	-61.05	-82.04	-101.13	-120.39	-138.94	-156.75	-176.58
SG7	234.97	215.23	203.82	202.70	148.64	114.64	84.84	55.98	14.25	-13.46	-64.90
SG8	59.48	50.73	42.08	38.23	16.84	-6.28	-20.75	-41.68	-56.61	-68.38	-96.54
SG9	21.14	7.92	-7.33	-21.48	-39.48	-54.90	-68.33	-84.13	-97.71	-110.95	-126.37
SG10	18.76	43.46	77.35	114.12	157.03	192.22	228.26	263.29	299.12	335.69	367.06
SG11	7.12	41.29	76.22	111.86	150.62	188.46	225.62	262.92	300.19	337.35	371.49

TABLE E-29. CVP3, AIR 2 LOAD CONDITION 1b (Continued)

SG12	-4.17	79.71	165.70	249.11	347.53	431.46	516.59	595.61	677.09	755.41	831.55
SG13	3.90	112.05	223.08	330.34	449.32	561.85	672.73	779.28	889.41	994.77	1093.14
SG14	-33.78	79.27	194.47	303.98	431.82	544.17	655.37	759.21	863.15	959.93	1053.94
SG15	9.96	66.78	126.18	182.35	245.79	305.56	363.03	419.35	477.45	531.79	584.38
SG16	175.40	278.31	383.05	484.01	601.14	706.97	812.56	911.22	1010.70	1104.33	1194.07
SG17	-263.80	-358.68	-341.10	-408.74	-483.00	-284.36	-312.37	-644.88	-1009.66	18.66	-154.20
SG18	3.60	71.25	137.45	202.01	271.10	336.64	400.69	462.46	525.93	586.93	646.72
SG19	23.43	120.25	209.56	291.09	369.84	439.18	507.38	573.28	641.33	706.19	769.80
SG20	85.82	187.80	290.20	384.24	483.23	570.80	655.41	736.96	819.53	897.67	973.60
SG21	35.36	115.28	196.72	266.68	336.82	389.26	439.62	487.50	536.80	583.45	632.01
SG22	-40.79	54.19	127.10	178.89	202.07	215.87	230.11	244.16	262.37	278.61	295.53
SG23	-14.95	83.84	175.69	262.72	350.47	434.16	515.23	593.10	673.10	749.01	825.33
SG24	7.47	112.15	213.37	310.69	412.21	507.47	601.23	689.39	780.59	865.70	952.10
SG25	6.31	110.84	220.35	324.36	443.64	552.95	660.97	765.93	870.43	969.40	1067.81
SG26	48.19	158.87	267.57	371.60	490.14	600.02	710.27	816.54	924.37	1027.61	1129.17
SG27	39.64	128.64	222.00	311.91	415.13	513.40	610.65	704.90	798.38	886.73	973.62
SG28	-2.42	43.93	90.30	140.33	193.30	240.36	290.45	339.75	390.49	438.36	486.88
SG29	47.34	127.80	212.35	292.61	380.94	462.82	542.83	622.38	701.12	776.33	851.75
SG30	-32.09	0.34	33.32	67.31	103.50	136.51	170.58	204.48	238.40	271.82	305.42
SG31	-26.96	7.29	40.68	72.50	106.48	142.42	180.20	217.72	254.66	291.38	329.19
SG32-T	9.68	-15.88	-42.40	-69.82	-101.69	-129.47	-158.81	-185.27	-213.56	-239.91	-266.95
SG32-45	-16.38	14.04	46.71	76.12	115.89	147.76	180.59	212.34	245.58	276.76	310.04
SG32-L	20.06	110.22	200.64	288.22	389.72	476.20	565.09	647.41	731.54	812.15	893.14
SG33-T	27.40	-14.88	-58.77	-102.97	-151.61	-194.28	-237.47	-278.74	-322.00	-363.53	-404.48
SG33-45	-19.80	-4.06	15.13	27.71	35.32	26.88	15.41	2.87	-9.98	-22.74	-34.77
SG33-T	40.09	150.89	261.92	370.51	493.93	605.95	715.97	819.99	925.39	1024.92	1123.88
SG34-T	7.32	-27.48	-64.82	-99.76	-140.84	-176.59	-211.34	-246.15	-280.61	-313.16	-344.45
SG34-45	10.72	41.11	67.16	92.09	111.05	131.30	147.87	165.02	178.34	191.74	207.86
SG34-L	35.87	136.40	239.72	335.46	439.07	531.10	621.46	709.16	797.68	881.79	963.70
SG35-T	44.39	12.27	-16.31	-43.06	-66.37	-87.19	-108.73	-128.32	-148.54	-168.19	-189.15
SG35-45	63.26	92.28	117.83	142.07	165.19	188.13	206.54	226.37	241.96	257.05	274.28
SG35-L	79.83	177.60	278.18	370.97	471.46	560.53	648.13	733.04	818.43	900.30	980.51
SG36-T	7.65	-34.22	-77.01	-119.97	-168.80	-212.89	-255.35	-295.84	-337.44	-377.23	-416.62
SG36-45	27.85	54.31	73.27	87.26	86.28	81.05	71.52	59.96	49.36	37.57	28.99
SG36-L	30.23	143.79	260.85	372.69	499.99	614.08	724.79	830.79	937.60	1038.91	1138.73
SG37-T	401.58	374.43	345.47	314.43	274.00	231.60	190.32	150.83	110.09	70.84	32.63
SG37-45	129.95	149.22	159.72	165.02	151.79	134.34	114.18	93.80	73.97	53.42	38.37
SG37-L	87.87	181.73	280.95	377.17	487.48	587.68	685.88	783.77	881.58	975.53	1069.10
SG38-T	39.50	3.71	-31.35	-67.88	-108.61	-145.31	-181.86	-216.18	-251.95	-284.47	-318.76
SG38-45	-10.82	30.87	60.08	94.23	126.35	158.29	194.50	223.89	254.53	284.86	314.95
SG38-L	-3.17	98.02	198.48	295.76	396.97	492.61	585.69	675.10	767.14	852.87	941.08
SG39-T	-7.77	-35.65	-63.72	-91.96	-123.13	-152.09	-180.46	-208.80	-236.88	-264.14	-290.89
SG39-45	0.56	27.15	47.14	68.81	88.64	117.24	144.87	169.44	197.02	220.14	250.70
SG39-L	50.71	134.88	223.86	305.77	399.71	486.02	570.99	655.67	739.91	820.73	901.71
SG40-T	33.64	20.42	5.14	-5.67	-22.95	-37.36	-51.27	-65.63	-79.72	-95.62	-111.55
SG40-45	41.11	78.55	109.42	143.57	175.14	215.50	254.78	291.10	330.54	363.37	403.80
SG40-L	47.72	123.02	203.45	280.22	367.37	449.07	530.27	611.91	694.15	771.93	851.23

TABLE E-30. CVP3, AIR 2 LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.00	0.88	1.75	2.64	3.52	4.39	5.29	6.16	7.03	7.93	8.81
Frame-1	1.60	183.05	367.86	539.03	735.41	922.23	1079.84	1282.31	1509.19	1614.04	1818.19
Frame-2	-3.61	184.33	363.50	548.05	733.68	907.93	1085.74	1284.46	1452.20	1623.71	1813.69
Frame-3	44.50	181.84	363.71	538.84	727.09	916.12	1098.34	1289.23	1468.41	1632.37	1806.05
Frame-4	-7.11	179.85	358.10	546.83	733.22	923.83	1088.64	1281.13	1468.73	1642.80	1812.82
Frame-5	-20.67	178.64	364.05	546.16	722.47	920.26	1083.61	1274.64	1452.17	1652.38	1815.76
Frame-6	-25.59	273.43	370.28	550.44	741.91	935.86	1083.96	1274.66	1463.96	1621.16	1820.30
Frame-7	22.21	172.83	375.09	530.81	737.94	926.26	1099.79	1289.89	1482.94	1622.95	1797.62
Frame-8	-25.99	179.53	366.08	540.56	738.86	918.37	1084.82	1302.26	1546.74	1628.04	1804.23
Frame-9	-40.38	194.39	368.06	555.71	732.58	927.02	1092.58	1276.62	1472.34	1616.17	1826.47
Frame-10	-26.00	186.48	376.54	564.86	728.80	929.03	1078.33	1287.23	1485.30	1630.36	1825.56
Frame-11	-10.33	187.36	366.40	550.43	730.87	908.05	1094.36	1266.53	1453.46	1630.51	1816.26
Frame-12	1.56	170.70	374.40	548.68	712.31	915.85	1069.96	1285.67	1455.90	1638.62	1830.19
Hoop-1	12.37	771.89	1538.78	2349.56	3081.74	3870.30	4641.71	5413.65	6204.44	6962.12	7701.42
Hoop-2	-35.95	778.41	1538.59	2318.41	3100.18	3910.85	4632.16	5409.94	6211.66	6955.59	7728.42
Hoop-3	21.76	788.68	1564.38	2313.52	3083.88	3877.04	4648.33	5428.82	6183.46	6952.14	7726.08
Hoop-4	44.49	851.90	1722.27	2323.89	3103.44	3871.88	4613.47	5405.60	6198.20	6951.90	7759.31
Hoop-5	-32.59	637.63	1559.87	2304.73	3102.71	3876.94	4635.67	5418.65	6213.05	6947.19	7739.76
Hoop-6	-6.29	803.58	1563.53	2302.90	3088.65	3859.62	4640.75	5418.72	6200.85	6964.50	7731.84
Hoop-7	51.78	778.71	1628.00	2309.03	3092.50	3883.27	4634.79	5414.22	6177.67	6963.04	7717.36
Hoop-8	-19.00	760.73	1533.26	2349.85	3077.55	3835.52	4725.59	5329.84	6189.42	6844.79	7566.50
Hoop-9	1.27	772.40	1552.76	2320.34	3096.37	3871.44	4635.32	5407.53	6105.00	6717.14	7389.28
Hoop-10	-64.81	776.10	1557.49	2311.67	3086.93	3864.85	4646.08	5413.93	6172.37	6961.53	7743.61
Hoop-11	220.94	772.33	1537.80	2308.73	3103.01	3872.32	4633.94	5418.79	6192.24	6958.25	7731.79
Hoop-12	-2.44	776.01	1539.79	2310.90	3073.98	3882.39	4631.18	5410.71	6173.25	6944.98	7716.86
Hoop-13	4.80	776.53	1548.42	2357.34	3098.85	4026.73	4635.21	5422.87	6171.26	6958.54	7731.12
Hoop-14	-3.22	766.09	1550.35	2312.34	3103.31	3865.53	4634.84	5405.24	6173.47	6817.71	7432.48
Long-1	79.06	1217.07	2448.82	3688.23	4903.10	6128.59	7340.64	8457.96	9700.40	10872.3	11892.4
Long-2	44.05	1228.65	2463.56	3663.83	4904.45	6137.77	7381.55	8569.18	9805.40	11026.1	12089.3
Long-3	3.80	1200.86	2474.32	3679.97	4903.28	6078.07	7273.49	8428.87	9723.67	10942.7	12076.4
Long-4	-1.65	1239.92	2446.47	3681.80	4899.00	6132.13	7346.39	8587.35	9796.47	11022.9	12247.5
Long-5	13.88	1225.75	2452.52	3669.07	4900.26	6141.06	7357.39	8577.05	9806.28	11035.8	12259.8
Long-6	0.44	1221.06	2462.96	3681.01	4907.87	6143.29	7358.65	8588.44	9812.11	11036.0	12259.2
Long-7	1.09	1229.00	2452.61	3669.59	4902.43	6140.08	7360.45	8590.16	9810.23	11040.2	12142.1
Long-8	-7.13	1226.41	2450.60	3659.41	4896.77	6132.91	7363.62	8576.86	9806.10	11023.2	11951.6
SG1	-33.01	-86.35	-82.52	-110.77	-130.40	-110.76	-121.58	-104.51	-108.00	-108.00	-111.14
SG2	13.73	-50.10	-44.05	-80.47	-110.42	-90.37	-113.30	-103.02	-116.22	-137.41	-159.13
SG3	392.82	538.80	721.76	846.13	962.53	1115.73	1216.15	1347.46	1439.06	1515.43	1592.29
SG4	314.91	297.86	381.86	416.83	452.04	532.50	555.78	614.77	640.80	654.74	672.84
SG5	34.70	-22.31	-7.47	-34.83	-61.68	-39.77	-59.84	-51.45	-64.37	-88.93	-115.26
SG6	15.92	35.22	57.78	80.71	101.43	127.65	150.39	176.41	200.80	225.55	251.27
SG7	202.89	99.29	108.15	87.36	53.42	72.42	56.75	67.60	64.72	43.38	13.70
SG8	31.09	-3.95	18.12	17.30	5.44	28.84	26.00	37.95	35.57	27.78	12.81
SG9	15.27	40.24	72.03	103.82	131.38	164.62	194.56	226.32	255.90	286.20	315.11
SG10	13.48	37.11	70.54	102.46	133.22	167.73	191.28	220.50	252.86	276.96	296.67
SG11	2.89	23.65	41.84	64.08	88.16	113.51	139.78	165.12	194.34	220.06	245.28

TABLE E-30. CVP3, AIR 2 LOAD CONDITION 1c (Continued)

SG12	-11.61	81.03	169.61	257.70	344.76	431.87	519.84	599.71	681.25	759.48	827.77
SG13	-7.88	94.06	196.40	298.80	406.26	516.80	627.74	732.55	838.72	942.86	1034.20
SG14	-25.85	89.62	198.47	305.36	412.14	517.49	623.06	714.31	808.04	897.00	971.49
SG15	5.65	73.64	130.51	189.69	250.77	308.52	368.50	423.85	482.54	537.74	588.48
SG16	168.35	274.13	376.83	479.89	585.61	692.78	801.15	898.75	996.48	1089.26	1170.72
SG17	-1672.58	-1686.05	10963.9	8526.36	6960.18	19563.4	19610.5	23359.5	23877.3	24136.2	25479.9
SG18	4.66	58.25	113.79	163.78	214.40	264.72	314.19	356.47	404.74	451.54	492.02
SG19	19.57	92.80	156.88	215.43	266.42	313.70	362.84	406.98	455.56	501.57	540.88
SG20	80.12	184.08	284.44	377.80	465.24	547.84	631.23	706.08	783.19	857.74	924.36
SG21	24.69	102.74	174.95	238.14	287.12	329.08	371.25	407.49	446.16	482.06	513.10
SG22	-47.13	48.62	121.05	178.48	197.54	218.24	239.64	259.96	279.93	305.14	322.89
SG23	-16.97	60.88	122.59	184.49	242.89	298.50	356.71	411.02	467.02	523.02	574.00
SG24	6.55	107.35	200.84	296.36	387.09	478.32	569.59	655.28	741.21	827.88	905.37
SG25	6.40	111.05	212.20	313.13	417.72	522.44	626.47	721.41	816.22	907.16	987.08
SG26	43.79	147.81	246.92	347.70	452.32	560.92	672.15	777.59	882.92	988.62	1083.32
SG27	34.36	125.81	214.60	306.02	402.80	501.87	601.81	694.00	784.88	872.95	952.57
SG28	2.73	56.43	102.06	149.90	199.94	247.74	297.04	340.42	388.24	439.74	484.72
SG29	43.49	125.94	206.24	287.28	369.59	451.48	533.96	610.31	687.27	763.13	832.55
SG30	-31.59	-6.83	17.93	39.29	65.29	91.33	118.01	144.73	173.90	201.68	228.36
SG31	-28.39	1.55	31.95	56.71	85.00	117.18	143.21	171.62	205.41	232.82	258.96
SG32-T	15.68	71.80	120.12	170.51	215.48	254.61	292.53	330.64	369.19	406.51	448.49
SG32-45	-10.41	57.75	119.83	188.30	256.39	324.03	391.43	455.24	519.46	588.09	648.96
SG32-L	11.90	105.52	193.77	278.95	365.54	453.14	541.09	619.72	698.27	773.28	837.46
SG33-T	34.15	71.36	103.00	135.42	163.24	184.84	207.33	228.70	250.41	272.44	299.57
SG33-45	-16.04	27.93	73.70	113.32	139.62	155.77	166.60	175.95	185.86	198.16	207.93
SG33-T	33.30	135.27	242.61	348.13	457.65	567.31	675.36	774.34	872.10	964.92	1046.20
SG34-T	11.22	65.87	118.34	174.49	226.77	278.29	329.65	380.43	430.31	482.22	534.96
SG34-45	12.37	88.03	147.49	211.55	269.67	325.38	381.48	438.46	492.91	546.07	602.47
SG34-L	30.92	128.30	223.53	311.43	396.73	477.95	559.77	634.55	710.66	783.11	848.58
SG35-T	44.40	73.51	102.07	136.26	174.16	210.76	249.57	289.00	330.89	371.81	416.49
SG35-45	61.98	121.09	165.56	216.64	265.31	310.65	359.68	408.86	457.16	503.62	552.76
SG35-L	71.57	166.36	258.65	344.32	426.66	505.64	585.03	657.74	731.24	801.44	865.01
SG36-T	14.07	67.49	115.05	159.87	197.69	228.52	258.45	286.88	314.42	342.69	375.26
SG36-45	24.82	83.70	136.47	184.88	217.36	239.08	257.84	274.37	289.88	304.37	320.35
SG36-L	26.19	132.88	244.58	352.62	465.83	577.41	684.86	783.97	883.33	977.91	1062.24
SG37-T	401.21	410.95	418.96	428.13	431.11	431.30	436.44	442.72	452.86	463.49	480.28
SG37-45	126.84	173.78	198.05	223.03	224.68	216.58	213.83	210.32	208.30	205.92	207.24
SG37-L	87.33	179.49	261.65	349.30	438.39	526.52	617.44	700.95	786.92	869.76	942.71
SG38-T	39.87	73.25	119.88	168.54	213.69	258.45	303.60	348.71	394.04	439.92	488.28
SG38-45	-8.98	61.34	129.66	196.89	264.11	330.00	398.68	464.01	529.37	591.07	651.24
SG38-L	-5.47	85.34	167.32	252.02	336.98	422.49	507.48	588.01	668.22	748.48	821.29
SG39-T	-2.45	56.78	111.26	163.36	210.32	251.74	293.37	332.77	373.30	411.99	454.45
SG39-45	2.77	79.26	138.28	207.74	275.16	342.50	413.31	480.63	545.28	610.30	673.44
SG39-L	47.15	136.41	222.67	308.24	393.29	479.12	564.84	644.60	723.32	799.84	869.11
SG40-T	33.78	72.07	107.02	140.61	177.41	211.20	245.74	278.64	313.96	347.13	383.97
SG40-45	39.47	97.16	139.00	191.58	249.10	308.63	373.30	434.26	494.78	554.96	614.12
SG40-L	43.70	105.10	166.53	228.47	297.19	368.29	441.43	509.93	580.36	649.01	711.88

TABLE E-31. CVP3, WATER 1, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.05	0.88	1.78	2.68	3.49	4.49	5.24	6.18	7.00	7.91	8.84
Frame-1	-207.76	198.55	392.91	547.37	693.27	898.86	1081.08	1262.80	1471.60	1662.58	1810.62
Frame-2	-134.99	208.66	322.78	553.03	701.53	938.36	1104.30	1282.19	1428.12	1657.03	1891.25
Frame-3	-225.85	180.12	385.22	541.98	729.75	921.95	1094.46	1276.64	1461.86	1632.70	1837.96
Frame-4	-99.46	176.40	341.80	555.18	720.34	903.90	1093.33	1258.16	1450.06	1634.50	1832.83
Frame-5	-218.34	190.72	304.62	533.82	721.65	907.23	1090.01	1274.08	1436.93	1642.34	1821.99
Frame-6	123.01	181.73	367.75	546.70	729.31	932.96	1093.79	1275.75	1443.95	1638.48	1833.13
Frame-7	-193.73	175.12	305.57	547.99	742.22	909.96	1095.89	1274.31	1438.37	1635.40	1819.84
Frame-8	-217.70	174.93	313.82	543.95	781.02	910.67	1105.02	1314.22	1452.27	1659.42	1835.04
Frame-9	-91.73	172.28	350.05	541.77	733.34	902.00	1107.71	1320.19	1455.05	1639.22	1842.06
Frame-10	-38.67	311.02	406.93	549.31	717.58	909.29	1070.99	1378.41	1442.48	1637.64	1844.32
Frame-11	82.29	184.54	355.57	555.37	714.87	912.06	1117.74	1291.77	1445.31	1664.78	1856.60
Frame-12	-222.22	186.83	315.00	540.01	730.42	913.38	1097.14	1252.74	1438.80	1633.82	1833.50
Hoop-1	4.90	755.01	1519.67	2315.89	3078.56	3863.91	4637.45	5425.33	6260.68	6962.91	7767.03
Hoop-2	7.19	777.98	1539.58	2333.99	3075.59	3866.54	4618.82	5421.30	6178.29	6979.68	7769.22
Hoop-3	57.91	943.91	1540.27	2324.66	3055.95	3858.04	4611.99	5406.00	6148.73	6953.94	7765.19
Hoop-4	-40.07	752.28	1542.63	2316.63	3054.99	3869.87	4633.99	5408.84	6151.90	6962.69	7761.30
Hoop-5	52.21	769.70	1550.93	2337.95	3051.47	3844.12	4621.39	5423.86	6147.49	6952.52	7785.72
Hoop-6	-189.88	741.73	1556.74	2316.61	3059.39	3863.78	4624.88	5413.33	6155.25	6959.25	7762.18
Hoop-7	52.06	864.59	1465.17	2266.88	3102.83	3877.32	4632.78	5417.09	6153.59	6945.95	7914.37
Hoop-8	-28.49	670.11	1523.15	2273.46	3368.94	3876.73	4634.25	5413.82	6149.27	6980.32	7693.71
Hoop-9	0.65	762.48	1551.52	2291.81	3160.43	3860.98	4622.88	5392.05	6137.63	6970.28	7641.49
Hoop-10	-74.23	753.77	1558.27	2272.60	3017.21	3867.29	4624.86	5413.17	6150.85	7004.24	7763.62
Hoop-11	-62.63	768.82	1550.50	2308.44	3095.42	3870.11	4673.99	5396.75	6145.31	6978.69	7756.76
Hoop-12	-105.99	768.57	1463.40	2264.08	3056.89	3872.55	4606.37	5421.72	6140.72	6941.25	7741.77
Hoop-13	15.10	786.60	1506.18	2478.22	3064.02	3902.68	4592.65	5401.33	6158.07	6966.75	7775.43
Hoop-14	255.03	765.29	1578.74	2311.08	3065.14	3842.00	4633.35	5402.50	6134.68	6992.59	7717.38
Long-1	41.60	2.65	3.83	5.01	-24.49	-6.79	-20.95	8.56	6.19	-0.89	-2.07
Long-2	0.01	0.01	2.44	-1.21	-1.21	2.44	3.65	3.65	1.22	-2.42	-2.42
Long-3	-0.85	-3.34	-4.58	-0.85	-2.10	-3.34	0.39	20.30	2.88	5.37	12.83
Long-4	14.20	11.75	6.85	15.42	4.40	6.85	4.40	9.30	16.64	17.87	10.52
Long-5	-17.38	-1.79	-34.18	-4.19	-34.17	-34.18	-17.38	-17.38	-7.79	-4.19	1.81
Long-6	20.21	-11.58	-22.59	11.65	18.98	7.98	22.65	7.98	18.99	14.09	20.21
Long-7	-27.48	-26.28	-20.27	55.40	18.16	68.62	16.96	-21.48	-25.08	98.65	-19.08
Long-8	-25.75	19.79	25.94	-30.68	-29.44	16.10	-29.44	18.56	16.10	-3.60	12.41
SG1	202.66	65.84	51.90	77.39	131.12	149.27	230.16	261.50	313.15	337.41	366.02
SG2	333.65	161.75	132.95	165.97	242.45	251.44	358.23	384.97	449.63	478.70	504.75
SG3	784.73	608.24	594.84	635.78	718.20	762.07	911.77	918.65	1019.78	1048.07	1096.34
SG4	731.27	540.14	506.36	553.89	647.95	677.84	814.88	839.00	917.66	957.45	996.69
SG5	355.98	187.32	158.73	196.85	281.62	288.22	397.82	423.85	490.24	521.95	545.37
SG6	21.19	54.84	94.08	139.92	186.13	233.07	280.22	327.50	373.45	421.56	468.14
SG7	596.73	441.36	368.27	404.36	500.49	500.12	606.44	647.78	704.79	747.62	764.65
SG8	292.42	173.21	162.58	201.18	277.56	291.43	375.76	404.57	460.11	491.20	512.27
SG9	60.83	90.58	133.01	182.97	236.06	286.20	336.20	387.23	436.37	486.79	535.29
SG10	40.66	26.51	22.98	14.03	1.27	-16.68	-22.37	-37.70	-48.62	-58.18	-76.26
SG11	17.59	-2.81	-21.36	-41.39	-54.25	-74.46	-88.62	-102.94	-117.43	-128.85	-142.81

TABLE E-31. CVP3, WATER 1, LOAD CONDITION 1a (Continued)

SG12	-4.77	-7.52	-5.13	-2.06	-4.08	-0.31	-4.44	2.08	4.64	4.60	5.47
SG13	0.74	-20.35	-25.20	-28.00	-31.71	-37.81	-44.97	-42.12	-46.05	-49.09	-53.90
SG14	-16.76	-27.72	-37.58	-39.28	-50.79	-57.89	-66.71	-68.85	-71.36	-76.65	-82.75
SG15	10.47	19.13	21.06	19.13	15.55	12.62	6.11	5.19	2.07	1.07	-0.36
SG16	189.33	179.50	175.38	178.82	174.10	172.81	167.65	170.61	170.72	169.19	167.27
SG17	24171.0	23977.3	23803.8	23912.6	23747.9	23839.1	23897.4	23918.5	23996.1	23953.8	23962.6
SG18	25.35	11.72	-5.12	-23.56	-43.62	-65.41	-87.35	-106.89	-126.92	-148.05	-170.35
SG19	33.00	2.63	-25.16	-52.77	-84.60	-119.39	-150.14	-179.02	-208.61	-237.54	-268.83
SG20	138.65	130.91	126.67	127.04	123.73	118.57	116.19	115.45	114.13	110.29	106.43
SG21	95.58	82.68	66.66	62.80	49.35	37.02	27.26	17.32	9.40	0.38	-10.86
SG22	-15.53	-28.62	-23.43	-16.63	-15.35	-14.93	-14.93	-6.94	-4.37	-1.89	-0.10
SG23	-9.26	-40.84	-71.32	-91.33	-129.70	-162.57	-195.64	-225.92	-255.61	-283.75	-312.39
SG24	23.08	6.74	-2.81	8.94	1.60	-2.63	-7.04	-4.83	-5.75	-4.28	-6.12
SG25	27.62	18.09	5.89	6.54	-2.39	-11.18	-16.89	-22.78	-30.05	-35.85	-41.74
SG26	48.75	29.07	26.87	29.99	27.78	23.01	19.70	18.59	14.55	11.79	9.40
SG27	52.47	46.07	41.84	48.69	46.39	44.46	43.87	44.88	45.28	44.00	42.85
SG28	-84.83	-83.35	-85.56	-86.30	-93.65	-98.80	-103.96	-110.57	-117.17	-119.40	-120.87
SG29	40.36	33.93	27.87	33.75	31.36	29.89	31.36	33.20	36.50	38.71	39.81
SG30	663.41	655.30	645.93	639.00	629.49	621.69	617.75	610.85	606.55	602.30	599.14
SG31	-10.98	-16.03	-28.29	-39.77	-48.86	-68.70	-70.63	-87.02	-92.23	-108.14	-125.54
SG32-T	-36.53	45.94	130.46	207.24	276.98	358.16	418.59	490.57	552.32	621.56	689.37
SG32-45	-39.50	-12.84	18.35	66.01	89.68	135.74	160.53	197.85	228.58	264.78	302.81
SG32-L	4.24	-14.19	-24.65	-24.47	-26.80	-24.24	-24.70	-20.80	-18.18	-21.81	-23.87
SG33-T	-18.23	54.61	139.57	215.94	284.74	367.44	427.56	499.62	560.14	628.96	698.08
SG33-45	-19.02	-11.49	12.24	49.50	70.43	105.31	131.21	157.96	182.52	212.11	241.12
SG33-T	52.38	7.98	-8.71	-7.24	-9.81	-14.94	-15.68	-14.94	-13.66	-19.53	-24.48
SG34-T	-19.09	68.44	156.66	244.34	321.55	413.81	482.45	565.49	637.44	718.45	800.07
SG34-45	-34.75	9.76	51.60	88.13	124.52	163.66	190.81	232.04	265.16	298.40	334.51
SG34-L	28.54	18.99	8.91	1.94	-9.25	-22.27	-31.82	-41.35	-49.59	-61.34	-72.90
SG35-T	17.73	99.67	164.13	224.23	638.31	968.76	768.95	744.84	684.83	828.33	959.40
SG35-45	54.63	95.95	127.16	150.48	178.40	210.53	232.23	270.22	300.82	332.10	366.26
SG35-L	84.06	72.66	62.37	56.67	46.75	34.44	25.25	16.61	9.26	-1.76	-13.34
SG36-T	-36.24	45.28	147.17	237.68	316.62	410.80	476.75	558.40	627.85	703.80	778.52
SG36-45	34.77	47.98	85.59	122.83	161.45	199.38	225.87	264.70	293.21	324.37	355.24
SG36-L	44.79	6.12	-5.03	1.39	-0.44	-4.71	-3.29	-5.49	-6.32	-9.49	-13.07
SG37-T	527.10	590.47	615.92	648.89	677.87	724.10	719.63	788.20	842.51	890.60	928.07
SG37-45	143.35	187.38	203.90	215.28	228.67	244.46	252.74	277.31	294.13	313.83	335.67
SG37-L	97.22	104.36	82.18	70.27	49.01	30.50	14.00	1.17	-10.01	-23.39	-35.48
SG38-T	24.26	88.49	164.28	241.73	314.40	401.02	467.86	547.83	617.81	694.64	774.47
SG38-45	-67.38	-38.73	-6.59	24.25	55.28	88.52	112.40	151.13	180.29	213.74	245.32
SG38-L	-19.05	-45.57	-64.80	-61.63	-78.93	-92.75	-103.86	-111.79	-120.62	-127.12	-135.61
SG39-T	-53.25	40.28	127.57	208.26	278.49	364.86	427.62	502.03	567.94	639.20	710.72
SG39-45	-45.91	6.99	54.84	104.93	147.87	196.63	226.59	275.93	311.45	350.82	390.82
SG39-L	36.06	26.68	23.43	33.00	34.96	33.77	35.06	34.92	35.18	33.68	31.99
SG40-T	57.01	119.77	170.06	217.61	259.31	316.92	360.75	416.12	464.31	521.02	578.69
SG40-45	62.45	89.29	104.45	124.71	139.83	161.42	171.42	200.12	217.81	241.72	267.30
SG40-L	84.97	67.25	43.87	30.35	10.06	-11.13	-25.19	-40.73	-54.25	-66.31	-79.10

TABLE E-32. CVP3, WATER 1, LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.02	0.01	-0.01	0.00	0.00	0.01	0.00	0.00	-0.01	0.00	-0.01
Frame-1	-31.40	101.56	105.34	-150.72	72.78	4.96	-128.50	34.47	86.40	34.93	-50.00
Frame-2	-146.36	-38.28	-91.83	-87.79	35.19	-142.71	153.57	-57.34	7.22	17.86	22.51
Frame-3	11.60	138.94	39.77	-54.07	74.23	126.78	-11.35	156.19	122.13	185.82	-135.61
Frame-4	13.30	-86.34	76.05	-35.46	-111.70	99.69	91.94	-89.71	-32.56	10.74	72.25
Frame-5	53.24	39.79	-128.95	-100.80	43.74	-1.77	-87.17	67.47	78.08	81.74	-46.48
Frame-6	72.59	-15.36	-11.57	-97.66	46.29	54.13	78.77	-55.99	12.20	-58.95	-44.19
Frame-7	37.74	-55.06	-92.78	4.35	-15.12	13.56	-107.57	22.41	114.05	-119.80	74.17
Frame-8	73.88	74.10	-11.80	23.30	107.13	73.82	-5.92	-61.95	84.73	-19.87	48.32
Frame-9	158.55	-87.21	117.02	620.16	-151.46	-134.63	13.09	-59.39	-135.81	53.04	-195.38
Frame-10	142.77	-111.85	53.62	81.85	-58.15	-32.93	-141.95	117.11	-6.52	140.26	-94.59
Frame-11	114.88	30.50	127.17	70.29	61.31	42.08	31.42	3.43	-13.14	44.78	55.98
Frame-12	34.45	15.64	-81.06	-44.05	41.90	-100.53	33.82	10.39	-53.25	-83.96	-86.37
Hoop-1	-66.80	17.77	8.58	-19.00	-33.70	-31.86	-15.32	-18.99	-18.99	-18.99	-18.99
Hoop-2	-0.03	166.01	14.41	-16.28	-41.55	16.21	66.76	12.60	-25.30	43.29	32.46
Hoop-3	112.30	-29.80	-129.81	177.22	12.30	28.09	168.44	250.88	-152.60	-26.30	-31.56
Hoop-4	232.07	-40.06	24.72	-40.07	-23.41	183.92	-43.77	-30.81	309.79	-34.51	200.58
Hoop-5	-104.79	-108.42	203.75	-124.87	141.66	165.39	-73.75	-126.69	-139.46	33.96	41.26
Hoop-6	-66.05	183.46	4.19	91.07	-43.86	242.62	-91.93	357.21	65.18	233.38	-10.60
Hoop-7	-101.31	31.98	126.93	31.99	-93.99	-55.65	139.71	-68.43	-28.27	-48.35	46.59
Hoop-8	59.76	-6.43	22.98	8.28	-13.79	8.28	8.28	-43.20	0.92	52.40	30.34
Hoop-9	-30.19	105.85	-100.93	82.28	-32.00	-120.89	-137.21	332.62	60.51	-137.21	-21.12
Hoop-10	-76.04	-43.49	-77.84	-45.31	14.36	177.08	102.94	-144.75	-88.69	37.86	-79.66
Hoop-11	-134.54	226.81	247.09	-105.04	-58.95	-151.14	1.90	481.27	1.90	-110.56	-34.98
Hoop-12	-55.97	97.82	-85.61	8.89	-5.94	477.71	21.85	90.42	-102.29	-143.05	51.51
Hoop-13	104.13	-66.50	-59.09	15.10	52.19	-44.25	-36.83	-96.19	96.70	81.86	74.45
Hoop-14	-85.15	107.13	158.90	-33.37	55.37	99.75	-33.37	33.19	84.95	25.79	-40.77
Long-1	-20.95	1273.68	2418.91	3688.27	4905.01	6153.04	7346.74	8558.43	9823.88	10976.8	12133.5
Long-2	1.22	1203.69	2454.01	3685.14	4857.24	6152.63	7367.84	8554.16	9826.22	10952.0	12154.6
Long-3	9.10	1362.54	2452.75	3708.68	4894.18	6136.28	7359.74	8523.71	9646.16	10801.6	12080.5
Long-4	5.63	1207.65	2408.94	3665.57	4883.51	6110.63	7379.37	8511.25	9834.84	11034.2	12290.3
Long-5	-1.79	1221.72	2464.91	3667.53	4903.03	6173.94	7358.44	8561.21	9843.84	11118.8	12062.9
Long-6	21.43	1192.77	2435.52	3663.85	4908.56	6102.52	7363.73	8575.06	9822.58	11023.1	12335.2
Long-7	-27.48	1216.89	2442.52	3674.38	4910.34	6122.89	7357.03	8530.18	9837.35	11122.4	12310.5
Long-8	-13.44	1142.20	2368.47	3698.40	4858.96	6080.44	7364.70	8571.66	9840.91	10953.3	12208.7
SG1	26.42	35.21	26.78	7.71	4.96	5.88	-47.66	-55.18	-90.75	-107.63	-137.52
SG2	98.48	108.55	91.86	56.65	53.72	52.61	-26.98	-34.87	-89.30	-119.39	-153.14
SG3	479.79	709.32	811.92	919.02	1046.15	1144.99	1185.32	1267.67	1329.34	1360.86	1426.95
SG4	449.47	542.10	547.60	548.94	582.55	608.17	569.36	581.70	555.85	525.47	524.01
SG5	119.88	128.84	110.83	72.63	69.93	67.31	-16.44	-23.87	-75.82	-109.05	-138.97
SG6	27.89	12.07	-7.64	-29.55	-48.77	-67.92	-93.44	-110.36	-132.27	-151.49	-170.38
SG7	299.97	319.51	308.24	249.38	231.26	244.93	163.84	167.61	113.99	85.19	46.86
SG8	123.13	130.38	114.17	86.71	84.75	80.12	17.94	13.13	-18.32	-44.65	-64.07
SG9	56.23	43.36	27.57	11.59	-1.08	-14.31	-36.90	-48.84	-65.92	-82.82	-98.07
SG10	24.59	57.31	97.47	133.10	171.45	210.81	244.87	281.84	323.34	356.37	392.73
SG11	8.03	48.82	82.44	121.76	157.05	195.25	232.14	269.45	306.93	342.24	381.92

TABLE E-32. CVP3, WATER 1, LOAD CONDITION 1b (Continued)

SG12	-1.23	90.76	178.94	274.08	360.84	441.74	527.35	604.98	695.69	773.43	851.29
SG13	-18.56	109.55	217.81	335.59	447.12	557.82	668.25	777.03	893.63	999.52	1104.58
SG14	-16.03	111.31	227.59	347.90	462.00	568.84	681.66	780.63	892.51	987.62	1082.82
SG15	10.42	76.48	133.33	196.25	253.86	310.69	371.14	427.11	485.24	538.47	596.98
SG16	186.95	303.88	408.98	520.27	626.63	727.50	834.59	931.94	1039.10	1132.34	1225.12
SG17	24376.9	24504.4	24628.0	24783.4	24824.2	24942.3	25057.9	25095.7	25275.2	25404.2	25571.9
SG18	24.99	94.31	157.63	224.13	286.89	352.80	418.42	479.39	544.55	605.72	669.41
SG19	30.79	137.52	224.38	308.51	376.65	444.34	515.09	578.81	650.95	714.88	780.95
SG20	124.85	241.68	341.98	442.69	532.01	617.36	703.73	783.30	872.00	950.50	1029.64
SG21	88.58	185.59	265.87	341.75	399.80	449.10	502.77	548.29	605.92	654.22	704.12
SG22	-34.59	76.90	145.50	200.35	210.29	223.08	237.09	248.45	275.13	291.23	306.38
SG23	-17.34	96.68	187.74	279.74	360.93	438.38	525.12	598.79	685.08	761.53	840.85
SG24	8.94	130.30	230.18	334.68	429.47	518.30	615.86	700.75	797.87	884.07	973.31
SG25	23.48	147.41	251.37	360.57	469.23	574.68	685.37	786.31	896.21	996.45	1095.13
SG26	32.20	158.28	264.15	379.25	488.67	596.90	705.94	814.27	927.13	1032.18	1134.57
SG27	51.41	156.97	246.46	343.06	439.49	533.45	633.62	725.42	824.51	915.24	1003.49
SG28	-89.98	-38.47	8.61	60.85	108.68	158.70	205.74	253.58	304.34	353.66	402.95
SG29	47.16	142.29	220.89	305.59	388.47	468.15	551.98	629.17	712.18	791.60	865.99
SG30	643.84	670.07	694.41	717.26	738.74	760.43	779.61	799.39	818.77	838.60	856.14
SG31	-13.83	22.39	52.51	85.81	119.61	160.51	199.04	233.40	270.45	308.91	348.30
SG32-T	-12.53	-40.91	-70.03	-99.53	-127.97	-154.93	-183.14	-209.90	-241.99	-270.08	-295.81
SG32-45	-23.17	12.52	46.37	82.11	114.60	145.42	174.47	206.59	246.08	277.62	307.21
SG32-L	-6.54	92.54	184.79	281.56	370.14	451.99	540.70	620.07	713.24	792.54	871.41
SG33-T	0.91	-48.56	-93.07	-138.20	-182.46	-224.67	-265.74	-307.07	-352.82	-394.21	-435.38
SG33-45	-23.84	-3.69	16.27	29.26	31.74	26.92	12.14	0.53	-8.97	-20.44	-36.46
SG33-T	16.79	144.07	252.83	367.87	482.37	588.53	699.18	801.22	912.00	1011.51	1112.21
SG34-T	-6.07	-44.39	-84.83	-122.58	-157.72	-194.11	-230.10	-264.56	-299.81	-333.13	-366.47
SG34-45	-35.76	4.67	24.65	52.29	70.67	81.76	109.10	122.81	136.28	150.32	167.32
SG34-L	16.98	130.50	231.55	332.46	426.78	518.26	608.75	695.19	788.91	873.36	957.55
SG35-T	57.15	18.05	-5.89	-30.67	-53.98	-73.24	-92.90	-112.36	-134.84	-153.34	-173.99
SG35-45	70.43	105.67	128.99	158.93	178.60	193.09	224.63	241.36	256.05	272.79	292.25
SG35-L	70.64	183.08	280.28	378.61	469.80	557.96	647.14	730.62	821.02	903.79	986.11
SG36-T	-22.47	-72.21	-114.06	-158.13	-203.82	-247.22	-287.55	-328.70	-371.84	-411.48	-451.04
SG36-45	22.80	54.94	69.67	87.51	85.69	73.30	70.53	56.37	45.31	32.70	24.49
SG36-L	12.83	146.33	258.13	373.63	491.31	600.49	710.18	814.38	926.40	1027.50	1127.78
SG37-T	504.68	468.54	439.60	406.26	366.13	324.82	284.96	244.46	202.96	164.01	125.39
SG37-45	170.33	191.58	198.01	206.83	191.44	166.09	155.60	130.84	112.13	91.22	76.35
SG37-L	105.29	214.68	310.53	414.30	514.79	610.78	714.19	807.73	911.64	1005.94	1099.78
SG38-T	34.17	-4.73	-41.07	-83.64	-119.44	-153.01	-192.25	-225.66	-263.65	-296.52	-333.41
SG38-45	-65.91	-33.40	1.12	37.29	69.43	100.09	135.68	161.58	199.58	226.96	262.40
SG38-L	-33.55	86.44	183.81	288.63	382.79	470.72	569.49	654.71	751.48	837.46	926.85
SG39-T	-24.83	-58.01	-85.33	-113.03	-141.65	-169.14	-197.44	-225.74	-255.08	-282.29	-308.65
SG39-45	-22.21	12.64	26.78	57.55	77.02	92.03	132.37	153.41	181.55	206.04	235.43
SG39-L	28.24	132.98	214.71	301.04	387.67	470.37	558.40	639.23	728.78	812.05	892.37
SG40-T	79.31	55.46	41.61	27.52	11.29	-2.02	-16.56	-32.19	-48.37	-63.87	-77.02
SG40-45	82.36	123.42	148.27	190.59	220.34	246.65	299.01	330.07	369.65	404.55	445.90
SG40-L	82.05	170.65	246.15	325.94	405.95	484.38	569.46	646.81	733.52	815.08	891.63

TABLE E-33. CVP3, WATER 1, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.86	1.72	2.65	3.55	4.41	5.24	6.12	7.03	7.04	7.88	8.78
Frame-1	183.72	414.37	541.30	717.37	897.26	1093.92	1288.53	1452.73	1471.48	1629.09	1836.61
Frame-2	183.23	380.84	543.40	722.47	920.98	1072.06	1262.87	1445.62	1448.92	1644.04	1814.85
Frame-3	165.36	392.91	551.40	726.27	899.81	1084.94	1286.88	1451.62	1451.42	1640.53	1821.00
Frame-4	183.96	375.34	540.49	728.96	891.93	1099.28	1285.62	1462.21	1446.50	1644.07	1817.46
Frame-5	158.60	379.58	543.27	728.57	898.69	1089.06	1280.86	1443.91	1448.90	1639.84	1806.60
Frame-6	170.56	368.67	547.57	741.05	890.81	1109.85	1272.42	1457.53	1462.41	1634.42	1818.17
Frame-7	247.97	337.37	545.11	868.29	887.40	1100.03	1354.76	1441.89	1424.41	1623.25	1778.11
Frame-8	190.93	426.52	537.63	703.87	901.91	1104.00	1284.46	1460.95	1464.14	1640.39	1879.42
Frame-9	193.67	364.69	547.52	733.80	884.21	1073.51	1258.45	1456.93	1449.75	1633.80	1808.37
Frame-10	182.39	306.13	536.10	797.11	902.24	1111.28	1388.24	1452.88	1462.96	1627.22	1818.11
Frame-11	207.10	380.20	549.22	737.01	934.13	1089.67	1274.59	1455.44	1466.98	1641.11	1797.20
Frame-12	183.86	383.20	537.10	741.16	911.43	1073.63	1260.83	1449.27	1455.96	1578.35	1810.58
Hoop-1	753.10	1547.25	2306.47	3097.25	3860.23	4652.62	5414.51	6163.25	6180.41	6929.37	7670.36
Hoop-2	752.63	1516.12	2308.49	3077.70	3859.32	4651.77	5414.26	6190.92	6193.35	6923.31	7724.87
Hoop-3	754.35	1566.58	2310.39	3077.31	3863.30	4652.80	5423.67	6176.80	6189.70	6943.05	7736.14
Hoop-4	735.55	1588.91	2316.40	3108.99	3851.36	4649.27	5407.22	6181.52	6213.61	6941.87	7728.75
Hoop-5	762.32	1622.12	2312.15	3090.12	3855.07	4641.93	5414.93	6176.69	6182.79	6928.35	7729.90
Hoop-6	734.26	1560.44	2310.84	3089.27	3861.93	4641.98	5413.55	6184.82	6170.65	6931.06	7740.77
Hoop-7	742.18	1569.23	2323.25	3086.71	3871.84	4644.19	5437.37	6173.68	6183.42	6905.34	7732.56
Hoop-8	802.56	1508.44	2383.77	3030.67	3920.47	4597.47	5302.44	6347.84	6282.28	6950.91	7502.49
Hoop-9	746.23	1531.57	2319.02	3075.18	3860.59	4642.84	5356.51	6141.26	6152.76	6972.10	7652.37
Hoop-10	721.30	1538.38	2321.42	3085.91	3866.90	4718.88	5433.77	6201.47	6173.16	6910.22	7734.69
Hoop-11	733.87	1541.28	2323.19	3086.20	3867.88	4633.43	5403.04	6187.72	6177.28	6949.19	7729.11
Hoop-12	753.82	1530.11	2323.38	3079.13	3864.75	4606.37	5413.23	6162.95	6230.29	6985.72	7734.36
Hoop-13	742.17	1550.69	2315.01	3071.44	3857.78	4607.49	5385.42	6172.91	6166.11	6974.17	7723.50
Hoop-14	765.37	1541.77	2340.66	3079.93	3856.41	4618.55	5423.61	6186.45	6187.07	6955.61	7584.25
Long-1	1259.64	2442.03	3677.20	4871.96	6112.30	7260.14	8545.45	9557.67	9581.73	10735.9	11962.3
Long-2	1246.32	2454.74	3682.23	4910.68	6138.66	7493.70	8554.16	9765.99	9757.96	10871.7	12072.0
Long-3	1385.07	2462.22	3613.61	4911.60	6042.37	7199.99	8268.67	9586.84	9594.88	10705.6	12132.8
Long-4	1218.79	2429.27	3640.59	4885.96	6127.16	7317.67	8637.34	9812.07	9794.20	11023.1	12307.4
Long-5	1206.25	2447.62	3686.26	4904.23	6121.74	7359.18	8582.81	9808.40	9806.43	11040.7	12263.3
Long-6	1189.23	2458.27	3684.15	4900.00	6128.81	7370.58	8573.84	9808.41	9804.00	11027.9	12261.8
Long-7	1214.60	2434.82	3677.52	4905.54	6128.28	7355.36	8573.43	9793.45	9804.70	11009.4	12206.0
Long-8	1201.40	2423.38	3663.44	4922.96	6131.53	7380.21	8579.05	9783.54	9797.58	11015.9	12158.3
SG1	51.54	72.98	54.64	76.83	86.18	87.28	116.27	86.56	83.44	84.18	85.46
SG2	142.67	165.95	136.04	143.39	154.75	150.90	167.80	131.85	127.45	121.40	101.77
SG3	838.62	1017.68	1121.82	1295.02	1429.23	1525.95	1646.86	1708.17	1706.70	1784.90	1872.09
SG4	618.62	697.57	716.38	776.04	841.04	873.48	929.21	930.13	927.01	953.41	971.38
SG5	166.33	190.60	169.74	170.35	186.92	186.78	200.10	173.07	168.44	163.40	138.11
SG6	37.42	66.02	91.13	114.42	141.72	167.76	196.03	223.35	223.72	249.94	274.51
SG7	395.15	398.82	381.43	387.28	408.63	415.54	433.49	410.31	403.03	413.52	384.21
SG8	150.86	172.73	181.09	184.31	206.32	218.04	235.84	231.86	228.01	233.78	217.94
SG9	73.68	108.20	144.74	174.87	209.38	242.81	276.47	309.35	309.72	341.68	369.05
SG10	64.06	102.29	136.42	166.73	200.35	232.66	265.67	289.40	288.67	322.82	349.49
SG11	38.17	55.06	74.35	95.11	119.35	145.07	168.43	195.25	194.52	221.53	248.72

TABLE E-33. CVP3, WATER 1, LOAD CONDITION 1c (Continued)

SG12	91.05	178.85	268.75	356.45	441.20	523.54	601.18	682.90	683.27	758.93	834.77
SG13	101.68	201.49	308.94	418.98	523.61	629.57	733.47	835.78	835.78	933.69	1034.36
SG14	123.38	226.31	332.84	439.85	543.10	638.05	724.94	818.49	818.86	901.59	986.33
SG15	84.60	140.02	197.31	254.00	310.08	366.00	416.70	474.47	474.47	527.29	581.94
SG16	303.91	404.30	509.25	615.69	719.06	818.92	912.41	1010.05	1010.23	1098.97	1187.17
SG17	23747.9	23698.4	23799.0	24036.7	24043.1	24457.9	24556.9	24542.2	24612.8	24418.6	24459.8
SG18	87.48	131.84	180.82	230.21	275.28	321.34	361.61	408.59	408.41	450.44	499.45
SG19	114.90	169.54	223.44	270.39	314.89	359.97	398.88	446.73	446.54	488.32	535.25
SG20	249.62	341.25	433.40	521.78	601.04	678.70	749.70	827.73	827.37	896.75	972.22
SG21	185.61	250.77	311.31	359.58	400.23	436.31	469.54	509.68	508.95	543.01	580.57
SG22	76.96	147.94	205.04	232.06	254.21	272.07	296.69	318.00	317.36	335.18	359.19
SG23	76.67	136.51	198.18	254.93	310.16	362.48	413.78	469.78	469.78	521.74	577.00
SG24	130.13	224.30	321.76	413.60	501.49	585.94	668.32	754.25	754.62	836.33	918.41
SG25	149.22	243.82	343.38	448.15	548.79	644.32	735.03	830.03	830.03	915.45	1004.55
SG26	146.90	245.22	354.55	463.58	567.74	672.86	774.65	879.06	878.33	976.67	1078.51
SG27	149.54	238.96	334.30	433.66	529.29	622.26	711.10	802.16	802.34	886.00	971.31
SG28	-32.59	10.08	54.95	102.04	146.16	189.56	233.00	277.88	278.62	322.76	370.58
SG29	125.95	204.92	290.10	375.90	457.59	535.82	611.97	690.40	690.03	762.77	837.71
SG30	683.73	696.80	708.35	723.62	738.56	753.85	767.87	782.43	782.38	797.08	815.77
SG31	29.24	54.35	79.96	112.10	144.78	177.37	208.49	238.52	237.74	269.23	304.91
SG32-T	11.69	65.12	115.97	160.11	199.97	238.38	276.06	315.89	317.63	354.31	392.17
SG32-45	27.62	92.88	163.78	231.96	298.02	358.93	425.42	486.07	488.45	548.82	609.01
SG32-L	94.75	176.40	260.09	346.73	429.94	509.99	584.42	663.79	663.24	734.22	805.57
SG33-T	6.28	43.50	78.23	104.81	128.34	151.06	174.45	197.99	199.60	221.58	244.99
SG33-45	12.14	57.44	96.89	124.39	139.94	149.30	162.36	168.79	169.89	177.78	187.70
SG33-T	139.87	239.26	344.68	456.05	560.17	659.93	752.33	851.74	851.38	939.24	1027.65
SG34-T	21.45	76.14	132.06	183.24	234.38	283.16	335.67	387.40	389.23	438.02	487.54
SG34-45	41.88	107.32	170.41	230.36	282.58	334.63	385.66	442.31	442.49	493.64	545.70
SG34-L	134.36	220.55	306.53	393.31	470.29	544.93	615.29	690.67	690.49	757.80	831.54
SG35-T	251.06	224.66	236.93	271.18	287.52	317.75	353.87	392.18	393.33	431.54	477.37
SG35-45	127.71	178.38	230.69	281.21	326.34	372.06	416.02	467.81	467.99	514.63	561.28
SG35-L	186.96	271.46	356.12	440.50	515.96	588.90	657.00	730.32	730.32	796.11	867.96
SG36-T	-3.92	50.23	98.68	136.69	168.98	199.63	229.78	260.26	261.91	289.45	318.64
SG36-45	77.84	132.40	183.43	215.09	235.48	252.35	267.04	288.13	288.09	302.90	315.75
SG36-L	140.70	247.38	356.29	470.64	575.68	672.72	766.89	863.86	864.05	952.94	1044.40
SG37-T	494.63	493.57	499.80	504.26	503.52	507.64	512.06	514.90	525.12	528.89	538.10
SG37-45	210.32	232.50	252.85	251.04	245.14	241.29	236.56	241.34	241.15	240.79	238.95
SG37-L	218.36	294.03	377.75	466.30	552.02	634.29	714.15	799.38	799.38	878.01	958.65
SG38-T	46.83	89.95	134.53	179.86	223.33	266.45	312.20	357.52	359.17	402.67	448.73
SG38-45	-2.55	58.22	125.77	190.96	253.90	317.24	378.81	449.32	450.24	510.10	570.14
SG38-L	76.86	159.95	247.74	331.37	412.17	489.89	565.39	644.87	645.28	719.62	793.77
SG39-T	8.37	62.64	113.97	160.38	201.98	242.13	283.44	323.97	325.80	363.03	404.48
SG39-45	42.30	107.91	183.19	247.85	312.92	377.56	439.30	510.57	511.21	572.79	630.69
SG39-L	128.83	210.50	297.46	384.80	468.04	546.60	623.00	703.00	702.72	774.98	849.31
SG40-T	100.23	135.18	166.16	199.45	232.45	265.43	298.47	334.19	335.63	367.94	404.59
SG40-45	134.02	180.37	236.82	289.34	345.74	404.01	458.22	525.69	525.95	583.87	639.56
SG40-L	155.14	213.58	275.75	344.75	413.45	480.18	545.58	617.15	616.84	681.95	751.21

TABLE E-34. CVP3, WATER 2, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.06	0.90	1.79	2.62	3.52	4.34	5.36	6.17	7.03	7.84	8.68
Frame-1	-41.22	263.02	366.16	554.71	711.33	929.51	1098.69	1290.45	1427.83	1626.81	1830.97
Frame-2	71.44	178.17	370.55	560.36	709.38	934.30	1077.09	1273.57	1451.79	1627.78	1810.76
Frame-3	-126.91	173.98	349.98	552.76	723.69	914.82	1091.34	1278.45	1471.42	1640.00	1824.01
Frame-4	-75.82	184.04	368.47	536.66	734.97	922.48	1109.26	1259.96	1461.42	1636.61	1825.60
Frame-5	-161.89	163.86	367.55	558.41	713.87	915.45	1083.54	1267.26	1453.48	1639.27	1806.10
Frame-6	-10.22	179.00	361.70	554.06	716.47	914.28	1105.76	1336.99	1449.95	1635.65	1804.33
Frame-7	-123.75	192.66	366.58	560.62	724.03	919.71	1087.39	1301.58	1574.73	1650.30	1807.86
Frame-8	3.73	187.30	359.30	570.35	737.00	915.27	1160.21	1332.87	1442.22	1636.45	1862.69
Frame-9	29.99	296.53	359.55	563.17	723.72	915.04	1113.34	1325.12	1479.84	1636.72	1827.84
Frame-10	-202.90	146.04	509.23	536.12	730.38	1061.95	1122.74	1273.09	1458.25	1609.50	1932.23
Frame-11	-43.90	210.15	371.43	561.17	708.73	901.77	1100.53	1276.28	1411.62	1639.01	1808.10
Frame-12	34.91	176.79	345.14	547.47	693.15	917.88	1114.64	1281.85	1470.24	1605.50	1850.77
Hoop-1	-57.60	784.35	1525.19	2341.40	3082.24	3834.49	4696.74	5535.10	6170.60	6889.38	7714.78
Hoop-2	140.75	716.53	1528.76	2306.69	3075.59	3821.42	4649.97	5435.20	6187.31	6882.22	7721.52
Hoop-3	-101.73	726.28	1549.04	2322.67	3068.23	3852.78	4666.84	5551.08	6206.62	6932.89	7706.52
Hoop-4	58.04	672.61	1650.00	2316.40	3077.21	3880.98	4647.41	5397.19	6175.97	6962.69	7719.80
Hoop-5	117.93	1233.30	1563.71	2319.46	3066.08	3862.37	4654.71	5381.32	6171.22	6959.82	7817.80
Hoop-6	118.78	641.85	1549.35	2344.11	3087.11	3869.32	4658.61	5373.97	6182.97	6940.77	7726.28
Hoop-7	-99.47	736.71	1538.19	2325.08	3082.75	3820.72	4810.35	5584.53	6177.33	6876.58	7908.10
Hoop-8	-65.25	817.27	1603.88	2236.68	3104.20	3884.09	4633.78	5524.14	6171.95	6854.61	7642.23
Hoop-9	-126.31	829.68	1544.11	2324.46	3073.37	3822.88	4633.31	5451.91	6136.43	6677.55	7338.54
Hoop-10	-50.72	775.54	1525.57	2328.65	3078.68	3843.79	4646.09	5499.95	6173.16	6931.23	7662.37
Hoop-11	390.85	772.59	1559.56	2313.97	3084.36	3835.08	4649.56	5457.59	6180.96	6906.10	7679.33
Hoop-12	120.05	757.53	1537.37	2323.38	3079.13	3857.73	4635.55	5429.13	6193.22	6955.37	7741.77
Hoop-13	-44.24	771.84	1565.37	2359.52	3071.44	3917.52	4673.80	5445.85	6188.37	6936.38	7627.05
Hoop-14	47.97	772.76	1534.22	2333.27	3079.93	3871.58	4677.25	5439.48	6187.07	6836.60	7465.92
Long-1	9.73	-20.95	12.10	-24.50	-18.59	-22.13	-7.97	16.81	-30.39	13.28	-38.65
Long-2	1.22	1.22	-2.42	1.22	1.22	-2.42	1.22	6.08	4.87	1.22	0.01
Long-3	2.88	7.86	10.34	4.12	7.86	12.83	10.34	10.34	11.59	5.37	12.83
Long-4	19.09	14.20	28.89	15.42	20.32	15.42	21.54	19.09	16.64	10.52	12.97
Long-5	21.00	-36.58	58.19	-28.18	-16.18	10.21	33.00	121.76	180.54	274.13	350.87
Long-6	-5.47	11.65	17.76	28.77	26.32	37.33	21.43	29.99	58.11	104.58	143.70
Long-7	74.62	-33.49	116.67	-25.08	59.01	-27.48	-26.28	3.75	60.20	109.46	161.10
Long-8	5.02	-1.14	-14.67	11.17	29.64	46.87	59.17	117.01	174.86	231.49	272.08
SG1	200.98	92.42	123.41	174.01	191.45	272.87	276.35	346.00	338.88	379.96	467.47
SG2	324.08	195.48	211.99	295.80	314.91	407.53	412.85	506.16	494.66	537.21	618.16
SG3	754.36	663.80	665.82	803.48	811.63	892.04	932.97	1042.64	1051.92	1098.55	1162.73
SG4	730.09	609.20	601.87	732.22	752.46	852.39	868.16	981.55	985.87	1028.96	1097.46
SG5	339.54	222.95	229.86	328.69	352.18	442.77	452.35	551.59	543.07	583.58	648.76
SG6	20.41	54.10	92.24	141.92	187.41	234.53	284.41	334.25	376.46	421.01	465.80
SG7	584.03	448.97	443.65	531.94	565.16	673.61	678.00	777.95	774.00	817.41	905.62
SG8	280.49	204.73	210.37	302.12	332.41	403.66	421.74	504.80	507.87	543.40	584.49
SG9	61.19	96.08	133.91	190.67	239.00	289.14	342.78	398.21	443.07	489.55	534.42
SG10	12.28	11.69	12.05	5.22	-8.33	-7.27	-28.57	-33.25	-45.42	-56.75	-73.84
SG11	14.46	-3.17	-24.85	-43.77	-61.78	-75.38	-93.39	-103.30	-115.07	-128.11	-143.19

TABLE E-34. CVP3, WATER 2, LOAD CONDITION 1a (Continued)

SG12	-16.24	-13.62	-10.32	-9.72	-6.05	-0.68	3.27	6.16	7.17	7.81	8.37
SG13	12.02	-10.17	-6.23	-14.52	-17.32	-10.86	-23.65	-26.21	-28.83	-30.57	-27.09
SG14	-13.83	-12.72	-23.18	-29.28	-32.58	-40.97	-44.37	-52.20	-58.95	-66.70	-76.02
SG15	17.80	20.92	19.68	13.77	11.43	8.17	6.84	3.95	5.65	2.76	-2.65
SG16	191.10	189.80	189.52	188.65	191.24	190.96	189.86	188.61	186.33	184.27	182.27
SG17	22309.2	22386.4	22439.4	22392.3	22421.0	22309.2	22294.5	21889.3	22109.2	22038.6	22070.2
SG18	33.98	22.14	5.39	-15.94	-33.75	-54.17	-76.15	-95.46	-121.62	-144.11	-166.61
SG19	39.07	16.07	-10.07	-41.53	-69.33	-99.14	-132.46	-159.68	-195.40	-229.08	-262.60
SG20	143.42	140.28	138.25	137.70	136.43	133.30	132.75	136.41	130.54	122.81	118.77
SG21	100.91	96.30	83.78	74.94	66.11	54.33	46.04	37.57	25.60	10.69	-1.83
SG22	-8.18	-19.52	-10.43	-10.02	-5.93	4.40	5.32	15.05	12.62	13.22	21.49
SG23	-19.36	-43.95	-65.25	-97.75	-122.73	-151.92	-184.24	-214.51	-239.32	-267.96	-298.47
SG24	16.84	7.29	14.45	13.35	18.49	20.51	19.77	21.79	21.43	20.69	21.98
SG25	23.80	21.49	18.73	14.32	12.20	6.86	2.03	-6.58	-16.89	-26.78	-32.36
SG26	42.12	24.47	31.46	33.66	37.16	41.76	40.65	38.63	31.64	28.89	32.02
SG27	49.01	48.82	53.28	56.13	60.64	63.12	64.82	63.99	60.27	56.50	56.88
SG28	-78.20	-77.46	-74.52	-81.14	-85.56	-87.03	-91.45	-95.85	-96.60	-100.27	-101.76
SG29	32.46	32.64	28.23	29.34	32.28	35.40	38.52	40.91	42.38	41.83	44.22
SG30	673.08	656.43	657.63	648.63	641.34	635.83	629.08	624.24	619.94	615.85	612.70
SG31	-23.93	-25.81	-33.06	-37.98	-51.25	-57.86	-73.52	-75.94	-92.21	-106.44	-110.77
SG32-T	-21.28	44.83	130.72	203.83	278.49	344.69	426.42	490.75	560.16	622.39	682.67
SG32-45	-34.50	-17.15	31.37	58.62	100.05	138.44	181.75	210.17	248.49	283.45	318.44
SG32-L	8.55	-4.24	-17.08	-17.59	-10.30	-4.52	-2.23	-1.31	-10.16	-12.27	-12.22
SG33-T	-4.00	63.42	139.92	213.48	289.88	355.83	437.39	500.26	563.23	627.95	690.07
SG33-45	-12.09	-4.38	25.96	54.04	87.46	114.63	146.21	167.30	192.10	220.37	248.30
SG33-T	63.38	38.06	32.74	34.94	35.31	36.78	34.03	35.49	32.56	23.21	19.54
SG34-T	-18.31	60.92	150.23	233.49	316.78	392.53	483.50	554.61	629.68	703.78	777.77
SG34-45	-36.81	4.62	44.12	83.35	121.54	154.03	196.47	234.58	269.07	300.97	337.48
SG34-L	21.56	21.01	14.41	5.42	-1.36	-11.45	-19.16	-24.29	-30.34	-41.90	-52.18
SG35-T	52.37	121.17	179.20	228.97	294.74	356.08	428.79	484.21	549.22	612.71	678.20
SG35-45	66.01	100.71	126.23	151.02	179.87	203.92	241.94	274.60	306.21	334.49	367.95
SG35-L	86.62	83.49	77.25	70.63	64.21	55.20	47.67	43.44	37.01	25.62	15.51
SG36-T	-20.63	39.40	137.79	222.42	311.11	387.12	478.17	546.96	620.45	688.93	757.12
SG36-45	35.41	47.79	80.90	120.25	160.44	195.94	235.20	270.82	301.67	328.86	358.03
SG36-L	37.35	20.72	17.28	20.22	22.19	23.66	22.38	22.88	19.35	16.04	13.52
SG37-T	432.72	512.69	502.05	531.49	571.44	584.42	637.24	676.34	724.19	767.75	813.23
SG37-45	136.55	179.84	189.93	202.59	217.48	227.02	250.33	270.49	291.07	305.75	323.22
SG37-L	84.75	108.93	89.69	71.36	57.62	38.01	26.83	13.27	2.82	-13.12	-25.96
SG38-T	31.60	90.68	160.60	235.65	310.54	380.83	468.00	537.31	610.04	680.51	751.97
SG38-45	-59.29	-28.81	1.48	32.15	67.59	95.13	127.99	162.13	196.12	223.11	252.14
SG38-L	-18.91	-39.60	-39.79	-51.35	-55.35	-63.93	-74.76	-81.45	-89.81	-97.84	-103.95
SG39-T	-39.49	44.67	127.56	200.53	277.21	345.61	429.05	494.83	566.22	631.14	695.02
SG39-45	-48.84	2.40	54.28	101.25	152.87	195.71	244.57	289.17	329.98	365.88	403.25
SG39-L	26.36	25.58	30.52	38.25	46.40	52.12	55.05	54.59	51.67	48.88	49.61
SG40-T	62.80	117.60	167.74	211.98	258.18	301.98	361.80	410.43	460.85	510.30	559.57
SG40-45	53.69	79.98	102.26	121.62	143.33	162.13	187.30	212.68	231.11	249.21	271.27
SG40-L	74.01	60.86	46.06	33.46	18.29	4.58	-10.40	-26.47	-45.47	-60.46	-71.96

TABLE E-35. CVP3, WATER 2, LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.04	-0.12	0.08	0.03	-0.15	0.10	-0.02	-0.02	0.03	0.01	0.05
Frame-1	-4.47	-7.13	3.63	-2.47	-5.98	-8.34	66.06	40.64	5.97	-47.25	-30.15
Frame-2	-72.22	32.58	76.77	1.03	56.27	12.60	146.54	-82.40	47.77	39.22	-82.47
Frame-3	177.41	-65.37	85.93	-156.92	-55.62	-34.12	69.27	45.65	114.03	-179.22	199.87
Frame-4	-89.03	-119.30	0.11	-88.75	-45.75	29.51	97.06	-74.91	-119.96	-100.83	-33.71
Frame-5	44.00	-146.76	-25.51	58.08	-35.21	107.43	-137.25	116.78	-112.90	-88.58	-9.32
Frame-6	-19.80	1.75	-6.83	-75.54	45.42	64.53	4.06	36.71	-82.50	-38.13	-87.60
Frame-7	-109.47	17.14	105.86	83.65	-74.69	89.75	21.36	88.78	-45.76	-19.49	-59.58
Frame-8	100.63	-13.83	-81.85	-104.04	-9.20	50.11	50.62	57.75	55.84	95.87	-4.45
Frame-9	-130.03	121.70	-91.55	-32.16	-168.52	110.26	-172.14	-63.71	-20.17	95.36	46.13
Frame-10	9.39	-108.54	-109.41	-81.68	32.12	-94.52	140.17	-107.54	100.62	-133.12	40.32
Frame-11	-7.84	3.67	-24.87	0.85	74.33	-23.84	32.90	17.88	-68.75	41.73	-50.23
Frame-12	59.62	-110.85	38.90	47.70	14.84	57.34	-73.69	73.57	-26.89	-92.20	38.81
Hoop-1	109.70	-79.65	-20.83	-4.29	-15.32	-70.47	-118.27	34.32	1.23	12.26	-41.05
Hoop-2	-19.89	-95.68	-39.74	99.23	-65.00	12.60	54.12	-43.35	-48.77	21.63	-10.86
Hoop-3	-54.37	61.41	-40.33	-42.08	-3.49	68.44	-145.60	47.38	-96.47	-50.85	164.90
Hoop-4	-73.39	424.52	109.86	-53.02	148.73	11.77	148.76	-65.98	-69.68	-40.06	-14.15
Hoop-5	-26.29	-126.67	172.68	-108.42	203.71	223.83	2.92	1.10	-15.33	64.98	-124.85
Hoop-6	33.77	-84.52	83.66	-71.58	-21.68	-14.29	107.71	9.74	200.11	-58.64	6.04
Hoop-7	227.36	-86.68	183.50	-59.30	2.77	-17.31	-59.31	44.76	-95.82	225.48	50.23
Hoop-8	-28.49	-43.20	-6.43	15.63	8.28	15.63	118.57	-13.79	-50.56	0.92	22.98
Hoop-9	357.95	94.98	-111.83	104.04	203.82	151.20	-51.95	47.81	417.88	-6.61	-137.21
Hoop-10	46.89	-39.88	-3.72	-57.96	8.93	-10.95	64.97	70.41	-135.71	-21.80	153.56
Hoop-11	-90.27	189.96	-103.21	232.34	90.40	-31.29	307.90	372.49	-44.20	57.21	-158.50
Hoop-12	253.44	101.54	359.15	-83.76	-35.59	-117.11	-183.80	-109.71	-98.59	-102.31	255.32
Hoop-13	-81.33	-29.42	-44.26	7.68	-51.67	7.68	15.10	-7.16	-36.83	7.68	-36.83
Hoop-14	-114.71	-40.77	62.78	-114.72	-107.33	47.97	-92.52	-144.31	-3.79	-144.33	-40.77
Long-1	61.66	1221.99	2486.87	3815.73	4898.91	6127.08	7353.82	8604.14	9737.52	10908.2	11898.5
Long-2	0.01	1231.87	2459.60	3676.64	4925.03	6107.69	7330.19	8592.67	9756.75	10893.6	11968.7
Long-3	5.37	1344.15	2485.85	3789.54	4885.21	6105.18	7341.08	8556.91	9751.63	11030.4	11987.3
Long-4	12.97	1226.26	2397.44	3709.64	4921.22	6114.30	7401.40	8605.15	9775.83	11014.5	12203.3
Long-5	-19.78	1189.57	2471.61	3633.94	4920.81	6151.14	7359.64	8584.86	9756.05	11040.7	12366.4
Long-6	-4.25	1221.14	2438.70	3654.07	4904.65	6093.96	7347.84	8577.14	9781.99	10974.1	12529.6
Long-7	42.19	1231.55	2427.62	3662.37	4919.73	6115.68	7371.44	8567.08	9771.07	11025.0	11174.2
Long-8	-13.44	1240.91	2434.45	3659.02	4935.03	6117.37	7357.32	8589.75	9809.89	11030.7	12278.9
SG1	106.91	185.40	65.48	44.02	139.36	5.69	41.63	21.28	-61.61	-59.59	-104.31
SG2	201.74	312.52	141.04	106.36	239.86	50.41	92.97	67.29	-52.85	-55.05	-109.92
SG3	671.39	958.85	931.41	1039.99	1307.86	1202.26	1347.46	1466.05	1403.27	1522.22	1495.12
SG4	618.25	797.57	648.75	661.89	856.34	655.29	732.66	760.90	624.48	671.97	595.76
SG5	225.40	336.93	160.44	122.48	261.48	66.31	103.83	82.62	-43.07	-49.44	-100.55
SG6	22.89	15.87	-7.69	-32.58	-48.07	-70.67	-91.30	-109.59	-135.03	-153.55	-166.22
SG7	500.26	577.43	383.70	329.25	491.55	285.10	307.72	273.15	175.64	157.83	106.74
SG8	212.45	282.23	154.04	125.40	222.77	82.87	106.36	98.85	3.43	-7.79	-37.96
SG9	62.66	57.70	32.72	12.69	7.18	-14.31	-29.37	-41.13	-66.29	-82.64	-91.44
SG10	21.10	64.29	93.73	132.32	171.28	203.65	246.25	281.51	316.53	349.17	382.78
SG11	13.73	53.05	86.31	125.25	160.88	193.97	233.29	271.13	307.33	343.34	376.52

TABLE E-35. CVP3, WATER 2, LOAD CONDITION 1b (Continued)

SG12	-11.74	80.07	176.32	263.89	345.76	443.21	521.72	605.04	690.25	769.94	833.32
SG13	-19.98	110.52	220.60	331.19	441.16	557.08	667.28	777.66	888.77	992.92	1088.04
SG14	-11.76	108.80	234.29	346.39	452.46	578.66	677.30	787.49	888.01	991.84	1063.53
SG15	10.88	68.92	136.70	198.27	243.91	313.81	367.36	426.78	484.55	540.12	588.24
SG16	181.80	295.80	409.65	514.99	614.59	733.41	831.51	935.01	1037.37	1133.44	1210.94
SG17	22612.3	22941.8	22917.6	23324.2	23074.8	23168.3	23318.3	23362.5	23394.8	23433.1	23840.2
SG18	27.92	96.89	161.56	228.31	289.17	355.73	419.42	481.64	546.07	607.37	661.02
SG19	30.42	136.62	225.53	308.51	377.12	448.02	513.35	583.66	647.15	715.62	765.34
SG20	138.64	247.04	353.65	450.61	536.69	631.35	709.76	796.45	877.25	960.07	1022.07
SG21	110.85	199.79	287.83	359.98	418.31	475.99	519.44	573.76	620.34	673.01	704.90
SG22	-24.99	86.51	158.39	201.91	224.39	233.69	242.97	270.43	266.43	294.76	288.00
SG23	-22.84	92.28	186.30	275.89	356.45	438.20	517.88	598.67	678.72	757.86	821.41
SG24	9.31	130.13	236.28	334.13	424.06	525.83	612.31	707.06	795.38	887.56	960.45
SG25	28.54	140.52	256.21	363.70	465.83	583.14	682.93	791.00	896.67	999.21	1083.50
SG26	34.77	158.85	268.62	377.78	482.69	599.10	709.58	821.16	928.33	1031.45	1128.46
SG27	51.03	147.06	247.43	343.56	432.46	540.75	634.20	730.45	830.66	919.47	1001.27
SG28	-92.92	-45.83	10.82	58.64	103.51	158.70	205.05	252.13	305.84	352.93	399.20
SG29	46.05	129.81	218.55	303.75	380.86	468.70	546.76	627.03	712.07	786.09	860.86
SG30	670.87	694.94	719.12	738.75	760.58	779.95	798.96	817.70	836.76	854.72	870.94
SG31	-12.91	25.20	47.88	88.42	129.23	153.44	197.56	232.82	267.21	305.87	342.03
SG32-T	-7.91	-53.28	-65.06	-97.56	-146.58	-152.59	-194.67	-222.65	-244.76	-275.76	-291.17
SG32-45	-22.48	4.50	60.60	80.92	96.92	151.61	170.46	201.20	244.96	273.68	307.84
SG32-L	13.59	111.58	205.32	292.33	379.51	474.83	551.36	639.39	722.11	806.67	866.83
SG33-T	11.15	-42.87	-83.41	-128.42	-182.97	-216.08	-263.31	-308.34	-345.19	-390.99	-420.65
SG33-45	-17.92	2.23	24.95	30.09	32.47	27.20	14.35	-0.48	-9.47	-24.07	-32.37
SG33-T	45.95	180.59	277.10	389.14	511.80	616.04	724.26	834.14	934.10	1040.49	1119.32
SG34-T	-7.63	-53.29	-81.78	-124.73	-172.72	-192.78	-238.08	-271.83	-305.03	-339.51	-363.41
SG34-45	-33.23	-9.49	22.59	54.07	56.13	89.68	104.17	125.62	138.04	160.17	164.08
SG34-L	23.58	128.50	237.47	335.76	426.14	526.70	611.62	702.04	792.10	877.76	948.73
SG35-T	62.74	9.11	8.93	-17.27	-63.19	-53.42	-86.96	-109.62	-116.78	-143.02	-150.65
SG35-45	70.42	86.58	126.26	162.05	161.67	203.92	220.45	243.40	263.05	285.27	293.11
SG35-L	86.07	190.08	294.12	390.56	478.35	575.05	657.74	746.49	833.96	917.76	986.65
SG36-T	-14.57	-68.91	-106.37	-151.71	-207.59	-240.20	-288.48	-332.68	-367.65	-411.89	-442.42
SG36-45	36.74	69.90	79.91	99.85	99.20	89.99	77.01	70.54	52.70	45.27	27.65
SG36-L	26.46	157.46	267.45	380.97	501.22	611.51	719.32	828.60	934.75	1039.44	1125.17
SG37-T	436.81	387.83	382.60	348.03	289.53	272.46	219.12	177.81	145.39	103.43	72.97
SG37-45	154.35	164.62	189.97	200.78	172.87	171.60	139.48	125.90	103.15	88.46	63.49
SG37-L	94.28	186.84	306.37	407.70	493.24	615.36	700.59	802.68	906.23	1003.74	1084.17
SG38-T	46.83	1.14	-35.57	-79.24	-118.32	-148.06	-192.28	-227.70	-264.04	-299.82	-327.84
SG38-45	-66.45	-24.40	4.97	36.92	67.21	106.70	133.50	160.31	198.69	225.86	249.68
SG38-L	-34.74	84.43	189.99	289.14	377.76	478.98	566.67	662.17	752.02	843.70	921.71
SG39-T	-28.12	-73.05	-82.05	-114.50	-161.24	-164.74	-206.23	-235.39	-256.89	-286.74	-305.20
SG39-45	-34.15	-10.27	20.86	49.92	51.66	98.41	113.66	146.63	174.36	202.51	227.17
SG39-L	30.62	119.95	211.45	298.16	379.76	470.33	552.43	639.43	726.29	808.03	880.66
SG40-T	66.22	43.89	41.01	24.10	-0.74	-0.56	-26.31	-43.46	-53.03	-69.26	-80.37
SG40-45	65.01	105.92	143.50	185.48	202.86	254.86	282.77	325.00	363.66	403.68	435.91
SG40-L	76.02	157.16	242.26	322.28	398.36	485.47	560.88	643.58	730.49	810.23	878.21

TABLE E-36. CVP3, WATER 2, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.11	0.81	1.76	2.62	3.52	4.41	5.27	6.13	7.12	7.90	8.82
Frame-1	-73.18	204.06	360.97	538.07	722.42	919.32	1080.72	1246.22	1440.65	1622.63	1851.74
Frame-2	71.94	184.58	375.68	548.80	739.70	903.28	1079.66	1282.76	1450.97	1630.61	1838.89
Frame-3	198.29	182.21	374.00	549.91	724.45	908.06	1083.78	1265.30	1446.39	1640.94	1856.64
Frame-4	-131.97	188.80	349.48	552.77	737.46	910.57	1094.70	1248.45	1453.59	1641.06	1820.56
Frame-5	-49.03	201.39	393.39	545.20	738.80	905.27	1086.21	1264.36	1449.10	1645.45	1837.31
Frame-6	-17.54	189.00	363.47	541.04	725.70	948.23	1166.38	1274.81	1457.27	1638.17	1851.65
Frame-7	-164.25	230.42	364.74	548.81	741.95	914.69	1162.45	1261.19	1453.80	1611.26	2016.03
Frame-8	87.21	250.87	362.62	567.15	729.10	925.74	1111.28	1259.80	1531.38	1619.80	1819.37
Frame-9	-70.73	195.01	359.35	540.76	736.65	901.39	1094.94	1277.13	1465.73	1640.92	1864.52
Frame-10	87.22	187.24	297.32	594.90	731.09	915.75	1075.53	1249.93	1456.17	1637.62	1840.70
Frame-11	-73.00	250.90	347.74	532.62	739.86	903.40	1081.49	1275.66	1453.30	1647.86	1854.79
Frame-12	-35.27	183.52	374.39	563.28	726.72	1020.12	1096.54	1275.85	1456.11	1632.06	1788.34
Hoop-1	87.63	782.59	1559.96	2317.50	3076.72	3896.22	4565.30	5392.45	6191.44	6958.09	7666.68
Hoop-2	7.19	774.37	1557.48	2308.49	3095.45	3851.33	4596.70	5446.74	6200.57	6926.23	7728.48
Hoop-3	-57.87	780.74	1522.57	2320.91	3106.83	3834.47	4622.05	5421.92	6170.40	6931.83	7678.23
Hoop-4	195.02	759.69	1557.29	2312.70	3079.06	3959.79	4846.38	5429.43	6328.39	6887.48	7691.72
Hoop-5	103.32	881.07	1528.87	2301.20	3087.98	3865.25	4624.57	5440.48	6171.83	6933.14	8003.77
Hoop-6	-127.04	763.91	1538.11	2314.53	3190.62	3857.46	4615.17	5415.40	6148.47	6945.16	7881.27
Hoop-7	185.34	860.94	1512.48	2292.21	3318.26	3819.95	4619.53	5442.85	6187.08	7017.86	7641.25
Hoop-8	140.64	765.79	1574.78	2317.35	3045.68	3875.96	4619.54	5406.47	6178.69	6752.34	7362.76
Hoop-9	-137.21	769.81	1540.79	2358.70	3075.49	3862.02	4646.47	5408.37	6161.21	6874.14	7403.85
Hoop-10	-18.18	775.54	1529.50	2321.19	3082.60	3866.52	4653.79	5413.17	6266.56	6953.62	7691.30
Hoop-11	12.96	776.28	1535.91	2310.06	3086.51	3850.90	4631.58	5385.68	6200.63	6949.19	7718.04
Hoop-12	199.73	727.88	1537.67	2315.73	3086.85	3864.37	4687.90	5406.90	6200.01	6933.83	7719.54
Hoop-13	-7.16	764.42	1513.75	2351.87	3101.43	4028.00	4600.07	5431.01	6224.85	6989.01	7723.50
Hoop-14	107.13	772.76	1541.92	2340.43	3072.84	3870.81	4744.28	5409.90	6312.18	6896.45	7443.73
Long-1	49.86	1257.28	2444.63	3711.06	4885.92	6129.44	7356.47	8516.27	9639.56	10721.9	11919.8
Long-2	0.01	1271.83	2456.20	3646.64	4905.59	6122.26	7375.39	8541.16	9736.09	10885.3	11990.6
Long-3	5.37	1392.54	2459.97	3777.47	4912.58	6061.64	7245.50	8484.29	9645.88	10859.0	11939.9
Long-4	12.97	1227.36	2449.10	3711.23	4884.49	6126.54	7318.41	8578.95	9881.11	10986.6	12235.2
Long-5	-42.57	1214.64	2449.07	3685.89	4898.01	6124.75	7338.32	8574.75	9808.83	11027.7	12260.9
Long-6	-9.14	1214.90	2445.06	3681.33	4909.54	6129.42	7410.46	8583.99	9805.22	11035.5	12214.1
Long-7	19.36	1212.20	2435.07	3683.16	4905.32	6121.69	7339.28	8542.54	9805.90	11117.7	12210.8
Long-8	38.25	1229.70	2431.00	3701.23	4879.63	6106.29	7321.86	8548.65	9775.42	11042.0	12131.2
SG1	334.33	162.11	83.80	152.76	123.23	133.15	134.42	149.85	138.09	141.56	157.69
SG2	516.17	296.38	189.06	258.78	214.57	226.70	219.89	228.01	199.35	187.96	182.46
SG3	1055.15	1035.40	1063.56	1291.11	1376.83	1535.95	1619.87	1729.26	1807.85	1871.17	1951.38
SG4	998.25	824.89	742.12	868.16	871.27	945.81	978.53	1018.71	1028.59	1036.19	1054.89
SG5	545.92	325.42	217.22	285.79	241.34	262.63	257.88	265.04	240.66	224.37	211.77
SG6	20.69	41.09	59.23	88.39	110.21	140.30	166.69	193.87	225.73	248.08	277.60
SG7	771.33	539.69	417.00	489.86	448.46	466.32	467.51	477.73	458.08	444.11	431.52
SG8	442.62	273.62	200.16	263.73	233.28	269.89	275.95	289.25	292.03	281.10	276.52
SG9	73.68	84.15	106.00	146.42	173.05	213.49	245.43	277.81	317.61	342.19	375.62
SG10	26.43	64.38	98.66	137.78	165.69	204.55	234.78	266.41	290.55	324.71	342.25
SG11	15.75	36.88	53.23	70.32	92.00	116.63	141.79	166.26	189.56	218.02	237.67

TABLE E-36. CVP3, WATER 2, LOAD CONDITION 1c (Continued)

SG12	-15.10	84.44	171.42	262.24	350.52	434.85	517.58	596.12	678.49	752.61	823.48
SG13	1.89	108.87	204.20	316.34	420.67	529.08	635.56	737.65	844.22	942.58	1036.64
SG14	-8.74	120.95	218.84	324.56	435.72	534.32	630.43	721.24	812.07	895.45	969.54
SG15	3.50	78.19	138.65	190.75	249.99	305.77	362.59	416.23	471.72	525.58	572.71
SG16	186.86	307.35	406.18	511.28	619.46	720.97	821.56	915.94	1014.08	1099.96	1181.91
SG17	21696.5	21688.5	21783.4	22020.6	21917.9	22146.7	22138.6	22254.9	22438.7	22677.6	22813.0
SG18	30.86	93.81	136.20	182.33	231.61	274.08	319.57	363.33	404.92	451.68	488.94
SG19	37.79	125.39	179.48	228.08	273.91	316.27	359.86	402.09	442.68	489.19	522.32
SG20	147.67	264.53	354.31	446.19	529.57	609.14	684.91	758.68	834.54	904.39	970.65
SG21	98.53	198.50	257.95	316.16	363.11	397.95	432.90	468.35	503.24	537.43	565.60
SG22	-8.92	92.25	155.65	217.20	230.70	262.88	278.00	304.10	325.95	350.66	366.04
SG23	-22.11	75.02	139.27	196.02	254.59	307.87	361.82	414.41	465.19	522.24	566.85
SG24	14.45	136.74	229.63	325.50	417.68	504.21	589.91	673.78	760.13	841.94	916.66
SG25	29.46	156.26	247.87	346.94	451.70	546.93	642.24	733.33	825.42	909.83	989.73
SG26	42.49	155.17	248.16	362.16	465.83	571.22	675.39	777.56	883.29	980.06	1074.17
SG27	47.78	157.40	243.88	339.52	438.99	530.65	625.19	713.41	804.00	885.73	965.15
SG28	-75.27	-15.67	30.68	76.30	124.85	167.54	210.93	254.39	299.22	344.06	388.20
SG29	32.10	125.77	202.71	286.67	371.16	447.99	526.74	604.19	680.85	752.22	822.75
SG30	669.24	687.73	699.69	710.88	726.31	738.92	751.93	766.19	778.16	794.89	810.50
SG31	-9.74	25.70	51.55	80.66	108.49	140.69	167.85	209.27	230.99	269.85	294.18
SG32-T	-25.08	11.28	71.48	116.77	164.07	207.36	246.85	285.55	332.84	366.09	408.98
SG32-45	-38.63	28.58	95.50	162.44	237.71	302.42	365.97	428.58	495.79	556.66	621.24
SG32-L	23.13	106.81	180.94	269.22	353.82	434.75	514.49	589.35	667.64	735.24	800.72
SG33-T	-3.81	3.12	46.58	77.84	115.10	139.67	157.60	181.37	213.32	233.22	262.77
SG33-45	-9.70	19.63	77.54	113.80	137.94	153.56	161.63	169.19	180.72	190.43	202.91
SG33-T	101.36	185.17	274.66	381.44	481.41	586.20	692.16	784.58	881.83	964.64	1044.79
SG34-T	-30.33	11.17	66.79	120.17	172.99	227.30	277.17	327.12	388.31	431.74	488.41
SG34-45	-36.45	42.39	110.62	176.86	232.04	286.33	339.10	395.82	456.79	505.51	554.45
SG34-L	32.02	147.39	235.77	325.85	409.31	486.03	559.89	631.37	705.16	772.77	837.51
SG35-T	17.83	65.03	113.42	136.74	179.04	219.34	258.68	298.01	348.83	385.40	436.32
SG35-45	50.41	125.14	185.72	235.88	283.44	329.75	375.44	424.92	478.27	522.66	566.00
SG35-L	100.23	209.93	294.79	383.76	464.80	539.45	611.25	681.76	753.66	819.36	881.83
SG36-T	-19.53	-10.53	53.72	93.01	133.22	168.85	200.04	228.73	267.60	291.07	326.50
SG36-45	48.07	78.20	131.53	178.38	210.16	233.49	251.26	270.90	292.86	305.76	317.55
SG36-L	61.73	158.10	254.91	368.07	483.04	582.69	680.75	774.39	870.11	957.25	1041.72
SG37-T	440.61	472.62	442.49	434.19	439.10	446.53	430.80	438.91	453.50	462.67	481.10
SG37-45	113.07	188.48	220.21	234.00	233.45	231.08	227.39	229.45	232.53	231.04	226.27
SG37-L	67.89	206.63	287.98	371.41	465.07	544.67	627.82	708.24	790.95	867.11	940.78
SG38-T	40.60	48.67	87.01	132.72	176.58	223.21	265.95	310.06	365.78	402.99	456.02
SG38-45	-54.16	4.97	72.17	137.54	199.97	268.12	332.36	395.23	468.05	523.08	584.58
SG38-L	-28.87	85.67	169.58	254.63	339.94	417.71	497.75	574.04	652.48	728.81	795.90
SG39-T	-60.22	-3.37	58.43	103.18	153.61	198.74	240.35	278.91	328.37	362.81	409.94
SG39-45	-53.07	35.83	107.95	177.53	244.89	311.92	378.88	446.37	520.35	578.38	634.67
SG39-L	32.27	136.10	219.37	311.38	396.83	476.74	556.91	635.12	713.16	783.05	852.01
SG40-T	55.37	96.17	138.88	160.63	198.89	230.65	262.58	294.30	333.12	363.08	402.22
SG40-45	55.15	131.10	187.32	232.78	289.40	343.77	401.67	462.37	526.50	581.02	631.52
SG40-L	79.85	163.54	226.58	287.97	357.98	419.70	485.89	552.84	618.30	682.00	743.90

TABLE E-37. CVP4, AIR 1, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.05	0.88	1.77	2.66	3.55	4.39	5.27	6.16	7.04	7.92	8.82
Frame-1	-8.26	177.78	355.91	552.32	723.65	924.88	1098.47	1258.92	1447.37	1638.30	1837.06
Frame-2	-17.04	250.35	363.87	558.21	717.08	926.67	1082.58	1265.32	1449.98	1642.32	1826.84
Frame-3	-130.76	174.40	365.22	551.75	722.17	911.88	1113.67	1264.75	1476.07	1626.36	1827.22
Frame-4	-71.58	177.04	359.11	571.36	724.31	910.39	1086.25	1264.60	1451.75	1632.74	1869.73
Frame-5	-40.97	202.78	369.60	561.44	728.43	913.06	1111.60	1260.89	1462.11	1641.64	1865.14
Frame-6	-47.73	191.59	360.10	563.42	735.53	914.93	1090.91	1274.46	1454.79	1710.57	1841.47
Frame-7	-50.04	187.85	361.25	525.24	720.75	903.02	1125.25	1281.37	1442.05	1637.86	1823.13
Frame-8	49.01	188.54	363.47	537.60	736.33	913.25	1105.99	1272.25	1456.84	1650.71	1809.96
Frame-9	-24.63	183.25	366.10	560.35	727.18	906.69	1112.81	1271.16	1453.31	1866.42	1820.54
Frame-10	39.67	174.09	354.25	600.76	718.64	914.56	1095.32	1285.75	1453.19	1643.69	1815.05
Frame-11	-8.34	194.02	368.38	545.33	704.20	929.73	1121.61	1273.95	1456.14	1635.61	1819.94
Frame-12	38.85	167.58	375.18	623.48	725.28	919.26	1143.01	1277.91	1443.31	1652.64	1811.62
Hoop-1	24.51	769.36	1536.12	2388.50	3100.14	3856.85	4683.00	5396.58	6180.04	6939.60	7756.17
Hoop-2	-33.16	796.27	1564.11	2343.81	3113.53	3831.73	4630.82	5384.36	6190.31	6933.00	7733.53
Hoop-3	46.22	797.35	1557.10	2335.41	3082.94	3848.86	4695.13	5402.39	6178.08	6930.96	7764.57
Hoop-4	-7.16	807.99	1563.70	2324.13	3098.44	3855.16	4635.50	5421.01	6197.25	6936.45	7775.68
Hoop-5	22.46	514.54	1555.04	2352.34	3101.31	3858.47	4631.61	5395.24	6208.09	6937.09	7808.26
Hoop-6	53.20	802.36	1543.96	2377.23	3085.59	3854.09	4631.37	5410.12	6183.32	6936.18	7740.82
Hoop-7	-56.64	800.77	1559.30	2348.11	3104.89	3844.29	4628.96	5396.80	6193.88	6974.51	7782.56
Hoop-8	11.63	768.45	1554.50	2326.17	3104.72	3861.46	4640.25	5419.57	6190.47	6991.29	7718.65
Hoop-9	-38.33	756.72	1546.17	2352.26	3088.92	3834.88	4648.00	5399.95	6190.75	6980.28	7713.54
Hoop-10	19.76	764.27	1551.99	2330.98	3082.41	3866.59	4656.19	5408.39	6210.10	6968.98	7713.41
Hoop-11	20.85	768.10	1548.39	2327.15	3107.29	3858.15	4631.14	5395.45	6182.66	6927.98	7708.36
Hoop-12	37.48	758.29	1604.93	2353.69	3101.98	3857.91	4658.31	5407.38	6207.24	6970.58	7741.34
Hoop-13	52.50	757.56	1551.52	2316.10	3087.64	3859.41	4720.23	5403.48	6182.13	6946.48	7725.67
Hoop-14	-148.00	762.38	1546.79	2331.51	3100.97	3863.26	4588.54	5410.58	6187.12	6956.81	7733.90
Long-1	-3.60	6.01	6.02	8.42	-3.60	6.02	14.42	81.70	98.51	146.57	176.61
Long-2	-7.08	1.55	-3.38	34.82	0.32	24.96	2.78	15.10	22.50	92.74	128.47
Long-3	-12.46	-24.69	130.69	16.91	182.10	-22.25	-0.22	82.98	98.87	167.40	195.54
Long-4	-28.38	164.74	121.57	149.18	-5.59	-36.77	177.95	29.20	-9.18	44.80	61.59
Long-5	462.30	495.28	556.57	514.98	447.60	363.04	387.54	377.74	350.76	392.44	414.49
Long-6	42.08	66.38	93.12	84.62	72.47	46.94	56.66	43.29	42.07	74.89	95.55
Long-7	78.23	100.77	111.46	104.35	111.47	123.34	148.27	149.46	149.44	151.83	158.95
Long-8	5.05	2.56	5.05	10.02	10.02	1.32	7.54	2.57	8.78	2.57	-1.16
SG1	-54.53	-66.87	-40.14	73.19	123.49	187.06	246.55	336.56	393.87	471.05	542.05
SG2	-115.10	-120.38	-98.52	27.18	98.35	180.45	253.40	357.43	427.47	526.95	602.39
SG3	-305.20	-301.03	-248.32	-84.11	19.39	128.24	227.11	332.73	422.60	534.37	632.41
SG4	-159.09	-170.29	-135.78	-17.72	63.42	158.14	234.20	337.21	405.24	503.71	582.52
SG5	-88.22	-122.27	-73.28	108.89	690.06	1223.97	1501.06	1856.32	2125.88	2130.82	2208.74
SG6	-24.73	10.46	48.97	94.45	137.00	181.21	224.84	268.39	313.16	357.89	401.96
SG7	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG8	-184.35	-181.36	-174.72	-93.73	-30.44	40.21	94.66	171.98	228.66	312.54	362.62
SG9	-48.26	-14.89	22.53	70.78	117.41	165.20	211.03	258.71	305.96	356.49	401.28
SG10	-55.87	-55.07	-60.00	-73.77	-82.63	-92.17	-105.62	-113.96	-126.96	-134.60	-145.18
SG11	16.79	18.36	12.45	1.47	-6.01	-14.77	-20.12	-29.31	-36.09	-43.33	-50.03

TABLE E-37. CVP4, AIR 1, LOAD CONDITION 1a (Continued)

SG12	27.83	30.68	24.64	20.76	16.15	12.00	8.59	5.82	1.77	0.89	-2.02
SG13	42.61	46.52	49.28	60.82	58.61	57.56	59.94	67.15	66.73	69.53	78.89
SG14	205.08	88.21	146.10	107.11	117.10	133.08	139.75	100.22	49.05	12.84	-22.31
SG15	38.94	49.25	52.47	46.43	44.95	40.62	39.84	35.10	32.75	28.56	28.38
SG16	38.09	39.65	33.24	26.33	19.61	11.41	5.56	-0.74	-8.57	-12.72	-18.89
SG17	-55.91	-62.70	-65.40	-71.22	-75.17	-84.45	-89.31	-92.27	-97.79	-97.41	-102.24
SG18	20.10	5.80	-9.74	-37.07	-59.04	-86.84	-110.21	-134.97	-160.43	-182.52	-206.62
SG19	-64.44	-81.63	-109.18	-147.57	-183.25	-222.55	-255.62	-291.90	-327.82	-358.81	-393.01
SG20	-19.90	-12.50	-13.42	-13.98	-15.64	-20.81	-18.96	-18.78	-21.00	-17.30	-18.60
SG21	-38.77	-36.18	-49.62	-68.76	-86.26	-106.32	-119.57	-137.10	-154.60	-166.00	-180.93
SG22	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG23	16.97	1.47	-26.76	-55.34	-87.06	-124.68	-156.39	-193.32	-229.48	-262.66	-295.15
SG24	20.23	27.42	25.95	24.28	19.12	13.03	12.29	8.43	3.26	1.79	-1.90
SG25	11.39	15.09	2.79	-14.18	-31.20	-51.77	-61.29	-77.26	-93.87	-103.15	-115.09
SG26	-160.16	-154.26	-155.17	-150.11	-153.25	-158.37	-153.69	-151.71	-154.29	-149.06	-149.58
SG27	16.95	21.06	16.30	9.92	1.65	-8.00	-11.65	-17.84	-25.37	-28.83	-35.35
SG28	113.25	125.07	125.80	122.81	119.12	116.16	117.62	113.96	111.00	109.51	112.48
SG29	-12.19	-10.16	-16.11	-22.57	-31.34	-40.98	-45.27	-52.95	-60.61	-65.82	-72.29
SG30	-150.69	-143.37	-144.83	-152.65	-158.23	-164.69	-165.04	-171.51	-175.53	-181.14	-179.50
SG31	-104.51	-91.39	-95.02	-108.29	-127.61	-148.51	-156.10	-181.47	-199.88	-216.88	-227.60
SG32-T	6.88	113.86	221.24	320.35	408.73	492.84	574.67	650.98	728.61	798.92	870.87
SG32-45	27.57	96.79	166.97	228.80	277.58	322.22	364.75	411.60	451.99	486.29	531.27
SG32-L	10.28	32.27	41.89	55.82	61.45	65.54	69.76	76.20	76.57	83.86	85.54
SG33-T	5.53	112.71	221.51	323.08	414.59	502.94	587.83	666.00	747.52	820.39	894.64
SG33-45	16.76	82.47	153.60	217.87	265.27	311.79	353.44	399.24	439.92	475.35	516.44
SG33-T	-4.05	16.23	30.13	45.80	50.68	51.79	54.11	59.24	55.99	59.33	57.48
SG34-T	-26.32	38.66	116.14	197.81	273.23	348.74	424.03	497.36	573.96	646.49	721.25
SG34-45	57.63	85.81	115.49	151.81	185.94	215.24	253.61	282.44	314.53	349.74	377.79
SG34-L	13.73	11.21	0.00	-12.79	-24.84	-40.29	-47.40	-57.18	-68.63	-73.55	-83.98
SG35-T	32.31	106.76	177.75	243.91	309.27	378.44	450.41	516.98	590.87	660.69	733.25
SG35-45	24.95	60.20	87.32	116.05	144.98	171.40	208.94	235.80	267.43	301.40	328.74
SG35-L	21.32	21.46	11.67	0.02	-11.86	-26.96	-34.00	-44.45	-56.00	-61.68	-72.74
SG36-T	11.09	101.32	196.18	287.74	370.44	450.45	528.31	601.56	678.37	746.77	816.35
SG36-45	-7.16	30.62	67.48	108.81	149.97	185.29	225.32	256.02	289.76	321.76	349.27
SG36-L	23.96	23.03	20.74	24.14	24.46	20.14	20.97	20.14	15.11	18.18	14.92
SG37-L	62.26	64.45	38.54	7.54	-16.84	-42.10	-58.32	-76.72	-93.41	-107.98	-123.58
SG37-45	1.08	22.79	32.06	35.40	49.80	63.06	85.08	98.32	120.44	137.63	155.31
SG37-T	36.78	74.16	117.46	150.74	188.91	231.19	276.98	321.05	371.60	417.11	466.82
SG38-T	-28.59	61.80	154.22	247.34	331.56	414.11	495.68	574.07	654.49	731.26	808.18
SG38-45	-52.83	-6.26	30.36	71.20	111.57	148.41	188.26	218.57	252.72	285.83	320.80
SG38-L	13.64	17.55	10.65	1.25	-9.79	-25.16	-33.53	-43.79	-56.83	-64.97	-75.13
SG39-T	9.62	115.38	222.43	321.15	410.15	494.35	575.76	652.02	729.92	800.16	872.14
SG39-45	19.63	91.42	146.79	201.34	253.00	297.59	346.38	385.37	426.45	467.05	503.06
SG39-L	10.37	32.27	37.05	44.79	47.34	45.39	49.01	49.81	45.91	50.87	47.30
SG40-T	25.10	57.78	93.76	124.08	160.61	200.95	246.05	287.32	336.23	381.00	434.50
SG40-45	6.39	17.53	16.25	15.52	24.47	33.42	52.78	63.20	80.18	98.45	117.81
SG40L	9.58	-11.06	-39.38	-69.34	-96.74	-121.76	-135.46	-154.27	-170.51	-182.40	-193.54

TABLE E-38. CVP4, AIR 1, LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.02	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Frame-1	-31.03	6.24	-49.99	-15.80	8.24	12.67	11.37	-5.07	-0.37	3.71	-3.11
Frame-2	8.86	-51.21	0.36	17.13	-5.77	-16.98	-42.61	-83.36	254.97	488.42	-178.71
Frame-3	69.92	-119.77	54.70	-57.40	-7.97	-92.83	74.05	18.36	36.74	75.07	-70.66
Frame-4	-47.56	30.79	-31.84	-41.03	-32.73	28.54	-52.04	-20.07	31.14	4.15	30.14
Frame-5	-58.35	20.06	47.10	-38.01	15.15	55.77	2.72	-32.57	-2.02	57.23	33.21
Frame-6	49.01	54.94	-45.81	-32.75	-19.52	68.00	32.77	62.55	38.30	26.98	27.11
Frame-7	-10.92	10.83	53.37	-54.13	-54.54	79.12	-39.38	-55.54	-11.26	42.91	-19.45
Frame-8	-22.08	-20.99	12.92	-3.27	-3.69	28.32	39.00	24.58	-27.57	-26.81	7.27
Frame-9	41.09	-38.12	17.18	-4.50	-15.36	22.33	-3.49	4.58	7.54	8.33	16.70
Frame-10	-3.88	23.03	3.57	-2.30	0.73	-8.57	-11.67	6.62	2.67	-6.89	-5.52
Frame-11	-35.83	26.23	-14.90	-20.62	-36.29	13.77	-9.57	-5.14	-15.77	-1.50	13.43
Frame-12	19.29	-47.09	50.97	-27.57	25.64	-56.34	-4.11	5.61	8.56	2.42	-13.46
Hoop-1	31.87	50.27	17.16	-47.21	0.61	-23.30	50.26	48.43	26.36	7.97	11.64
Hoop-2	-51.23	-87.38	33.70	-56.66	93.34	35.50	-34.97	58.99	-65.69	33.70	-0.64
Hoop-3	-45.02	-57.31	51.49	35.70	-22.22	0.60	5.86	-9.93	16.39	-8.17	-8.17
Hoop-4	-59.03	-60.89	-55.33	63.24	-18.28	39.15	44.70	133.63	-81.27	-62.74	87.32
Hoop-5	-66.84	-57.73	-8.53	-6.70	-75.97	-26.75	-34.04	93.54	102.65	42.51	31.57
Hoop-6	29.16	55.06	-26.33	53.21	97.61	-15.23	60.60	-41.13	53.21	-44.83	-46.68
Hoop-7	27.45	-42.02	-29.22	36.60	129.84	58.53	-1.80	3.68	-31.05	5.51	20.14
Hoop-8	77.75	-10.41	26.33	-17.76	-3.06	-3.06	4.28	-32.45	70.41	-3.06	63.07
Hoop-9	-43.77	-49.22	28.83	188.53	-12.92	83.29	-16.55	86.91	3.42	-31.07	19.76
Hoop-10	17.95	32.41	5.31	-9.15	43.26	-19.99	-10.95	21.57	-9.15	12.54	-12.76
Hoop-11	-86.14	4.25	24.55	-108.28	-130.44	-38.19	31.92	-17.89	-54.79	20.86	59.60
Hoop-12	-40.33	-66.27	-66.28	83.79	78.25	33.78	-21.81	61.57	-14.40	-44.04	-29.22
Hoop-13	-43.96	-66.23	30.24	-43.96	-51.39	30.24	-14.28	15.40	-73.65	15.40	-43.97
Hoop-14	-147.99	0.01	125.84	-36.99	303.48	-125.81	74.02	148.03	148.03	-133.21	103.64
Long-1	2.41	1167.82	2407.72	3676.46	4959.61	6137.04	7339.70	8606.89	9811.09	10959.7	11996.5
Long-2	-92.11	1185.89	2473.75	3675.34	4896.65	6154.93	7340.50	8560.20	9807.76	11039.0	12064.2
Long-3	-27.15	1136.56	2426.30	3668.31	4894.42	6145.00	7366.22	8605.42	9730.33	11113.1	12170.3
Long-4	101.19	1215.71	2498.20	3671.51	4838.83	6142.91	7334.22	8576.77	9782.82	11060.6	12278.2
Long-5	464.75	1470.45	2327.93	3644.78	4960.40	6160.87	7377.27	8583.50	9794.14	11068.2	12295.5
Long-6	22.63	1134.83	2445.17	3664.34	4875.00	6130.64	7346.16	8581.99	9805.17	11058.4	12272.6
Long-7	106.72	1056.64	2451.84	3664.17	4863.44	6142.27	7353.42	8584.42	9792.33	11089.0	12262.1
Long-8	-2.41	1215.91	2471.52	3660.00	4802.49	6143.88	7337.33	8583.86	9795.10	11047.1	12278.9
SG1	-60.76	-48.98	-61.13	-74.59	-86.57	-123.63	-160.10	-175.23	-240.84	-273.12	-304.08
SG2	-127.51	-110.71	-123.37	-160.37	-186.28	-249.85	-310.41	-338.23	-440.25	-502.96	-545.13
SG3	-347.17	-236.18	-105.04	-86.32	18.84	11.46	77.88	160.19	137.31	176.27	217.97
SG4	-194.77	-62.12	-26.93	-6.12	18.06	5.95	6.91	29.62	-15.24	-27.91	-17.13
SG5	-23.01	-16.11	-26.78	-84.31	-17.44	-145.73	-240.17	-342.84	-451.20	-517.86	-558.33
SG6	-27.80	-36.37	-44.79	-59.35	-71.88	-87.09	-101.96	-113.85	-133.70	-149.60	-160.52
SG7	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG8	-194.54	-180.57	-165.84	-202.65	-221.81	-266.00	-304.24	-318.26	-385.24	-430.19	-457.43
SG9	-52.52	-60.13	-64.14	-80.89	-93.91	-109.88	-125.28	-137.01	-157.82	-174.72	-187.00
SG10	-51.18	1.56	47.25	78.37	122.83	148.85	187.02	224.67	254.55	285.57	323.57
SG11	18.76	60.79	109.54	154.81	204.37	250.17	296.46	341.53	387.30	432.93	474.65

TABLE E-38. CVP4, AIR 1, LOAD CONDITION 1b (Continued)

SG12	31.78	96.74	175.20	251.10	332.42	406.15	481.54	559.85	638.15	711.18	782.34
SG13	48.07	153.19	272.55	380.32	500.59	601.22	707.07	813.24	916.58	1019.11	1114.54
SG14	285.40	371.28	487.28	606.89	743.74	859.76	973.94	1082.80	1200.76	1288.41	1384.42
SG15	43.66	85.53	134.65	183.95	237.67	286.61	336.56	384.91	435.58	485.38	530.34
SG16	42.63	109.67	187.65	264.15	348.45	422.95	499.53	576.13	654.88	728.04	799.34
SG17	-57.21	30.78	123.21	215.16	309.80	403.26	495.03	587.00	683.00	780.37	864.39
SG18	21.79	77.75	134.58	197.04	257.49	323.09	384.22	445.25	513.27	580.79	639.44
SG19	-53.68	36.55	127.14	215.72	309.50	395.71	482.59	566.41	656.66	742.37	821.16
SG20	-10.10	78.95	170.39	256.31	349.09	430.80	515.94	598.03	685.81	767.74	844.44
SG21	-23.65	60.68	125.66	174.28	228.25	271.18	320.69	363.08	416.12	459.99	503.64
SG22	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG23	21.75	111.94	212.43	305.03	404.66	493.05	586.52	675.67	767.53	860.22	947.48
SG24	28.33	115.55	217.13	309.71	413.56	502.49	594.64	685.07	777.09	868.10	954.42
SG25	24.98	131.83	245.36	362.87	492.38	604.90	721.73	835.57	953.40	1062.28	1166.80
SG26	-151.85	-53.54	55.20	160.63	275.87	377.47	480.84	583.01	684.02	787.33	883.19
SG27	23.17	91.07	164.35	239.01	321.99	391.27	463.48	534.85	609.50	681.08	750.57
SG28	116.14	154.62	201.94	247.82	299.63	344.79	392.84	440.96	492.01	540.89	588.25
SG29	-7.71	40.15	90.26	140.48	199.38	248.51	302.40	355.60	411.36	465.32	518.50
SG30	-147.28	-112.73	-73.82	-33.54	8.36	46.95	86.68	125.56	164.93	204.41	242.87
SG31	-100.99	-72.36	-33.43	-9.54	27.50	58.45	92.12	130.05	158.00	198.76	233.96
SG32-T	2.52	-22.27	-47.10	-71.66	-97.53	-120.10	-143.67	-167.32	-191.04	-212.42	-233.69
SG32-45	31.92	69.19	107.33	154.08	209.56	241.52	284.10	323.40	364.95	399.66	434.53
SG32-L	19.47	107.00	200.64	290.46	389.51	473.88	562.58	650.13	740.60	822.97	905.41
SG33-T	1.57	-54.76	-117.17	-179.46	-244.61	-301.53	-357.45	-413.73	-465.97	-516.96	-566.64
SG33-45	16.66	21.49	4.87	-15.84	-34.50	-68.73	-91.05	-117.39	-138.15	-165.70	-189.57
SG33-T	3.49	91.45	187.63	278.50	378.40	463.26	551.75	640.16	731.49	816.02	901.22
SG34-T	-29.38	-62.16	-96.56	-131.58	-169.22	-202.90	-239.39	-272.25	-311.59	-344.74	-376.55
SG34-45	63.90	84.12	103.77	125.11	143.85	174.29	193.01	212.88	232.91	262.62	284.14
SG34-L	20.79	111.97	206.66	299.54	398.94	488.69	581.31	671.45	767.86	858.77	944.02
SG35-T	31.08	2.39	-20.69	-45.30	-70.28	-90.86	-112.48	-135.94	-156.46	-180.07	-201.94
SG35-45	33.99	57.31	84.32	110.98	135.10	172.78	198.95	223.73	252.20	285.48	312.47
SG35-L	29.65	121.68	215.93	307.75	406.57	495.35	587.76	676.56	772.39	862.33	947.16
SG36-T	7.69	-29.73	-71.66	-120.21	-173.61	-218.60	-267.31	-315.05	-362.30	-407.50	-451.87
SG36-45	-1.22	16.74	36.83	30.43	18.23	16.70	6.39	-2.10	-10.88	-13.71	-18.44
SG36-L	33.40	142.98	258.21	372.56	494.38	595.37	700.52	803.39	909.17	1008.35	1104.64
SG37-L	88.30	167.38	256.70	354.59	459.38	549.65	648.71	739.79	842.99	938.22	1031.94
SG37-45	8.10	8.42	14.43	2.18	-14.02	-16.45	-26.50	-36.18	-42.51	-47.06	-52.52
SG37-T	35.01	12.89	-15.97	-43.83	-75.82	-102.90	-131.76	-161.33	-188.50	-218.26	-248.01
SG38-T	-30.67	-63.13	-96.56	-132.15	-170.58	-201.71	-236.95	-269.81	-304.70	-338.60	-371.39
SG38-45	-49.18	-30.46	13.54	39.83	65.07	103.60	133.28	167.40	198.49	232.90	269.43
SG38-L	21.36	110.25	212.80	306.46	412.67	502.40	597.02	689.95	783.70	877.67	967.71
SG39-T	6.54	-22.10	-47.06	-74.55	-104.46	-127.44	-153.19	-177.34	-202.55	-226.15	-248.34
SG39-45	29.79	46.33	85.71	110.48	143.20	181.31	212.61	246.68	280.56	321.57	359.35
SG39-L	23.31	105.89	189.57	273.05	368.84	448.60	534.12	617.93	705.91	791.09	874.40
SG40-T	20.17	4.83	-4.85	-17.27	-32.43	-45.39	-59.64	-73.84	-89.59	-107.66	-124.39
SG40-45	12.42	31.96	75.08	105.77	142.67	183.41	218.30	255.96	293.20	335.19	375.27
SG40L	18.90	91.79	170.34	250.72	341.14	418.78	501.54	584.35	671.98	754.66	836.29

TABLE E-39. CVP4, AIR 1, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.03	0.87	1.77	2.62	3.52	4.39	5.28	6.15	7.06	7.91	8.79
Frame-1	-21.76	145.41	362.53	533.07	723.31	895.33	1088.26	1271.47	1462.68	1618.30	1808.89
Frame-2	-86.12	179.79	367.01	532.05	706.31	902.36	1088.01	1279.60	1451.37	1622.34	1796.97
Frame-3	-149.03	183.66	361.45	539.75	733.90	901.59	1086.41	1272.01	1456.83	1639.24	1821.81
Frame-4	-15.87	179.45	362.23	543.75	753.31	896.61	1095.07	1275.33	1470.35	1623.26	1817.71
Frame-5	-38.72	184.49	376.16	547.60	710.87	911.34	1096.28	1287.16	1449.68	1632.16	1818.26
Frame-6	7.35	183.78	369.96	544.84	720.03	904.75	1070.72	1285.06	1456.10	1648.61	1814.09
Frame-7	14.25	173.23	388.59	556.00	725.95	911.91	1077.35	1264.17	1483.37	1640.91	1829.56
Frame-8	-81.27	175.65	356.36	545.96	731.20	903.19	1094.26	1273.99	1439.61	1648.61	1809.50
Frame-9	33.31	180.64	358.90	556.51	776.00	905.22	1144.57	1295.58	1462.04	1600.82	1813.04
Frame-10	188.30	178.42	376.41	533.36	737.62	906.22	1090.48	1227.23	1439.39	1631.25	1821.48
Frame-11	-34.63	179.68	352.94	533.39	731.40	908.01	1089.76	1287.54	1435.78	1638.67	1809.41
Frame-12	-29.84	192.68	357.67	555.75	766.80	895.32	1075.90	1283.11	1434.65	1657.42	1795.57
Hoop-1	30.03	776.79	1558.34	2301.58	3103.20	3838.85	4656.79	5403.40	6164.11	6930.40	7708.35
Hoop-2	30.08	778.28	1540.77	2290.93	3091.22	3837.53	4635.78	5387.44	6205.38	6933.00	7702.81
Hoop-3	-55.56	758.82	1543.22	2312.12	3031.43	3824.67	4652.55	5403.60	6201.52	6980.10	7718.94
Hoop-4	148.46	745.07	1536.07	2271.78	3351.63	3835.17	4629.47	5401.94	6184.90	6954.97	7729.37
Hoop-5	-48.62	789.82	1564.31	2324.53	3264.72	3796.89	4620.21	5420.22	6195.95	6993.59	7704.37
Hoop-6	-54.08	745.10	1531.17	2323.10	3083.12	3834.12	4636.46	5392.93	6161.74	6919.53	7724.18
Hoop-7	34.76	773.42	1546.66	2312.90	3171.91	3839.19	4750.98	5412.71	6187.19	7018.39	7740.51
Hoop-8	41.01	761.03	1547.16	2392.06	3097.07	3898.59	4632.90	5412.23	6271.28	6924.48	7725.99
Hoop-9	-29.25	756.64	1558.87	2304.84	3106.76	3833.45	4624.41	5428.99	6143.56	6919.69	7702.65
Hoop-10	1.69	764.19	1553.79	2310.87	3109.20	3876.01	4648.96	5401.16	6195.64	6924.92	7691.73
Hoop-11	20.85	760.64	1546.55	2301.09	3101.45	3847.46	4640.37	5399.14	6195.58	6932.82	7719.42
Hoop-12	-51.44	773.04	1553.06	2331.22	3086.85	3858.30	4650.90	5422.20	6192.42	7014.35	7711.69
Hoop-13	-110.73	750.06	1544.10	2323.29	3087.33	3844.95	4660.86	5425.75	6241.50	6990.31	7710.83
Hoop-14	96.21	769.70	1561.59	2316.48	3100.66	3856.24	4647.75	5417.98	6194.52	6956.12	7726.50
Long-1	-18.01	1217.20	2454.83	3676.46	4903.86	6131.62	7352.64	8635.54	9834.13	11015.1	12230.8
Long-2	-76.10	1248.86	2417.30	3746.82	4881.37	6129.67	7335.33	8616.77	9803.09	11014.5	12252.8
Long-3	-30.82	1195.41	2432.66	3653.63	4937.98	6133.38	7324.37	8643.21	9815.00	11061.9	12260.8
Long-4	188.79	1219.44	2451.66	3621.13	4915.12	6103.91	7360.34	8589.79	9805.83	11012.7	12279.4
Long-5	559.13	1413.02	2201.98	3740.33	4874.16	6116.16	7348.85	8578.47	9800.51	10972.8	12246.5
Long-6	37.22	1228.55	2449.06	3710.53	4893.96	6116.65	7370.21	8573.34	9805.40	11014.8	12227.7
Long-7	62.80	1202.81	2477.02	3819.72	4910.45	6107.23	7350.76	8593.72	9800.85	11019.0	12227.6
Long-8	10.03	1212.30	2471.77	3707.24	4892.75	6079.87	7347.05	8565.13	9802.82	11021.1	12232.9
SG1	20.68	-63.55	-98.38	-44.57	30.45	35.60	83.72	102.88	113.22	140.85	184.92
SG2	-2.95	-121.75	-182.11	-128.82	-59.13	-67.65	-20.47	-11.07	-14.89	0.73	46.59
SG3	-254.71	-247.44	-155.36	59.63	272.60	429.61	594.70	731.21	820.61	936.61	1066.64
SG4	-68.58	-106.62	-81.47	31.93	156.03	223.44	315.12	376.77	411.03	462.77	540.40
SG5	-20.81	-134.09	-150.43	65.33	230.92	276.42	305.71	270.37	306.22	327.87	337.39
SG6	-19.48	1.02	25.34	55.43	85.09	111.61	142.40	168.74	196.95	222.91	254.99
SG7	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG8	-101.86	-185.03	-224.78	-179.17	-138.71	-138.84	-99.34	-58.43	-54.01	-39.29	11.51
SG9	-39.94	-23.28	0.76	34.63	67.52	98.38	132.83	163.27	194.94	223.76	261.81
SG10	-42.48	-0.47	35.09	69.37	101.27	132.81	167.15	198.86	229.69	261.40	291.87
SG11	23.57	66.43	106.34	144.99	177.97	218.05	253.91	292.09	329.78	365.37	400.30

TABLE E-39. CVP4, AIR 1, LOAD CONDITION 1c (Continued)

SG12	32.48	101.37	172.90	246.92	311.64	383.27	452.49	523.98	593.86	662.93	733.20
SG13	59.14	160.36	262.69	380.52	483.65	589.43	691.99	796.93	897.24	998.29	1100.46
SG14	270.36	373.38	493.60	711.72	935.81	805.04	814.73	860.72	953.37	1056.05	1139.04
SG15	42.29	101.21	151.14	195.03	232.00	278.37	319.11	362.10	406.00	448.16	486.90
SG16	42.92	111.40	181.17	252.69	314.43	384.40	449.94	516.49	581.12	644.40	709.18
SG17	-60.31	25.82	104.28	190.67	271.23	355.08	435.55	522.88	604.62	688.08	774.24
SG18	21.75	69.31	110.17	148.67	184.92	225.39	264.00	309.11	352.39	396.99	440.19
SG19	-59.25	14.18	74.84	132.01	179.90	236.29	286.10	341.93	394.13	446.80	497.71
SG20	-9.91	86.36	171.36	256.23	334.56	417.13	495.76	576.47	654.15	730.60	808.48
SG21	-39.87	48.16	98.81	133.46	160.52	195.86	227.21	260.16	292.42	324.81	353.02
SG22	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG23	21.21	97.02	163.98	229.51	281.32	344.56	401.27	459.90	518.61	577.23	633.56
SG24	30.74	124.98	218.67	310.94	389.48	478.15	562.17	643.08	727.63	809.45	891.43
SG25	19.95	127.00	229.02	333.55	428.47	534.24	633.14	732.79	830.56	925.38	1019.27
SG26	-146.60	-51.89	44.88	156.08	256.90	362.14	463.25	563.86	661.07	757.04	859.45
SG27	21.84	90.35	157.34	227.28	289.25	357.78	421.29	482.97	544.01	603.84	666.00
SG28	105.83	162.79	210.88	253.84	294.51	341.09	381.85	426.21	471.39	517.96	557.97
SG29	-9.47	36.14	77.40	122.06	162.68	209.93	255.21	299.87	343.85	387.77	434.16
SG30	-144.94	-101.31	-68.86	-36.83	-2.85	28.12	61.55	96.40	130.80	166.52	197.00
SG31	-83.41	-56.60	-30.67	-9.04	21.50	40.23	67.51	94.21	118.91	147.32	172.75
SG32-T	-5.61	89.39	167.85	225.93	284.23	336.38	385.68	430.96	479.11	519.36	561.21
SG32-45	26.17	140.23	240.73	331.22	408.58	487.45	561.19	631.51	703.26	773.57	839.39
SG32-L	20.69	124.36	219.99	314.90	398.61	485.92	568.79	652.24	731.17	809.07	887.74
SG33-T	-9.28	59.30	114.19	148.58	188.24	220.95	254.71	284.71	319.76	346.22	373.03
SG33-45	17.60	89.80	139.25	167.94	193.69	211.78	231.10	248.45	266.49	283.97	295.29
SG33-T	12.60	110.40	209.77	309.86	398.94	489.86	575.73	661.06	742.24	822.35	904.48
SG34-T	-26.55	8.43	56.00	100.53	149.78	195.39	243.62	287.50	336.74	379.59	425.12
SG34-45	53.90	107.32	169.47	225.35	280.61	342.36	400.87	455.00	512.38	562.79	617.40
SG34-L	18.19	107.16	186.63	268.76	345.42	426.53	504.05	585.15	661.91	737.22	815.48
SG35-T	14.25	81.58	134.34	169.50	211.83	251.82	295.01	335.79	382.92	422.72	464.04
SG35-45	17.28	91.08	157.82	208.86	261.00	320.43	376.47	428.96	485.36	533.80	586.67
SG35-L	25.84	117.89	199.49	281.39	358.74	439.24	515.97	595.90	671.66	746.55	823.07
SG36-T	-0.87	63.88	116.72	151.29	189.08	219.04	248.93	275.72	306.99	330.80	354.48
SG36-45	-4.52	57.17	112.82	147.81	175.50	206.12	233.00	254.70	279.42	297.22	317.86
SG36-L	42.03	138.91	251.77	366.37	465.42	568.18	664.78	759.33	849.19	937.76	1028.75
SG37-L	58.63	147.02	218.91	293.38	361.85	441.86	517.53	595.61	671.79	747.47	825.55
SG37-45	-4.70	33.06	53.35	50.79	48.86	56.05	59.83	64.28	72.82	76.48	81.59
SG37-T	23.98	55.74	76.68	78.25	88.37	100.32	113.27	128.79	147.83	164.35	178.85
SG38-T	-33.38	33.33	97.42	152.06	211.83	262.79	314.99	363.99	415.49	460.34	506.86
SG38-45	-52.45	21.49	101.28	175.29	245.54	317.13	388.72	458.40	531.32	596.52	665.93
SG38-L	19.64	109.76	197.64	285.06	358.58	444.24	525.28	603.29	682.63	760.35	839.66
SG39-T	-2.29	90.68	170.25	228.38	287.94	338.33	389.01	434.92	484.60	527.53	567.54
SG39-45	20.04	117.24	210.63	291.25	359.90	443.87	517.71	584.85	658.47	721.42	788.27
SG39-L	23.78	116.58	199.23	287.59	364.79	450.55	529.87	608.76	684.93	758.79	838.05
SG40-T	13.60	44.28	71.86	89.02	116.22	139.96	167.33	196.00	229.25	258.99	284.79
SG40-45	4.74	45.30	92.99	136.64	176.82	237.10	290.77	342.83	401.68	453.51	507.86
SG40L	17.44	69.69	122.12	181.30	239.00	307.68	373.77	442.26	510.80	577.60	648.60

TABLE E-40. CVP4, AIR 2, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.02	0.88	1.77	2.64	3.54	4.42	5.30	6.16	7.03	7.90	8.79
Frame-1	2.98	187.07	370.59	546.99	719.70	902.12	1086.29	1278.32	1455.90	1611.61	1827.24
Frame-2	-125.70	183.17	352.48	558.11	907.75	900.45	1105.16	1263.84	1465.44	1601.75	1825.72
Frame-3	95.00	188.70	362.55	560.29	721.71	906.50	1087.87	1278.74	1451.90	1627.52	1810.75
Frame-4	31.04	184.52	373.67	541.99	732.47	911.92	1086.21	1275.20	1436.07	1625.27	1811.77
Frame-5	-34.89	167.13	368.64	549.29	762.47	904.24	1139.17	1295.66	1442.98	1618.64	1808.87
Frame-6	29.77	187.05	384.64	554.95	735.10	906.16	1112.90	1308.68	1452.96	1635.33	1864.29
Frame-7	14.45	222.47	436.15	533.22	730.49	963.34	1076.85	1282.68	1438.49	1647.32	1809.63
Frame-8	23.94	183.54	347.08	549.01	735.74	897.78	1076.55	1294.22	1458.44	1642.95	1817.13
Frame-9	9.11	258.46	398.33	549.19	749.25	932.95	1076.05	1275.97	1433.98	1642.20	1801.57
Frame-10	-16.40	236.24	430.84	545.03	718.05	940.41	1086.54	1288.78	1437.57	1677.25	1808.44
Frame-11	-22.61	216.16	379.36	560.01	725.64	911.06	1096.00	1282.00	1457.74	1629.72	1828.77
Frame-12	-53.85	179.87	369.09	545.00	755.81	927.95	1065.03	1265.38	1434.54	1646.56	1794.58
Hoop-1	66.82	769.21	1556.66	2347.09	3083.59	3891.12	4624.15	5416.81	6169.61	6939.60	7708.05
Hoop-2	-45.82	732.88	1540.93	2330.22	3057.50	3879.87	4645.28	5431.35	6167.39	6927.58	7709.77
Hoop-3	-64.34	779.65	1550.39	2341.49	3093.47	3881.61	4633.71	5421.69	6155.79	6945.00	7725.75
Hoop-4	87.33	689.28	1691.86	2299.11	3078.06	3861.88	4655.88	5402.48	6151.56	6947.56	7710.53
Hoop-5	13.35	971.80	1528.01	2324.07	3114.07	3854.16	4627.96	5404.36	6168.58	6984.48	7705.92
Hoop-6	58.76	739.32	1538.72	2318.94	3085.59	3866.34	4653.57	5404.57	6178.39	6952.82	7729.42
Hoop-7	-42.02	701.91	1629.09	2325.23	3075.63	3841.79	4647.25	5418.73	6172.53	6967.20	7718.29
Hoop-8	-25.10	665.51	1642.67	2303.90	3075.33	3883.51	4625.55	5419.03	6182.50	6939.86	7725.99
Hoop-9	-32.88	783.87	1528.02	2548.05	3096.18	3876.63	4644.37	5415.75	6164.72	6971.20	7722.61
Hoop-10	-16.37	766.00	1530.31	2337.98	3120.35	3873.81	4627.28	5422.30	6173.34	6947.30	7698.96
Hoop-11	37.46	777.24	1524.41	2299.25	3101.76	3882.13	4658.81	5417.05	6183.89	6942.74	7719.42
Hoop-12	30.07	761.92	1536.38	2375.69	3101.98	3902.38	4636.08	5414.25	6176.98	6963.17	7733.93
Hoop-13	7.98	794.59	1529.26	2308.45	3109.90	3851.98	4646.02	5432.63	6196.36	6968.75	7703.41
Hoop-14	-88.80	777.10	1539.39	2323.88	3123.17	3863.26	4625.54	5410.03	6156.90	6949.41	7534.08
Long-1	-1.19	-2.39	-8.40	-19.22	-3.60	4.81	25.24	93.72	144.17	180.25	207.86
Long-2	16.34	-69.93	81.65	-67.48	77.97	-29.26	-42.82	-0.92	44.68	93.99	133.42
Long-3	45.05	229.82	-19.80	42.61	-23.48	-22.25	32.81	95.22	153.94	191.91	222.48
Long-4	-12.78	-17.58	303.91	36.41	12.41	331.50	-31.98	4.01	42.40	70.00	108.39
Long-5	522.32	546.82	528.40	429.31	461.12	427.96	369.20	360.63	399.79	408.44	431.68
Long-6	33.57	50.59	54.23	28.71	45.73	53.01	29.92	42.08	66.38	61.53	80.97
Long-7	113.85	85.35	131.65	93.68	136.42	147.08	138.78	137.60	148.27	151.86	154.22
Long-8	26.19	19.97	13.75	17.49	15.00	21.21	31.16	28.67	24.94	17.49	19.97
SG1	53.69	-50.11	-20.06	35.43	120.22	180.90	254.28	352.88	393.44	523.46	553.82
SG2	37.84	-100.64	-63.01	9.49	105.91	176.32	261.69	379.29	431.47	592.67	619.35
SG3	-195.08	-291.06	-242.39	-108.71	40.26	135.70	230.59	354.98	434.91	593.34	616.91
SG4	-66.40	-151.68	-95.50	-5.34	119.37	192.84	266.02	372.00	435.36	584.14	605.78
SG5	37.12	-90.90	3.13	152.29	265.06	389.59	506.83	597.77	687.42	839.36	867.09
SG6	-15.06	15.26	55.62	99.12	142.96	185.37	228.50	273.63	315.46	365.26	405.40
SG7	########	########	########	########	########	########	########	########	########	########	########
SG8	-68.76	-167.43	-141.64	-85.69	-17.94	43.18	100.62	188.96	239.77	365.71	384.09
SG9	-31.51	-6.77	33.62	80.05	126.64	172.83	217.78	266.91	312.19	367.65	408.41
SG10	-44.30	-53.70	-65.51	-78.85	-89.39	-104.13	-115.80	-126.44	-137.05	-148.42	-169.85
SG11	21.83	19.65	14.39	7.47	-4.12	-12.06	-21.61	-30.20	-34.63	-43.91	-49.90

TABLE E-40. CVP4, AIR 2, LOAD CONDITION 1a (Continued)

SG12	34.11	27.74	27.60	23.96	21.69	17.45	11.92	10.81	8.41	7.35	2.27
SG13	69.07	49.53	52.98	50.54	54.03	57.36	58.05	66.43	70.07	80.17	78.96
SG14	148.48	131.69	159.09	270.90	6.39	22.98	40.17	27.22	32.20	61.09	52.19
SG15	37.89	46.45	49.91	48.39	42.48	39.86	35.21	30.14	30.78	23.60	23.78
SG16	45.19	38.92	37.35	28.46	22.33	15.98	6.63	1.51	-3.79	-9.36	-17.24
SG17	-44.71	-51.14	-61.56	-70.58	-72.90	-82.02	-86.15	-88.30	-90.05	-90.52	-96.62
SG18	24.75	15.46	-5.46	-32.13	-57.68	-82.20	-107.16	-131.06	-152.71	-180.04	-200.75
SG19	-54.46	-78.88	-106.80	-144.88	-181.99	-215.93	-254.46	-287.64	-317.42	-353.72	-385.82
SG20	-6.59	-9.55	-9.18	-13.80	-13.61	-14.17	-18.61	-16.02	-13.80	-10.84	-14.17
SG21	-35.09	-40.25	-47.61	-67.15	-83.53	-99.76	-121.31	-135.48	-147.83	-164.79	-180.06
SG22	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG23	19.18	-7.39	-34.15	-71.61	-96.69	-127.71	-166.09	-201.50	-231.76	-271.64	-301.88
SG24	29.28	25.22	29.09	19.87	17.83	15.62	7.51	6.95	5.11	4.92	0.13
SG25	21.90	14.82	6.44	-14.19	-29.17	-41.35	-62.44	-73.22	-83.95	-98.99	-111.56
SG26	-139.63	-153.38	-153.23	-158.23	-159.68	-150.34	-157.22	-151.20	-148.43	-139.02	-142.29
SG27	25.46	21.53	19.17	9.83	3.92	-0.52	-10.22	-15.35	-19.42	-24.41	-30.92
SG28	100.69	113.27	118.44	116.23	112.50	113.27	110.31	106.59	109.55	104.38	106.59
SG29	-4.30	-10.16	-15.01	-24.57	-31.63	-36.07	-46.87	-53.06	-58.78	-65.07	-71.85
SG30	-168.69	-158.88	-161.96	-169.55	-175.51	-177.86	-182.94	-187.68	-189.48	-196.24	-196.63
SG31	-87.00	-87.26	-87.44	-108.31	-132.74	-140.94	-164.19	-176.36	-193.48	-213.34	-228.37
SG32-T	-9.28	115.34	220.38	317.75	409.64	494.07	576.00	650.06	724.93	794.86	869.46
SG32-45	24.70	99.05	164.18	217.19	278.57	321.30	369.78	412.56	453.05	493.17	531.76
SG32-L	22.42	30.60	43.95	50.42	63.38	69.35	71.58	80.50	82.87	89.67	86.92
SG33-T	-11.57	115.31	221.29	322.95	418.90	506.50	592.62	669.78	746.81	818.43	895.47
SG33-45	18.58	88.63	151.74	208.06	269.60	310.86	359.64	401.59	441.17	480.42	516.41
SG33-T	15.21	17.68	33.68	39.26	49.91	53.92	52.76	59.26	58.80	64.76	58.05
SG34-T	-27.68	41.56	118.22	197.60	277.11	351.93	427.35	500.16	572.83	645.37	721.00
SG34-45	47.24	75.45	110.70	148.19	177.67	219.09	244.32	278.26	309.62	341.94	375.49
SG34-L	26.95	15.08	3.26	-12.80	-24.85	-32.54	-47.85	-55.43	-61.99	-69.73	-80.33
SG35-T	13.65	106.05	177.62	245.50	310.46	382.11	451.38	517.89	589.19	655.67	731.00
SG35-45	12.60	53.81	87.63	118.07	140.62	181.82	204.02	235.27	266.35	295.98	329.81
SG35-L	33.54	23.80	14.47	-0.54	-12.34	-19.38	-35.09	-43.01	-49.96	-57.94	-69.31
SG36-T	-1.80	101.58	194.33	284.79	370.41	451.84	529.80	602.34	674.52	742.63	814.73
SG36-45	-8.10	24.46	71.58	110.87	145.07	189.63	216.61	252.89	285.49	315.84	346.17
SG36-L	45.12	25.50	29.23	25.92	29.08	29.42	22.85	25.45	24.43	27.41	19.45
SG37-L	53.60	59.24	38.83	9.70	-13.46	-34.28	-57.86	-75.65	-90.09	-107.94	-123.11
SG37-45	-10.63	17.19	35.14	43.96	48.72	70.35	80.68	96.79	116.25	127.78	152.01
SG37-T	22.85	76.75	117.63	157.02	196.36	237.93	283.87	324.18	371.16	411.49	465.77
SG38-T	-35.77	63.63	156.22	247.91	335.93	418.73	500.59	577.78	654.69	729.77	808.23
SG38-45	-52.24	-9.65	35.81	71.84	106.55	152.92	180.02	215.28	250.05	280.76	316.62
SG38-L	21.38	11.73	6.70	-9.24	-18.97	-26.80	-43.06	-49.81	-57.96	-66.22	-75.99
SG39-T	-5.22	116.26	221.52	319.81	411.89	496.00	578.40	653.52	726.56	796.23	869.19
SG39-45	8.94	79.78	148.42	202.49	248.64	304.75	341.19	384.75	425.18	462.04	504.47
SG39-L	26.06	31.72	40.59	42.26	46.15	52.75	44.54	49.04	51.17	56.37	52.52
SG40-T	17.43	60.90	95.58	128.13	165.01	203.32	250.10	291.19	337.54	378.70	431.26
SG40-45	-0.37	9.13	20.82	21.19	23.20	42.19	49.68	65.03	82.56	94.27	119.84
SG40-L	22.73	-7.59	-32.98	-67.34	-91.64	-109.34	-132.36	-147.71	-159.75	-174.22	-185.52

TABLE E-41. CVP4, AIR 2, LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.03	0.88	1.79	2.67	3.55	4.40	5.29	6.16	7.06	7.92	8.82
Frame-1	30.60	182.69	375.10	557.01	725.80	894.64	1092.60	1277.42	1446.76	1639.56	1831.36
Frame-2	0.94	178.80	374.36	561.17	740.08	901.67	1114.94	1285.54	1442.41	1664.42	1829.84
Frame-3	82.80	172.38	348.08	552.95	729.44	911.17	1090.68	1269.27	1453.11	1648.18	1816.45
Frame-4	-50.18	188.80	362.59	603.60	722.99	901.08	1099.37	1274.31	1449.38	1642.59	1826.15
Frame-5	-55.80	188.68	361.01	586.80	768.52	876.13	1090.24	1291.32	1449.40	1653.23	1823.26
Frame-6	61.86	184.49	361.78	556.11	729.15	900.63	1097.01	1272.13	1440.51	1643.86	1830.81
Frame-7	10.72	196.08	481.66	565.76	776.07	981.64	1076.22	1244.20	1451.56	1668.05	1838.85
Frame-8	6.44	203.65	371.90	584.97	774.40	1043.46	1125.84	1264.36	1449.13	1629.24	1870.43
Frame-9	-5.16	210.78	414.82	550.81	716.92	935.75	1078.88	1264.92	1450.79	1645.77	1867.89
Frame-10	7.42	178.87	345.47	563.78	753.28	982.81	1080.74	1262.36	1485.08	1701.42	1832.49
Frame-11	-29.63	191.95	352.92	561.43	712.86	913.86	1086.94	1267.87	1450.18	1648.36	1815.05
Frame-12	-23.01	255.41	356.00	555.21	708.18	958.42	1079.96	1256.15	1439.05	1648.36	1842.98
Hoop-1	26.36	815.34	1552.98	2334.92	3109.03	3852.11	4649.43	5402.64	6182.50	6951.33	7743.29
Hoop-2	-110.87	881.20	1551.77	2332.73	3082.49	3839.72	4637.59	5412.01	6216.23	6955.38	7729.91
Hoop-3	0.60	783.31	1550.39	2345.70	3101.94	3849.63	4647.29	5371.33	6175.19	6977.29	7761.06
Hoop-4	28.04	798.72	1526.96	2316.48	3107.40	3829.99	4638.74	5410.43	6175.64	6963.08	7734.93
Hoop-5	6.05	787.92	1568.11	2335.70	3117.41	3853.78	4669.41	5399.43	6186.84	6976.06	7746.29
Hoop-6	18.06	776.47	1562.77	2330.73	3088.98	3830.81	4632.76	5386.61	6187.64	6981.27	7729.73
Hoop-7	45.73	747.75	1568.76	2353.36	3091.78	3828.61	4694.31	5393.68	6170.73	6947.78	7735.03
Hoop-8	-10.41	856.54	1554.50	2355.33	3127.08	3891.24	4632.90	5381.76	6153.73	6940.56	7778.20
Hoop-9	-31.07	798.39	1557.06	2339.32	3105.56	3886.09	4635.30	5395.24	6194.38	6933.78	7748.80
Hoop-10	8.92	764.19	1535.73	2347.01	3066.45	3868.78	4656.19	5400.08	6217.32	6969.68	7750.32
Hoop-11	22.70	731.12	1544.70	2334.30	3113.14	3865.91	4634.83	5394.37	6188.20	6967.42	7744.18
Hoop-12	-1.43	715.60	1553.06	2338.63	3072.64	3925.01	4628.67	5413.71	6185.00	6971.28	7734.70
Hoop-13	-6.86	757.49	1536.68	2352.97	3095.37	3889.48	4623.75	5402.40	6167.29	6947.18	7741.29
Hoop-14	-170.22	1058.34	1539.39	2316.48	3101.28	3878.45	4625.54	5409.49	6194.52	6972.31	7734.67
Long-1	2.41	1209.99	2433.20	3672.49	4918.77	6110.61	7361.79	8591.61	9795.47	11046.3	12246.4
Long-2	73.03	1256.26	2425.92	3709.47	4902.81	6105.63	7326.21	8559.34	9788.05	11028.1	12246.6
Long-3	297.13	1189.29	2452.24	3666.72	4904.21	6132.77	7338.56	8571.52	9787.84	11048.4	12247.4
Long-4	-22.38	1191.84	2442.06	3674.74	4880.82	6115.31	7362.27	8597.51	9809.21	11041.5	12266.2
Long-5	698.72	1291.74	2117.45	3673.81	4895.47	6208.64	7328.76	8580.19	9810.06	11036.5	12236.7
Long-6	68.82	1453.45	2455.14	3683.42	4923.62	6171.96	7352.72	8556.82	9802.73	11033.0	12258.0
Long-7	134.03	1240.81	2435.46	3637.68	4905.00	6157.71	7339.62	8545.56	9795.90	11041.6	12289.4
Long-8	16.24	1254.57	2441.93	3686.99	4905.67	6136.42	7357.73	8605.38	9803.80	11026.1	12193.2
SG1	29.35	-18.59	-69.10	-20.61	31.01	84.65	90.92	95.73	139.76	177.03	170.56
SG2	-0.19	-44.77	-134.98	-97.13	-60.26	-1.43	-10.51	-20.94	14.05	46.14	28.85
SG3	-244.81	-119.54	-78.99	120.01	283.05	493.98	613.04	732.79	876.17	998.19	1065.83
SG4	-99.48	-54.19	-25.34	87.19	177.24	299.48	347.82	391.76	468.34	533.41	550.31
SG5	15.43	-12.34	-75.01	66.82	149.77	287.60	283.32	272.88	196.55	325.81	384.76
SG6	-18.70	11.94	32.08	61.89	89.18	120.86	147.21	172.49	203.58	231.82	258.70
SG7	########	########	########	########	########	########	########	########	########	########	########
SG8	-102.63	-107.07	-181.42	-155.65	-129.89	-70.95	-71.69	-70.97	-35.61	-3.95	-1.74
SG9	-37.83	-6.95	9.62	42.07	72.26	109.63	137.60	165.37	201.91	233.98	265.07
SG10	-38.57	13.28	36.95	69.56	99.47	130.45	159.42	189.90	217.88	251.51	277.32
SG11	23.90	66.06	102.93	140.31	177.54	215.72	252.64	291.29	325.90	362.90	399.78

TABLE E-41. CVP4, AIR 2, LOAD CONDITION 1b (Continued)

SG12	35.90	106.93	173.80	244.98	318.55	387.31	454.93	526.26	595.80	666.09	734.94
SG13	63.90	172.66	261.13	372.49	486.24	593.66	691.69	792.83	896.69	1000.80	1095.05
SG14	359.89	499.94	619.51	770.61	1047.39	887.94	791.96	862.45	874.81	955.68	1041.70
SG15	42.35	95.46	144.29	187.51	230.39	271.49	315.59	359.85	399.18	440.92	484.37
SG16	44.50	116.67	181.15	249.10	320.87	387.70	451.59	517.62	581.35	646.11	709.11
SG17	-38.59	33.83	108.55	190.71	273.45	358.68	438.86	522.17	605.40	691.59	774.64
SG18	33.16	67.33	109.98	146.76	186.00	224.07	265.82	309.42	350.60	396.83	442.44
SG19	-48.53	17.89	74.69	127.60	182.57	235.07	287.05	341.88	390.98	445.46	499.24
SG20	0.62	93.81	173.09	254.25	337.65	419.29	495.81	575.04	651.57	730.82	807.45
SG21	-36.75	50.96	95.35	129.43	160.77	192.97	224.29	256.76	285.42	318.82	351.95
SG22	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG23	19.37	95.78	154.26	214.24	274.97	330.64	391.35	451.41	508.10	566.70	625.87
SG24	34.63	133.36	216.72	301.96	392.96	477.55	558.35	640.02	722.47	806.19	886.91
SG25	30.55	134.71	233.32	332.37	437.71	538.28	635.43	734.94	828.34	925.29	1018.27
SG26	-135.46	-40.65	47.48	151.68	261.26	368.16	464.03	560.76	660.70	760.23	853.25
SG27	27.95	95.67	159.62	225.75	295.56	360.66	421.70	483.72	543.46	604.94	664.77
SG28	104.38	161.41	206.52	245.75	293.15	333.79	378.93	424.16	463.99	509.23	555.06
SG29	-6.51	38.56	77.76	120.98	166.99	212.39	256.16	300.73	345.52	390.29	434.20
SG30	-160.54	-120.86	-87.59	-56.51	-21.69	8.32	45.17	80.13	110.44	145.42	180.31
SG31	-84.36	-42.83	-25.05	-4.47	17.68	40.71	68.67	96.24	119.83	148.28	176.88
SG32-T	-4.63	85.77	166.90	231.18	284.16	331.66	384.60	430.94	477.25	517.48	562.20
SG32-45	27.30	140.40	235.85	329.29	416.92	485.69	561.06	633.25	704.00	772.32	836.88
SG32-L	21.58	134.77	219.76	312.92	407.33	493.37	572.06	653.57	732.57	813.08	890.90
SG33-T	-8.07	54.49	112.47	155.97	187.71	216.54	255.76	289.02	321.81	348.89	382.43
SG33-45	19.32	89.20	134.57	168.85	192.94	206.83	228.57	246.41	264.96	281.41	295.60
SG33-T	16.10	121.35	212.56	307.88	405.24	494.85	576.34	658.72	739.27	821.11	899.36
SG34-T	-28.70	9.22	57.61	107.11	153.09	197.17	245.78	290.41	339.02	382.17	429.82
SG34-45	52.07	101.26	168.05	226.32	284.25	344.69	400.17	454.44	511.27	562.59	617.64
SG34-L	31.42	113.92	188.56	267.32	348.35	428.70	504.66	583.90	659.49	738.56	814.63
SG35-T	14.21	76.46	131.18	172.51	211.50	249.06	295.69	339.60	382.46	422.70	469.71
SG35-45	19.05	83.61	155.89	210.39	264.59	322.06	377.06	430.53	483.68	533.91	589.75
SG35-L	37.88	123.93	201.11	279.96	361.12	441.05	516.58	594.65	669.24	747.14	822.41
SG36-T	-0.87	62.38	116.81	158.72	190.69	218.59	251.56	280.39	308.39	330.71	359.31
SG36-45	-8.98	57.39	110.78	146.91	174.83	206.23	231.54	253.32	278.08	296.34	319.43
SG36-L	47.49	146.82	253.17	361.79	470.08	570.58	663.17	756.65	848.26	939.90	1026.81
SG37-L	61.90	148.71	217.98	287.98	365.76	440.16	515.61	594.84	668.81	746.96	823.39
SG37-45	-7.23	31.57	52.31	51.35	49.20	54.24	61.26	66.78	71.85	75.04	85.54
SG37-T	28.02	51.74	76.62	84.78	90.75	98.20	117.36	135.58	148.74	164.40	185.84
SG38-T	-32.97	33.44	98.86	160.66	214.15	264.68	318.00	367.49	418.23	463.55	512.49
SG38-45	-55.30	32.24	103.55	173.14	244.71	317.97	388.20	456.72	528.16	595.02	666.18
SG38-L	21.84	115.28	194.22	274.87	361.85	441.99	519.75	598.55	678.49	758.01	834.57
SG39-T	-3.78	86.78	167.62	232.94	288.38	336.01	389.79	438.12	484.64	526.43	572.80
SG39-45	14.80	119.87	210.34	289.17	367.48	443.45	515.16	583.09	654.15	717.50	786.95
SG39-L	32.47	125.29	203.86	287.05	371.57	455.19	530.57	607.56	684.84	762.09	836.88
SG40-T	17.43	45.56	73.32	93.76	116.96	137.05	170.27	201.52	229.28	258.44	291.92
SG40-45	2.55	48.96	95.00	134.62	184.51	236.75	290.80	343.81	398.80	450.59	509.14
SG40-L	26.57	77.54	127.79	183.11	247.61	313.19	379.10	447.47	513.41	582.53	650.79

TABLE E-42. CVP4, AIR 2, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.03	0.88	1.79	2.67	3.55	4.40	5.29	6.16	7.06	7.92	8.82
Frame-1	30.60	182.69	375.10	557.01	725.80	894.64	1092.60	1277.42	1446.76	1639.56	1831.36
Frame-2	0.94	178.80	374.36	561.17	740.08	901.67	1114.94	1285.54	1442.41	1664.42	1829.84
Frame-3	82.80	172.38	348.08	552.95	729.44	911.17	1090.68	1269.27	1453.11	1648.18	1816.45
Frame-4	-50.18	188.80	362.59	603.60	722.99	901.08	1099.37	1274.31	1449.38	1642.59	1826.15
Frame-5	-55.80	188.68	361.01	586.80	768.52	876.13	1090.24	1291.32	1449.40	1653.23	1823.26
Frame-6	61.86	184.49	361.78	556.11	729.15	900.63	1097.01	1272.13	1440.51	1643.86	1830.81
Frame-7	10.72	196.08	481.66	565.76	776.07	981.64	1076.22	1244.20	1451.56	1668.05	1838.85
Frame-8	6.44	203.65	371.90	584.97	774.40	1043.46	1125.84	1264.36	1449.13	1629.24	1870.43
Frame-9	-5.16	210.78	414.82	550.81	716.92	935.75	1078.88	1264.92	1450.79	1645.77	1867.89
Frame-10	7.42	178.87	345.47	563.78	753.28	982.81	1080.74	1262.36	1485.08	1701.42	1832.49
Frame-11	-29.63	191.95	352.92	561.43	712.86	913.86	1086.94	1267.87	1450.18	1648.36	1815.05
Frame-12	-23.01	255.41	356.00	555.21	708.18	958.42	1079.96	1256.15	1439.05	1648.36	1842.98
Hoop-1	26.36	815.34	1552.98	2334.92	3109.03	3852.11	4649.43	5402.64	6182.50	6951.33	7743.29
Hoop-2	-110.87	881.20	1551.77	2332.73	3082.49	3839.72	4637.59	5412.01	6216.23	6955.38	7729.91
Hoop-3	0.60	783.31	1550.39	2345.70	3101.94	3849.63	4647.29	5371.33	6175.19	6977.29	7761.06
Hoop-4	28.04	798.72	1526.96	2316.48	3107.40	3829.99	4638.74	5410.43	6175.64	6963.08	7734.93
Hoop-5	6.05	787.92	1568.11	2335.70	3117.41	3853.78	4669.41	5399.43	6186.84	6976.06	7746.29
Hoop-6	18.06	776.47	1562.77	2330.73	3088.98	3830.81	4632.76	5386.61	6187.64	6981.27	7729.73
Hoop-7	45.73	747.75	1568.76	2353.36	3091.78	3828.61	4694.31	5393.68	6170.73	6947.78	7735.03
Hoop-8	-10.41	856.54	1554.50	2355.33	3127.08	3891.24	4632.90	5381.76	6153.73	6940.56	7778.20
Hoop-9	-31.07	798.39	1557.06	2339.32	3105.56	3886.09	4635.30	5395.24	6194.38	6933.78	7748.80
Hoop-10	8.92	764.19	1535.73	2347.01	3066.45	3868.78	4656.19	5400.08	6217.32	6969.68	7750.32
Hoop-11	22.70	731.12	1544.70	2334.30	3113.14	3865.91	4634.83	5394.37	6188.20	6967.42	7744.18
Hoop-12	-1.43	715.60	1553.06	2338.63	3072.64	3925.01	4628.67	5413.71	6185.00	6971.28	7734.70
Hoop-13	-6.86	757.49	1536.68	2352.97	3095.37	3889.48	4623.75	5402.40	6167.29	6947.18	7741.29
Hoop-14	-170.22	1058.34	1539.39	2316.48	3101.28	3878.45	4625.54	5409.49	6194.52	6972.31	7734.67
Long-1	2.41	1209.99	2433.20	3672.49	4918.77	6110.61	7361.79	8591.61	9795.47	11046.3	12246.4
Long-2	73.03	1256.26	2425.92	3709.47	4902.81	6105.63	7326.21	8559.34	9788.05	11028.1	12246.6
Long-3	297.13	1189.29	2452.24	3666.72	4904.21	6132.77	7338.56	8571.52	9787.84	11048.4	12247.4
Long-4	-22.38	1191.84	2442.06	3674.74	4880.82	6115.31	7362.27	8597.51	9809.21	11041.5	12266.2
Long-5	698.72	1291.74	2117.45	3673.81	4895.47	6208.64	7328.76	8580.19	9810.06	11036.5	12236.7
Long-6	68.82	1453.45	2455.14	3683.42	4923.62	6171.96	7352.72	8556.82	9802.73	11033.0	12258.0
Long-7	134.03	1240.81	2435.46	3637.68	4905.00	6157.71	7339.62	8545.56	9795.90	11041.6	12289.4
Long-8	16.24	1254.57	2441.93	3686.99	4905.67	6136.42	7357.73	8605.38	9803.80	11026.1	12193.2
SG1	29.35	-18.59	-69.10	-20.61	31.01	84.65	90.92	95.73	139.76	177.03	170.56
SG2	-0.19	-44.77	-134.98	-97.13	-60.26	-1.43	-10.51	-20.94	14.05	46.14	28.85
SG3	-244.81	-119.54	-78.99	120.01	283.05	493.98	613.04	732.79	876.17	998.19	1065.83
SG4	-99.48	-54.19	-25.34	87.19	177.24	299.48	347.82	391.76	468.34	533.41	550.31
SG5	15.43	-12.34	-75.01	66.82	149.77	287.60	283.32	272.88	196.55	325.81	384.76
SG6	-18.70	11.94	32.08	61.89	89.18	120.86	147.21	172.49	203.58	231.82	258.70
SG7	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG8	-102.63	-107.07	-181.42	-155.65	-129.89	-70.95	-71.69	-70.97	-35.61	-3.95	-1.74
SG9	-37.83	-6.95	9.62	42.07	72.26	109.63	137.60	165.37	201.91	233.98	265.07
SG10	-38.57	13.28	36.95	69.56	99.47	130.45	159.42	189.90	217.88	251.51	277.32
SG11	23.90	66.06	102.93	140.31	177.54	215.72	252.64	291.29	325.90	362.90	399.78

TABLE E-42. CVP4, AIR 2, LOAD CONDITION 1c (Continued)

SG12	35.90	106.93	173.80	244.98	318.55	387.31	454.93	526.26	595.80	666.09	734.94
SG13	63.90	172.66	261.13	372.49	486.24	593.66	691.69	792.83	896.69	1000.80	1095.05
SG14	359.89	499.94	619.51	770.61	1047.39	887.94	791.96	862.45	874.81	955.68	1041.70
SG15	42.35	95.46	144.29	187.51	230.39	271.49	315.59	359.85	399.18	440.92	484.37
SG16	44.50	116.67	181.15	249.10	320.87	387.70	451.59	517.62	581.35	646.11	709.11
SG17	-38.59	33.83	108.55	190.71	273.45	358.68	438.86	522.17	605.40	691.59	774.64
SG18	33.16	67.33	109.98	146.76	186.00	224.07	265.82	309.42	350.60	396.83	442.44
SG19	-48.53	17.89	74.69	127.60	182.57	235.07	287.05	341.88	390.98	445.46	499.24
SG20	0.62	93.81	173.09	254.25	337.65	419.29	495.81	575.04	651.57	730.82	807.45
SG21	-36.75	50.96	95.35	129.43	160.77	192.97	224.29	256.76	285.42	318.82	351.95
SG22	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG23	19.37	95.78	154.26	214.24	274.97	330.64	391.35	451.41	508.10	566.70	625.87
SG24	34.63	133.36	216.72	301.96	392.96	477.55	558.35	640.02	722.47	806.19	886.91
SG25	30.55	134.71	233.32	332.37	437.71	538.28	635.43	734.94	828.34	925.29	1018.27
SG26	-135.46	-40.65	47.48	151.68	261.26	368.16	464.03	560.76	660.70	760.23	853.25
SG27	27.95	95.67	159.62	225.75	295.56	360.66	421.70	483.72	543.46	604.94	664.77
SG28	104.38	161.41	206.52	245.75	293.15	333.79	378.93	424.16	463.99	509.23	555.06
SG29	-6.51	38.56	77.76	120.98	166.99	212.39	256.16	300.73	345.52	390.29	434.20
SG30	-160.54	-120.86	-87.59	-56.51	-21.69	8.32	45.17	80.13	110.44	145.42	180.31
SG31	-84.36	-42.83	-25.05	-4.47	17.68	40.71	68.67	96.24	119.83	148.28	176.88
SG32-T	-4.63	85.77	166.90	231.18	284.16	331.66	384.60	430.94	477.25	517.48	562.20
SG32-45	27.30	140.40	235.85	329.29	416.92	485.69	561.06	633.25	704.00	772.32	836.88
SG32-L	21.58	134.77	219.76	312.92	407.33	493.37	572.06	653.57	732.57	813.08	890.90
SG33-T	-8.07	54.49	112.47	155.97	187.71	216.54	255.76	289.02	321.81	348.89	382.43
SG33-45	19.32	89.20	134.57	168.85	192.94	206.83	228.57	246.41	264.96	281.41	295.60
SG33-T	16.10	121.35	212.56	307.88	405.24	494.85	576.34	658.72	739.27	821.11	899.36
SG34-T	-28.70	9.22	57.61	107.11	153.09	197.17	245.78	290.41	339.02	382.17	429.82
SG34-45	52.07	101.26	168.05	226.32	284.25	344.69	400.17	454.44	511.27	562.59	617.64
SG34-L	31.42	113.92	188.56	267.32	348.35	428.70	504.66	583.90	659.49	738.56	814.63
SG35-T	14.21	76.46	131.18	172.51	211.50	249.06	295.69	339.60	382.46	422.70	469.71
SG35-45	19.05	83.61	155.89	210.39	264.59	322.06	377.06	430.53	483.68	533.91	589.75
SG35-L	37.88	123.93	201.11	279.96	361.12	441.05	516.58	594.65	669.24	747.14	822.41
SG36-T	-0.87	62.38	116.81	158.72	190.69	218.59	251.56	280.39	308.39	330.71	359.31
SG36-45	-8.98	57.39	110.78	146.91	174.83	206.23	231.54	253.32	278.08	296.34	319.43
SG36-L	47.49	146.82	253.17	361.79	470.08	570.58	663.17	756.65	848.26	939.90	1026.81
SG37-L	61.90	148.71	217.98	287.98	365.76	440.16	515.61	594.84	668.81	746.96	823.39
SG37-45	-7.23	31.57	52.31	51.35	49.20	54.24	61.26	66.78	71.85	75.04	85.54
SG37-T	28.02	51.74	76.62	84.78	90.75	98.20	117.36	135.58	148.74	164.40	185.84
SG38-T	-32.97	33.44	98.86	160.66	214.15	264.68	318.00	367.49	418.23	463.55	512.49
SG38-45	-55.30	32.24	103.55	173.14	244.71	317.97	388.20	456.72	528.16	595.02	666.18
SG38-L	21.84	115.28	194.22	274.87	361.85	441.99	519.75	598.55	678.49	758.01	834.57
SG39-T	-3.78	86.78	167.62	232.94	288.38	336.01	389.79	438.12	484.64	526.43	572.80
SG39-45	14.80	119.87	210.34	289.17	367.48	443.45	515.16	583.09	654.15	717.50	786.95
SG39-L	32.47	125.29	203.86	287.05	371.57	455.19	530.57	607.56	684.84	762.09	836.88
SG40-T	17.43	45.56	73.32	93.76	116.96	137.05	170.27	201.52	229.28	258.44	291.92
SG40-45	2.55	48.96	95.00	134.62	184.51	236.75	290.80	343.81	398.80	450.59	509.14
SG40-L	26.57	77.54	127.79	183.11	247.61	313.19	379.10	447.47	513.41	582.53	650.79

TABLE E-43. CVP4, WATER 1, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.09	0.92	1.72	2.64	3.57	4.41	5.24	6.13	7.06	7.90	8.79
Frame-1	-241.93	176.22	347.09	559.63	725.83	919.45	1093.92	1276.21	1453.15	1631.14	1817.46
Frame-2	-299.13	203.60	381.14	549.89	727.94	922.98	1100.63	1253.06	1448.79	1633.42	1835.06
Frame-3	-112.15	191.65	416.70	559.05	724.28	913.33	1088.66	1252.71	1459.43	1646.78	1801.08
Frame-4	-206.42	178.88	324.60	544.19	722.99	899.81	1095.58	1269.72	1454.00	1629.11	1824.48
Frame-5	-167.32	175.30	438.56	561.84	725.39	916.27	1093.33	1266.01	1459.19	1627.66	1818.13
Frame-6	-219.23	171.23	287.18	552.02	717.21	912.94	1073.02	1264.29	1460.36	1623.84	1827.54
Frame-7	-167.70	187.61	385.03	551.14	739.83	885.45	1082.59	1268.44	1464.97	1609.87	1833.79
Frame-8	-326.80	164.19	394.12	561.76	717.53	869.86	1099.51	1252.44	1438.43	1636.52	1820.61
Frame-9	-217.40	195.31	383.09	558.61	729.11	941.28	1078.26	1270.21	1459.11	1651.36	1829.54
Frame-10	-34.90	177.29	388.35	575.00	713.61	915.94	1088.83	1262.49	1465.77	1639.83	1818.82
Frame-11	-214.86	169.97	378.35	562.40	711.04	902.26	1096.73	1268.09	1454.91	1655.59	1832.17
Frame-12	-110.53	148.35	355.78	533.59	715.05	887.80	1077.68	1289.11	1445.59	1636.63	1799.82
Hoop-1	-39.85	826.29	1526.92	2342.27	3099.21	3925.29	4634.72	5434.66	6180.04	6956.15	7739.62
Hoop-2	-71.11	796.19	1529.78	2311.04	3098.14	3850.18	4632.17	5414.54	6219.22	6949.27	7722.68
Hoop-3	-27.48	821.84	1541.31	2319.37	3097.81	3861.53	4643.78	5482.57	6200.90	6939.74	7734.74
Hoop-4	322.57	804.20	1554.44	2318.34	3169.76	3849.99	4623.92	5426.02	6187.99	6954.97	7736.78
Hoop-5	-54.08	787.84	1604.24	2315.65	3100.38	3893.49	4605.63	5631.61	6257.29	6957.14	7722.60
Hoop-6	-65.17	785.64	1582.80	2347.39	3101.31	3845.22	4612.41	5492.81	6181.47	6954.67	7737.12
Hoop-7	1.86	866.50	1656.19	2302.16	3111.27	3974.48	4674.20	5434.64	6223.13	6976.34	7735.03
Hoop-8	-47.14	738.98	1532.46	2355.33	3104.72	4067.18	4809.71	5396.99	6234.55	6961.90	7741.46
Hoop-9	-38.32	743.94	1616.95	2335.69	3105.25	3912.93	4643.02	5397.60	6187.12	6951.24	7732.46
Hoop-10	3.50	766.00	1606.19	2321.71	3091.44	3893.69	4656.65	5415.07	6166.73	6947.30	7728.64
Hoop-11	15.32	1094.56	1555.77	2317.70	3151.57	3861.84	4633.45	5402.29	6171.59	6957.50	7723.89
Hoop-12	-32.92	786.01	1536.38	2323.81	3101.98	3880.15	4643.96	5436.48	6170.18	6948.35	7764.35
Hoop-13	-21.70	816.85	1603.46	2308.45	3102.48	3889.09	4705.85	5477.15	6196.98	6946.48	7726.45
Hoop-14	-79.44	779.05	1541.34	2333.23	3088.11	3894.80	4664.96	5337.97	6055.85	6551.71	7188.90
Long-1	-45.64	12.02	-7.20	8.42	-2.39	-3.60	3.61	22.84	78.10	120.15	169.40
Long-2	-42.81	151.90	24.96	-42.82	-24.33	-40.36	16.34	55.77	128.49	182.71	234.45
Long-3	-21.02	-16.13	13.24	18.13	1.00	8.34	51.17	95.22	161.30	209.02	256.72
Long-4	318.30	-6.79	-15.18	70.00	95.20	-3.19	0.41	-12.78	41.20	80.79	132.37
Long-5	402.24	394.93	328.78	263.88	227.13	179.35	201.38	212.41	235.68	243.03	247.91
Long-6	-4.11	53.02	27.49	38.44	27.49	4.40	3.18	25.06	65.17	74.90	85.83
Long-7	60.41	126.91	105.54	110.30	111.49	112.67	112.66	120.97	144.72	155.41	156.58
Long-8	56.02	58.51	48.56	52.30	48.57	47.32	47.32	53.54	52.29	54.78	53.53
SG1	296.32	176.86	161.54	208.15	254.46	345.69	430.49	521.56	546.14	590.02	670.59
SG2	353.70	193.49	186.09	234.35	289.53	405.48	513.89	616.21	636.93	682.10	782.04
SG3	16.45	-16.23	-60.16	59.63	136.26	264.16	392.64	513.54	578.02	606.08	694.32
SG4	178.01	60.65	60.60	117.67	183.54	288.98	401.26	504.83	547.55	583.59	677.63
SG5	278.93	128.50	136.63	179.52	234.86	348.43	457.69	550.98	571.48	613.16	709.87
SG6	-13.58	24.66	62.44	104.63	149.25	193.83	239.54	284.13	326.55	367.10	397.33
SG7	167.44	29.28	29.23	49.34	85.67	191.17	284.07	359.20	367.15	411.72	897.15
SG8	145.49	43.09	60.62	92.50	140.15	226.70	315.24	383.07	406.45	439.81	506.36
SG9	-28.55	5.00	44.74	87.28	134.66	182.73	232.21	279.05	323.57	365.11	407.30
SG10	-35.02	-37.88	-51.67	-62.78	-74.97	-81.61	-87.14	-101.63	-116.03	-135.91	-150.26
SG11	20.53	19.52	15.68	5.16	-4.72	-10.81	-17.00	-28.77	-34.95	-43.03	-50.92

TABLE E-43. CVP4, WATER 1, LOAD CONDITION 1a (Continued)

SG12	37.75	38.58	33.92	29.76	23.13	22.71	20.45	13.16	12.38	6.93	0.24
SG13	56.76	55.94	55.42	56.20	55.24	62.24	71.31	70.85	74.54	73.53	78.23
SG14	25.66	30.13	20.03	68.54	497.53	483.20	366.67	512.04	15.98	60.59	272.47
SG15	28.07	44.29	46.04	43.77	41.52	37.51	34.19	27.28	27.74	25.49	20.65
SG16	31.83	32.75	27.22	21.87	14.04	10.73	5.93	-4.06	-7.56	-15.58	-25.72
SG17	-83.21	-78.44	-83.12	-89.86	-98.70	-98.64	-100.07	-104.16	-105.45	-110.19	-114.78
SG18	2908.85	2688.62	2077.78	1749.89	1613.79	1178.91	859.32	786.86	648.28	630.07	602.30
SG19	40.27	16.59	-8.02	-43.35	-81.47	-113.09	-145.65	-185.75	-216.07	-247.80	-286.79
SG20	-23.78	-15.46	-15.83	-16.94	-20.45	-17.13	-15.65	-19.53	-15.83	-18.42	-22.12
SG21	-52.59	-49.65	-58.49	-71.00	-88.89	-99.19	-113.56	-136.22	-146.74	-164.05	-176.95
SG22	548.97	722.87	419.54	246.26	235.61	253.35	206.34	189.59	275.37	271.10	224.36
SG23	-32.90	-53.58	-79.13	-110.02	-144.68	-177.84	-211.83	-249.84	-277.50	-310.35	-343.24
SG24	18.94	18.58	12.86	10.64	5.85	6.58	5.48	-2.64	-2.09	-7.62	-8.91
SG25	4.82	5.06	0.34	-11.13	-29.23	-39.86	-53.60	-74.19	-82.29	-97.60	-110.33
SG26	-113.66	-127.53	-132.23	-134.47	-137.08	-132.77	-127.83	-130.09	-127.84	-129.32	-139.39
SG27	10.25	10.62	7.34	2.86	-4.77	-8.37	-13.32	-22.61	-24.83	-31.62	-35.64
SG28	44.43	56.28	60.72	60.71	57.76	54.05	51.83	50.35	51.84	52.58	43.69
SG29	-13.21	-15.43	-17.69	-22.35	-29.79	-34.49	-40.27	-48.99	-53.15	-59.99	-66.64
SG30	-151.68	-150.03	-148.91	-154.19	-159.57	-164.22	-169.11	-170.68	-173.80	-176.89	-182.61
SG31	-74.80	-82.61	-81.08	-95.92	-116.61	-128.37	-141.66	-158.92	-181.78	-197.42	-217.36
SG32-T	-58.51	89.38	190.86	292.80	391.51	471.17	549.01	629.82	710.14	784.08	858.58
SG32-45	-17.80	80.99	134.62	194.48	250.53	294.76	341.28	385.49	431.08	467.63	506.87
SG32-L	9.02	35.54	44.04	54.87	59.02	69.94	78.13	79.94	84.55	82.32	77.90
SG33-T	-45.48	83.18	187.17	292.71	395.23	476.60	556.84	641.33	723.83	799.75	868.64
SG33-45	11.84	82.09	136.94	196.31	251.96	297.96	344.18	389.33	429.88	465.37	486.36
SG33-T	41.59	34.85	43.17	52.65	55.97	65.82	71.64	69.73	69.88	64.29	66.67
SG34-T	-23.21	46.68	114.28	192.08	272.33	342.78	414.00	489.83	567.53	639.79	703.20
SG34-45	50.02	74.34	97.35	135.18	170.28	205.33	233.72	263.97	302.78	336.00	382.76
SG34-L	10.47	6.19	-3.21	-13.26	-27.60	-34.58	-43.28	-57.29	-63.16	-74.15	-59.72
SG35-T	-33.87	80.45	151.29	225.53	300.75	364.99	430.15	500.80	577.47	648.78	718.69
SG35-45	3.72	50.79	75.69	112.05	144.37	176.04	201.63	229.32	268.10	301.13	356.38
SG35-L	14.19	12.75	4.96	-4.22	-18.21	-24.74	-33.50	-47.72	-53.88	-64.84	-50.76
SG36-T	-27.88	81.57	170.46	264.67	355.86	431.35	504.97	582.36	659.17	730.19	793.57
SG36-45	-4.57	28.73	70.29	114.38	155.45	192.16	224.52	253.73	291.88	322.20	342.45
SG36-L	44.23	28.49	28.25	30.85	26.76	31.04	32.72	25.59	25.69	19.22	24.11
SG37-T	-35.15	30.04	69.24	109.60	153.36	189.00	227.83	273.11	326.91	375.74	421.30
SG37-45	-26.92	-0.07	19.03	38.85	73.15	87.97	98.26	108.91	149.68	171.12	187.05
SG37-L	327.33	350.89	265.78	112.51	66.30	32.50	-0.94	-37.40	-49.60	-67.86	-83.22
SG38-T	-62.43	56.61	143.63	235.58	325.53	403.24	480.11	561.40	642.84	718.41	796.03
SG38-45	-75.11	-17.00	29.58	72.29	113.03	145.37	178.38	211.05	250.68	282.71	316.88
SG38-L	12.94	8.61	-1.32	-10.03	-21.16	-29.59	-37.51	-53.03	-58.48	-70.18	-78.56
SG39-T	-39.28	105.05	203.12	304.21	399.92	480.32	557.22	636.91	716.72	788.93	860.39
SG39-45	-21.41	67.56	129.05	189.53	245.30	290.40	331.62	368.94	420.39	460.46	496.71
SG39-L	6.70	29.41	38.36	47.17	49.97	55.30	57.62	54.14	56.70	52.99	58.93
SG40-T	-13.43	27.29	62.72	98.71	138.16	173.78	211.93	257.40	306.34	353.28	400.54
SG40-45	-20.28	-16.26	-7.50	0.72	11.69	20.09	29.04	38.18	64.30	82.39	97.36
SG40-L	-2.48	-35.00	-52.72	-77.20	-100.77	-117.94	-135.10	-154.83	-163.79	-175.48	-195.37

TABLE E-44. CVP4, WATER 1, LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.13	0.07	-0.02	0.00	0.00	-0.02	0.00	-0.01	-0.01	0.00	0.00
Frame-1	-35.28	-168.19	-159.99	2.54	-24.37	-118.90	-156.69	94.99	-30.33	-150.86	-90.51
Frame-2	51.51	146.37	-245.08	108.44	69.39	-169.27	170.04	148.67	-183.31	563.36	65.87
Frame-3	0.27	-118.71	128.13	115.11	-14.39	-93.89	69.56	51.90	-195.29	1.50	52.49
Frame-4	-7.12	-16.36	-63.25	-150.44	-27.13	-72.52	107.21	-146.71	315.21	156.07	-92.68
Frame-5	-5.78	-106.48	-8.49	-2.58	51.81	4.66	58.58	-36.81	-76.58	2.24	108.71
Frame-6	63.11	-137.73	64.25	-9.81	128.65	14.36	-54.87	41.44	-86.00	-96.76	-58.18
Frame-7	-147.76	149.78	90.72	-60.14	64.79	-166.42	-95.57	83.11	29.62	-13.85	111.26
Frame-8	87.33	110.99	108.77	118.10	-233.89	-53.53	-36.09	-134.67	83.87	-111.07	48.39
Frame-9	138.24	-64.71	-238.14	55.74	100.26	63.19	-182.53	78.67	-167.40	263.12	150.81
Frame-10	-243.99	163.64	135.60	113.94	51.15	143.73	143.95	-230.15	-183.74	-299.52	28.72
Frame-11	123.85	-206.38	207.99	157.87	-86.58	19.69	-196.74	131.10	109.02	-104.63	119.82
Frame-12	-403.39	75.18	-210.75	-45.71	-148.56	-181.83	122.80	79.09	103.22	102.81	-51.75
Hoop-1	-23.30	68.66	-32.49	13.48	92.57	81.53	77.85	-30.66	7.97	22.68	-6.75
Hoop-2	-6.06	-9.68	30.07	21.04	-9.68	19.24	-16.90	-18.71	6.59	-4.25	22.85
Hoop-3	28.68	-6.42	62.01	0.60	-20.46	-2.91	-2.91	28.68	12.89	-38.01	2.35
Hoop-4	-34.96	-73.87	-7.16	-42.36	2.10	-14.57	-51.63	-29.40	-60.90	39.15	100.29
Hoop-5	162.81	80.79	46.14	66.19	-13.99	-50.44	13.34	-34.04	9.70	-43.15	2.41
Hoop-6	16.22	5.12	-13.38	-55.92	203.06	-57.78	-26.33	-33.73	-65.18	378.77	-52.23
Hoop-7	16.48	202.98	5.51	40.24	299.88	237.69	21.97	87.79	23.80	345.55	25.62
Hoop-8	-10.41	-3.06	-10.41	4.28	11.63	41.02	18.98	11.63	4.28	4.28	4.28
Hoop-9	86.90	57.87	27.01	-5.66	-47.40	50.61	-29.25	-23.81	-14.73	34.28	43.34
Hoop-10	-23.60	-7.34	7.11	-25.41	14.34	-7.34	-12.76	7.11	-12.76	16.15	-25.40
Hoop-11	-14.20	-3.13	-27.11	20.85	-6.82	0.56	26.39	-12.35	-19.73	72.52	19.01
Hoop-12	-49.59	-3.28	59.71	-34.78	-53.30	-3.28	59.72	-55.16	-23.66	7.84	52.29
Hoop-13	-6.86	0.56	-21.70	67.35	22.82	0.56	15.40	37.66	-14.28	15.40	-6.86
Hoop-14	275.76	105.58	68.56	-12.84	-20.24	75.97	-20.24	-35.05	9.36	-35.05	-35.04
Long-1	56.48	1278.61	2471.15	3645.95	4930.29	6023.50	7090.29	8117.43	9395.13	10568.0	11768.2
Long-2	11.41	1195.98	2436.53	3650.19	4816.06	6117.34	7313.89	8419.24	9384.76	10439.9	11793.1
Long-3	-8.79	1240.82	2413.82	3667.82	4933.08	6152.95	7317.76	8565.77	9810.85	10900.1	11934.1
Long-4	140.78	1211.16	2437.97	3672.25	4844.34	6093.11	7391.06	8588.25	9802.99	10987.3	12377.7
Long-5	718.32	1708.44	2402.42	3661.44	4906.01	6134.53	7338.56	8549.93	9823.29	11129.3	12286.9
Long-6	110.15	1232.32	2466.80	3673.58	4942.58	6125.16	7353.93	8582.71	9801.28	10963.5	12340.7
Long-7	105.54	958.28	2431.41	3668.47	4891.45	6146.41	7337.25	8570.83	9750.56	10799.2	12018.7
Long-8	17.48	1178.85	2433.98	3704.26	4857.94	6144.51	7356.49	8614.46	9797.33	11030.8	12357.3
SG1	20.31	71.39	108.79	67.33	60.69	11.46	-16.74	-53.81	-91.60	-90.14	-142.65
SG2	-12.04	35.08	79.82	9.95	-26.09	-88.36	-140.81	-198.29	-262.76	-273.47	-354.41
SG3	-280.23	-149.79	-24.16	26.42	69.98	146.94	178.87	204.95	246.10	258.52	312.34
SG4	-88.04	-14.23	50.08	55.02	70.18	73.58	81.50	91.30	85.99	93.20	99.66
SG5	-57.65	-20.58	26.61	-45.54	-91.54	-142.82	-195.40	-251.36	-315.76	-333.19	-407.64
SG6	-8.88	-20.27	-29.66	-44.92	-61.08	-74.25	-87.57	-101.14	-115.92	-127.24	-141.76
SG7	-90.00	-52.30	-16.02	-73.80	-92.63	-140.35	-199.59	-240.81	-299.35	-282.28	-367.08
SG8	-76.52	-57.02	-15.45	-70.27	-111.27	-137.76	-170.75	-207.95	-252.99	-269.43	-311.45
SG9	-25.55	-35.98	-40.87	-58.60	-77.10	-88.95	-103.21	-118.11	-135.08	-148.31	-162.16
SG10	-41.43	7.93	55.53	89.49	122.33	158.66	187.81	219.24	251.70	289.77	324.19
SG11	22.88	63.55	105.54	152.82	198.92	248.37	292.86	335.97	379.88	419.85	466.99

TABLE E-44. CVP4, WATER 1, LOAD CONDITION 1b (Continued)

SG12	30.87	93.89	168.69	242.95	316.41	387.78	457.89	530.55	603.25	673.88	751.77
SG13	52.61	162.82	274.39	377.00	487.61	591.20	693.65	793.01	893.36	987.92	1093.94
SG14	50.72	152.33	257.72	379.20	499.83	618.60	728.53	840.88	949.46	1051.32	1161.13
SG15	49.67	93.60	135.18	183.60	231.08	282.25	328.09	372.57	419.35	460.74	512.39
SG16	29.48	93.38	163.93	240.03	317.86	395.58	470.94	547.52	623.07	693.52	770.75
SG17	-75.99	18.16	106.55	199.62	292.42	384.41	472.53	562.89	648.40	733.83	824.17
SG18	25.02	82.58	138.51	200.56	263.20	324.81	384.48	446.39	504.65	563.43	624.67
SG19	53.59	146.10	232.27	321.13	411.56	497.71	580.03	664.39	744.62	821.20	904.20
SG20	4.50	94.90	180.08	270.33	358.66	440.68	519.05	600.37	676.47	750.93	827.97
SG21	-12.80	78.40	147.09	211.60	267.40	313.05	353.94	399.74	437.29	473.68	514.06
SG22	37.67	130.79	216.28	290.02	371.02	446.22	520.35	594.07	665.50	734.66	808.72
SG23	-19.06	74.50	168.90	265.54	359.61	453.49	541.68	630.61	716.72	795.68	891.02
SG24	33.70	123.18	219.45	313.95	409.48	500.93	588.73	678.77	763.20	843.07	936.72
SG25	44.51	148.33	248.77	366.98	487.03	601.13	709.00	819.52	925.66	1026.35	1130.40
SG26	-131.57	-26.97	81.27	181.60	288.54	390.47	490.58	590.50	687.44	783.85	883.73
SG27	38.48	105.82	171.74	246.45	323.09	394.12	461.21	530.13	595.33	660.16	728.91
SG28	39.25	77.74	116.94	164.33	210.94	259.76	306.38	354.58	404.13	447.15	498.08
SG29	-4.30	45.90	91.36	143.70	199.09	252.44	304.70	357.63	410.42	462.23	514.54
SG30	-137.67	-104.12	-70.67	-33.14	5.83	43.68	80.02	117.31	155.58	191.22	230.50
SG31	-79.36	-44.16	-13.38	15.00	46.70	81.07	112.40	141.28	178.60	210.54	243.79
SG32-T	16.41	-13.83	-50.28	-72.54	-99.33	-124.49	-146.17	-170.56	-192.98	-214.99	-237.96
SG32-45	41.60	76.29	103.20	142.14	188.19	222.44	261.62	294.35	332.59	369.16	408.15
SG32-L	29.81	111.58	194.23	283.89	375.11	460.26	543.12	627.94	709.88	789.19	876.01
SG33-T	4.03	-54.09	-124.86	-184.65	-247.69	-308.06	-362.64	-419.62	-472.16	-524.39	-576.02
SG33-45	44.03	52.72	35.90	21.78	5.52	-28.48	-55.32	-87.35	-118.97	-143.71	-177.07
SG33-T	28.93	112.58	198.10	292.06	386.18	471.91	556.57	641.97	722.67	802.29	886.52
SG34-T	0.80	-34.33	-72.23	-109.10	-146.72	-183.87	-215.64	-249.26	-283.85	-315.73	-347.51
SG34-45	40.00	65.98	88.98	115.90	138.72	159.67	183.05	209.46	229.29	249.01	273.06
SG34-L	26.58	119.11	208.82	305.49	402.08	492.88	579.63	668.25	753.64	837.22	922.98
SG35-T	29.57	-4.83	-38.47	-56.96	-80.32	-100.37	-121.73	-144.85	-163.18	-184.63	-207.05
SG35-45	25.00	52.14	78.74	116.02	145.37	175.18	202.82	234.48	261.55	285.72	313.69
SG35-L	29.90	123.06	212.17	308.49	404.31	494.89	580.67	668.69	754.05	836.27	921.06
SG36-T	11.33	-27.65	-74.58	-119.44	-169.58	-217.66	-262.83	-310.13	-356.58	-403.32	-448.46
SG36-45	5.32	25.80	49.57	61.61	57.19	53.42	46.23	42.20	30.82	12.80	8.99
SG36-L	42.83	145.67	252.19	369.43	485.26	590.08	690.30	792.43	890.35	986.12	1082.13
SG37-T	23.94	-2.32	-36.93	-58.89	-88.96	-116.49	-145.55	-174.80	-202.19	-231.72	-262.22
SG37-45	-0.43	1.63	5.99	10.77	0.39	-3.23	-11.72	-15.95	-25.77	-45.25	-48.63
SG37-L	51.25	124.83	200.70	301.78	404.39	501.89	594.93	691.63	786.59	877.08	971.20
SG38-T	-5.05	-44.23	-84.42	-117.85	-154.69	-191.66	-224.09	-258.41	-292.21	-320.34	-359.00
SG38-45	-36.43	-21.46	11.78	46.41	69.84	110.13	146.19	182.92	214.10	236.69	281.76
SG38-L	26.22	117.68	212.30	309.81	407.94	502.13	592.03	684.75	771.99	853.98	951.69
SG39-T	25.62	-7.08	-42.95	-66.31	-94.59	-121.23	-144.82	-169.71	-192.96	-218.12	-240.43
SG39-45	26.32	44.31	71.26	106.74	136.05	174.66	210.35	251.09	286.15	310.48	360.07
SG39-L	22.90	106.14	182.33	269.73	360.78	445.63	528.06	613.32	696.26	778.17	862.69
SG40-T	13.41	-7.41	-26.94	-38.64	-53.83	-66.43	-81.22	-96.70	-110.65	-129.40	-146.66
SG40-45	-1.83	17.54	49.68	86.24	119.09	162.38	198.92	241.30	279.35	304.71	354.59
SG40-L	4.83	77.19	147.31	230.12	315.36	397.37	476.10	558.48	639.89	718.75	800.77

TABLE E-45. CVP4, WATER 1, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.03	0.90	1.79	2.64	3.51	4.44	5.27	6.18	7.07	7.92	8.80
Frame-1	-21.10	177.71	372.70	538.94	722.31	880.02	1093.52	1260.61	1450.21	1632.82	1810.33
Frame-2	-28.13	198.15	418.88	548.34	736.60	906.17	1093.27	1286.12	1471.92	1662.90	1805.35
Frame-3	-373.18	196.60	357.73	540.35	741.53	882.94	1088.21	1269.80	1458.23	1636.38	1812.92
Frame-4	-137.62	195.91	327.47	540.92	731.66	910.67	1102.04	1271.42	1454.52	1618.68	1808.79
Frame-5	-346.89	176.81	343.11	546.50	730.61	890.91	1087.73	1269.44	1423.49	1629.30	1816.23
Frame-6	-17.47	186.35	311.92	540.32	724.21	915.08	1079.33	1281.12	1457.46	1633.88	1769.63
Frame-7	-215.96	275.60	347.81	535.86	734.80	893.28	1096.04	1270.28	1526.03	1622.10	1809.80
Frame-8	88.05	195.32	358.64	560.26	755.55	894.89	1168.03	1261.16	1509.78	1614.31	1777.71
Frame-9	30.43	230.30	359.50	550.10	736.10	895.18	1032.61	1265.21	1451.19	1648.08	1815.72
Frame-10	-346.58	201.54	328.76	597.60	687.93	901.37	1088.50	1274.66	1442.43	1664.10	1874.05
Frame-11	-282.75	268.32	375.43	554.16	741.82	904.79	1089.56	1259.60	1430.27	1638.78	1815.38
Frame-12	72.81	169.23	404.94	582.24	770.49	926.80	1103.30	1292.73	1461.93	1648.92	1810.33
Hoop-1	4.29	831.97	1539.95	2323.18	3092.17	3964.30	4638.86	5405.78	6222.37	6943.97	7735.94
Hoop-2	-16.90	787.31	1551.62	2310.34	3085.80	3868.64	4627.21	5404.24	6221.09	6982.49	7711.84
Hoop-3	-39.76	765.84	1562.52	2339.74	3094.61	3965.47	4633.71	5405.90	6201.00	6938.68	7727.72
Hoop-4	254.05	798.80	1547.18	2328.75	3092.27	3876.31	4602.15	5374.69	6223.21	6951.96	7608.95
Hoop-5	191.95	775.24	1544.26	2327.71	3089.76	4016.00	4611.56	5393.42	6244.59	6919.56	7697.08
Hoop-6	-39.28	793.19	1534.87	2311.54	3086.82	3976.95	4631.37	5391.62	6061.21	6946.12	7700.13
Hoop-7	-5.46	822.79	1590.54	2367.28	3118.89	3865.17	4650.90	5435.19	6164.65	6969.72	7740.51
Hoop-8	-3.06	790.33	1488.23	2244.90	3112.38	4030.04	4720.59	5441.07	6191.09	6933.21	7710.53
Hoop-9	46.98	780.16	1587.75	2311.87	3085.60	3934.31	4634.83	5395.78	6193.19	6926.52	7707.32
Hoop-10	8.92	780.38	1526.54	2359.42	3102.59	3858.97	4655.72	5415.07	6174.58	6962.45	7705.41
Hoop-11	6.09	779.01	1526.10	2607.08	3135.28	3859.61	4643.59	5402.29	6207.27	6947.13	7720.50
Hoop-12	-8.84	787.78	1530.67	2308.76	3087.47	3901.99	4635.62	5436.48	6178.21	7008.34	7710.92
Hoop-13	-14.28	787.09	1536.52	2293.37	3139.90	3903.54	4638.13	5410.36	6234.70	7021.39	7724.90
Hoop-14	-35.05	793.77	1533.78	2332.99	3118.03	3864.81	4649.23	5404.58	6137.88	6678.19	7180.06
Long-1	4.81	1244.72	2450.98	3667.68	4928.38	6236.18	7364.93	8584.40	9770.24	10726.6	11922.0
Long-2	-52.67	1229.02	2487.30	3658.95	4929.92	6156.78	7383.63	8580.29	9780.65	10956.3	12021.1
Long-3	10.79	1254.03	2467.90	3737.69	4947.04	6146.84	7355.20	8598.44	9844.13	11002.9	12244.9
Long-4	-13.98	1224.11	2432.22	3668.75	4933.60	6136.32	7351.01	8573.51	9877.59	11017.3	12213.4
Long-5	400.97	1385.93	2430.83	3731.38	4899.15	6165.16	7341.74	8642.66	9813.74	11032.5	12247.7
Long-6	12.90	1188.32	2401.41	3702.87	4977.10	6216.35	7352.24	8623.68	9863.51	11064.4	12256.8
Long-7	125.70	1214.57	2626.38	3689.92	4891.94	6148.82	7311.86	8380.52	9514.48	10793.3	11880.9
Long-8	58.50	1246.99	2610.76	3700.66	4896.97	6094.76	7372.14	8596.68	9806.29	11038.2	12237.9
SG1	311.25	144.40	62.90	144.60	175.70	234.16	231.58	235.27	270.69	268.42	276.77
SG2	361.82	159.17	46.87	128.57	162.83	206.35	196.21	185.74	216.15	189.56	170.42
SG3	83.46	81.98	93.61	330.68	519.95	681.33	773.07	863.69	1014.43	1045.97	1101.01
SG4	185.33	104.74	77.87	221.85	335.53	417.43	455.67	489.73	571.56	563.38	579.67
SG5	287.59	117.98	16.95	89.26	129.47	166.27	172.40	163.27	196.27	187.67	240.89
SG6	-25.06	-4.23	18.39	51.02	82.88	115.69	126.57	152.77	185.93	209.85	239.01
SG7	138.89	12.84	-102.34	-56.50	-21.13	41.52	65.00	88.08	113.53	292.88	169.14
SG8	143.60	42.40	-24.84	30.52	73.26	106.82	123.98	124.79	161.78	140.58	124.23
SG9	-37.92	-18.49	2.60	36.76	72.01	107.41	128.04	157.15	194.15	217.55	245.71
SG10	-25.98	13.19	40.17	77.88	112.54	143.73	175.65	205.03	235.83	256.63	276.79
SG11	22.52	62.49	101.72	138.02	176.10	210.55	248.77	285.19	320.43	353.78	388.75

TABLE E-45. CVP4, WATER 1, LOAD CONDITION 1c (Continued)

SG12	22.80	86.84	160.40	224.52	298.39	367.61	429.52	497.70	561.04	626.10	690.72
SG13	62.01	158.16	263.73	370.59	477.52	587.95	686.16	787.30	883.97	978.31	1075.44
SG14	116.48	282.98	546.19	785.30	791.84	824.63	997.10	824.29	919.00	1007.09	1110.23
SG15	29.59	85.81	135.75	177.21	220.23	260.80	300.85	342.89	381.57	422.03	464.33
SG16	29.75	98.08	172.42	235.17	307.23	374.34	433.67	499.37	560.14	621.24	682.00
SG17	-74.25	43.98	92.55	150.52	234.59	317.41	396.81	479.52	561.41	642.25	721.41
SG18	2470.42	2158.52	1271.78	959.73	639.14	671.01	682.23	731.66	781.79	848.20	870.62
SG19	49.34	115.20	177.54	226.42	282.22	333.49	378.81	431.81	480.61	532.31	581.44
SG20	-13.61	81.77	172.15	250.02	336.26	417.25	491.19	567.46	641.16	713.85	782.95
SG21	-45.59	50.95	111.37	140.87	182.27	216.92	229.45	260.08	292.66	320.60	349.96
SG22	673.58	516.74	406.83	392.40	482.58	577.15	659.74	733.76	806.36	875.11	961.78
SG23	-45.87	7.88	138.38	190.03	252.11	310.95	363.86	424.83	479.41	538.17	596.04
SG24	25.77	118.39	212.64	293.50	383.80	470.36	549.13	633.56	710.80	791.09	869.29
SG25	5.29	122.38	231.68	325.93	432.03	530.88	623.77	726.43	814.44	901.23	988.39
SG26	-100.32	-13.30	67.24	170.17	273.37	377.77	468.28	566.49	661.94	752.13	845.58
SG27	10.81	83.87	156.32	220.13	289.19	354.01	414.50	480.21	536.73	593.92	649.68
SG28	50.36	102.16	159.14	196.18	239.78	281.25	318.25	364.20	406.36	449.93	493.69
SG29	-18.34	32.27	80.01	122.29	168.60	213.87	256.35	304.06	346.32	390.02	433.32
SG30	-458.98	-400.01	4.67	34.14	63.21	97.38	126.84	162.56	195.66	229.04	261.92
SG31	-83.06	-45.27	-25.65	-2.63	22.66	48.32	72.22	99.79	126.82	151.02	170.71
SG32-T	-47.97	59.37	143.38	206.12	261.04	315.87	365.65	417.19	466.20	512.17	557.98
SG32-45	-5.35	111.35	208.67	292.68	379.28	461.46	527.81	604.46	667.74	736.51	802.78
SG32-L	12.65	117.48	210.67	296.16	391.44	481.19	555.92	634.64	708.57	780.32	851.22
SG33-T	-40.31	23.36	81.02	121.42	154.26	195.45	233.50	273.70	308.23	343.46	380.42
SG33-45	12.31	69.58	116.26	148.57	175.46	203.26	224.02	241.81	253.72	269.28	282.57
SG33-T	45.54	114.02	212.21	305.86	403.63	492.43	562.20	639.18	716.53	788.01	857.95
SG34-T	-31.35	-2.55	42.16	89.72	135.88	186.47	228.10	275.61	322.57	369.07	421.49
SG34-45	61.53	109.78	170.82	228.39	282.87	340.60	384.95	437.55	500.98	556.35	616.59
SG34-L	27.88	132.33	216.66	289.32	367.42	444.53	519.74	597.86	674.89	747.16	811.73
SG35-T	-16.23	53.03	109.20	148.23	186.86	232.30	266.70	315.12	361.21	407.40	459.43
SG35-45	33.27	97.53	165.95	218.64	269.25	324.75	368.19	422.86	486.15	541.66	604.17
SG35-L	48.79	144.04	230.70	302.93	380.59	456.90	529.63	607.70	684.29	756.13	822.49
SG36-T	-28.68	33.92	86.95	141.32	175.18	212.96	237.45	271.96	302.25	331.67	361.26
SG36-45	-7.72	54.04	119.17	154.86	184.48	214.03	261.67	283.73	309.11	324.92	351.83
SG36-L	61.46	153.50	266.19	373.19	479.63	575.80	686.46	779.20	864.08	946.23	1025.42
SG37-T	-27.58	4.00	31.37	37.10	47.04	60.15	87.56	109.36	124.80	144.53	159.54
SG37-45	-3.19	25.96	63.74	63.11	69.15	78.43	122.03	129.36	137.93	141.85	149.36
SG37-L	134.09	165.88	230.71	299.66	377.48	449.29	555.32	636.03	701.51	770.20	833.15
SG38-T	-53.21	20.59	82.94	141.82	195.29	252.21	300.00	351.76	403.24	449.31	498.26
SG38-45	-105.79	-15.51	70.53	132.10	239.29	313.83	381.88	447.98	521.76	587.47	654.16
SG38-L	18.07	108.78	202.36	279.84	367.33	448.56	525.80	607.59	681.61	758.00	830.93
SG39-T	-27.00	72.66	156.25	219.94	276.16	334.71	376.44	425.37	474.32	521.63	565.51
SG39-45	-20.30	98.04	201.58	275.03	355.90	434.24	501.87	565.37	639.45	709.31	778.76
SG39-L	0.71	112.87	203.14	286.70	375.73	458.30	538.09	617.03	690.97	761.66	835.43
SG40-T	-4.48	17.61	49.03	68.74	94.50	122.09	141.25	170.84	202.06	235.67	264.16
SG40-45	-20.28	22.65	81.65	117.81	168.43	218.87	265.44	312.39	370.30	429.30	487.58
SG40-L	-2.66	51.78	119.37	173.97	235.92	299.89	364.16	431.39	494.96	560.54	631.43

TABLE E-46. CVP4, WATER 2, LOAD CONDITION 1a

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	0.01	0.87	1.80	2.62	3.51	4.41	5.29	6.16	7.04	7.93	8.78
Frame-1	-4.94	164.86	380.38	485.16	724.72	911.37	1093.08	1273.55	1452.37	1654.43	1825.42
Frame-2	0.18	180.11	419.60	551.94	702.52	906.22	1111.94	1260.82	1446.28	1637.58	1825.64
Frame-3	179.77	192.56	351.54	549.09	719.88	907.06	1087.73	1279.17	1438.10	1635.36	1822.70
Frame-4	-149.25	174.59	374.71	546.24	720.25	921.10	1094.68	1270.47	1451.53	1640.07	1787.57
Frame-5	77.96	188.26	354.15	539.74	743.35	904.79	1088.99	1282.30	1451.54	1650.71	1795.00
Frame-6	-73.20	177.31	373.69	525.20	745.22	920.31	1077.12	1283.63	1454.57	1649.83	1798.02
Frame-7	25.49	256.03	302.41	547.94	711.21	912.23	1088.80	1270.85	1434.73	1631.02	1834.98
Frame-8	24.64	179.21	351.14	527.57	713.03	917.28	1078.16	1278.94	1451.24	1635.27	1835.58
Frame-9	-100.01	196.46	416.48	546.61	712.21	926.54	1086.38	1274.47	1431.94	1634.47	1828.97
Frame-10	61.79	169.92	371.19	542.52	712.55	918.60	1076.09	1321.72	1454.48	1635.13	1820.01
Frame-11	57.50	184.87	374.78	540.68	725.39	901.47	1092.54	1351.57	1455.70	1639.02	1818.16
Frame-12	67.95	185.88	366.28	544.20	720.87	937.17	1078.75	1350.36	1441.15	1640.59	1823.49
Hoop-1	20.84	789.59	1497.50	2299.74	3129.26	3874.18	4642.08	5413.67	6183.72	6972.70	7715.71
Hoop-2	-80.15	740.25	1522.55	2283.70	3084.30	3874.06	4630.36	5421.05	6190.31	6965.53	7715.45
Hoop-3	32.19	693.81	1550.08	2280.53	3133.53	3868.93	4657.81	5402.93	6206.16	6957.29	7732.98
Hoop-4	-21.99	737.59	1530.36	2294.02	3061.08	3874.46	4653.56	5352.99	6173.17	6949.42	7716.40
Hoop-5	40.68	775.16	1591.49	2339.11	3286.92	3855.60	4653.01	5344.75	6173.46	6968.08	7717.13
Hoop-6	-39.28	728.37	1556.91	2193.60	3087.13	3856.71	4627.21	5403.26	6199.97	6963.92	7714.93
Hoop-7	-42.02	689.25	1559.30	2334.84	3097.26	3883.46	4623.02	5408.31	6213.99	6956.23	7713.09
Hoop-8	4.28	680.07	1554.50	2340.40	3090.03	3876.16	4640.25	5448.96	6205.16	6941.25	7734.11
Hoop-9	-36.51	796.41	1555.24	2444.35	3021.76	3892.96	4648.00	5383.62	6181.68	6956.26	7727.01
Hoop-10	-3.73	731.52	1555.60	2350.39	3028.20	3870.20	4620.05	5531.27	6224.55	6977.60	7721.41
Hoop-11	6.09	725.44	1565.00	2310.08	3083.31	3885.82	4644.05	5467.41	6177.13	6953.36	7747.87
Hoop-12	-60.71	754.36	1564.17	2360.63	3087.16	3887.56	4658.31	5407.38	6199.83	6957.15	7727.29
Hoop-13	15.40	735.08	1573.78	2293.37	3109.90	3903.93	4660.86	5529.65	6182.13	6955.30	7711.60
Hoop-14	-29.59	725.15	1576.40	2323.65	3123.17	3855.86	4655.15	5321.76	5965.10	6425.24	6972.31
Long-1	19.23	-37.24	12.02	-3.60	6.02	14.43	40.85	123.75	144.18	186.23	204.24
Long-2	-95.80	-20.63	-60.06	75.50	-20.63	8.94	-8.31	57.00	80.42	139.58	160.51
Long-3	-14.91	-6.34	250.58	217.61	8.34	5.89	37.71	117.24	131.93	193.11	201.66
Long-4	156.36	11.21	5.21	-30.78	-25.98	288.34	-23.58	25.60	17.21	77.19	103.58
Long-5	516.15	437.80	572.43	430.50	394.93	425.55	332.42	353.24	300.60	311.63	261.38
Long-6	54.23	14.12	45.72	15.34	16.55	43.29	16.55	27.49	27.49	46.94	60.30
Long-7	107.90	41.42	85.33	94.86	75.85	129.28	100.78	138.77	136.41	150.66	154.20
Long-8	12.51	12.51	8.78	13.76	8.78	12.51	8.78	10.02	13.75	7.54	7.54
SG1	187.44	97.71	59.75	121.50	234.69	293.83	368.88	452.94	500.13	561.70	621.91
SG2	221.38	105.61	41.24	131.66	255.19	329.82	422.21	522.31	570.25	634.03	699.04
SG3	124.38	-72.78	-78.41	21.98	193.82	306.00	383.74	533.79	573.29	619.06	667.35
SG4	163.73	-17.27	-22.52	81.72	202.53	296.84	378.14	490.64	527.96	576.61	628.97
SG5	197.73	142.98	69.75	197.64	304.47	384.08	478.23	586.15	587.12	610.64	774.66
SG6	-21.45	14.33	49.34	93.38	138.72	183.29	228.83	274.34	315.99	358.18	400.89
SG7	########	########	########	########	########	########	########	########	########	########	########
SG8	46.10	-38.32	-91.28	-17.34	55.13	116.97	209.56	286.86	322.20	368.59	416.40
SG9	-40.35	-9.62	21.94	72.14	117.78	165.39	214.23	263.98	306.25	351.01	395.82
SG10	-42.75	-58.34	-66.65	-75.04	-82.61	-94.41	-104.66	-113.98	-130.68	-152.22	-170.79
SG11	16.51	12.03	8.85	2.94	-12.52	-17.22	-26.45	-32.69	-42.01	-50.50	-58.02

TABLE E-46. CVP4, WATER 2, LOAD CONDITION 1a (Continued)

SG12	39.07	30.91	30.77	26.95	20.72	19.48	15.05	14.13	8.91	3.75	-1.83
SG13	58.07	52.78	51.36	53.11	54.68	59.42	60.76	69.32	66.88	68.13	68.30
SG14	414.38	361.26	357.71	-111.86	-294.74	-295.35	-328.32	-425.44	-273.31	-214.89	291.74
SG15	24.88	36.26	45.24	41.23	31.24	30.73	25.25	22.35	19.26	15.81	12.63
SG16	41.34	34.53	32.37	27.07	17.63	13.86	5.38	1.47	-7.52	-15.25	-24.23
SG17	-57.59	-62.74	-64.58	-68.35	-83.29	-88.61	-92.80	-92.61	-100.15	-102.95	-109.19
SG18	1702.68	1267.35	629.70	301.34	188.20	122.68	72.22	38.25	-8.40	-10.24	19.36
SG19	-62.01	-84.39	-108.08	-138.46	-184.11	-216.32	-253.76	-286.78	-321.88	-356.05	-391.11
SG20	-16.19	-16.94	-13.61	-13.80	-22.48	-19.15	-23.22	-18.97	-23.41	-25.44	-29.13
SG21	-45.57	-52.57	-56.44	-69.89	-95.68	-105.99	-126.44	-139.34	-159.60	-177.65	-196.79
SG22	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG23	9.58	-11.45	-30.26	-63.47	-99.64	-126.19	-168.27	-200.74	-233.21	-269.38	-306.98
SG24	22.25	17.83	16.54	12.67	5.66	6.40	0.50	1.23	-6.15	-9.10	-15.55
SG25	6.53	8.48	3.53	-11.46	-36.07	-44.57	-66.41	-77.32	-96.29	-111.41	-128.93
SG26	-135.90	-140.63	-149.60	-147.47	-149.57	-144.52	-149.66	-141.07	-146.61	-146.75	-148.49
SG27	15.70	15.97	13.57	7.71	-2.74	-4.63	-14.33	-17.06	-26.35	-32.86	-40.57
SG28	109.51	127.28	133.21	128.77	123.60	122.11	116.20	112.50	113.98	113.24	110.27
SG29	-16.66	-13.99	-18.47	-25.16	-34.63	-37.16	-47.14	-50.65	-59.98	-66.44	-75.02
SG30	-162.12	-152.95	-150.25	-158.14	-161.48	-166.73	-173.39	-180.18	-181.10	-185.26	-188.28
SG31	-102.07	-94.66	-106.75	-117.18	-131.45	-142.69	-165.08	-181.83	-199.18	-216.02	-234.59
SG32-T	-39.31	86.65	203.43	294.07	386.05	473.49	555.64	633.28	709.44	785.41	857.95
SG32-45	-1.68	71.66	150.08	195.07	256.75	303.98	349.98	394.36	433.37	471.95	505.14
SG32-L	18.73	29.47	42.59	52.96	62.45	71.97	75.93	83.93	82.96	82.58	78.39
SG33-T	-34.19	84.16	204.35	297.98	395.76	485.12	571.22	650.30	731.51	810.07	884.95
SG33-45	10.72	68.86	143.96	192.86	253.63	300.37	347.30	389.10	426.82	464.53	497.18
SG33-T	35.34	24.37	33.49	44.28	49.86	57.67	57.21	63.40	57.21	53.35	46.83
SG34-T	-34.59	26.75	103.64	177.73	256.64	333.27	409.50	483.13	558.44	633.99	707.74
SG34-45	62.43	81.54	115.31	150.56	179.34	220.32	247.80	283.61	316.45	351.70	384.88
SG34-L	18.94	12.24	4.84	-7.31	-26.57	-32.85	-48.59	-54.03	-69.15	-79.44	-92.09
SG35-T	-24.27	75.95	161.06	223.42	291.89	362.87	432.86	500.94	574.28	647.39	719.22
SG35-45	3.63	41.76	80.08	110.09	133.05	172.24	196.50	230.69	261.82	296.29	329.52
SG35-L	26.21	21.18	15.49	4.40	-14.43	-20.31	-36.11	-41.94	-57.18	-68.00	-81.32
SG36-T	-17.63	81.66	181.40	266.41	353.41	435.27	514.00	587.71	663.09	736.94	807.58
SG36-45	-6.84	23.94	59.64	106.01	137.68	180.75	212.20	248.18	280.31	313.27	344.71
SG36-L	47.37	29.96	27.45	30.15	24.52	29.45	23.22	26.10	16.19	10.55	1.19
SG37-T	-9.47	42.36	96.71	128.38	164.97	208.30	251.96	295.09	345.64	396.29	445.74
SG37-45	-22.83	3.51	23.61	36.79	38.99	60.05	73.97	91.59	115.04	137.99	161.11
SG37-L	33.40	44.04	31.94	5.21	-26.20	-43.40	-67.84	-84.30	-104.53	-122.87	-142.12
SG38-T	-57.47	42.82	142.14	228.39	316.11	400.70	482.30	561.11	639.55	718.45	795.23
SG38-45	-63.31	-8.58	24.84	70.84	104.08	143.35	176.87	211.27	247.24	282.84	317.30
SG38-L	18.06	13.77	7.86	-2.34	-17.62	-25.26	-39.05	-45.10	-58.61	-68.90	-82.17
SG39-T	-27.68	93.33	209.71	301.25	391.70	477.85	560.00	636.24	713.55	787.79	859.81
SG39-45	-12.06	68.36	130.17	189.00	232.28	287.41	328.48	374.02	416.17	458.69	498.33
SG39-L	13.06	33.57	39.74	47.82	47.36	58.21	54.32	60.73	53.30	52.14	46.29
SG40-T	3.00	42.09	84.25	110.58	147.09	186.54	229.98	271.25	321.32	370.81	420.81
SG40-45	-12.98	-1.47	2.92	7.12	8.03	24.29	33.97	50.41	70.88	92.25	113.80
SG40-L	8.85	-11.61	-40.10	-69.53	-96.74	-112.45	-135.82	-149.16	-165.06	-178.03	-193.00

TABLE E-47. CVP4, WATER 2, LOAD CONDITION 1b

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.07	-0.11	0.12	-0.09	0.04	0.02	-0.02	0.09	-0.08	0.06	0.08
Frame-1	-8.26	-25.56	3.94	-0.69	9.44	37.10	18.29	13.30	4.74	-9.39	10.65
Frame-2	-22.24	-20.40	-6.61	-122.41	-143.58	78.67	-20.05	-99.77	-9.25	-89.42	962.76
Frame-3	-84.16	-207.52	71.59	-212.19	-154.45	-103.09	144.42	-125.02	-100.46	68.88	-95.02
Frame-4	26.86	33.91	-18.22	24.06	-74.70	128.58	63.45	-114.05	50.12	-89.95	-82.19
Frame-5	-152.96	-45.84	59.02	109.93	26.64	-28.71	-123.23	95.95	98.05	-30.03	76.08
Frame-6	56.33	-74.15	-168.56	23.07	-62.67	127.43	-43.59	-133.81	55.51	46.22	41.91
Frame-7	120.73	-22.12	15.33	-164.69	-111.29	32.49	2.26	-130.33	-67.47	-165.07	-148.32
Frame-8	81.97	49.38	-99.14	-149.92	30.83	124.60	-50.21	63.44	-135.38	-93.50	-128.41
Frame-9	-47.34	-101.39	121.97	73.51	-39.60	-40.56	57.82	-163.45	-131.57	-3.30	-75.26
Frame-10	24.42	-34.01	-0.03	-71.49	40.43	73.95	59.23	-21.66	61.86	-21.95	-67.19
Frame-11	-6.05	104.18	33.66	-95.15	0.91	-81.17	105.86	-87.33	-74.12	20.77	62.53
Frame-12	-76.88	-163.26	9.40	8.37	-135.08	111.31	44.60	-12.35	78.32	-131.99	-108.24
Hoop-1	-8.59	-56.40	7.97	-19.62	9.80	-10.42	-15.94	-26.98	33.71	-28.82	-8.59
Hoop-2	4.78	40.92	30.08	-38.59	48.14	-44.00	17.43	-29.55	-6.06	-7.87	-29.55
Hoop-3	-25.73	-41.52	-1.16	39.21	21.66	19.90	37.45	30.43	19.90	33.94	49.74
Hoop-4	83.62	-59.03	-5.31	3.95	-57.17	63.23	57.68	-25.69	152.15	50.27	-12.72
Hoop-5	4.23	-17.64	-26.75	47.98	46.14	-8.52	-21.28	-12.17	102.64	-28.57	-23.11
Hoop-6	167.91	19.91	-9.68	-26.33	-11.53	-17.08	32.86	-30.03	-48.52	21.76	-31.88
Hoop-7	40.25	-16.42	0.03	3.69	49.38	67.66	58.53	58.52	42.07	38.42	56.70
Hoop-8	48.37	18.98	11.63	4.28	18.98	11.63	-3.06	-10.41	18.98	4.28	-10.41
Hoop-9	32.46	-70.99	-25.62	59.68	-3.84	-9.28	97.80	119.58	183.08	66.94	-14.73
Hoop-10	-25.41	-14.57	7.11	1.69	-14.57	10.73	16.15	-23.60	39.63	25.18	14.34
Hoop-11	4.25	-108.28	15.32	-23.42	-97.24	66.96	-139.65	26.39	-93.52	-10.51	-117.50
Hoop-12	11.54	74.53	-49.59	83.80	83.82	-21.80	35.63	-53.30	-5.13	-36.63	52.30
Hoop-13	30.24	0.56	-81.06	-21.70	-58.82	30.24	-6.86	-51.39	-58.80	-43.97	-14.28
Hoop-14	192.44	-155.39	162.82	66.62	-22.19	-81.38	488.47	-7.39	244.22	-96.20	370.02
Long-1	22.83	1250.60	2432.47	3640.05	4911.07	6144.25	7370.94	8561.58	9841.56	10990.8	12084.2
Long-2	112.44	1194.39	2439.98	3634.30	4904.78	6154.93	7355.29	8576.60	9837.84	11038.8	12128.3
Long-3	-14.91	1179.27	2496.77	3617.78	4924.52	6159.69	7401.70	8593.55	9828.70	10988.1	12112.8
Long-4	275.09	1285.17	2496.50	3635.16	4907.92	6109.32	7305.42	8583.11	9827.64	11046.0	12179.8
Long-5	687.56	1323.32	2347.06	3852.64	4890.08	6124.12	7406.67	8596.11	9813.00	11004.2	12195.0
Long-6	76.10	1295.15	2430.10	3694.36	4902.47	6140.36	7366.82	8564.12	9821.43	11015.7	12249.5
Long-7	123.32	1228.69	2425.23	3846.64	4912.82	6136.33	7371.23	8561.00	9839.05	11058.0	12123.2
Long-8	19.97	1229.46	2448.66	3644.72	4884.05	6131.45	7230.42	8560.62	9808.06	10977.2	12128.5
SG1	134.00	110.06	-45.66	50.34	-83.10	-78.48	-91.74	-197.16	-111.29	-251.21	-292.99
SG2	142.87	111.00	-117.03	25.11	-179.70	-182.08	-197.13	-382.92	-247.01	-476.93	-530.70
SG3	-55.15	21.61	-110.32	108.88	32.32	122.01	259.29	107.05	350.30	180.90	291.21
SG4	41.46	67.94	-21.32	106.90	10.42	55.88	96.36	-9.67	117.06	-21.65	1.80
SG5	29.87	15.05	-209.60	-53.71	-259.35	-260.47	-259.80	-453.87	-305.31	-546.37	-592.75
SG6	-17.58	-28.73	-45.59	-51.43	-71.54	-83.32	-94.60	-117.53	-122.93	-147.36	-157.83
SG7	-1240.59	-33616.5	-48358.7	-59269.9	-63780.2	-70416.2	-75910.9	-79816.4	-77995.2	-83049.3	-94104.0
SG8	31.43	11.92	-158.14	-42.04	-196.71	-194.89	-190.78	-343.10	-226.41	-406.86	-434.47
SG9	-35.97	-45.57	-69.32	-67.98	-94.81	-105.83	-113.94	-144.12	-142.84	-174.69	-184.53
SG10	-29.79	10.09	41.59	94.61	113.83	151.27	201.24	215.81	266.93	286.15	330.36
SG11	17.57	56.65	107.49	148.27	200.19	245.76	292.25	339.31	384.01	428.91	471.46

TABLE E-47. CVP4, WATER 2, LOAD CONDITION 1b (Continued)

SG12	38.61	95.93	173.62	243.80	324.03	397.24	476.33	553.67	629.36	703.08	779.31
SG13	79.34	171.50	275.18	388.60	492.31	601.65	712.66	812.69	924.05	1015.34	1114.24
SG14	637.16	763.12	867.50	952.39	1110.52	1160.16	1291.42	1410.44	1471.76	1604.97	1665.45
SG15	36.48	78.08	137.90	173.78	234.70	281.34	330.01	385.65	426.05	481.01	529.19
SG16	46.92	107.39	189.07	258.19	341.55	417.33	495.72	574.33	647.02	721.85	797.64
SG17	-53.73	25.96	120.48	207.15	302.41	398.75	488.88	584.70	679.39	770.15	857.41
SG18	17.24	67.80	135.16	186.62	255.13	317.20	375.21	447.27	505.05	575.52	632.21
SG19	-47.40	31.56	129.02	208.16	302.56	391.31	476.53	568.08	651.92	736.89	816.08
SG20	-3.26	74.53	173.56	251.16	341.99	430.10	514.32	600.62	681.99	762.09	841.39
SG21	-26.60	47.06	127.16	167.85	220.95	272.13	318.70	366.95	412.11	455.07	499.91
SG22	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG23	23.60	109.93	210.07	298.97	396.84	486.65	579.75	671.24	759.31	849.42	936.87
SG24	33.32	118.16	217.17	308.08	404.83	498.30	591.01	682.67	770.35	858.78	948.79
SG25	21.56	116.92	244.99	349.22	480.32	597.37	715.70	833.35	938.51	1048.88	1154.85
SG26	-128.66	-41.83	55.95	164.53	267.27	374.92	481.62	582.08	691.29	782.79	880.70
SG27	22.81	83.61	163.28	231.23	312.20	385.40	458.72	533.56	600.88	674.31	746.61
SG28	104.33	144.29	201.24	236.01	294.54	338.16	386.22	440.22	481.70	535.03	581.53
SG29	-4.25	39.79	91.80	140.30	195.38	248.91	304.64	358.37	411.22	463.52	517.53
SG30	-150.59	-120.00	-75.36	-42.31	3.29	41.00	81.20	122.33	160.56	200.74	237.67
SG31	-77.39	-48.25	-32.47	8.12	36.96	62.57	100.89	125.71	176.06	197.25	226.42
SG32-T	-9.23	-37.04	-33.65	-86.15	-92.96	-121.55	-152.88	-160.72	-211.03	-212.16	-229.76
SG32-45	37.40	60.01	122.90	139.47	200.10	235.32	276.93	327.90	341.45	396.55	446.00
SG32-L	39.70	110.56	209.93	286.87	382.65	470.07	561.61	651.34	735.14	818.73	906.57
SG33-T	-20.17	-74.04	-110.81	-200.48	-245.19	-310.64	-375.13	-406.84	-496.75	-518.50	-563.83
SG33-45	26.65	15.78	14.67	-21.55	-42.41	-69.66	-95.24	-110.98	-153.07	-163.81	-178.59
SG33-T	31.99	103.61	189.85	282.24	368.47	459.77	552.55	640.35	729.33	811.27	900.95
SG34-T	-24.68	-56.92	-87.46	-130.25	-163.41	-200.04	-238.76	-268.39	-315.30	-340.96	-370.89
SG34-45	54.45	77.64	109.35	116.22	144.64	166.89	178.00	214.92	223.10	255.41	273.54
SG34-L	26.57	107.90	209.31	295.47	393.10	489.30	581.37	675.17	766.07	854.57	941.87
SG35-T	-12.36	-36.51	-22.13	-75.45	-73.79	-102.54	-129.89	-134.55	-182.77	-182.65	-202.99
SG35-45	1.03	29.12	85.18	85.87	132.21	158.12	174.45	224.47	230.63	276.50	298.64
SG35-L	32.78	113.97	216.11	300.14	398.12	492.79	584.09	678.24	767.43	856.08	942.59
SG36-T	-4.97	-40.16	-61.94	-131.58	-166.12	-220.15	-275.85	-305.41	-379.28	-402.37	-446.00
SG36-45	-5.96	19.29	39.67	32.71	27.75	19.02	4.58	4.72	-12.73	-12.22	-21.04
SG36-L	53.28	143.94	259.56	371.29	483.17	592.45	701.15	804.13	905.72	1002.67	1104.53
SG37-T	-6.54	-23.77	-21.02	-72.56	-81.89	-113.87	-147.40	-165.45	-211.85	-224.61	-254.40
SG37-45	-32.28	-16.63	8.10	-16.91	-12.37	-23.33	-38.66	-37.05	-56.79	-53.90	-65.18
SG37-L	50.41	120.24	232.55	306.54	422.10	515.92	615.90	723.10	808.91	914.10	1013.64
SG38-T	-42.16	-76.08	-93.09	-140.58	-168.58	-202.15	-242.00	-266.70	-316.64	-337.93	-368.66
SG38-45	-59.13	-24.19	16.47	40.49	76.34	104.68	132.88	169.35	197.95	232.55	262.48
SG38-L	27.14	111.99	215.36	305.14	405.34	499.71	595.22	690.46	779.72	872.17	965.47
SG39-T	-18.10	-45.17	-39.77	-96.04	-101.51	-132.39	-164.04	-171.02	-222.71	-222.97	-243.48
SG39-45	0.57	30.96	84.71	93.81	144.17	172.78	200.13	252.12	262.32	317.93	354.34
SG39-L	25.49	97.88	188.21	266.72	357.72	444.52	531.57	617.65	700.27	784.68	869.81
SG40-T	-2.29	-12.70	-9.96	-34.43	-35.71	-53.93	-69.68	-80.00	-105.09	-113.20	-130.18
SG40-45	-16.26	18.99	64.83	89.50	138.09	169.53	204.24	250.82	275.43	324.48	360.98
SG40-L	11.04	79.17	161.72	238.82	325.95	408.55	493.50	576.80	659.61	741.84	823.97

TABLE E-48. CVP4, WATER 2, LOAD CONDITION 1c

Load Step	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Pressure	-0.17	0.86	1.73	2.66	3.51	4.41	5.27	6.19	7.03	7.93	8.82
Frame-1	-321.22	190.00	415.43	532.28	729.83	918.94	1092.26	1273.59	1461.37	1641.14	1807.49
Frame-2	-53.39	259.09	378.17	532.98	740.63	908.57	1119.81	1262.59	1486.55	1639.94	1814.68
Frame-3	-327.48	181.36	379.43	540.58	733.49	902.52	1109.26	1279.17	1452.15	1651.45	1820.39
Frame-4	-72.86	202.98	369.91	541.17	732.21	911.36	1073.20	1268.76	1451.84	1645.88	1818.03
Frame-5	-221.71	178.71	382.12	548.47	722.53	905.40	1095.09	1252.98	1474.28	1653.07	1813.40
Frame-6	-216.52	212.10	369.15	547.28	743.41	898.84	1101.84	1271.69	1454.91	1643.70	1812.65
Frame-7	-261.35	210.34	372.17	546.71	728.43	907.71	1093.32	1271.65	1465.71	1638.59	1841.97
Frame-8	46.15	192.08	370.94	545.27	731.97	907.61	1075.79	1262.53	1483.93	1627.35	1830.51
Frame-9	-183.32	219.94	382.30	543.70	738.38	909.75	1083.95	1266.60	1444.11	1650.83	1829.13
Frame-10	-104.39	184.52	368.61	532.68	734.94	900.31	1099.55	1253.65	1451.01	1644.42	1835.60
Frame-11	-298.16	194.18	372.48	532.59	733.85	891.97	1093.64	1249.09	1454.01	1624.50	1853.70
Frame-12	-185.58	193.61	354.99	546.45	746.81	968.95	1095.38	1285.46	1456.68	1655.10	1839.17
Hoop-1	-56.40	741.77	1552.98	2319.74	3088.49	3870.50	4633.35	5380.57	6183.10	6959.13	7737.78
Hoop-2	-100.03	877.59	1542.73	2343.10	3102.06	3841.53	4625.40	5410.20	6155.36	6950.38	7706.42
Hoop-3	-46.78	769.28	1545.12	2324.18	3071.79	3868.93	4626.69	5408.19	6187.99	6961.85	7715.43
Hoop-4	85.47	789.46	1560.31	2310.46	3099.68	3874.46	4642.91	5415.99	6159.58	6956.13	7721.96
Hoop-5	-43.15	540.05	1551.71	2331.59	3095.22	3866.54	4638.90	5408.54	6172.84	6958.27	7702.55
Hoop-6	-91.07	815.31	1529.47	2345.07	3097.92	3886.31	4690.56	5423.61	6184.55	6953.98	7720.48
Hoop-7	23.79	822.71	1535.85	2321.81	3100.61	3868.83	4649.07	5415.62	6217.02	6970.16	7725.89
Hoop-8	-32.45	709.60	1547.00	2318.13	3097.38	3868.81	4631.97	5433.73	6205.16	6969.95	7748.03
Hoop-9	-29.25	771.16	1544.20	2317.08	3103.44	3869.37	4616.22	5423.01	6152.64	6926.52	7758.91
Hoop-10	25.18	751.54	1562.67	2321.25	3091.44	3855.75	4633.58	5436.76	6159.50	6955.22	7742.32
Hoop-11	-76.92	764.33	1539.01	2324.61	3107.29	3865.53	4661.57	5481.62	6154.99	6954.51	7726.80
Hoop-12	18.95	756.36	1545.49	2315.94	3079.75	3865.32	4649.97	5414.25	6185.00	6956.46	7726.52
Hoop-13	15.40	779.75	1551.36	2315.40	3080.21	3844.56	4630.25	5425.21	6204.40	6939.76	7747.94
Hoop-14	0.01	777.10	1546.64	2316.02	3093.57	3870.66	4639.42	5432.24	6179.72	6972.31	7719.10
Long-1	3.61	1224.29	2468.75	3665.28	4911.56	6136.43	7361.32	8578.74	9787.28	11019.7	12276.5
Long-2	23.73	1299.27	2442.69	3681.13	4924.99	6127.20	7342.96	8585.60	9792.00	11029.0	12268.8
Long-3	136.83	1257.70	2494.57	3669.17	4916.45	6117.47	7358.87	8557.21	9785.64	11042.0	12249.8
Long-4	-22.38	1294.90	2453.57	3657.95	4901.21	6124.30	7364.21	8570.25	9810.63	11044.9	12256.6
Long-5	584.80	1426.35	2497.95	3678.71	4900.37	6132.08	7367.47	8598.93	9782.13	11041.1	12279.6
Long-6	42.08	1190.75	2472.88	3666.40	4911.47	6119.08	7351.02	8597.29	9813.91	11037.7	12265.4
Long-7	107.91	1271.56	2519.27	3672.11	4900.25	6102.48	7377.17	8577.95	9762.86	11035.5	12243.1
Long-8	-1.16	1279.31	2514.78	3667.10	4916.86	6122.13	7355.98	8570.96	9818.98	10998.5	12276.4
SG1	233.19	117.09	24.19	55.88	104.56	149.36	201.14	185.84	215.17	243.01	244.64
SG2	298.85	122.64	-7.06	5.29	50.33	84.25	137.75	103.79	123.57	139.43	133.51
SG3	196.75	85.66	59.09	225.36	432.14	620.97	771.70	856.24	987.01	1097.02	1181.26
SG4	249.40	80.58	63.13	151.24	262.12	358.09	448.44	469.45	539.44	592.14	627.83
SG5	269.73	114.09	-35.50	-24.63	34.26	103.70	239.78	246.87	354.18	396.13	405.44
SG6	-25.79	1.34	23.92	54.87	84.37	114.77	146.64	173.73	201.76	231.43	260.34
SG7	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG8	101.32	-17.20	-107.03	-95.97	-57.70	-23.83	24.03	18.14	37.28	57.16	71.15
SG9	-43.22	-20.84	-1.74	30.98	63.20	97.81	133.01	163.75	194.59	227.73	260.79
SG10	-24.91	6.68	33.95	65.85	100.56	131.37	166.04	197.04	230.45	262.19	293.71
SG11	20.80	57.91	99.32	133.35	171.69	206.30	243.57	282.15	318.55	355.11	394.21

TABLE E-48. CVP4, WATER 2, LOAD CONDITION 1c (Continued)

SG12	37.00	98.95	172.03	241.08	311.94	381.08	451.94	521.08	591.61	664.04	735.05
SG13	59.74	167.02	263.96	369.79	479.32	587.39	693.28	793.69	894.75	998.31	1098.81
SG14	455.60	509.46	809.42	828.24	682.90	700.73	638.32	631.64	469.10	631.84	739.87
SG15	28.34	84.32	137.96	179.07	221.18	261.96	303.21	347.95	388.90	430.92	474.93
SG16	40.25	108.10	179.10	245.67	314.27	381.34	447.91	513.13	577.68	643.33	708.72
SG17	-53.05	26.98	103.16	182.57	266.09	348.75	431.55	514.25	595.86	682.38	766.89
SG18	1025.53	710.85	339.65	300.19	325.67	358.31	397.12	431.73	496.32	555.17	600.89
SG19	-50.92	15.29	77.08	127.19	181.24	233.22	286.29	339.74	391.39	445.41	499.93
SG20	-11.02	85.08	169.20	248.07	329.64	410.97	489.48	567.84	643.68	723.16	801.27
SG21	-42.63	47.44	99.02	129.39	160.37	192.05	223.53	255.58	286.00	315.29	349.15
SG22	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######	#######
SG23	10.14	90.95	159.41	215.83	276.03	333.60	393.15	452.75	511.84	571.81	632.26
SG24	24.66	124.08	213.57	297.81	382.73	467.78	553.69	636.14	717.74	801.31	885.34
SG25	3.44	124.11	232.19	327.37	427.82	526.63	625.19	721.21	816.76	912.80	1005.77
SG26	-135.88	-33.62	53.39	155.14	260.46	364.65	467.31	562.81	660.03	761.44	857.23
SG27	13.20	89.44	157.75	222.68	288.76	353.68	417.23	477.29	538.15	600.07	661.56
SG28	102.13	167.26	218.34	257.51	299.75	341.19	382.59	429.21	472.18	516.58	562.41
SG29	-22.53	35.50	77.66	119.28	163.82	209.80	255.21	299.53	343.89	390.80	435.45
SG30	-158.46	-112.87	-74.14	-46.43	-12.92	19.59	52.82	86.62	121.02	155.38	188.18
SG31	-90.19	-48.30	-28.42	-10.33	16.39	39.04	66.77	90.58	118.64	145.55	171.55
SG32-T	-65.32	57.45	139.85	211.61	265.89	320.70	365.99	418.55	461.14	505.72	548.58
SG32-45	-19.97	112.21	214.05	311.09	390.78	472.46	545.77	621.17	690.14	761.47	828.06
SG32-L	11.90	122.48	217.08	309.52	399.43	486.67	569.95	650.21	729.20	809.37	888.95
SG33-T	-43.41	21.59	80.04	131.80	164.38	200.71	229.89	270.03	298.14	328.36	359.81
SG33-45	11.37	70.45	117.79	156.64	178.22	202.37	221.49	243.13	258.44	275.25	288.78
SG33-T	44.55	119.58	214.68	307.42	399.77	488.89	574.80	654.99	735.25	817.49	895.55
SG34-T	-41.48	-9.34	33.83	88.20	132.78	181.72	226.22	276.22	319.84	366.22	412.61
SG34-45	57.80	109.94	166.36	227.55	284.19	341.53	396.42	451.34	505.38	559.56	615.17
SG34-L	16.10	108.67	189.47	264.63	344.18	423.30	500.70	577.21	653.04	731.60	808.78
SG35-T	-48.66	47.67	110.04	157.06	194.84	237.98	276.21	325.68	365.23	409.54	453.15
SG35-45	-7.94	77.35	145.09	202.06	255.67	310.30	361.46	416.00	467.89	520.57	574.41
SG35-L	24.44	120.10	201.79	277.26	356.39	435.27	512.05	587.57	662.03	740.17	815.99
SG36-T	-31.32	40.85	92.03	140.52	173.10	206.90	232.63	266.48	291.79	317.45	343.17
SG36-45	-17.33	51.05	101.81	139.71	168.81	196.94	220.42	245.07	266.87	286.42	310.30
SG36-L	47.43	144.34	254.64	360.38	462.54	561.08	657.89	748.23	838.09	930.31	1019.25
SG37-T	-24.64	18.76	49.11	61.52	68.40	81.74	91.54	114.14	128.13	145.14	163.55
SG37-45	-33.34	13.98	42.71	44.77	46.85	51.34	54.18	63.73	72.05	75.76	87.46
SG37-L	26.94	131.64	214.52	281.47	354.95	427.60	502.76	578.38	654.98	733.50	811.15
SG38-T	-73.71	7.09	72.84	140.09	193.54	249.47	298.15	352.49	397.94	446.47	493.32
SG38-45	-86.01	19.07	97.45	168.95	240.11	309.55	379.06	450.63	519.47	587.71	660.16
SG38-L	17.59	118.58	204.55	283.73	364.71	442.13	523.23	601.96	680.42	761.29	841.52
SG39-T	-52.01	61.39	144.11	215.01	269.72	325.03	371.56	424.59	468.46	513.54	557.12
SG39-45	-35.34	97.79	191.96	275.05	349.75	425.37	495.50	568.22	636.51	703.16	773.91
SG39-L	5.63	122.13	204.26	287.61	370.15	452.59	533.67	610.07	685.51	763.82	840.09
SG40-T	-4.48	26.01	58.33	79.15	103.45	129.55	154.22	187.25	215.74	244.98	275.69
SG40-45	-23.02	31.60	81.28	122.02	170.62	221.20	271.46	326.97	382.13	435.70	495.12
SG40-L	8.30	67.12	126.12	177.26	241.77	305.86	372.57	437.92	505.69	576.07	647.38

APPENDIX F—REDUCED STRAIN GAGE DATA

The raw strain gage data in appendix E was reduced to remove the strain gage offset due to preloading after the panel was installed in the fixture. In the strain gage data reduction, the first three data points were removed to minimize the effects of preloading and free play. A linear regression using a least squares method was used to curve-fit the remaining data set to a first order polynomial:

$$\varepsilon = A\chi + B \tag{1}$$

where ε is the dependent strain variable, χ the independent load increment variable, A the slope, and B the ordinate intercept. Parameter B was used to define the zero load offset which was used to shift all data in the set. The reduced strain gage data is presented in the tables of this appendix in terms of the ten equal load increments up to the maximum loads for each load sequence. Cross-reference tables in appendix E list the corresponding values of the applied loads.

CVP1	SG1											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	305.54	187.21	279.40	154.54			-55.90	49.81	203.04	96.31	142.61	109.95
1	206.97	157.73	112.17	49.25			-37.88	-13.06	96.40	108.59	73.59	48.00
2	239.73	183.88	163.85	35.85			-0.35	4.36	135.59	146.52	77.62	68.16
3	261.37	239.44	222.66	154.98			6.93	-2.65	217.52	222.76	174.98	166.96
4	344.55	341.14	291.94	345.79			-14.61	-21.29	308.59	308.71	296.91	332.79
5	436.52	411.13	381.29	419.20			-39.02	-17.07	412.85	417.20	371.72	444.74
6	552.71	482.78	483.94	533.60			-50.30	-25.48	488.68	513.60	434.03	518.36
7	599.44	558.61	515.27	571.07			-40.20	-38.57	568.07	581.16	529.03	571.35
8	716.35	669.66	605.07	630.34			-46.97	-33.88	649.06	661.45	565.60	654.11
9	781.00	748.75	686.00	689.91			-33.31	-18.65	711.73	699.16	628.78	697.68
10	877.51	810.10	748.91	760.80			-36.31	-41.38	769.04	799.62	693.95	767.52

CVP1	SG2											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	34.95	28.29	37.46	25.44			-2.61	1.22	28.17	21.77	20.89	23.18
1	77.09	74.83	72.87	70.01			-5.91	-4.28	65.55	66.67	66.73	69.01
2	129.50	124.88	123.07	119.50			-9.21	-5.56	112.65	112.30	111.11	114.09
3	181.16	178.00	181.15	177.75			-12.51	-8.31	164.68	163.96	164.08	165.23
4	236.31	234.62	239.80	235.85			-15.44	-13.08	216.72	216.23	217.62	219.02
5	295.99	291.95	293.01	292.91			-17.46	-15.10	270.57	271.92	272.25	273.24
6	358.00	349.14	355.93	353.23			-22.59	-20.97	325.51	327.63	325.55	328.12
7	412.98	405.69	411.61	413.47			-26.07	-22.62	380.72	381.80	382.08	382.40
8	476.93	468.94	470.95	470.70			-30.30	-26.65	435.70	436.08	435.17	440.07
9	534.05	529.00	533.20	530.83			-34.88	-26.46	489.20	488.07	489.75	491.91
10	596.65	586.13	599.27	589.35			-38.19	-31.59	543.75	544.92	545.29	548.37

CVP1	SG3											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	300.89	244.64	334.83	231.45			-57.68	36.93	237.72	170.80	192.71	216.48
1	207.96	179.27	102.56	36.20			-51.00	-35.64	119.44	131.31	43.00	18.43
2	226.85	177.38	141.87	34.54			-25.34	-27.18	102.34	135.35	40.06	39.01
3	243.21	217.64	200.09	137.60			-36.22	-57.56	159.67	176.87	117.61	120.58
4	305.46	301.02	264.39	313.23			-72.34	-105.46	238.46	238.94	214.09	252.95
5	389.39	364.01	342.51	382.94			-116.10	-110.06	316.14	324.36	266.65	345.33
6	486.91	429.95	437.36	494.11			-148.68	-124.19	389.78	405.36	303.88	397.78
7	531.18	498.61	463.96	528.55			-161.53	-154.38	442.87	457.86	378.02	433.06
8	644.68	596.32	545.31	578.03			-176.14	-167.55	501.46	527.30	401.65	504.46
9	701.03	664.92	616.15	626.90			-174.53	-196.49	546.28	546.56	443.87	528.49
10	788.96	724.58	676.49	690.93			-182.02	-227.36	587.02	624.64	488.28	580.48

CVP1	SG4											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	18.93	21.00	22.87	16.75			3.42	4.43	20.76	21.70	11.13	19.63
1	71.66	71.91	65.77	65.69			-5.01	-1.61	65.26	65.84	58.42	61.21
2	124.78	124.50	120.34	121.94			-8.86	-7.84	109.22	111.08	108.27	111.95
3	181.35	176.67	180.77	180.88			-16.00	-12.42	160.49	160.52	161.39	165.63
4	235.37	232.34	240.85	234.37			-18.39	-18.29	212.14	211.10	213.06	211.14
5	295.01	290.37	294.77	293.23			-21.87	-22.32	264.12	265.29	265.47	265.89
6	355.35	348.26	356.36	354.07			-28.46	-26.72	318.84	319.51	316.90	320.18
7	411.39	405.14	414.03	416.10			-34.32	-31.48	371.83	372.18	372.12	373.88
8	474.94	465.79	472.61	473.12			-38.20	-37.18	424.94	425.15	425.54	430.61
9	533.12	524.91	534.27	533.03			-42.58	-38.80	478.23	477.66	478.81	482.05
10	594.59	582.74	600.85	591.52			-48.11	-44.11	531.29	531.73	533.59	536.83

CVP1	SG5											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	333.86	240.30	356.75	258.39			-60.26	28.00	280.26	180.87	221.09	248.98
1	158.67	129.82	128.69	62.00			-44.81	-20.15	97.07	108.77	63.40	62.30
2	202.20	155.81	170.80	64.37			-15.70	-10.12	111.75	142.83	81.41	69.76
3	240.85	219.79	206.36	158.72			-21.20	-42.83	174.25	201.34	149.97	149.48
4	298.56	298.62	276.55	303.91			-48.72	-90.86	260.81	260.80	247.85	270.22
5	393.44	358.85	367.95	379.04			-75.86	-95.35	344.48	349.11	312.52	370.80
6	466.14	422.81	459.11	496.46			-100.95	-103.53	430.52	435.73	356.52	431.42
7	513.84	494.22	491.26	533.68			-118.05	-130.01	482.22	494.88	439.72	474.39
8	632.72	589.67	574.84	581.82			-119.75	-127.04	542.23	575.37	478.43	553.03
9	690.18	659.94	642.57	637.82			-124.08	-175.12	594.92	606.10	528.84	588.65
10	778.01	721.53	712.75	703.82			-112.54	-184.28	645.33	681.07	580.31	640.53

CVP1	SG6											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	41.94	41.66	52.72	39.32			2.31	-0.24	44.50	41.09	37.75	44.12
1	86.06	87.62	91.04	86.98			-7.59	-7.39	78.93	80.65	81.01	82.23
2	143.21	142.04	144.88	141.76			-14.55	-11.42	125.27	127.17	128.29	129.49
3	200.34	197.33	202.56	200.52			-19.31	-16.55	177.82	178.08	179.04	181.15
4	257.47	254.83	263.56	252.00			-24.27	-22.97	230.38	229.94	229.06	224.64
5	322.24	316.89	320.59	311.78			-29.21	-29.38	285.48	285.97	282.75	280.30
6	384.22	378.45	387.50	377.74			-36.89	-35.99	343.50	343.48	338.40	337.35
7	445.94	441.74	449.75	442.70			-44.22	-41.11	401.43	401.47	399.12	395.08
8	517.73	509.35	514.38	506.32			-50.13	-46.63	460.22	460.84	457.67	456.94
9	582.32	575.43	585.20	574.11			-55.79	-52.27	519.74	520.31	517.17	513.69
10	651.48	642.05	662.21	640.67			-60.77	-57.22	579.94	579.70	577.45	574.70

CVP1	SG7											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	368.71	314.76	404.22	272.02			-85.90	-4.52	333.07	230.18	214.33	269.14
1	150.21	147.24	133.72	71.49			-42.77	-16.21	105.10	140.59	56.43	50.27
2	205.88	179.55	159.52	61.03			21.63	11.09	138.32	198.64	78.78	88.36
3	256.20	234.75	209.49	160.45			32.74	7.71	213.50	261.78	189.97	193.49
4	296.02	306.43	281.65	301.85			34.35	-12.51	332.33	335.11	307.96	338.88
5	384.36	386.17	378.64	389.85			51.17	-14.52	432.85	435.10	389.67	464.85
6	464.56	452.28	476.61	521.57			34.86	-4.04	545.79	549.37	450.69	538.78
7	521.14	527.13	508.47	550.95			23.36	-13.68	606.63	624.21	549.62	599.98
8	637.41	629.68	589.96	593.32			30.31	9.97	681.15	736.30	605.74	700.80
9	700.55	698.62	655.44	653.77			65.31	-18.19	745.97	781.11	665.76	747.44
10	784.00	761.95	731.68	714.51			109.19	-10.13	811.29	861.36	723.79	804.59

CVP1	SG8											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	16.56	25.06	28.79	19.78			1.23	0.65	28.09	23.78	18.89	25.38
1	61.92	68.90	68.90	69.17			-5.54	-5.12	63.95	65.36	65.99	68.57
2	119.96	122.35	120.89	123.25			-9.02	-8.23	110.97	114.25	113.63	116.87
3	177.47	175.55	180.10	181.39			-14.65	-11.61	163.37	164.90	167.46	170.98
4	230.88	230.02	239.57	232.03			-17.21	-17.84	216.46	215.94	220.04	217.08
5	289.86	289.71	295.94	291.18			-21.14	-21.73	270.26	269.43	273.94	274.92
6	346.74	346.36	358.01	352.77			-27.73	-26.44	326.70	325.09	327.93	330.80
7	403.12	402.98	414.69	413.86			-33.31	-30.19	380.45	378.42	384.40	385.85
8	466.23	463.70	473.11	470.22			-36.53	-33.82	434.00	434.71	440.18	444.12
9	522.43	520.93	534.10	530.61			-41.92	-38.69	488.01	488.03	495.58	497.64
10	582.27	579.41	600.06	589.08			-44.23	-42.40	542.78	542.68	551.59	553.69

CVP1	SG9											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	301.63	246.36	345.15	230.67			-60.40	32.75	241.72	169.60	207.00	232.70
1	206.29	180.42	114.51	48.42			-57.03	-48.65	118.08	127.16	58.16	40.11
2	237.86	177.25	151.43	42.53			-41.47	-31.56	108.88	141.12	48.42	57.39
3	245.77	226.52	212.42	148.91			-37.84	-54.59	170.81	188.54	128.01	131.44
4	319.80	313.04	277.09	321.65			-82.23	-105.44	247.78	252.64	227.45	272.30
5	407.41	383.95	357.28	393.40			-122.51	-112.80	334.30	340.84	280.58	369.30
6	502.77	449.54	456.72	508.09			-156.58	-137.78	407.03	424.25	325.91	421.39
7	547.41	520.24	488.12	546.03			-167.77	-156.77	467.31	483.92	403.37	459.63
8	667.00	625.32	573.36	598.83			-188.45	-167.73	526.83	555.04	428.29	542.63
9	721.90	691.92	646.96	650.84			-188.49	-200.55	576.44	577.05	474.38	566.65
10	816.82	758.21	710.06	716.74			-194.87	-229.22	617.55	660.12	520.84	622.89

CVP1	SG10											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												

CVP1	SG11											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	325.20	227.09	342.88	237.88			-52.36	30.84	276.35	173.63	209.18	236.28
1	143.97	111.05	111.56	43.93			-37.23	-24.81	92.88	99.79	39.80	41.18
2	173.87	124.58	139.84	34.37			-13.04	-15.62	92.49	119.81	49.91	43.57
3	199.96	176.22	165.18	117.94			-19.15	-41.22	138.61	165.74	108.71	116.68
4	245.32	243.26	226.16	252.59			-46.25	-92.97	215.19	214.39	201.51	226.99
5	318.96	296.15	308.47	319.90			-71.08	-98.67	291.22	288.97	256.09	320.84
6	383.78	341.33	386.28	427.39			-98.54	-110.05	366.14	367.21	292.39	369.97
7	415.37	398.61	406.06	449.35			-112.85	-133.26	407.29	416.23	361.94	402.86
8	520.60	483.82	478.93	486.50			-112.53	-131.52	455.41	483.09	385.02	474.63
9	564.47	535.67	533.24	524.90			-117.93	-177.76	496.36	498.50	421.54	493.70
10	639.92	584.88	582.23	577.13			-106.08	-187.87	531.05	564.63	460.42	533.93

CVP1	SG12											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	43.30	46.55	38.05	29.09			7.63	-8.97	51.75	47.03	31.29	36.85
1	126.54	130.11	125.04	124.11			-6.22	-12.18	119.96	121.12	114.46	117.11
2	210.96	209.02	206.98	209.00			-16.18	-15.62	188.74	191.04	190.15	192.35
3	294.14	289.80	294.79	292.88			-23.43	-19.02	265.79	265.38	268.00	269.43
4	378.66	373.05	382.55	370.66			-24.94	-23.97	341.79	341.18	343.13	339.04
5	470.94	463.08	468.85	455.08			-28.38	-32.96	423.35	424.13	420.24	418.37
6	563.40	553.94	563.51	552.36			-37.64	-41.41	509.20	507.98	504.71	502.91
7	656.05	647.06	657.15	645.34			-46.63	-44.34	595.12	595.25	592.07	588.55
8	759.61	745.58	750.89	741.53			-48.90	-51.09	683.42	683.33	681.61	680.95
9	854.88	843.02	853.29	840.82			-60.40	-57.90	772.81	771.91	772.11	768.57
10	955.44	940.31	962.89	936.90			-65.51	-63.77	861.89	861.15	862.78	859.56

CVP1	SG13											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	357.41	298.88	392.63	257.43			-81.12	-12.60	324.33	214.35	195.82	257.36
1	150.27	140.64	130.43	65.80			-39.92	-20.72	106.75	137.25	48.11	44.90
2	199.94	175.64	153.42	54.54			16.22	9.49	144.53	198.55	72.81	91.63
3	251.71	231.32	205.53	154.56			30.07	7.25	216.32	262.18	190.07	199.40
4	295.27	304.75	277.37	298.90			34.95	-17.29	331.39	335.44	306.40	344.26
5	381.91	383.39	369.78	387.28			53.48	-16.92	435.72	442.03	388.90	472.92
6	461.17	445.56	464.90	517.94			34.30	-11.33	550.15	555.51	453.96	544.71
7	512.25	517.39	498.49	545.68			20.96	-15.17	609.71	635.20	551.79	607.05
8	630.70	621.56	576.65	587.91			29.10	4.53	684.65	739.99	603.91	715.81
9	692.55	692.94	642.90	645.46			64.56	-26.06	751.80	784.74	667.44	759.18
10	777.88	753.29	716.97	703.51			107.89	-16.16	815.01	869.35	722.61	820.03

CVP1	SG14											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-10.84	-0.53	2.40	-8.06			2.25	-2.29	2.87	-6.34	-9.57	0.01
1	49.10	56.43	55.10	57.27			-6.36	-6.51	52.15	51.19	53.41	56.46
2	118.28	121.97	117.51	122.24			-11.63	-7.88	111.57	112.71	111.71	118.03
3	184.67	183.41	186.75	190.08			-15.62	-10.45	170.82	172.47	175.79	181.30
4	245.62	244.60	253.95	246.20			-16.40	-16.68	230.18	229.09	234.36	232.85
5	309.85	309.10	314.32	311.74			-18.87	-20.49	289.69	289.29	293.99	296.91
6	370.60	369.45	381.50	379.15			-26.29	-25.80	350.84	349.16	352.48	356.70
7	428.72	428.63	441.50	444.95			-32.62	-27.54	407.02	406.29	412.96	415.91
8	496.32	493.15	502.51	503.46			-35.61	-32.13	463.45	464.41	471.34	478.51
9	554.52	553.60	564.91	565.41			-41.19	-36.24	519.69	519.50	529.56	534.73
10	615.64	612.54	631.67	623.96			-42.76	-39.41	575.51	575.43	585.52	592.28

CVP1	SG15											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	128.12	108.11	149.58	99.45			-25.61	-26.88	110.31	86.72	100.94	125.41
1	98.38	95.42	76.82	53.54			-33.39	-63.74	65.63	77.74	57.57	71.59
2	158.21	108.87	99.10	72.80			-53.58	-23.11	88.67	112.25	67.34	97.76
3	168.66	163.78	159.69	141.87			-4.90	-15.10	149.63	160.19	131.21	149.84
4	222.91	221.57	208.46	218.38			-36.47	-30.72	201.18	212.62	192.15	221.86
5	292.95	278.75	261.65	272.83			-53.30	-42.87	274.40	279.85	239.65	288.96
6	349.76	323.62	322.81	339.95			-52.22	-69.97	317.82	337.00	290.42	338.71
7	383.35	376.42	364.08	387.52			-52.40	-47.33	380.91	399.33	344.33	376.95
8	465.52	456.03	416.48	435.32			-63.55	-40.88	427.65	453.84	377.24	460.11
9	501.64	493.10	483.31	476.90			-74.89	-78.93	475.17	480.98	423.50	485.65
10	573.49	546.19	523.39	526.83			-66.26	-77.92	511.01	547.69	468.63	544.01

CVP1	SG16											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	49.82	47.18	49.46	23.64			12.09	-2.42	52.59	52.01	44.96	44.20
1	66.65	69.34	59.43	52.61			3.63	-20.57	62.85	65.38	64.27	64.88
2	134.39	111.26	101.25	101.92			-19.79	-6.28	99.10	103.48	100.75	102.26
3	167.17	168.22	164.63	162.03			-9.13	-7.17	152.21	154.02	153.17	153.37
4	227.96	226.46	223.79	225.96			-19.63	-16.37	203.49	205.49	205.75	209.44
5	286.90	288.89	275.01	281.12			-23.10	-24.25	256.04	260.98	256.14	264.76
6	344.25	346.95	337.13	339.38			-22.48	-38.61	309.31	313.54	309.34	313.35
7	397.54	401.66	389.79	396.50			-26.70	-26.97	362.81	366.43	360.96	363.01
8	457.79	460.83	443.74	450.75			-32.17	-25.76	410.60	418.09	409.83	422.33
9	509.76	511.65	497.73	503.88			-41.57	-42.69	461.70	465.86	462.19	466.64
10	567.95	569.31	555.42	555.34			-38.09	-40.76	508.91	516.43	513.00	521.42

CVP1	SG17											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	130.54	86.05	158.55	110.34			-13.76	16.34	127.66	88.81	100.24	118.44
1	92.53	69.72	87.46	63.47			-14.12	-6.25	93.88	82.57	56.68	68.11
2	128.69	107.35	122.20	81.48			-6.05	-4.97	119.40	121.68	84.98	98.78
3	167.98	155.65	161.13	141.72			-5.32	-9.20	146.21	159.14	136.79	155.54
4	207.28	196.04	216.05	211.15			-16.70	-34.73	200.75	197.53	200.55	210.69
5	253.16	247.63	272.20	263.72			-26.62	-31.98	262.07	239.40	248.51	278.46
6	304.97	279.04	334.47	338.13			-33.79	-38.96	314.38	300.55	293.42	324.25
7	343.34	328.03	372.03	377.57			-36.18	-43.92	362.15	352.85	350.29	368.17
8	420.65	394.88	431.45	420.95			-39.12	-45.94	412.10	408.14	391.76	448.21
9	462.49	440.32	492.75	463.02			-39.85	-57.15	462.23	441.16	436.55	477.94
10	528.92	496.85	540.86	520.32			-37.28	-61.01	502.77	506.56	485.68	530.29

CVP1	SG18											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	40.39	31.83	45.96	36.59			0.64	3.02	46.95	43.95	38.77	43.20
1	72.32	63.11	62.88	62.95			-6.07	-4.11	74.91	70.73	59.29	61.12
2	120.74	113.97	109.69	110.18			-7.99	-6.54	118.41	116.81	102.48	107.49
3	171.22	166.43	166.34	166.04			-10.47	-8.48	158.30	162.01	156.99	160.46
4	219.90	214.15	223.88	223.31			-14.45	-17.16	208.91	207.86	211.58	214.61
5	272.05	268.78	274.73	277.29			-19.75	-18.49	263.09	256.87	262.86	269.60
6	325.98	316.88	331.75	335.86			-24.00	-23.97	316.44	311.61	314.78	320.03
7	378.47	370.02	385.63	392.52			-27.37	-26.25	369.22	365.77	368.41	372.92
8	442.60	431.10	441.92	446.47			-30.70	-30.11	420.38	418.91	420.94	434.08
9	494.42	483.39	498.80	500.54			-34.26	-33.16	474.48	469.13	472.60	481.06
10	554.30	541.27	554.73	556.25			-36.78	-36.55	525.01	525.31	526.14	535.54

CVP1	SG19											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	159.91	126.80	172.92	102.89			-14.37	-34.75	147.94	98.44	86.77	127.76
1	88.74	80.64	82.34	52.80			-1.81	-29.58	63.88	75.99	41.61	51.95
2	127.91	121.28	107.88	73.21			-9.40	-3.08	117.22	130.81	66.27	104.76
3	178.49	171.87	163.05	143.08			6.94	-0.54	161.92	181.58	152.94	177.81
4	225.94	236.07	217.14	218.16			11.42	-19.26	228.14	237.16	219.75	246.36
5	289.92	294.73	278.65	284.28			28.16	-16.13	304.09	315.51	274.05	332.62
6	345.89	342.76	343.84	367.28			14.82	-33.78	375.25	377.88	332.54	387.54
7	385.62	394.02	384.28	406.57			3.98	-21.13	418.34	446.98	394.97	434.85
8	465.64	466.52	438.14	451.52			17.03	-22.52	473.53	506.80	434.45	531.93
9	512.32	533.22	499.52	494.40			21.92	-38.67	530.55	544.46	492.00	561.32
10	581.98	574.02	550.78	538.61			38.78	-27.08	574.83	614.41	535.27	620.58

CVP1	SG20											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	51.25	53.37	54.99	40.36			2.41	-14.68	50.07	46.84	41.20	51.00
1	72.03	72.30	74.43	73.85			0.41	-13.93	65.33	65.96	68.40	71.61
2	113.98	114.27	112.82	111.93			-14.70	-4.00	113.71	110.66	105.20	117.40
3	164.54	164.63	163.37	163.19			-6.63	-1.99	157.28	159.01	158.90	164.50
4	215.66	219.44	216.90	212.12			-4.57	-9.69	205.47	208.35	208.22	211.69
5	272.05	272.37	265.74	266.27			1.68	-9.88	261.53	262.03	258.64	268.68
6	324.19	325.00	323.88	324.04			-3.88	-22.57	315.00	312.24	314.72	321.01
7	374.39	377.70	376.09	378.79			-7.74	-12.65	363.81	369.36	368.31	371.98
8	434.90	435.29	428.30	431.82			-4.15	-21.27	416.22	419.97	418.08	436.49
9	487.07	496.69	484.51	485.91			-10.82	-21.32	470.47	470.13	472.49	480.96
10	543.65	543.35	541.25	534.16			-9.67	-17.09	520.07	525.35	522.19	537.44

CVP1	SG21											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-8.50	-6.46	-5.84	-1.43			1.09	-4.67	-2.82	-4.01	4.36	0.93
1	-25.25	-31.50	-26.66	-22.99			27.44	23.89	0.49	0.60	3.99	9.58
2	-62.08	-61.34	-53.54	-48.60			55.98	49.68	1.05	-0.51	5.46	10.50
3	-89.69	-88.58	-85.39	-77.87			82.31	79.52	-6.69	-5.48	-2.10	5.53
4	-117.49	-118.41	-116.15	-129.26			104.27	107.92	-9.82	-8.61	-10.57	-19.34
5	-151.16	-151.72	-146.11	-155.62			135.95	134.09	-9.45	-13.40	-13.52	-22.65
6	-178.08	-179.91	-171.55	-183.99			163.50	160.64	-16.08	-15.24	-17.02	-24.68
7	-208.28	-209.33	-201.82	-213.80			192.25	187.12	-18.29	-18.92	-17.57	-23.39
8	-240.50	-239.72	-232.10	-242.55			214.19	213.21	-19.21	-20.95	-17.39	-26.89
9	-267.54	-269.08	-261.35	-269.44			245.04	241.77	-20.87	-20.02	-18.68	-25.05
10	-297.71	-297.78	-287.00	-298.85			268.60	267.37	-22.71	-22.42	-22.00	-26.34

CVP1	SG22											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-8.11	-4.01	0.79	3.35			-1.49	-13.08	-15.42	-13.21	6.70	-2.52
1	4.90	-2.18	-2.14	-1.05			27.68	18.83	21.97	21.07	21.73	26.08
2	-4.81	-8.96	-3.79	4.45			56.27	47.07	48.37	46.00	48.50	57.06
3	-6.46	-5.84	-1.41	1.14			78.81	76.95	67.24	68.16	72.51	77.96
4	-8.66	-7.13	-3.97	-13.16			104.52	106.14	91.43	93.85	95.25	88.45
5	-11.78	-14.46	-5.99	-13.34			138.61	130.72	117.99	115.28	120.38	111.17
6	-9.21	-14.64	-3.79	-11.69			162.73	155.31	137.03	138.92	142.26	136.50
7	-11.41	-17.02	-6.72	-14.26			190.06	183.50	161.26	160.88	166.41	161.99
8	-15.81	-17.21	-8.37	-16.27			214.67	209.66	185.27	186.19	192.40	185.80
9	-18.56	-18.31	-8.37	-16.27			241.33	236.61	205.79	207.79	215.67	210.16
10	-21.12	-23.62	-7.45	-18.66			267.17	259.34	229.04	230.54	239.31	233.63

CVP1	SG23											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-26.30	-22.44	-23.80	-24.47			-16.32	-12.18	-31.69	-28.33	-25.88	-35.60
1	-24.09	-32.17	-22.65	-34.94			23.35	27.83	0.59	-0.64	-7.19	-6.79
2	-51.77	-51.78	-43.41	-45.78			60.20	59.58	17.10	14.77	14.09	12.28
3	-70.66	-68.84	-66.53	-67.44			91.91	92.95	23.69	23.74	23.98	19.44
4	-91.94	-91.03	-91.84	-95.69			121.34	125.49	31.76	33.49	30.59	33.98
5	-118.15	-117.07	-113.88	-120.83			159.12	154.85	42.57	40.26	32.42	28.09
6	-137.42	-137.25	-135.31	-145.97			190.00	185.17	47.14	47.42	37.25	34.35
7	-159.79	-160.16	-157.16	-169.81			221.95	217.57	55.79	54.91	45.82	45.00
8	-187.67	-183.82	-181.77	-192.57			248.32	247.64	64.78	63.73	56.80	49.37
9	-208.57	-206.78	-204.69	-212.75			281.01	280.41	72.11	73.43	65.04	60.73
10	-232.94	-230.06	-225.17	-236.11			309.69	310.49	80.71	80.41	71.58	67.89

CVP1	SG24											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-2.31	-3.07	-1.26	-7.44			-16.90	-15.16	-14.38	-15.86	-8.29	-18.36
1	0.99	-9.68	-4.39	-16.99			22.95	26.52	19.20	19.57	11.73	12.85
2	-13.69	-18.13	-12.28	-16.25			61.50	60.13	49.30	48.38	43.51	45.71
3	-18.64	-18.67	-17.60	-21.75			93.06	94.45	71.69	73.33	72.51	69.75
4	-25.06	-22.89	-25.31	-28.54			123.77	127.72	99.95	101.98	96.75	100.45
5	-32.03	-33.72	-31.59	-35.34			164.34	156.19	128.75	126.93	118.97	119.16
6	-32.59	-37.94	-33.56	-40.85			194.72	185.60	150.94	152.26	140.14	142.87
7	-39.38	-44.72	-42.76	-49.47			226.68	219.33	176.29	175.90	165.61	168.22
8	-48.19	-48.58	-50.48	-58.29			254.10	250.30	201.25	203.08	192.01	191.69
9	-54.79	-54.29	-55.25	-63.43			285.74	284.43	224.01	226.37	215.86	216.63
10	-61.57	-63.83	-59.80	-70.80			317.34	313.98	248.76	250.98	238.79	240.32

CVP1	SG25											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-41.98	-28.66	-25.40	-51.10			27.13	29.78	-27.92	-28.78	-29.95	-58.12
1	-40.91	-44.10	-32.00	-65.60			77.04	79.26	8.69	8.57	-7.25	-20.61
2	-65.43	-60.35	-49.37	-72.50			124.50	121.42	40.69	43.34	28.33	14.02
3	-79.75	-74.10	-72.07	-90.15			171.52	168.23	61.86	70.03	46.09	36.66
4	-100.53	-94.53	-104.27	-85.92			218.67	221.73	84.12	99.82	70.02	101.36
5	-125.85	-120.25	-130.28	-101.85			277.06	269.97	107.87	126.69	89.53	126.80
6	-144.72	-139.41	-156.57	-135.90			331.67	323.35	126.82	150.05	108.36	147.02
7	-169.19	-162.90	-182.25	-168.18			387.77	376.22	149.06	173.60	125.43	167.45
8	-201.20	-189.05	-210.46	-194.37			440.43	433.28	170.22	199.54	138.00	175.39
9	-225.99	-213.08	-231.66	-214.80			499.60	494.38	189.54	224.00	154.05	196.38
10	-254.82	-241.56	-252.24	-237.33			558.68	550.87	210.51	243.88	171.16	213.86

CVP1	SG26											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	0.11	0.45	-1.27	-12.66			-13.44	-10.38	-14.77	-13.77	-15.84	-31.28
1	0.35	-8.96	-5.36	-23.74			28.04	29.89	16.97	20.00	6.48	3.28
2	-12.57	-14.31	-11.69	-23.11			65.68	62.76	51.53	52.48	43.15	37.91
3	-13.72	-13.86	-14.55	-27.18			97.31	96.60	79.73	81.22	73.87	64.71
4	-18.31	-16.25	-23.73	-19.29			128.79	129.67	110.37	113.28	108.57	113.26
5	-22.08	-23.64	-29.50	-17.89			169.66	159.41	142.96	142.95	139.60	144.15
6	-20.28	-25.42	-33.56	-29.27			201.78	189.79	168.02	170.84	166.70	171.28
7	-25.78	-28.83	-39.04	-40.94			234.89	222.79	195.87	197.48	192.66	198.46
8	-32.75	-32.08	-46.60	-48.23			264.16	255.89	223.21	227.28	216.74	215.37
9	-36.84	-37.98	-50.38	-51.17			296.62	289.18	249.27	253.25	241.62	240.44
10	-44.60	-45.92	-54.85	-56.85			329.83	320.57	275.61	279.57	266.62	265.59

CVP1	SG27											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												

CVP1	SG28											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-3.65	-8.02	-14.21	-32.98			-14.54	-9.35	-17.68	-21.60	-43.72	-41.88
1	-6.59	-16.85	-12.09	-34.45			23.74	31.88	11.02	13.73	-3.90	0.82
2	-22.05	-21.27	-17.19	-24.86			62.04	63.55	44.15	41.70	39.56	31.74
3	-22.05	-19.80	-17.91	-24.10			93.70	100.37	68.43	70.40	65.34	63.39
4	-27.20	-27.89	-26.01	-29.26			121.69	132.80	97.13	96.18	97.00	95.83
5	-33.08	-35.99	-35.68	-32.95			163.66	160.05	124.35	121.93	122.04	116.42
6	-36.77	-36.72	-31.87	-38.10			195.27	191.00	148.62	147.69	136.81	137.07
7	-44.13	-43.34	-44.44	-48.40			229.14	226.30	168.52	171.94	164.76	157.69
8	-55.17	-50.71	-54.05	-58.71			251.41	258.82	192.07	196.25	189.03	181.22
9	-61.79	-59.55	-56.97	-63.13			283.72	296.92	220.04	216.10	211.83	206.97
10	-66.93	-69.11	-62.05	-72.01			317.75	326.37	239.15	240.41	231.85	226.85

CVP1	SG29T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-73.71	-74.23	-67.93	-66.71			18.00	6.04	-66.46	-64.31	-61.91	-54.12
1	44.68	51.13	48.21	55.84			-8.55	-10.81	48.30	46.43	51.67	54.46
2	159.83	162.83	156.55	169.55			-26.86	-22.71	148.06	146.55	149.29	153.68
3	264.30	264.18	265.24	270.70			-43.51	-35.71	242.67	241.70	242.82	245.22
4	357.45	357.70	366.65	352.90			-50.31	-45.98	329.97	328.72	325.60	321.53
5	453.60	455.02	451.33	446.19			-59.09	-61.92	413.74	414.34	411.86	406.97
6	542.16	545.30	543.00	531.52			-74.25	-77.13	497.87	498.17	494.49	489.66
7	630.01	633.19	636.26	628.98			-89.82	-85.16	580.89	580.96	574.29	571.16
8	720.79	721.66	720.72	715.47			-97.43	-98.40	660.51	659.91	656.93	653.44
9	806.72	808.67	808.46	804.64			-116.61	-108.38	741.22	741.64	736.86	731.37
10	893.74	895.52	904.65	889.43			-130.06	-120.46	820.74	818.22	815.28	811.56

CVP1	SG29-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-48.25	-47.70	-56.25	-47.53			24.15	14.97	-40.47	-32.36	-44.77	-28.23
1	7.87	12.44	5.57	18.86			13.34	16.57	24.64	21.25	28.73	34.57
2	64.39	70.76	62.15	73.78			16.91	23.49	81.19	86.64	93.51	96.98
3	115.73	116.93	115.33	125.43			24.51	26.10	148.11	147.33	149.73	154.64
4	160.41	160.01	164.97	158.95			31.12	33.48	201.86	197.97	197.74	195.36
5	207.69	206.86	212.48	204.66			36.70	39.94	249.67	251.65	252.44	254.17
6	244.59	247.09	248.29	248.27			47.27	49.52	301.96	301.79	302.61	305.54
7	281.72	287.03	295.91	290.43			52.90	51.98	353.08	349.28	350.84	354.01
8	325.94	324.51	327.82	329.31			67.34	67.36	401.70	399.50	402.10	404.41
9	364.54	362.82	369.93	369.38			71.30	72.67	450.00	449.07	450.87	454.19
10	398.32	402.29	406.93	408.32			75.78	84.12	499.85	496.14	499.16	504.67

CVP1	SG29L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-17.16	-22.32	-23.10	-23.19			30.97	28.35	0.74	-1.83	7.37	2.90
1	-14.93	-25.80	-24.70	-30.42			43.46	42.77	13.19	13.41	13.35	15.03
2	-25.69	-31.95	-33.33	-34.48			66.64	66.21	36.89	40.96	37.81	39.11
3	-35.71	-36.14	-37.53	-41.73			96.99	95.47	60.28	62.70	63.32	62.00
4	-42.16	-42.23	-48.10	-39.86			123.33	124.33	85.26	88.55	90.65	93.60
5	-53.48	-58.42	-55.73	-49.53			155.10	153.00	112.94	110.15	113.64	121.33
6	-62.39	-68.27	-63.74	-59.60			186.96	183.28	129.22	130.52	134.37	142.14
7	-72.83	-79.04	-77.78	-73.13			217.27	215.17	151.57	150.23	157.64	164.53
8	-84.13	-90.22	-91.69	-85.87			249.25	247.71	171.84	174.72	180.56	184.97
9	-97.39	-102.12	-100.18	-98.92			280.62	278.25	191.88	194.57	200.96	206.11
10	-110.55	-114.60	-120.21	-111.24			314.79	311.66	213.29	216.86	220.62	228.91

CVP1	SG30T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-7.56	-9.53	4.57	2.41			13.42	6.84	-0.98	-2.16	4.52	17.31
1	72.34	76.41	75.97	81.85			-13.29	-13.10	69.79	69.35	75.53	77.31
2	161.60	161.68	156.24	165.09			-29.39	-21.52	139.48	139.94	141.96	145.35
3	243.86	243.56	243.08	247.33			-40.73	-33.78	214.08	212.71	213.47	216.33
4	322.67	322.93	327.76	315.56			-49.53	-48.61	283.38	282.07	277.70	272.60
5	405.59	406.64	400.02	393.75			-63.61	-63.61	352.10	353.37	347.23	342.25
6	483.99	486.78	481.12	469.32			-75.66	-75.70	423.55	423.42	416.75	412.04
7	563.72	566.39	563.46	557.75			-90.66	-85.38	495.33	495.00	485.74	481.76
8	648.57	648.00	641.41	635.74			-100.62	-96.76	565.36	564.73	557.90	554.30
9	727.49	729.04	723.24	718.07			-115.77	-109.32	637.60	636.90	628.82	622.66
10	809.69	811.27	813.02	797.79			-129.01	-121.21	708.66	706.45	699.56	695.65

CVP1	SG30-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-31.07	-26.96	-23.19	-16.46			-2.05	-8.38	-36.74	-24.64	-23.05	-21.23
1	20.01	19.50	15.75	16.15			10.20	11.38	37.77	35.53	30.15	28.65
2	60.66	66.81	59.83	66.81			23.40	27.62	87.86	91.16	89.39	89.42
3	101.02	103.27	102.75	105.83			42.60	39.90	141.60	141.97	142.69	141.95
4	136.53	136.67	139.65	138.56			51.51	53.44	192.69	191.27	189.32	187.78
5	174.97	173.22	176.95	177.05			66.27	66.46	238.67	237.76	238.38	242.98
6	205.09	209.44	208.57	212.22			81.31	79.49	287.30	285.83	285.91	290.72
7	239.46	244.62	248.41	250.07			94.24	90.61	335.75	331.59	331.82	336.57
8	276.07	275.57	278.30	280.26			112.06	109.42	381.75	381.06	381.21	382.57
9	310.45	311.18	314.41	316.85			124.51	117.12	429.13	429.45	428.33	429.98
10	340.19	344.83	348.15	351.74			131.43	133.67	477.88	474.72	474.75	477.10

CVP1	SG30L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-28.46	-29.57	-34.40	-34.98			-12.66	-16.45	-41.09	-39.15	-32.50	-47.85
1	-17.60	-27.42	-26.31	-34.02			32.33	31.29	3.59	4.16	-0.36	-1.69
2	-27.13	-29.94	-30.13	-30.44			68.53	64.07	39.02	38.90	35.87	34.29
3	-31.62	-30.90	-33.34	-36.82			100.28	98.12	62.38	64.18	64.78	59.13
4	-38.72	-36.58	-43.15	-34.02			132.15	134.39	89.41	92.57	93.26	98.20
5	-47.24	-49.55	-48.10	-40.21			173.08	166.03	117.95	115.80	119.62	125.95
6	-54.16	-57.11	-56.99	-48.83			204.79	196.46	137.13	138.34	141.80	147.36
7	-63.79	-66.09	-65.65	-62.26			238.36	231.15	159.80	159.34	164.42	169.55
8	-75.20	-76.45	-78.27	-74.04			271.43	264.58	181.43	183.60	188.44	189.41
9	-86.19	-85.76	-88.90	-83.16			302.55	298.13	201.04	204.33	209.09	211.80
10	-98.74	-98.59	-106.75	-94.69			337.90	330.81	222.60	225.44	228.54	232.34

CVP1	SG31T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	21.32	30.60	27.28	33.87			5.05	-4.61	24.71	35.25	26.45	26.74
1	105.90	110.25	117.41	122.37			-4.84	-3.96	102.82	99.80	106.11	109.02
2	177.44	183.21	185.57	197.12			-15.41	-16.16	165.33	161.74	168.12	171.42
3	253.92	254.44	261.41	266.17			-27.07	-21.68	227.83	225.58	229.95	230.25
4	329.55	326.64	339.91	329.91			-29.48	-27.08	291.00	290.33	291.05	289.12
5	407.61	409.11	413.08	406.94			-33.16	-36.07	359.49	359.11	360.73	357.44
6	485.04	490.52	494.59	482.90			-41.29	-43.73	431.73	429.90	434.86	429.81
7	569.39	572.31	583.27	575.24			-50.41	-51.12	506.23	504.92	506.18	505.14
8	655.57	655.25	665.71	661.01			-56.08	-59.75	580.63	577.82	584.16	580.15
9	741.30	740.93	753.99	752.00			-67.42	-63.09	657.83	657.65	660.68	656.27
10	826.65	828.51	851.69	837.64			-76.97	-70.93	734.94	729.97	738.27	734.78

CVP1	SG31-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	3.09	13.88	18.92	16.89			-8.46	-8.60	-5.17	6.31	19.70	4.22
1	43.12	44.72	55.30	52.03			9.97	14.30	56.62	53.72	67.46	59.68
2	74.55	81.95	86.61	88.01			26.13	28.01	107.30	106.99	112.73	108.78
3	108.59	116.71	119.82	118.13			43.03	44.27	152.67	153.55	156.69	148.63
4	146.22	147.06	149.81	149.54			53.86	59.77	199.43	201.47	202.33	201.62
5	182.11	183.61	185.85	185.04			76.00	74.27	246.89	246.01	250.40	252.20
6	213.00	222.52	223.71	222.28			89.44	85.94	294.89	294.79	302.12	300.53
7	251.87	260.59	265.29	261.48			104.09	98.83	346.50	344.95	351.14	349.89
8	288.73	296.20	301.17	296.19			119.76	116.55	396.01	397.44	405.54	398.61
9	327.20	337.40	340.00	340.03			133.92	132.02	447.72	451.49	457.40	450.11
10	361.81	374.40	382.88	379.29			140.53	148.02	500.48	500.69	508.99	502.21

CVP1	SG31L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-7.39	-8.34	-15.27	-18.65			-12.00	-10.47	-22.17	-21.92	-15.46	-29.85
1	-12.15	-22.28	-25.63	-34.08			30.26	31.21	5.89	8.34	0.63	-1.21
2	-34.51	-36.75	-39.63	-40.89			68.01	64.06	32.32	32.74	28.70	26.29
3	-45.52	-44.83	-49.55	-54.32			98.97	99.62	50.27	52.53	50.69	43.90
4	-59.27	-56.94	-66.06	-55.79			130.82	133.65	73.20	75.68	75.83	83.07
5	-73.58	-74.55	-79.96	-65.86			173.37	163.75	96.10	94.92	97.12	103.94
6	-82.19	-86.47	-90.65	-82.56			205.13	195.35	111.85	113.44	114.65	120.14
7	-97.23	-100.59	-105.31	-100.73			239.10	229.94	130.42	131.18	133.82	138.68
8	-115.75	-115.08	-123.29	-117.43			269.21	262.80	148.76	151.57	152.30	153.49
9	-130.98	-129.20	-141.83	-132.11			302.05	298.63	163.98	167.49	168.97	171.80
10	-147.66	-148.28	-164.20	-150.28			335.55	329.82	180.64	184.21	183.13	188.13

CVP1	SG32T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-26.59	-27.66	-14.74	-16.13			12.13	1.07	-15.45	-18.91	-13.73	-0.62
1	64.25	70.10	73.09	78.43			-12.17	-13.64	65.73	63.94	71.75	74.27
2	168.73	169.16	165.44	173.91			-29.58	-20.16	149.18	149.39	150.33	154.19
3	261.25	260.80	262.70	265.63			-37.42	-32.11	232.64	231.48	231.95	235.27
4	348.29	347.85	356.36	341.53			-47.01	-43.45	310.90	309.43	304.75	299.19
5	438.90	438.34	437.43	426.68			-60.35	-55.65	387.65	387.85	382.32	377.42
6	522.43	524.71	524.34	509.19			-72.10	-69.23	466.03	465.19	458.98	454.34
7	608.38	610.53	613.85	603.13			-87.13	-75.95	544.20	543.16	533.24	530.81
8	699.65	697.64	697.30	687.16			-94.78	-87.50	620.07	618.91	612.33	609.18
9	784.61	784.56	787.00	776.08			-110.37	-100.71	698.51	697.82	688.90	683.19
10	872.29	872.45	883.91	862.05			-120.58	-108.96	776.50	773.22	766.63	762.76

CVP1	SG32-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-29.41	-23.83	-18.23	-22.31			-3.76	-7.66	-32.13	-29.00	-13.84	-19.68
1	19.01	20.76	23.82	22.50			5.93	10.44	36.95	32.04	46.34	40.09
2	65.25	71.04	69.69	72.05			19.46	27.63	97.81	97.28	103.40	99.31
3	106.35	114.69	115.01	113.88			39.57	42.25	153.35	153.73	157.14	149.22
4	149.29	151.24	151.38	149.16			47.26	57.08	207.08	207.88	208.33	205.61
5	190.00	190.69	189.56	189.60			67.74	70.25	257.48	255.18	260.08	260.78
6	221.49	230.36	229.57	228.54			79.04	79.03	307.88	307.09	312.50	310.02
7	260.42	268.49	268.96	267.24			92.57	94.37	359.48	357.81	363.21	359.22
8	296.60	304.52	304.15	299.45			107.29	111.98	410.28	410.67	417.43	410.33
9	333.66	344.29	342.48	340.95			118.21	123.95	463.27	463.24	469.67	460.75
10	367.79	380.62	381.24	378.21			126.51	140.41	514.39	513.36	521.03	511.38

CVP1	SG32L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-19.15	-20.19	-35.13	-33.49			-7.55	-12.39	-33.34	-32.31	-27.68	-42.13
1	-17.37	-27.20	-33.60	-38.08			33.68	31.17	1.20	4.17	-4.25	-4.31
2	-37.85	-40.13	-44.66	-41.93			69.65	63.58	29.48	30.29	25.78	24.97
3	-47.51	-47.09	-53.13	-54.57			99.15	99.00	48.76	50.85	49.56	44.13
4	-61.12	-58.45	-68.30	-57.69			132.81	134.90	71.49	74.52	74.78	81.62
5	-76.18	-76.08	-81.99	-67.83			175.15	164.20	94.75	94.30	96.78	102.96
6	-84.54	-88.42	-93.55	-85.06			207.13	196.05	110.04	112.95	113.86	119.77
7	-100.16	-103.38	-108.09	-102.19			241.53	230.92	128.67	129.97	132.59	138.07
8	-119.45	-117.87	-126.59	-119.07			273.35	264.07	146.31	149.55	150.98	152.61
9	-135.39	-133.44	-147.02	-135.20			304.38	299.41	160.43	165.20	167.10	171.06
10	-153.10	-152.94	-172.03	-153.73			338.53	330.39	176.76	181.16	180.73	186.33

CVP1	SG33T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-9.86	-14.55	5.15	3.55			9.15	-3.03	-4.70	-10.98	-1.48	10.32
1	71.73	75.94	81.21	88.90			-10.52	-12.79	69.58	67.52	77.81	80.41
2	174.58	175.24	171.70	180.91			-25.97	-20.73	154.14	153.13	154.16	158.46
3	267.52	266.62	268.83	271.09			-37.74	-33.88	236.05	235.55	235.28	237.71
4	355.31	354.60	361.22	347.73			-46.24	-45.31	315.37	313.92	307.49	302.51
5	447.04	446.57	442.29	433.44			-56.87	-56.77	393.78	392.53	386.17	381.85
6	531.67	534.22	531.24	517.98			-70.41	-71.46	472.90	470.98	463.76	458.96
7	620.02	621.89	621.86	613.03			-86.18	-80.19	552.00	550.25	539.86	536.37
8	713.13	710.48	707.70	698.72			-93.05	-92.39	629.16	627.47	618.60	615.30
9	800.66	799.61	799.43	790.04			-109.56	-104.32	708.71	707.86	696.82	690.78
10	890.19	890.26	897.64	877.86			-117.19	-113.08	788.18	784.36	775.11	771.09

CVP1	SG33-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-19.28	-15.54	-30.54	-31.22			-1.56	-13.02	-32.02	-28.72	-22.79	-33.59
1	23.65	24.88	19.61	23.28			10.15	7.32	34.50	34.92	35.93	30.61
2	69.58	70.91	61.48	70.79			21.98	28.07	94.37	97.50	93.49	94.85
3	107.74	114.75	109.96	110.40			42.17	45.96	152.16	154.05	149.79	148.35
4	151.40	154.02	149.01	150.18			54.08	61.49	209.46	211.48	205.38	206.40
5	189.80	195.74	186.10	188.13			78.67	73.20	262.23	260.18	257.52	262.03
6	227.34	234.89	223.84	228.20			92.12	82.81	313.30	314.37	310.49	310.20
7	265.88	273.46	264.01	266.14			106.26	102.38	367.00	366.22	358.87	360.05
8	302.53	311.93	299.54	299.67			122.96	118.32	417.14	419.94	410.79	411.52
9	338.37	351.40	334.35	338.59			134.18	133.69	467.23	470.58	460.40	460.81
10	371.40	384.85	370.22	373.76			142.26	149.30	518.74	520.08	509.51	511.89

CVP1	SG33L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-22.63	-18.75	-34.44	-32.80			-3.65	-3.83	-35.82	-32.70	-25.26	-33.96
1	-18.27	-25.49	-31.81	-38.59			30.70	32.85	1.61	3.73	-3.60	-4.40
2	-37.22	-38.25	-42.79	-39.28			68.79	67.56	29.15	30.90	29.92	28.68
3	-46.16	-44.21	-51.92	-48.59			101.86	102.98	52.77	53.92	55.38	51.49
4	-58.78	-55.73	-62.84	-52.13			135.56	138.01	75.89	77.75	82.47	90.28
5	-73.50	-71.69	-71.12	-58.23			176.58	167.99	98.68	98.48	106.75	112.70
6	-79.25	-81.88	-84.40	-76.32			211.13	202.81	115.59	118.07	124.67	131.23
7	-95.53	-96.77	-97.08	-88.84			245.70	239.06	135.62	136.85	143.93	151.34
8	-114.66	-109.49	-114.73	-104.13			278.86	273.13	154.62	156.78	165.84	168.74
9	-130.48	-125.53	-134.96	-119.87			311.44	307.41	170.31	173.09	184.08	190.75
10	-146.98	-144.42	-159.00	-136.80			344.03	340.68	187.08	190.09	200.08	207.64

CVP1	SG34T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-24.47	-27.28	-8.87	-9.59			-1.75	-17.52	-6.41	-16.63	-1.01	4.83
1	58.09	61.47	65.23	73.01			-12.71	-18.12	62.96	63.80	71.94	74.92
2	157.15	154.96	150.49	159.66			-33.26	-31.65	141.51	140.83	140.16	145.17
3	242.90	240.20	240.79	243.74			-49.96	-48.53	214.85	214.49	214.86	215.85
4	321.43	322.04	325.17	316.34			-59.64	-63.08	287.39	286.03	279.08	274.81
5	406.15	404.02	401.28	391.68			-70.61	-81.85	358.69	357.90	349.82	346.58
6	481.57	484.07	480.93	471.27			-89.76	-100.44	430.89	429.43	420.06	416.07
7	562.72	564.41	562.01	557.02			-110.67	-113.59	502.37	501.27	488.64	485.63
8	647.41	643.23	639.96	634.14			-120.29	-128.54	572.84	571.70	560.96	558.19
9	726.23	723.69	722.20	715.60			-140.99	-147.00	645.33	645.08	632.77	627.07
10	806.93	805.60	808.02	794.04			-150.42	-161.63	718.06	714.74	704.37	699.95

CVP1	SG34-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-44.05	-33.24	-43.96	-48.28			-1.82	-14.48	-40.62	-53.91	-37.80	-45.22
1	13.18	12.99	6.12	7.48			7.87	10.83	36.27	33.02	27.17	20.15
2	58.75	62.42	53.38	55.98			22.94	32.20	100.58	101.76	91.86	93.25
3	97.54	109.27	103.49	95.71			45.75	50.66	160.00	162.00	153.91	149.49
4	146.79	146.75	142.54	144.06			63.21	68.34	221.49	222.59	213.65	216.90
5	183.39	189.57	173.17	181.70			88.37	81.73	277.59	278.70	269.82	274.46
6	221.51	221.58	208.11	213.84			106.13	95.69	332.21	334.75	325.69	323.60
7	254.00	257.76	247.01	247.06			121.31	118.43	388.15	391.12	375.27	374.73
8	289.55	297.01	278.94	277.76			136.13	134.85	440.89	446.10	427.07	428.73
9	322.19	336.44	313.29	314.66			150.25	149.46	494.59	498.06	478.08	477.18
10	353.25	366.83	349.79	348.76			162.57	166.47	547.50	551.08	530.77	530.72

CVP1	SG34L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-17.14	-6.89	-25.36	-28.58			0.36	0.99	-22.47	-25.43	-18.39	-16.83
1	-14.02	-23.58	-29.66	-33.77			26.93	35.63	15.27	12.54	5.01	2.12
2	-39.83	-34.27	-36.23	-36.79			70.09	72.80	36.60	38.41	36.76	36.02
3	-50.28	-40.46	-46.91	-50.00			106.86	108.53	59.57	60.69	57.81	56.20
4	-54.78	-54.81	-55.90	-55.37			139.77	144.04	81.03	82.81	87.31	92.58
5	-72.19	-63.61	-70.42	-54.96			179.54	178.60	103.99	103.90	111.03	115.81
6	-75.10	-77.47	-83.23	-79.74			217.64	214.60	121.22	123.39	131.01	135.48
7	-94.54	-94.46	-94.03	-95.83			254.86	252.57	143.53	144.78	152.61	157.60
8	-113.71	-101.35	-111.99	-109.78			287.27	287.13	164.07	166.21	173.08	176.60
9	-129.70	-115.73	-128.90	-124.19			322.87	323.08	183.20	184.62	191.54	197.36
10	-146.15	-136.22	-145.46	-138.54			354.61	359.87	201.93	205.60	211.11	217.27

CVP1	SG35T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	37.17	35.43	96.31	110.42			-8.69	18.92	40.85	42.06	89.83	105.64
1	101.59	105.49	113.77	122.10			-17.29	-12.79	99.83	98.03	113.88	115.64
2	195.12	195.19	193.32	204.76			-26.51	-24.02	175.54	175.80	180.60	184.34
3	288.11	288.22	288.79	295.31			-34.58	-40.11	260.44	260.05	262.23	264.37
4	380.65	380.72	387.27	374.33			-54.64	-61.55	344.84	344.60	339.81	333.52
5	478.23	479.96	476.89	467.68			-77.69	-70.44	430.02	429.85	425.31	419.92
6	570.42	574.80	571.16	558.72			-89.86	-82.91	516.24	516.18	511.05	506.01
7	665.63	669.29	671.20	663.88			-99.35	-100.18	604.31	604.14	594.58	591.99
8	766.24	765.79	764.19	757.59			-117.50	-112.34	689.45	689.33	683.40	679.57
9	859.03	861.47	861.09	854.62			-122.24	-128.94	776.64	777.60	769.82	763.58
10	954.68	957.56	962.99	948.49			-137.00	-141.95	863.29	861.61	858.16	851.40

CVP1	SG35-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	9.77	19.88	45.56	49.60			-7.80	7.73	2.95	13.86	45.45	46.10
1	45.15	49.44	54.46	51.48			3.86	7.92	55.67	57.28	66.44	64.31
2	95.96	100.12	99.19	100.78			16.14	22.42	116.14	120.91	121.21	120.75
3	144.63	152.04	151.03	149.81			35.52	32.72	181.50	182.78	178.93	176.19
4	196.70	199.17	199.26	193.37			35.33	37.11	241.97	243.02	237.10	238.47
5	249.36	251.17	244.37	244.68			46.74	48.21	300.61	302.05	298.38	300.06
6	296.01	305.47	294.34	292.02			57.83	56.66	361.26	363.11	359.62	357.55
7	345.52	355.64	347.66	344.05			71.32	65.34	423.86	424.10	417.09	415.35
8	395.03	405.37	395.29	389.58			79.80	79.86	483.09	485.93	478.09	476.18
9	443.76	455.19	444.01	442.04			95.24	86.31	543.05	547.49	536.55	534.47
10	489.54	501.91	497.88	490.11			96.15	99.47	603.69	605.67	595.48	594.82

CVP1	SG35L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-11.75	-12.60	-16.88	-20.57			0.01	-3.91	-19.34	-18.49	-15.63	-28.97
1	-5.66	-13.01	-10.47	-20.39			35.07	33.65	14.26	17.27	9.50	9.40
2	-12.52	-13.56	-10.91	-16.00			65.96	58.89	46.17	46.61	44.67	41.22
3	-10.65	-11.41	-10.96	-17.21			89.38	87.86	71.16	72.46	71.26	65.39
4	-14.58	-13.24	-13.16	-11.94			119.25	118.22	97.34	98.81	101.21	106.07
5	-17.06	-17.96	-16.42	-10.38			155.79	143.83	125.84	125.99	129.43	132.56
6	-16.23	-19.69	-19.53	-17.16			184.80	171.48	148.93	149.52	154.80	155.73
7	-19.20	-22.12	-21.62	-23.94			213.67	201.73	173.64	174.29	178.75	180.51
8	-26.34	-26.33	-26.19	-28.88			244.22	231.05	198.13	199.30	204.12	201.66
9	-28.95	-29.31	-29.72	-30.30			271.79	263.01	220.74	223.58	227.68	227.19
10	-34.68	-36.81	-34.32	-35.70			303.60	290.71	243.79	246.08	249.32	250.18

CVP1	SG36T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-48.89	-46.87	-35.61	-32.60			13.49	2.22	-39.80	-36.65	-32.86	-21.62
1	55.50	59.91	52.58	62.74			-10.15	-13.91	57.10	54.76	57.35	59.93
2	162.68	162.73	152.22	166.47			-29.76	-19.59	146.33	145.08	144.97	148.24
3	257.90	257.39	257.53	260.58			-35.61	-29.48	232.40	231.70	233.28	233.62
4	346.73	345.68	353.72	346.69			-44.98	-42.70	313.37	312.37	313.93	310.71
5	437.66	436.30	434.57	434.00			-56.70	-55.53	392.82	391.84	395.31	394.22
6	522.07	522.81	523.81	516.84			-67.85	-70.57	470.61	469.88	475.05	471.65
7	608.35	607.49	613.28	610.36			-80.86	-76.04	549.66	548.91	552.38	550.11
8	697.92	694.37	695.59	694.72			-89.57	-85.99	626.41	624.98	631.25	628.98
9	781.36	779.60	782.13	781.95			-104.19	-98.37	704.08	703.67	708.14	703.32
10	866.26	865.26	873.13	865.50			-114.52	-106.25	781.30	778.30	784.20	781.56

CVP1	SG36-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-29.78	-16.78	-24.45	-21.99			5.08	1.00	-34.05	-21.51	-17.75	-18.10
1	16.32	21.44	20.48	12.55			9.68	3.12	22.19	27.77	23.85	30.46
2	66.76	68.64	64.57	71.07			11.00	19.68	80.47	87.00	85.77	87.96
3	111.12	115.88	114.02	118.07			29.52	31.09	142.52	143.69	141.61	141.83
4	153.06	156.67	157.89	148.88			31.88	38.03	195.92	195.86	189.64	189.93
5	197.19	199.69	194.83	191.76			47.01	43.58	244.67	246.95	241.33	239.47
6	236.14	243.86	234.82	227.30			58.20	49.74	294.68	296.92	290.03	287.92
7	273.08	282.39	277.12	270.85			68.21	62.92	344.90	345.62	336.27	334.84
8	310.08	320.83	313.22	305.97			80.09	77.97	391.56	394.57	384.12	381.59
9	347.12	358.08	348.51	345.63			86.00	79.95	437.95	441.87	429.65	428.69
10	382.83	392.19	389.52	381.62			88.09	94.86	485.02	486.71	476.88	476.06

CVP1	SG36L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	3.07	2.92	-6.95	-8.23			-7.83	-10.62	-7.31	-7.34	-11.60	-21.29
1	-11.22	-18.48	-4.67	-18.83			33.33	31.03	4.98	9.48	3.47	10.08
2	-27.67	-28.47	-20.23	-22.69			64.94	58.50	28.04	30.11	30.29	31.98
3	-34.91	-35.85	-36.00	-31.73			89.81	86.13	46.32	48.07	48.44	49.26
4	-47.83	-45.43	-47.69	-53.96			118.12	118.50	67.08	67.52	60.50	61.60
5	-57.41	-58.40	-54.57	-62.81			154.97	144.69	87.27	88.04	78.61	73.13
6	-65.34	-67.89	-67.26	-73.82			184.44	173.20	104.86	104.86	91.51	91.18
7	-78.22	-78.23	-78.37	-85.60			212.74	202.67	120.74	121.19	106.35	107.88
8	-92.29	-91.25	-91.45	-99.17			244.76	233.30	137.52	138.63	123.65	121.51
9	-103.47	-102.27	-102.85	-109.35			271.35	261.73	150.85	153.09	140.14	139.37
10	-115.74	-117.39	-116.44	-122.31			302.06	290.20	165.87	168.23	155.92	154.96

CVP2	SG1											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	192.71	332.93	473.87	518.68	-18.98	-51.08	92.09	91.74	108.38	179.39	447.98	554.61
1	103.52	213.13	163.96	77.12	46.99	-45.95	-28.33	68.76	76.13	142.34	196.25	219.74
2	168.58	225.11	204.29	193.48	58.60	16.17	47.71	63.97	117.22	73.39	258.53	256.19
3	275.46	285.93	275.46	260.94	40.91	15.46	-2.09	-68.01	233.89	288.10	214.86	202.75
4	315.65	363.73	302.50	352.27	69.46	14.15	26.47	206.05	381.66	353.37	325.98	405.64
5	388.64	471.36	451.94	397.84	60.44	74.04	40.96	-153.85	432.75	450.14	449.27	444.89
6	468.74	571.63	527.00	425.06	76.85	47.34	34.95	86.51	532.08	542.77	517.64	547.79
7	555.51	673.56	622.83	575.51	79.78	45.48	150.24	110.54	586.33	650.37	580.82	665.09
8	622.38	762.58	667.61	669.68	98.04	29.81	24.19	-155.14	716.20	767.32	669.67	736.70
9	736.47	816.16	771.45	706.18	129.17	67.83	95.14	-42.36	762.28	832.03	743.20	791.44
10	829.85	953.91	870.32	847.45	142.64	83.47	32.41	133.63	876.17	898.59	807.80	859.26

CVP2	SG2											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	19.39	22.88	24.79	23.87	1.24	-0.47	9.79	5.61	10.61	19.47	15.65	20.62
1	67.46	73.12	65.85	51.15	0.04	-1.44	4.44	0.82	59.79	63.77	54.08	55.96
2	127.91	128.97	126.70	124.25	-3.46	-4.44	5.82	-4.01	114.06	111.55	123.79	123.73
3	188.58	189.16	190.39	181.86	-6.50	-7.38	-5.33	-10.28	172.12	178.81	177.70	173.95
4	246.80	248.35	244.04	248.31	-7.19	-11.03	-10.26	-1.48	234.40	233.44	237.69	241.73
5	306.75	310.27	310.20	311.00	-9.03	-8.86	-9.94	-22.77	289.63	292.57	298.46	298.68
6	367.92	372.53	369.85	371.14	-11.89	-14.30	-7.31	-13.32	348.29	350.38	356.01	352.90
7	430.14	437.09	435.65	431.54	-14.84	-17.48	-3.76	-13.92	404.55	412.11	415.99	420.22
8	490.89	497.74	491.40	494.76	-16.13	-21.02	-16.53	-27.93	466.80	472.67	480.36	481.74
9	555.96	558.33	559.83	554.12	-17.19	-21.30	-14.87	-21.85	520.26	529.64	536.39	537.22
10	620.05	625.67	621.52	616.66	-19.49	-23.10	-20.03	-24.93	579.98	586.49	591.92	589.19

CVP2	SG3											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	192.02	325.48	495.19	586.04	15.14	-8.43	14.46	86.37	146.08	230.41	567.82	642.85
1	115.12	199.65	184.43	116.36	79.88	-61.05	7.55	52.49	82.82	180.04	237.44	289.75
2	162.34	227.32	225.71	178.81	41.51	-16.94	-45.84	-12.63	95.72	73.56	229.33	239.53
3	268.22	267.73	272.98	242.65	-14.39	-56.58	-86.27	-147.70	184.27	245.86	186.35	173.68
4	329.86	370.34	301.70	361.91	-3.88	-69.70	-91.07	103.40	327.40	275.96	267.33	325.49
5	409.74	480.83	454.61	385.03	-15.31	-42.58	-41.52	-256.49	362.11	376.70	385.20	364.04
6	492.12	588.95	534.18	436.81	-31.73	-80.75	-91.25	-78.62	454.54	445.61	431.50	457.26
7	575.14	679.17	623.09	553.65	-33.76	-125.97	-69.56	-34.08	492.41	542.44	479.24	546.07
8	643.54	761.27	691.53	663.78	-40.40	-154.93	-187.25	-350.76	583.31	642.89	554.17	600.05
9	753.87	814.71	771.32	706.95	-34.32	-136.10	-129.32	-319.58	638.29	680.72	626.11	656.69
10	851.03	951.31	865.11	823.28	-28.23	-140.90	-208.33	-80.14	733.30	740.54	685.05	707.24

CVP2	SG4											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	15.50	18.17	17.31	15.80	0.76	-5.39	-2.93	-4.14	13.63	23.45	14.98	17.48
1	66.91	68.24	63.37	45.05	-0.07	-11.06	6.88	-8.33	61.49	67.22	50.58	62.35
2	125.78	124.58	126.55	115.27	-6.84	-15.20	-6.02	-18.83	110.54	111.58	116.49	124.43
3	186.52	185.44	184.83	176.21	-16.01	-21.79	-18.22	-21.13	164.71	170.71	169.09	167.86
4	245.27	245.72	239.94	243.79	-22.04	-30.54	-25.22	-21.77	223.56	220.39	226.43	228.61
5	306.30	306.14	305.29	300.47	-25.91	-30.68	-22.87	-41.12	274.80	277.33	286.03	289.41
6	366.85	369.29	364.46	366.95	-33.28	-41.18	-26.74	-41.17	330.73	331.85	339.46	340.75
7	428.22	430.79	429.95	416.00	-38.62	-51.54	-35.40	-40.84	384.20	390.42	394.99	404.59
8	487.79	490.77	487.71	480.30	-42.77	-59.14	-45.76	-58.67	441.32	447.64	454.19	458.40
9	552.70	550.79	547.04	539.59	-49.35	-63.76	-48.30	-64.79	495.95	500.95	510.98	515.10
10	616.58	617.18	609.07	602.11	-53.46	-69.28	-54.65	-64.65	553.07	557.42	565.94	567.61

CVP2	SG5											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	165.97	212.63	368.66	454.91	17.63	40.99	-20.91	100.82	105.37	115.31	467.91	513.40
1	93.92	173.16	163.28	136.35	37.71	13.68	31.67	94.27	77.51	139.71	194.76	216.14
2	132.92	227.23	206.94	174.80	7.09	15.80	-77.13	8.18	101.59	50.97	182.70	150.37
3	239.91	251.95	256.00	215.97	-10.18	-13.76	-72.71	-97.86	170.79	227.50	204.25	206.45
4	299.51	366.64	281.52	345.16	21.50	21.37	-96.10	92.98	292.97	235.44	265.39	284.12
5	388.33	463.92	424.32	360.99	-3.09	-7.96	-29.80	-130.91	338.53	346.10	369.90	319.15
6	473.58	551.13	511.11	401.65	-18.37	2.64	-74.69	-36.73	424.36	404.37	423.21	426.51
7	540.45	647.19	577.36	509.62	-21.87	-8.42	-112.12	19.20	467.41	485.62	458.49	492.78
8	619.38	734.04	656.91	603.68	-17.68	-5.66	-162.71	-208.67	525.75	588.47	529.19	552.17
9	693.38	787.71	721.08	667.78	6.54	1.86	-115.75	-165.90	582.01	607.90	623.30	616.31
10	781.36	908.98	811.24	757.37	-3.50	-1.97	-194.42	-12.26	681.88	668.39	699.98	687.03

CVP2	SG6											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	33.85	25.79	43.29	34.04	-1.46	-4.49	-8.39	-5.68	21.27	25.16	34.54	36.33
1	87.83	90.46	90.64	69.03	-6.44	-6.33	7.46	-7.15	78.39	83.39	70.83	79.45
2	150.29	153.29	159.15	146.25	-12.33	-13.88	-13.18	-19.68	132.55	131.10	141.94	150.36
3	217.15	217.78	222.35	211.48	-19.89	-20.33	-20.18	-22.08	190.96	196.86	202.55	203.05
4	283.68	286.35	281.09	286.97	-22.28	-23.83	-29.76	-24.65	255.60	251.60	261.68	263.66
5	354.79	355.42	355.88	356.27	-30.02	-30.83	-27.55	-39.58	316.24	317.01	326.71	328.50
6	425.82	427.83	423.52	431.95	-37.94	-37.28	-29.39	-44.00	381.82	379.55	387.51	389.70
7	496.57	501.53	497.02	492.24	-44.39	-44.65	-45.78	-45.10	444.69	445.85	454.28	462.52
8	568.75	572.47	568.32	569.43	-50.28	-52.02	-53.89	-58.18	507.84	512.98	524.01	530.83
9	640.79	642.79	642.25	642.76	-54.33	-56.26	-54.81	-62.79	571.04	573.80	592.54	598.26
10	714.61	718.77	718.82	711.92	-61.34	-62.71	-63.65	-71.63	637.36	638.54	658.56	659.98

CVP2	SG7											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												

CVP2	SG8											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	4.66	3.54	6.21	-0.73	-3.07	-1.68	-1.68	-5.13	2.59	9.14	5.86	11.47
1	64.27	63.17	61.40	49.32	-2.32	-3.14	16.72	-4.40	60.01	65.09	52.97	61.53
2	123.16	119.85	127.64	114.10	-8.21	-7.57	-3.88	-13.97	114.48	111.47	119.21	126.30
3	185.71	183.16	185.06	175.94	-9.68	-11.99	-7.57	-13.96	169.69	175.51	182.51	181.51
4	246.09	246.50	243.92	250.26	-14.10	-14.93	-14.20	-16.18	229.30	227.05	240.66	238.18
5	308.66	306.11	315.31	309.90	-14.84	-18.61	-9.77	-16.18	285.26	286.68	299.54	297.80
6	370.43	368.68	374.95	373.17	-17.78	-20.82	-6.84	-20.60	340.47	341.22	356.22	353.76
7	431.66	431.99	436.04	423.99	-21.46	-28.18	-19.34	-19.85	399.39	401.56	416.64	417.84
8	492.73	490.89	497.87	490.98	-25.14	-29.65	-20.08	-34.58	453.83	461.24	479.87	479.64
9	556.04	552.68	559.01	552.08	-28.08	-34.08	-20.81	-41.94	509.77	514.26	540.23	536.32
10	617.09	613.09	618.58	611.02	-32.50	-37.75	-25.22	-33.11	571.61	575.27	602.10	597.42

CVP2	SG9											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	195.46	314.49	485.37	555.59	8.70	0.93	30.98	78.19	148.66	213.48	532.20	629.14
1	117.75	197.63	174.04	104.45	59.28	-43.59	-0.66	34.50	79.99	159.57	213.05	255.70
2	161.31	217.75	212.04	166.54	27.52	-6.29	-53.33	-8.51	97.15	76.66	213.61	217.09
3	254.71	256.71	264.86	232.45	-22.13	-45.41	-78.49	-150.48	183.73	234.12	187.21	165.03
4	324.13	358.45	293.43	337.60	-5.71	-50.04	-83.47	97.62	316.62	273.10	253.85	325.25
5	400.56	466.25	432.22	386.74	-21.95	-31.76	-54.37	-244.96	358.18	365.41	365.70	349.80
6	479.68	560.40	518.47	414.20	-34.69	-61.84	-85.13	-65.51	445.12	431.39	416.83	449.53
7	562.16	658.44	602.46	541.44	-35.79	-95.45	-66.37	-38.09	483.19	525.33	456.46	516.04
8	633.02	732.10	660.97	627.09	-54.25	-125.91	-180.44	-336.33	576.01	625.46	529.06	595.91
9	732.53	782.62	744.30	678.78	-38.38	-102.64	-122.85	-306.43	620.68	662.21	604.74	637.08
10	823.11	918.01	837.61	793.32	-44.10	-105.41	-200.05	-87.88	723.13	715.81	663.33	687.11

CVP2	SG10											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	2.31	-0.71	2.94	-9.85	-0.12	-1.54	-0.66	-7.45	-2.57	3.61	-10.76	0.50
1	62.46	62.03	55.15	31.84	-6.20	-5.42	7.09	-16.30	53.34	55.09	31.49	46.26
2	125.56	122.00	122.84	111.20	-12.48	-12.98	-10.25	-18.88	107.39	107.12	109.52	119.86
3	186.61	186.02	185.94	177.81	-20.41	-20.18	-18.37	-24.42	164.95	168.55	168.37	165.43
4	250.65	249.34	243.85	243.45	-24.84	-26.64	-23.54	-24.23	224.89	223.74	223.90	231.10
5	312.09	312.42	310.07	310.26	-29.64	-29.77	-29.62	-43.24	278.60	280.38	284.78	290.14
6	373.27	373.68	374.67	372.21	-37.20	-39.00	-25.57	-39.55	334.69	335.26	340.86	343.86
7	435.61	439.00	440.53	428.71	-42.92	-46.01	-37.19	-45.08	388.42	394.46	395.92	404.04
8	497.38	497.86	497.35	488.30	-51.22	-54.68	-46.97	-61.50	446.87	451.90	453.40	467.66
9	561.22	557.77	557.18	547.53	-55.65	-58.20	-49.92	-65.74	498.16	504.68	509.29	516.73
10	624.45	624.81	617.08	609.58	-63.40	-64.10	-56.92	-73.12	557.94	559.38	562.67	565.44

CVP2	SG11											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	160.01	215.69	357.70	411.94	26.57	54.53	-11.12	96.47	122.66	126.19	457.10	525.62
1	68.52	137.15	130.10	65.21	47.38	18.58	16.69	83.04	52.15	105.14	157.59	188.57
2	107.32	193.40	176.91	103.19	18.04	21.95	-84.86	11.06	82.10	28.58	134.98	124.23
3	207.86	212.46	220.62	178.13	-5.77	-9.28	-74.43	-103.23	147.21	193.12	169.40	162.01
4	266.28	326.18	233.69	289.77	23.44	11.48	-91.59	84.33	265.17	203.20	212.03	248.57
5	342.73	412.91	368.21	274.86	4.75	-3.84	-39.23	-142.06	304.78	303.93	323.31	277.54
6	418.99	497.55	454.26	299.37	-6.19	-4.35	-88.64	-32.33	381.60	354.71	356.71	372.81
7	482.24	580.98	510.17	405.35	-11.07	-14.45	-105.85	12.14	413.94	427.96	377.48	422.50
8	545.15	650.56	566.28	476.59	-5.36	-9.79	-165.83	-223.12	472.22	524.19	441.79	475.98
9	610.86	690.75	625.58	532.88	24.77	-3.56	-124.86	-195.26	518.18	527.88	523.35	522.86
10	687.96	801.18	695.83	610.84	5.16	-3.06	-199.26	-17.54	608.06	573.74	582.48	580.81

CVP2	SG12											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	55.29	44.83	65.33	41.18	-3.17	-4.42	-13.20	-10.11	46.49	52.38	39.20	44.04
1	139.24	140.69	149.77	115.36	-7.14	-6.60	10.71	-12.97	130.40	135.09	113.02	127.61
2	230.47	230.91	246.05	230.50	-16.24	-17.58	-15.97	-23.40	210.35	209.70	219.34	236.00
3	322.04	322.57	334.02	315.83	-25.24	-26.54	-24.47	-26.26	291.94	297.68	303.64	304.19
4	416.91	421.89	418.51	421.22	-29.07	-31.71	-34.26	-36.93	382.30	378.14	387.10	389.46
5	524.85	523.62	524.17	527.45	-37.89	-40.39	-39.06	-46.67	475.23	475.44	485.11	491.16
6	631.11	629.96	627.91	640.74	-46.85	-50.00	-36.98	-53.92	572.19	573.40	579.62	582.30
7	737.71	739.49	740.33	728.16	-55.53	-59.37	-55.63	-56.22	669.96	672.53	676.74	691.38
8	841.53	845.04	845.22	842.75	-63.05	-68.37	-64.82	-70.30	768.28	771.48	782.33	793.03
9	949.39	950.74	955.37	951.25	-68.55	-74.75	-68.65	-78.24	861.31	864.17	883.67	891.46
10	1055.03	1058.84	1069.63	1054.73	-78.38	-82.55	-79.22	-92.74	959.66	962.17	979.46	983.76

CVP2	SG13											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	263.47	292.59	461.24	555.79	4.82	38.84	-58.73	87.79	229.82	226.10	518.45	604.64
1	123.30	152.89	225.66	262.23	89.24	-20.92	20.05	106.44	124.45	173.68	218.20	250.89
2	134.95	225.67	207.30	199.36	31.12	22.24	-99.75	30.92	129.47	74.46	160.40	81.01
3	249.53	239.35	254.21	186.00	36.73	-6.90	-19.12	-90.50	222.08	277.05	234.96	213.50
4	346.16	380.36	311.73	400.32	42.67	37.03	-44.54	117.13	369.25	278.45	310.48	327.34
5	439.79	474.62	471.37	407.92	48.99	13.31	35.70	24.47	441.49	423.73	434.63	394.57
6	528.83	579.92	571.64	455.21	37.75	49.02	-3.46	61.54	545.62	487.56	477.74	498.16
7	610.52	674.98	636.84	577.03	53.08	10.31	-46.45	145.25	615.49	586.14	523.57	570.07
8	680.30	754.76	722.31	639.48	59.67	27.08	-25.27	-118.52	674.21	712.42	622.89	620.30
9	767.26	800.94	790.19	729.75	85.59	43.14	16.36	-144.49	759.69	734.72	720.33	690.30
10	870.92	918.37	861.75	802.98	108.44	36.77	-65.49	187.86	871.88	807.36	808.85	795.67

CVP2	SG14											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	1.39	-2.85	-1.64	-13.36	-1.26	-1.64	-4.21	-2.34	-4.64	2.67	0.63	2.68
1	62.48	61.70	59.63	35.13	-2.32	-3.95	14.08	-4.31	56.04	61.88	48.67	55.33
2	123.52	126.84	126.68	116.24	-9.37	-10.17	-6.29	-14.13	111.54	109.78	119.01	128.38
3	188.36	188.35	188.65	180.00	-12.27	-15.55	-11.99	-17.26	171.61	176.56	184.46	180.75
4	253.48	253.75	252.78	256.01	-16.46	-17.68	-19.00	-18.32	233.64	229.06	241.21	240.96
5	317.60	316.33	324.13	312.93	-18.12	-22.56	-13.56	-23.38	289.68	290.71	306.34	301.44
6	379.34	379.91	387.82	379.04	-24.29	-26.24	-13.61	-30.06	349.11	347.22	361.80	357.90
7	442.58	445.43	451.71	432.11	-27.42	-33.57	-26.60	-26.15	406.05	407.27	419.47	423.50
8	506.07	506.29	512.56	497.71	-32.21	-38.08	-31.99	-41.90	462.71	468.78	485.16	483.43
9	567.99	567.18	575.17	563.58	-36.22	-41.63	-31.16	-49.50	519.28	522.10	548.22	542.72
10	632.70	632.98	636.88	622.01	-39.26	-46.56	-35.99	-45.86	580.50	579.57	608.39	600.40

CVP2	SG15											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	107.04	140.89	202.32	206.98	-11.37	-7.42	17.66	-13.94	67.81	69.25	186.64	246.31
1	90.63	114.54	73.14	58.67	6.69	-11.74	-16.49	-15.17	58.13	71.79	94.35	88.78
2	125.18	141.35	116.34	94.56	-1.51	4.24	-20.28	-13.93	90.88	77.55	116.22	95.69
3	169.90	170.69	164.61	134.64	-24.81	-9.58	-7.49	-67.32	147.95	154.89	151.78	121.29
4	229.97	229.53	202.50	209.19	-2.24	1.48	-23.43	14.99	218.69	198.66	186.64	238.65
5	272.81	294.47	258.69	296.26	-10.63	-3.04	-22.06	-94.02	257.26	243.52	252.64	240.40
6	320.45	351.92	320.84	310.70	-9.66	3.13	-17.26	-31.19	316.63	290.78	298.29	319.64
7	385.47	423.46	379.19	386.82	-6.29	-8.01	-16.77	-36.05	348.30	351.48	337.45	341.32
8	443.40	460.36	410.65	411.78	-35.87	-29.34	-52.55	-126.77	414.05	412.97	391.14	426.78
9	500.11	502.48	477.39	460.98	-18.31	-4.47	-14.42	-146.80	457.86	458.86	440.37	448.43
10	559.54	592.62	527.41	525.83	-36.24	-5.16	-47.41	-64.27	525.25	487.40	494.77	495.97

CVP2	SG16											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	27.84	29.27	37.32	23.37	0.61	0.52	5.90	-13.82	15.81	16.15	28.43	47.02
1	70.21	71.98	60.02	41.97	-4.83	-0.86	1.38	-18.56	54.59	55.73	51.27	55.77
2	123.68	123.80	114.54	100.48	-9.66	-3.90	-7.50	-13.63	105.48	100.77	108.20	108.18
3	174.52	174.10	170.60	157.60	-18.51	-9.84	-4.70	-23.12	160.57	160.92	165.21	153.17
4	231.88	229.86	228.10	215.00	-11.60	-6.80	-14.14	-16.26	216.88	213.12	211.27	224.05
5	283.88	289.40	277.24	283.83	-15.37	-13.20	-18.97	-32.24	268.67	263.61	269.11	262.32
6	339.23	346.70	340.63	331.52	-18.28	-12.24	-12.20	-25.19	323.80	314.98	319.27	320.47
7	400.20	410.36	399.49	388.53	-20.02	-16.66	-20.68	-30.26	373.44	372.13	373.54	367.95
8	459.68	461.03	450.75	435.00	-33.48	-26.61	-27.03	-45.73	430.52	426.80	430.95	435.07
9	516.66	515.80	510.72	488.93	-29.97	-20.17	-20.49	-56.88	481.74	480.75	483.91	478.69
10	574.97	581.54	565.01	545.82	-40.75	-23.76	-29.61	-52.78	540.10	528.85	537.34	530.13

CVP2	SG17											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	121.30	144.64	169.22	61.37	15.90	29.09	5.91	8.08	113.12	85.57	189.06	244.20
1	95.00	109.46	112.48	-37.45	5.93	17.67	-13.46	-6.90	73.89	77.31	103.77	121.98
2	137.51	163.98	187.63	12.70	11.10	17.45	-47.26	-18.40	119.30	96.04	113.28	151.00
3	212.31	206.30	219.18	182.98	0.07	7.39	-32.40	-47.48	188.16	190.19	193.72	180.26
4	283.59	288.12	262.02	239.37	4.49	-10.29	-37.15	4.82	276.43	241.26	222.38	260.37
5	342.44	365.00	339.13	201.60	6.25	5.40	-16.04	-78.35	327.14	303.48	315.56	300.76
6	408.05	456.67	428.01	241.08	-2.24	-7.84	-46.11	-31.03	404.35	364.99	365.21	381.51
7	486.02	528.73	495.06	347.40	-3.35	-6.23	-37.46	-40.97	452.21	433.46	407.96	422.49
8	565.05	583.15	550.31	389.54	-0.90	-3.09	-66.48	-99.16	525.05	526.54	481.05	510.23
9	623.95	633.59	634.92	461.45	18.47	-3.40	-62.47	-119.37	591.05	556.64	544.37	558.37
10	697.88	730.95	687.14	526.22	-1.87	2.22	-81.55	-56.42	662.64	602.36	611.77	617.50

CVP2	SG18											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	32.60	34.88	31.15	-14.86	-0.24	2.77	-2.17	-14.33	29.46	26.41	26.79	40.63
1	65.86	66.94	65.69	16.64	-6.98	2.64	-4.43	-15.39	57.09	58.01	54.82	65.34
2	109.83	112.35	122.77	67.13	-5.04	-2.31	-13.94	-16.22	99.20	99.72	100.49	113.60
3	160.20	160.52	161.75	147.64	-9.24	-5.59	-11.08	-14.01	148.90	149.04	154.20	149.99
4	214.35	212.64	213.27	200.26	-11.87	-16.21	-16.67	-22.46	200.24	195.42	190.04	199.12
5	265.15	266.76	261.85	220.42	-12.80	-12.84	-18.52	-27.31	247.00	241.98	246.19	243.64
6	317.38	322.01	322.83	270.64	-18.11	-19.81	-21.29	-27.91	298.91	291.55	290.90	292.44
7	372.55	376.88	376.59	327.01	-21.39	-21.89	-22.63	-37.23	346.24	342.34	340.65	341.24
8	428.13	426.77	426.46	370.61	-24.39	-24.15	-28.72	-34.42	397.94	395.96	394.71	396.82
9	479.31	478.09	482.85	426.96	-23.00	-27.25	-32.79	-48.37	447.45	439.76	443.48	444.48
10	532.29	535.96	531.94	476.33	-30.86	-28.63	-39.02	-51.97	497.14	488.46	491.19	493.07

CVP2	SG19											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	110.60	127.08	209.08	203.74	-32.10	-23.11	-27.79	2.23	94.93	71.45	176.60	227.69
1	71.18	85.97	131.60	102.75	1.55	-30.63	-12.46	18.15	72.37	81.91	103.18	110.61
2	97.07	162.04	131.59	137.93	-2.84	-4.40	-39.11	2.99	95.53	70.65	117.79	61.77
3	167.44	163.89	189.86	141.44	9.13	-7.81	-11.33	-33.28	160.13	179.49	162.36	149.62
4	239.64	244.02	246.62	271.80	1.40	7.99	-12.44	33.69	241.26	194.92	215.81	235.07
5	285.70	301.76	309.13	272.39	11.91	3.14	18.61	2.99	285.82	270.76	283.51	255.78
6	340.47	380.19	392.20	306.95	-4.37	16.01	-3.00	17.25	354.99	318.84	329.93	334.42
7	399.81	436.43	442.50	418.14	0.33	0.36	-9.13	50.31	400.68	377.31	363.12	381.26
8	458.27	494.15	502.61	458.84	2.01	-1.02	-6.54	-32.52	455.06	459.83	437.38	427.09
9	510.07	525.96	562.41	498.97	12.22	8.54	4.93	-58.79	507.59	486.48	500.08	476.66
10	579.80	597.55	630.05	558.96	16.25	2.74	-21.36	50.15	579.73	532.71	542.87	543.99

CVP2	SG20											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	30.71	33.15	39.11	38.30	-11.50	-9.90	-2.07	-1.51	25.99	22.64	33.45	51.80
1	60.11	63.10	66.84	54.00	-8.55	-9.72	1.43	-1.13	58.16	60.73	53.97	68.80
2	112.23	132.05	113.21	122.25	-9.66	-8.61	-6.89	-6.49	107.14	102.87	111.63	105.20
3	172.66	172.17	177.73	163.28	-6.89	-10.83	-11.31	-11.86	165.18	169.96	166.90	164.90
4	235.52	234.67	238.69	242.72	-13.73	-10.46	-12.97	-10.56	224.86	213.42	216.80	227.19
5	289.31	291.77	288.78	283.41	-10.77	-13.42	-7.07	-13.33	276.82	273.86	272.43	268.40
6	345.80	356.10	355.53	337.16	-20.20	-14.15	-15.56	-17.20	335.05	326.25	324.73	328.32
7	404.92	414.33	414.12	408.73	-21.31	-20.44	-18.90	-9.09	388.87	382.79	374.72	384.37
8	464.59	472.38	470.86	464.56	-24.26	-25.25	-23.89	-21.65	444.84	444.40	438.22	441.63
9	520.23	522.61	529.32	513.35	-25.00	-24.88	-25.00	-34.77	498.26	493.02	495.88	494.86
10	581.36	584.22	591.36	570.72	-27.40	-28.76	-27.96	-25.34	557.41	546.90	543.07	551.79

CVP2	SG21											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	18.82	0.36	17.44	-10.40	-4.08	1.06	8.77	10.08	12.13	1.63	-13.80	-16.30
1	-19.66	-25.18	-13.83	-15.39	21.08	27.70	4.88	38.20	4.73	1.63	-23.61	-23.15
2	-55.92	-61.44	-53.78	-57.77	48.28	56.75	66.11	66.13	1.03	2.00	-22.31	-28.14
3	-94.77	-97.71	-87.83	-95.89	79.55	85.62	82.77	86.11	-6.74	-10.58	-13.06	-11.86
4	-128.08	-128.63	-120.56	-124.73	109.51	113.92	111.45	114.60	-15.06	-13.73	-12.51	-14.08
5	-160.46	-160.63	-147.01	-151.20	135.06	139.46	126.06	149.57	-17.28	-19.09	-23.24	-20.19
6	-193.17	-197.45	-177.19	-188.55	166.32	169.45	154.56	177.71	-23.95	-19.28	-28.05	-19.08
7	-222.48	-229.46	-208.08	-215.22	191.65	199.59	190.07	206.16	-23.95	-27.98	-29.16	-25.74
8	-255.77	-258.33	-239.35	-251.11	216.46	231.78	222.63	236.52	-22.84	-28.53	-38.78	-30.73
9	-287.04	-289.94	-265.09	-281.82	244.01	255.52	244.46	271.49	-31.16	-32.42	-36.74	-34.06
10	-319.58	-325.50	-296.33	-310.72	271.23	281.40	263.30	285.18	-33.01	-35.01	-40.08	-36.47

CVP2	SG22											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	13.24	5.48	16.78	-8.53	-7.25	3.25	14.90	19.68	-1.45	-13.23	-17.83	-16.76
1	2.36	-0.38	15.40	16.12	17.49	33.25	6.03	44.29	24.64	18.95	-12.01	-17.68
2	-0.55	-3.52	5.24	11.24	44.58	64.78	62.19	77.98	49.14	49.88	30.96	17.67
3	-3.05	-3.20	-7.40	-2.29	80.36	90.19	89.87	92.84	77.81	78.54	73.98	72.37
4	-3.92	-2.13	1.41	3.34	116.72	127.80	116.00	116.16	106.37	105.79	107.58	98.45
5	-5.86	-0.11	15.90	15.16	140.47	149.72	117.14	165.09	133.99	130.58	129.92	127.07
6	-4.58	-3.06	18.54	11.55	172.46	181.00	155.98	200.46	160.03	158.51	154.99	161.76
7	-5.21	-4.17	10.93	6.94	195.74	218.65	194.45	219.39	187.10	183.74	181.81	183.06
8	-7.06	-3.75	6.86	7.63	224.85	252.07	236.78	246.60	214.18	213.92	203.64	197.12
9	-9.23	-2.42	9.22	12.02	253.12	276.69	246.56	295.76	237.95	236.27	233.78	223.34
10	-9.92	-7.31	6.22	10.31	281.59	303.81	268.83	305.87	264.49	262.02	258.65	254.08

CVP2	SG23											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	2.37	-14.66	2.21	-27.13	-6.01	4.05	10.43	10.84	-8.33	-20.56	-37.55	-44.31
1	-20.37	-27.94	-11.40	-6.60	25.81	35.41	7.25	48.14	4.12	1.03	-24.04	-31.91
2	-42.46	-51.28	-43.25	-40.65	59.39	70.97	80.33	87.01	20.41	25.71	-1.30	-14.61
3	-69.75	-74.25	-61.98	-72.84	97.66	104.09	102.48	110.29	31.80	26.49	23.74	23.25
4	-90.93	-94.78	-90.33	-93.11	136.58	139.96	139.60	137.28	39.96	40.88	39.41	29.43
5	-114.08	-117.74	-107.30	-106.91	166.52	169.71	153.70	192.11	53.70	48.63	36.74	36.30
6	-135.63	-146.89	-130.74	-135.03	205.03	206.20	191.85	225.14	61.04	62.29	46.47	51.01
7	-155.90	-170.87	-153.79	-157.41	235.67	243.82	237.72	253.97	75.43	66.81	64.47	59.14
8	-180.74	-190.71	-174.41	-186.28	267.84	282.00	278.62	297.89	88.57	78.02	62.75	59.87
9	-204.77	-213.88	-190.61	-206.57	301.25	311.66	300.48	345.02	92.90	87.39	75.20	65.59
10	-229.61	-243.56	-218.54	-228.41	335.08	343.55	327.06	354.70	103.10	97.20	84.43	79.38

CVP2	SG24											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	11.65	-0.25	17.84	-8.36	-8.94	6.34	15.52	19.64	-5.63	-20.55	-25.98	-18.54
1	-5.18	-8.97	12.08	26.00	25.84	38.62	3.25	54.69	20.90	17.10	-8.45	-10.83
2	-7.86	-13.63	-3.42	7.92	59.24	78.67	80.09	99.07	53.23	54.37	34.91	21.91
3	-11.45	-15.66	-8.17	-9.75	102.79	111.53	109.26	115.66	89.21	88.50	83.80	83.54
4	-13.34	-14.97	-10.61	-4.58	146.87	153.77	146.90	147.96	123.52	120.80	123.28	115.09
5	-17.50	-16.08	0.36	5.52	176.97	183.48	156.30	208.48	157.30	152.18	145.61	147.19
6	-18.14	-23.37	-0.51	-5.50	218.49	222.80	198.20	247.44	187.38	184.52	175.87	183.38
7	-19.85	-28.30	-8.17	-9.24	249.64	264.85	248.92	272.48	218.96	212.55	206.55	209.42
8	-26.86	-29.64	-10.80	-11.96	284.55	306.92	296.71	313.46	251.78	245.61	230.30	228.22
9	-30.97	-34.35	-12.23	-8.69	320.68	338.00	315.34	369.00	276.88	272.38	265.54	254.79
10	-34.43	-42.61	-16.52	-11.69	356.51	371.73	339.48	384.31	306.58	300.00	293.25	295.38

CVP2	SG25											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-3.56	-8.40	-37.39	-38.08	-4.87	2.56	9.55	-5.58	-1.07	-13.09	-42.80	-57.71
1	-12.40	-11.99	-31.57	-2.01	22.59	30.41	10.32	22.88	18.56	14.13	-15.04	-29.68
2	-14.71	-20.79	-39.65	-23.82	50.72	61.74	67.83	34.99	41.23	43.15	13.27	-4.33
3	-23.70	-27.42	-38.66	-34.08	84.37	89.67	87.36	62.68	58.96	56.85	54.93	49.81
4	-30.40	-32.56	-49.54	-46.50	118.17	121.63	120.92	52.25	76.70	78.38	79.33	61.54
5	-36.90	-37.82	-60.09	-43.72	143.48	146.08	131.57	147.73	100.81	99.60	86.92	74.66
6	-42.23	-48.92	-71.44	-55.34	176.68	177.84	164.24	173.45	120.33	123.15	108.70	98.08
7	-48.00	-57.71	-83.04	-70.24	203.38	210.39	203.75	195.84	143.34	139.42	134.73	111.51
8	-57.27	-62.64	-98.37	-85.02	231.28	243.54	240.39	224.65	163.19	158.84	144.83	116.13
9	-66.76	-71.17	-110.69	-93.12	259.77	269.10	256.91	196.20	178.33	177.77	166.84	138.13
10	-76.21	-85.80	-123.55	-103.65	289.47	296.77	280.85	216.64	195.74	195.79	185.93	162.99

CVP2	SG26											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	101.20	52.09	-13.11	-8.55	25.37	154.85	11.52	17.33	179.22	-7.07	1548.82	-21.68
1	82.64	52.09	-14.70	29.04	-38.93	-23.64	4.10	53.09	249.41	-1.18	1575.84	0.01
2	26.75	52.09	-22.11	5.06	14.02	43.53	76.29	93.72	135.09	37.63	1613.17	28.04
3	80.15	-12.65	-16.90	-12.59	14.02	66.59	101.25	109.98	123.32	70.54	91.43	85.77
4	97.35	-166.18	-17.33	-6.53	20.33	28.83	138.76	141.34	73.75	111.18	137.02	115.00
5	109.12	-183.29	-22.48	2.39	-35.99	-27.07	151.19	198.70	73.31	137.66	159.45	140.01
6	74.72	-268.62	-26.83	-4.69	-77.18	-71.70	188.41	233.94	111.56	186.60	196.22	174.14
7	96.46	-200.95	-35.47	-8.09	-85.57	-6.48	236.68	259.81	214.11	201.85	236.34	203.86
8	102.79	-236.25	-47.06	-14.34	-9.51	-21.19	279.70	300.01	255.71	233.69	259.47	225.81
9	173.40	-247.48	-40.93	-14.89	-53.21	63.16	298.08	350.75	302.78	254.29	293.11	252.83
10	253.28	-318.64	-46.87	-16.27	5.20	48.93	321.34	365.64	173.34	261.24	322.65	289.42

CVP2	SG27											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	25.09	27.86	21.75	21.24	-1.51	2.95	16.41	20.57	32.15	22.35	180.35	0.27
1	-12.17	-9.20	-8.46	16.64	32.36	30.92	13.82	51.73	23.22	22.53	175.45	-12.15
2	-38.60	-42.14	-42.68	-27.72	59.85	67.54	70.17	85.64	26.79	27.86	182.52	-11.77
3	-67.03	-70.78	-63.89	-67.87	92.28	96.36	90.74	100.10	26.33	24.00	20.53	21.49
4	-93.48	-94.97	-109.56	-93.13	129.88	131.57	127.89	132.94	27.54	29.76	31.57	23.39
5	-115.33	-117.17	-125.22	-104.84	157.46	159.43	143.67	176.77	37.14	37.84	23.62	27.82
6	-136.33	-146.04	-150.50	-130.31	193.91	193.39	172.88	212.99	43.23	47.24	40.85	40.60
7	-158.22	-170.94	-177.52	-155.57	223.75	227.24	218.13	239.13	54.22	51.32	50.76	44.98
8	-182.90	-189.10	-204.03	-180.93	253.92	261.89	251.66	272.02	63.70	58.84	50.14	44.44
9	-205.91	-210.59	-221.65	-200.56	284.81	291.25	272.31	316.32	67.95	68.68	59.88	51.55
10	-228.79	-239.83	-245.74	-221.35	317.62	321.96	298.47	337.01	75.89	77.90	66.99	68.00

CVP2	SG28											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-5.60	-9.98	-12.37	-23.34	-8.86	-0.33	17.04	19.97	-12.04	-23.48	-39.06	-32.25
1	-15.20	-17.38	-10.89	16.56	30.32	30.71	9.64	57.69	15.32	13.49	-2.10	-13.77
2	-15.94	-21.81	-16.81	-8.53	61.37	72.86	74.67	93.91	46.36	46.75	31.17	11.35
3	-18.90	-24.03	-12.36	-27.01	99.07	106.14	99.84	109.41	73.72	75.57	77.00	69.01
4	-21.12	-22.55	-25.68	-15.95	143.41	143.09	136.81	141.22	106.23	105.90	114.70	102.27
5	-25.55	-25.51	-19.03	-14.45	172.26	173.40	150.83	195.92	137.29	136.95	128.00	125.93
6	-28.52	-33.64	-21.97	-24.82	212.92	212.61	186.34	228.48	161.69	166.58	162.01	158.48
7	-34.42	-40.30	-30.84	-30.72	244.68	246.59	231.40	254.28	190.55	188.74	190.90	180.70
8	-41.08	-43.99	-42.67	-41.81	278.72	288.73	274.28	298.67	216.40	216.86	210.79	192.49
9	-49.21	-53.61	-38.97	-45.50	311.95	319.11	294.24	345.98	236.36	239.05	238.88	217.63
10	-54.39	-63.96	-46.37	-51.41	346.00	350.87	318.59	362.24	262.23	264.86	269.97	255.33

CVP2	SG29T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	8.25	8.04	31.21	37.06	8.22	4.25	17.51	9.28	16.52	24.89	58.04	77.17
1	82.72	78.09	82.57	65.87	-13.40	-13.13	3.29	-16.04	80.53	78.45	91.87	102.82
2	163.73	156.98	163.65	157.09	-28.13	-30.52	-33.80	-44.53	146.30	146.64	166.33	175.05
3	242.96	243.96	236.78	231.61	-46.21	-48.23	-49.70	-56.99	218.63	220.49	226.94	226.87
4	323.17	322.46	318.22	318.30	-61.87	-67.01	-69.87	-61.96	289.30	289.72	287.08	293.70
5	403.07	401.41	389.93	397.35	-78.61	-76.26	-85.76	-98.03	361.10	360.29	356.24	369.18
6	482.14	482.62	465.50	481.43	-94.09	-98.53	-96.88	-106.87	432.35	429.83	424.98	432.34
7	562.62	564.91	549.76	545.07	-111.28	-114.46	-113.98	-126.42	505.75	503.94	503.02	515.36
8	644.94	643.47	625.61	629.99	-124.35	-132.27	-136.10	-143.95	579.05	576.94	584.96	594.28
9	725.41	726.56	707.90	712.36	-139.35	-146.33	-150.65	-157.61	651.05	650.59	653.14	666.94
10	807.94	807.38	787.12	788.57	-156.19	-159.80	-169.27	-181.60	724.40	726.61	724.09	737.12

CVP2	SG29-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	32.05	31.32	86.97	23.45	-3.66	6.55	16.54	10.53	34.74	20.88	72.27	53.15
1	40.96	38.32	61.43	38.14	7.65	17.07	-7.25	1.31	64.94	63.87	32.49	22.87
2	71.71	65.31	88.97	68.11	19.29	34.33	18.38	50.27	109.07	106.81	83.26	108.31
3	109.25	104.04	107.85	113.70	36.21	45.56	34.16	40.99	162.45	162.07	152.72	160.71
4	144.37	139.48	138.81	128.46	60.36	70.40	64.95	67.43	218.30	213.51	204.79	198.87
5	175.67	173.18	176.22	169.65	69.69	81.02	47.97	62.56	275.12	267.63	257.09	254.78
6	216.43	207.87	227.88	199.45	91.07	97.63	78.31	103.42	329.05	321.95	312.68	307.39
7	253.62	243.81	248.98	230.54	100.37	120.99	89.47	96.67	383.11	375.21	353.46	368.50
8	288.05	276.09	279.86	256.36	116.29	139.91	115.76	105.49	438.07	435.04	400.26	406.85
9	322.04	315.05	324.35	316.92	128.10	151.03	115.48	141.57	490.88	478.31	463.32	464.35
10	360.36	346.06	357.43	343.25	137.11	159.17	121.49	147.22	546.34	537.76	514.42	514.76

CVP2	SG29L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	8.02	9.69	13.09	-14.20	1.35	9.50	10.12	17.45	13.96	3.90	27.34	10.19
1	-12.93	-11.72	-16.82	-6.91	36.23	35.74	12.53	37.56	25.11	36.04	2.73	3.32
2	-20.50	-17.20	-27.40	-25.57	68.14	72.95	82.10	102.72	51.03	49.00	21.91	50.96
3	-29.09	-32.67	-30.00	-26.32	104.74	107.66	100.60	117.34	74.62	73.57	68.26	75.81
4	-38.10	-39.64	-42.03	-50.00	143.74	143.73	152.57	139.04	102.94	100.24	114.19	92.34
5	-49.16	-46.65	-48.21	-58.97	178.36	175.78	172.30	182.00	124.93	125.46	134.90	107.95
6	-57.42	-56.22	-55.27	-70.95	214.22	217.28	207.52	226.19	152.10	159.03	161.33	141.68
7	-65.14	-67.60	-68.09	-82.15	251.03	253.63	245.40	258.51	177.80	176.81	182.17	156.80
8	-75.03	-77.78	-80.81	-93.94	285.33	288.70	287.57	287.61	203.61	205.45	192.96	178.89
9	-86.97	-89.34	-88.90	-101.42	320.17	324.16	313.39	334.10	226.79	226.26	238.06	209.92
10	-96.86	-99.84	-98.93	-110.02	355.19	356.04	354.00	370.00	252.24	250.79	265.07	236.07

CVP2	SG30T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	18.01	22.86	58.58	57.89	3.85	-2.99	-14.77	-11.12	21.19	32.57	78.97	69.99
1	89.29	87.23	89.64	61.90	-9.75	-15.79	-3.57	-23.50	82.66	85.26	84.53	85.02
2	167.84	163.69	170.61	154.35	-21.98	-29.42	-33.04	-37.83	142.95	142.89	156.82	163.29
3	246.47	248.42	242.03	235.21	-40.15	-43.91	-47.79	-51.19	213.20	216.40	221.87	219.66
4	326.74	326.18	320.83	317.26	-54.39	-58.80	-62.74	-57.07	283.88	283.68	285.81	288.59
5	407.02	405.93	392.41	396.79	-65.05	-68.38	-74.83	-98.54	352.29	352.81	356.42	363.64
6	486.56	489.59	471.00	484.22	-80.46	-86.36	-87.63	-97.94	423.00	423.05	424.18	425.13
7	568.18	572.69	557.07	547.92	-92.73	-101.82	-109.39	-109.93	494.41	495.00	498.53	504.86
8	651.69	651.81	634.41	630.27	-106.29	-119.52	-128.30	-138.85	565.73	566.76	576.43	580.34
9	733.94	736.29	717.09	712.65	-119.32	-129.49	-136.99	-154.68	636.68	638.10	648.35	653.85
10	817.00	818.99	796.32	794.00	-134.17	-142.56	-153.65	-163.69	708.14	712.39	718.88	721.67

CVP2	SG30-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	24.04	21.31	44.96	25.03	-12.17	7.71	5.73	16.06	29.27	21.35	34.67	35.31
1	38.52	42.43	44.68	47.36	1.25	17.73	-10.51	23.58	63.29	54.73	29.01	26.82
2	75.56	68.38	76.47	76.65	5.15	29.43	19.51	49.24	101.26	97.81	84.33	82.61
3	109.16	109.05	105.16	108.17	26.31	40.11	33.63	40.61	148.42	150.86	138.50	143.83
4	144.54	142.81	135.41	143.48	47.24	61.88	41.80	50.63	198.35	196.36	194.33	196.27
5	178.38	179.80	172.77	188.60	55.00	62.62	32.23	67.34	252.35	248.36	239.86	240.46
6	219.88	213.45	214.55	223.26	74.45	79.89	53.54	90.14	301.18	296.64	286.28	287.73
7	256.41	253.14	240.04	254.01	81.26	97.15	69.74	88.96	351.80	348.71	333.03	350.24
8	288.60	288.05	266.35	281.30	85.91	120.41	88.44	99.37	404.64	403.16	378.96	384.19
9	324.39	327.29	313.91	332.92	99.42	127.35	85.79	130.60	447.67	444.76	429.64	433.25
10	363.12	356.85	348.55	366.88	108.15	132.77	90.10	131.21	498.50	496.20	475.55	486.02

CVP2	SG30L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	7.68	0.73	-4.13	-11.54	-11.93	1.53	16.20	17.51	-2.99	-18.56	-3.37	6.87
1	-11.13	-11.58	-12.05	22.36	29.56	37.37	6.77	57.54	20.40	18.51	24.12	30.69
2	-16.65	-18.80	-28.64	-5.12	63.89	80.94	81.44	101.01	51.24	49.12	45.81	54.07
3	-25.56	-29.45	-30.48	-24.04	108.41	116.70	110.04	120.42	81.42	79.48	73.91	86.74
4	-31.64	-32.76	-35.34	-31.20	153.94	157.76	152.71	155.32	112.20	110.33	113.14	99.85
5	-40.89	-36.81	-42.31	-33.70	185.98	189.21	174.95	215.54	142.34	139.47	130.35	117.96
6	-45.92	-49.40	-52.22	-49.82	227.28	232.76	214.53	251.82	170.87	171.49	159.49	156.64
7	-52.21	-57.99	-66.18	-56.99	261.63	273.00	262.74	281.99	200.13	194.81	189.61	179.76
8	-61.36	-63.88	-79.66	-61.43	296.88	315.49	304.94	323.79	229.86	224.55	209.99	205.35
9	-73.05	-73.92	-82.88	-66.05	336.31	350.46	331.30	378.01	251.31	248.42	238.09	229.96
10	-81.39	-86.66	-88.81	-79.07	374.55	385.55	361.20	401.92	278.90	273.92	264.47	261.84

CVP2	SG31T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-6.54	-22.98	-55.41	-52.53	-3.78	-13.67	-4.07	-22.10	-12.25	-11.67	-44.17	-41.20
1	88.28	76.04	62.11	59.87	-11.37	-10.60	20.98	-21.49	72.29	67.48	71.07	91.14
2	172.30	163.89	155.55	153.23	-16.21	-22.61	-4.99	-36.99	152.35	157.97	154.38	185.61
3	247.96	248.52	249.26	236.00	-27.20	-29.26	-15.94	-14.46	224.59	220.56	232.39	234.16
4	334.94	331.14	337.15	325.08	-36.27	-44.34	-32.00	-59.75	294.38	298.70	300.72	300.07
5	418.45	409.69	401.51	404.67	-48.56	-47.09	-30.64	-32.80	369.64	372.02	368.35	369.97
6	499.11	491.53	477.65	490.41	-59.31	-59.34	-28.13	-64.18	442.11	447.72	442.30	434.90
7	583.03	576.54	570.98	556.65	-68.48	-71.16	-51.86	-72.68	520.28	519.05	523.26	520.28
8	667.19	657.40	653.78	643.84	-75.42	-83.54	-49.49	-51.47	595.26	592.34	605.49	606.57
9	750.10	741.49	739.91	724.37	-83.05	-92.12	-63.03	-71.95	665.41	666.66	677.73	683.42
10	832.92	825.13	821.24	804.79	-94.74	-99.23	-58.32	-105.69	740.72	744.17	749.94	745.57

CVP2	SG31-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	16.00	9.28	1.26	-1.83	-2.01	-5.61	-7.48	-2.18	26.07	23.78	-15.51	-11.70
1	41.96	35.23	33.72	38.02	15.75	1.41	-3.30	22.84	54.59	50.57	21.70	32.34
2	79.45	70.02	71.38	73.02	17.84	13.92	43.25	30.75	98.07	104.57	78.48	81.26
3	112.18	108.96	111.57	99.86	25.38	25.84	39.91	49.06	142.76	145.67	129.91	133.02
4	147.07	143.81	146.95	150.90	40.16	37.64	35.54	23.26	190.79	186.11	190.14	196.22
5	183.30	176.12	178.01	191.47	48.91	47.83	36.14	60.14	239.13	236.48	229.95	240.17
6	222.65	214.96	213.51	238.56	66.26	56.26	48.28	62.85	283.64	283.80	269.43	274.75
7	262.33	250.59	256.16	259.33	71.46	61.87	62.93	74.04	333.21	333.41	320.56	342.18
8	289.05	286.27	286.38	288.44	81.65	80.57	92.50	94.79	386.47	382.76	360.35	372.79
9	332.87	324.51	329.86	331.79	87.14	84.88	85.43	110.32	430.61	426.67	411.41	422.51
10	371.85	357.44	363.63	372.06	96.44	88.91	91.66	103.90	473.58	473.75	454.80	470.88

CVP2	SG31L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	17.43	7.24	20.15	-6.18	-7.52	4.28	15.41	20.96	2.25	-11.50	-17.40	-10.36
1	-4.95	-8.93	10.36	16.66	22.52	35.16	1.38	49.99	19.90	14.19	-12.57	-17.65
2	-16.10	-20.82	-10.96	-1.91	52.62	71.90	71.63	89.22	41.72	42.19	18.31	11.37
3	-27.29	-29.22	-24.89	-24.99	92.04	100.98	99.98	105.28	65.87	65.27	57.50	63.43
4	-35.65	-35.40	-29.30	-26.10	132.29	141.56	131.93	132.97	89.68	87.99	87.26	85.85
5	-45.68	-42.18	-24.66	-21.79	158.50	167.76	136.60	188.18	114.54	110.00	103.42	109.03
6	-51.67	-54.72	-30.83	-37.57	195.98	202.84	175.49	225.03	135.67	133.58	124.00	137.18
7	-59.34	-64.25	-43.79	-46.68	222.66	242.80	220.74	246.71	159.52	154.01	145.02	157.08
8	-71.04	-70.79	-51.59	-56.57	255.19	281.40	267.46	282.54	183.79	179.20	160.36	172.90
9	-80.52	-79.06	-53.45	-56.90	287.84	308.77	281.21	334.88	201.67	197.97	186.17	189.71
10	-89.62	-92.44	-70.07	-64.01	319.75	339.11	304.06	347.46	223.87	218.78	206.40	221.29

CVP2	SG32T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	17.39	12.94	38.04	33.23	0.24	-4.76	-9.32	-14.86	13.78	24.35	59.09	52.19
1	97.88	94.65	88.02	61.59	-13.66	-12.75	9.60	-25.46	88.93	93.00	85.46	94.88
2	181.49	177.89	180.01	163.44	-24.22	-28.80	-31.64	-43.83	158.07	156.65	165.01	176.33
3	264.32	265.27	260.84	254.49	-39.51	-41.17	-47.03	-50.56	232.10	234.71	240.42	242.44
4	349.49	348.40	341.33	341.63	-53.60	-55.11	-60.05	-55.26	307.30	307.74	310.07	313.95
5	434.91	433.19	420.92	426.79	-61.51	-66.00	-58.00	-91.39	381.17	382.05	385.99	392.11
6	519.80	521.87	501.58	517.70	-80.06	-80.51	-71.49	-97.86	457.61	458.45	460.20	461.19
7	606.79	610.28	592.20	582.66	-90.19	-96.27	-95.85	-105.56	535.04	535.66	535.85	543.87
8	697.13	694.68	677.05	678.40	-104.80	-113.61	-122.58	-128.54	612.55	613.34	622.97	631.42
9	784.51	785.24	763.09	769.30	-117.12	-121.77	-122.49	-149.23	689.55	691.25	702.53	712.05
10	874.50	874.79	855.03	852.76	-130.42	-134.50	-135.91	-159.88	768.09	772.78	779.45	785.94

CVP2	SG32-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	14.96	15.19	23.96	24.64	-3.87	-1.69	-3.48	7.31	28.93	27.51	31.35	22.94
1	33.70	34.86	26.93	39.28	18.75	1.26	-2.56	28.10	56.95	55.90	33.76	37.41
2	75.62	69.92	67.17	64.74	17.27	16.11	30.63	33.85	97.01	93.92	82.73	75.79
3	114.38	110.92	103.35	98.69	25.25	27.25	29.91	35.87	144.50	150.11	132.81	132.92
4	148.90	145.82	135.42	146.69	43.23	40.04	28.06	37.93	196.60	190.20	195.50	193.57
5	183.77	181.60	166.58	178.06	54.55	46.53	40.10	49.61	244.30	243.26	235.57	233.63
6	224.15	220.74	202.21	228.48	70.32	58.42	46.24	60.20	291.60	290.63	276.93	271.14
7	263.41	256.55	234.86	249.48	77.17	62.11	58.28	72.41	340.61	340.88	327.46	330.35
8	293.62	293.10	250.25	278.41	84.61	80.85	72.37	75.02	393.44	392.50	369.11	362.22
9	335.36	330.90	306.12	322.38	92.21	88.67	76.64	92.27	439.81	437.03	421.42	415.45
10	376.13	365.45	342.81	356.00	103.53	91.62	79.03	106.74	485.07	486.84	466.73	465.91

CVP2	SG32L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-1.29	-8.79	-14.60	-30.15	-8.12	5.66	16.83	23.61	-6.78	-26.45	-24.25	-15.39
1	-23.58	-25.56	-20.32	10.29	30.95	39.99	3.40	60.31	9.60	4.34	9.68	4.34
2	-32.07	-38.79	-42.81	-18.51	65.68	84.20	86.46	107.47	36.63	37.49	35.53	32.36
3	-45.09	-49.44	-55.63	-47.71	111.66	119.93	116.48	125.22	64.85	64.32	58.03	63.73
4	-56.93	-58.72	-56.23	-58.17	158.02	163.53	158.71	159.37	90.29	88.61	89.20	71.62
5	-71.14	-71.15	-74.97	-68.63	190.01	196.88	170.33	225.27	116.95	113.48	99.86	89.18
6	-82.97	-89.90	-85.04	-89.35	235.39	239.53	212.78	264.96	137.47	137.99	122.16	117.42
7	-95.62	-106.09	-105.56	-94.68	268.91	282.92	267.41	291.74	162.16	156.72	155.94	141.51
8	-112.98	-116.74	-130.81	-118.95	306.63	328.70	318.91	338.14	186.21	181.61	164.97	151.95
9	-128.38	-133.90	-133.39	-133.75	345.70	361.93	339.24	397.13	202.79	201.15	185.69	167.94
10	-144.55	-153.85	-158.24	-146.19	384.58	398.20	366.03	414.70	224.89	220.84	206.04	194.97

CVP2	SG33T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	73.06	64.59	89.79	89.89	-0.61	1.16	0.39	2.61	64.69	75.27	123.33	110.67
1	124.26	116.78	123.01	99.58	-11.86	-10.98	10.08	-13.86	113.45	116.45	124.27	124.12
2	190.61	188.18	192.17	174.08	-27.44	-27.97	-38.94	-38.00	166.90	162.71	175.89	184.54
3	265.13	264.60	261.20	254.09	-40.94	-42.89	-47.89	-51.07	231.56	234.04	238.70	241.61
4	344.86	341.86	334.20	336.31	-56.32	-57.81	-65.11	-55.22	300.43	300.32	302.97	305.23
5	426.18	423.01	412.30	414.49	-67.81	-71.50	-57.06	-81.00	369.86	371.43	372.52	376.42
6	509.62	508.95	491.57	504.66	-86.96	-84.83	-77.39	-95.60	444.30	445.67	443.80	442.51
7	595.92	597.00	580.50	572.46	-99.56	-102.18	-101.90	-102.49	521.14	521.46	522.93	528.67
8	686.32	681.05	663.50	664.69	-113.27	-118.04	-124.49	-131.25	597.94	599.12	609.10	612.29
9	774.52	771.81	753.67	755.14	-125.41	-128.98	-129.71	-151.96	675.21	676.37	684.57	694.31
10	865.50	861.11	842.68	839.96	-138.49	-142.38	-141.22	-147.86	753.80	758.65	761.85	765.70

CVP2	SG33-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	37.87	21.19	44.00	40.75	-1.89	-9.31	-1.29	8.67	36.09	32.34	65.62	39.18
1	50.97	50.32	50.64	54.96	12.51	1.61	18.49	33.10	68.24	71.83	75.19	71.51
2	78.14	79.07	79.71	70.25	16.74	14.57	41.85	22.32	103.07	105.13	108.21	103.79
3	111.85	113.40	113.76	103.37	25.89	28.55	30.99	38.34	148.73	154.13	148.34	153.95
4	144.93	145.00	151.74	148.64	40.42	42.62	24.44	39.23	198.27	190.00	210.06	209.72
5	175.82	178.62	177.42	179.40	46.14	48.80	61.31	53.39	244.92	240.08	238.48	237.45
6	211.04	213.41	212.22	224.76	55.57	65.11	63.27	50.38	293.23	287.65	292.26	281.46
7	248.37	249.97	250.07	248.09	64.20	68.58	60.43	71.08	344.68	336.54	351.49	349.77
8	284.58	289.08	285.55	281.21	71.68	84.89	80.26	85.53	396.34	390.05	395.14	389.54
9	322.21	326.63	333.88	327.70	81.44	94.15	88.07	101.79	444.74	436.84	446.22	451.78
10	362.91	365.27	368.87	360.99	95.33	98.32	93.81	101.93	491.84	489.11	499.86	500.04

CVP2	SG33L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-13.04	-5.86	-8.77	-18.86	-0.22	1.55	0.80	12.52	-4.77	-16.34	-16.63	-16.79
1	-30.55	-22.82	-24.60	0.47	32.20	34.24	3.92	52.20	4.97	8.22	7.27	0.35
2	-38.70	-39.87	-44.30	-20.07	67.83	75.33	85.56	97.33	30.54	38.07	34.98	24.33
3	-52.76	-52.22	-56.55	-49.98	106.73	111.02	103.33	112.74	55.88	56.98	51.75	52.09
4	-67.95	-63.91	-55.76	-68.33	146.21	151.86	148.09	148.89	79.44	76.09	76.99	63.97
5	-85.37	-78.49	-84.59	-76.39	180.56	185.63	157.39	196.96	102.37	96.45	87.05	82.04
6	-101.99	-98.38	-97.87	-97.99	222.16	223.20	196.17	239.69	119.79	115.48	107.08	107.81
7	-116.74	-116.97	-115.19	-114.35	255.85	263.80	245.56	269.92	138.99	132.71	129.19	119.15
8	-138.44	-129.78	-135.45	-136.62	291.28	304.70	290.60	308.74	161.06	154.43	135.44	132.18
9	-154.47	-146.87	-146.23	-148.17	326.12	337.65	311.79	363.19	177.46	173.72	162.78	143.59
10	-171.27	-164.81	-165.45	-161.79	362.41	371.30	334.81	371.71	195.85	189.66	181.62	174.01

CVP2	SG34T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	70.52	63.58	98.40	104.09	1.58	9.63	2.94	13.76	75.49	80.33	145.58	143.06
1	102.97	95.89	109.90	105.29	-6.94	-15.60	-9.82	-9.23	102.96	102.40	125.70	129.09
2	165.02	163.20	165.18	159.35	-35.76	-31.06	-62.46	-40.55	150.06	145.36	158.14	169.77
3	234.03	233.68	227.23	221.91	-53.44	-55.31	-52.73	-58.18	210.15	210.85	213.94	218.73
4	308.33	307.49	300.50	302.91	-68.98	-70.43	-85.41	-71.54	274.13	272.82	271.89	275.09
5	381.92	381.25	368.17	374.38	-88.96	-92.50	-90.24	-85.65	338.71	338.27	334.77	343.23
6	457.01	458.47	439.08	452.77	-111.16	-106.33	-113.47	-112.74	406.76	406.30	401.18	397.48
7	533.76	536.49	518.48	513.74	-128.42	-129.83	-145.49	-127.80	476.57	474.33	470.00	479.39
8	613.08	611.44	590.57	595.48	-146.12	-146.86	-154.98	-155.18	545.84	544.02	550.95	551.92
9	691.28	691.44	669.94	674.93	-160.68	-163.00	-172.06	-185.85	615.89	613.49	614.94	628.21
10	771.42	770.59	747.88	749.38	-176.60	-180.58	-190.39	-167.05	687.90	688.52	683.65	693.18

CVP2	SG34-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	22.31	19.32	51.37	41.16	3.96	4.14	20.14	16.34	28.60	44.36	66.59	52.69
1	38.92	40.77	38.05	45.61	8.55	0.75	31.88	25.43	53.95	63.72	58.19	59.14
2	68.63	66.30	71.78	47.05	4.79	7.16	23.57	1.86	91.03	93.38	91.05	87.78
3	98.19	100.51	102.00	82.47	7.58	9.66	12.81	10.58	125.66	130.19	124.97	129.68
4	126.27	130.27	125.94	132.44	8.28	7.39	-1.67	9.00	161.85	160.50	173.01	174.24
5	153.89	160.16	158.93	153.34	11.39	12.45	32.53	21.35	199.78	202.88	191.85	190.43
6	184.86	194.23	192.91	189.29	14.31	19.55	30.68	10.53	240.30	243.35	239.09	229.76
7	218.77	226.63	221.55	209.31	16.54	11.98	9.75	25.71	282.93	283.49	291.35	282.32
8	248.73	262.18	257.65	243.61	16.54	21.59	33.32	16.15	324.26	327.29	332.75	322.40
9	282.71	292.98	297.17	275.78	19.51	24.42	34.16	15.55	366.08	368.01	368.16	373.59
10	317.27	326.80	320.12	305.97	24.38	25.16	32.30	40.42	406.69	414.51	409.40	410.91

CVP2	SG34L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-11.06	1.15	7.12	0.44	12.59	9.91	13.12	26.85	2.71	3.71	2.78	-3.06
1	-19.67	-13.05	-15.31	-4.72	34.98	36.95	21.54	44.12	13.56	20.80	7.34	-4.04
2	-28.84	-29.11	-29.00	-22.83	69.81	69.36	90.10	100.96	37.63	43.89	42.81	23.70
3	-40.71	-38.61	-39.42	-36.90	102.54	103.87	84.58	98.02	60.44	64.79	56.68	54.99
4	-54.12	-49.93	-54.69	-56.91	134.32	137.66	140.40	141.46	81.76	80.86	81.36	71.33
5	-67.25	-62.03	-69.77	-64.41	169.16	172.76	161.61	179.59	104.90	104.00	93.88	82.08
6	-80.04	-76.04	-81.37	-77.58	205.94	205.09	198.22	220.71	123.90	123.49	106.22	122.13
7	-92.49	-89.36	-96.64	-90.48	238.50	242.08	236.52	255.44	144.31	144.01	133.34	122.42
8	-106.92	-99.09	-110.51	-107.75	272.19	276.77	265.14	277.67	167.38	167.22	132.61	147.27
9	-121.36	-113.42	-120.71	-118.37	305.38	310.40	296.43	336.93	185.40	190.09	173.30	154.06
10	-134.94	-126.66	-136.35	-130.06	339.41	344.40	315.16	337.77	204.16	206.11	194.92	184.56

CVP2	SG35T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	101.24	92.14	138.90	131.94	4.16	-0.72	-1.17	-10.44	82.46	90.21	162.12	163.00
1	134.39	127.29	130.49	100.79	-7.98	-11.55	-4.71	-18.06	114.59	119.05	130.59	132.96
2	186.93	183.28	183.90	165.05	-18.26	-24.15	-30.51	-36.15	160.29	159.04	169.65	179.36
3	249.41	250.80	244.21	237.55	-33.93	-35.50	-39.25	-44.42	219.35	220.92	222.74	224.36
4	321.08	320.90	313.00	309.49	-46.48	-47.91	-54.97	-45.17	282.94	282.08	278.53	282.43
5	394.59	395.70	386.07	381.16	-55.36	-56.75	-49.53	-81.02	347.31	346.81	343.62	347.66
6	471.00	475.27	461.89	464.40	-70.89	-69.08	-69.15	-84.97	417.19	415.28	408.90	408.08
7	551.56	557.62	544.97	527.58	-80.60	-82.60	-86.54	-93.56	489.16	486.64	482.57	487.30
8	636.48	637.47	622.94	612.72	-92.19	-97.99	-108.48	-117.56	561.85	560.63	559.81	566.17
9	720.46	724.46	705.99	697.16	-102.46	-105.18	-108.25	-135.13	635.27	634.07	632.44	641.04
10	807.02	809.99	788.87	777.11	-114.37	-116.00	-120.33	-132.81	711.01	711.90	705.40	709.34

CVP2	SG35-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	70.06	73.37	71.63	91.30	-10.26	-3.47	17.55	20.22	71.51	68.23	103.95	92.48
1	63.56	66.82	55.65	81.64	17.33	4.97	-3.59	40.01	83.36	81.00	84.91	77.57
2	87.58	87.36	76.50	81.79	16.63	22.63	33.33	42.75	113.78	107.29	97.45	99.11
3	115.02	113.46	103.12	103.30	31.31	35.64	39.29	46.41	152.84	153.09	141.53	150.71
4	145.13	143.90	129.40	147.37	51.32	49.34	36.78	49.25	198.40	190.96	201.77	202.36
5	176.20	177.90	166.60	175.20	60.81	57.98	60.41	72.10	245.98	242.25	239.11	233.39
6	217.60	215.06	193.92	216.99	78.60	74.52	59.77	77.22	295.59	292.28	284.44	277.63
7	254.10	251.86	227.55	245.06	85.93	79.90	80.94	90.11	349.13	341.13	338.01	345.85
8	287.71	289.58	251.70	277.95	95.60	102.15	92.28	100.90	403.17	393.95	386.25	378.71
9	325.62	329.31	297.99	321.43	107.31	110.35	99.34	117.80	447.95	438.74	434.19	440.95
10	369.44	362.61	334.93	356.39	121.24	117.03	111.95	144.37	497.37	491.06	483.83	489.63

CVP2	SG35L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	33.55	46.35	13.84	49.89	-8.21	2.22	18.40	23.31	36.79	23.62	25.07	31.93
1	7.86	14.89	-1.58	68.42	32.82	35.26	3.80	62.11	43.90	40.31	36.59	29.00
2	-0.88	-4.26	-21.52	20.47	65.03	80.02	81.72	103.84	65.55	67.13	52.62	41.73
3	-7.85	-13.19	-24.58	-13.27	109.17	115.02	110.79	120.32	92.09	91.70	89.43	90.94
4	-12.36	-17.19	-24.07	-10.06	153.86	155.72	150.98	154.54	119.59	120.11	126.04	113.71
5	-15.14	-19.97	-44.66	-5.83	184.83	189.46	165.23	218.06	155.71	153.71	138.87	138.15
6	-14.86	-27.31	-55.67	-18.65	229.58	229.87	202.80	253.72	184.62	186.38	170.75	174.51
7	-15.01	-31.03	-65.29	-26.09	263.16	270.27	256.26	281.37	219.45	213.97	202.90	200.93
8	-21.37	-30.66	-79.00	-30.27	299.62	314.38	304.50	326.51	250.89	245.32	230.83	222.10
9	-25.23	-36.74	-73.33	-25.67	337.73	346.98	324.20	381.44	276.17	276.10	266.98	252.86
10	-28.30	-45.16	-75.28	-26.70	374.39	381.34	350.09	400.96	304.38	304.39	295.91	295.29

CVP2	SG36T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	12.96	6.80	23.08	14.95	2.37	-3.76	-1.64	-19.43	7.89	13.92	44.32	43.40
1	87.73	83.43	77.06	57.77	-10.88	-10.78	3.47	-23.48	78.34	81.03	84.03	94.96
2	167.43	165.27	160.22	150.41	-18.92	-23.80	-17.35	-42.12	144.83	144.36	157.67	172.93
3	246.63	247.44	235.41	238.85	-33.85	-33.75	-29.17	-38.73	217.55	219.25	224.90	225.93
4	328.45	325.22	323.07	317.01	-42.17	-46.77	-49.11	-52.63	289.27	288.33	289.43	292.23
5	408.65	404.52	388.66	395.39	-50.96	-53.28	-41.86	-71.92	358.25	356.96	360.80	363.22
6	488.39	487.07	464.71	481.46	-66.12	-65.28	-52.04	-85.04	430.50	428.15	428.91	427.18
7	570.90	569.88	549.42	544.74	-75.73	-79.50	-75.56	-94.05	502.58	500.98	504.22	507.30
8	653.34	647.87	626.97	632.06	-86.99	-94.57	-87.88	-102.98	575.71	574.14	582.70	589.04
9	735.92	732.99	707.29	716.27	-96.01	-100.35	-88.21	-125.86	647.92	646.24	656.77	663.53
10	820.29	816.58	789.42	793.90	-107.68	-110.53	-98.75	-134.74	721.76	722.37	727.97	728.76

CVP2	SG36-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	17.33	0.57	3.45	-11.35	-18.18	-10.12	24.36	26.75	-2.54	-1.20	12.04	-14.05
1	40.03	35.44	39.95	31.72	6.11	5.50	7.71	42.22	48.74	50.60	49.66	32.56
2	83.33	81.31	87.21	77.45	6.01	17.57	36.84	35.42	101.45	96.56	83.64	87.18
3	123.22	120.09	123.67	119.22	24.28	29.93	37.55	44.64	151.33	152.63	148.95	157.75
4	161.97	160.15	158.84	176.25	39.94	40.79	31.39	37.84	204.63	198.18	217.61	214.33
5	199.68	202.56	217.85	204.09	47.03	48.43	67.14	68.23	254.48	251.33	263.24	246.49
6	245.64	243.21	253.44	251.05	58.87	62.93	58.20	59.94	306.50	305.13	314.05	298.95
7	285.87	284.51	293.81	284.50	66.23	65.35	81.45	75.82	359.44	353.54	365.78	368.95
8	326.72	325.11	322.62	326.68	71.27	86.51	85.37	95.77	414.64	408.83	417.44	397.53
9	362.76	365.40	374.63	376.56	81.71	91.10	91.66	100.99	457.15	451.45	471.61	465.07
10	407.24	399.89	417.99	415.98	94.72	98.03	114.21	126.07	507.63	502.82	521.87	519.80

CVP2	SG36L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	0.16	-6.31	-10.20	-24.38	-6.26	2.01	20.20	23.24	-11.40	-18.27	-54.98	-39.05
1	-16.07	-16.01	-9.40	11.61	29.69	31.10	9.99	56.10	11.73	12.55	-13.26	-18.07
2	-20.73	-25.98	-17.61	-11.52	55.47	70.07	71.59	87.19	37.41	40.24	17.82	10.09
3	-29.54	-33.02	-21.19	-36.41	91.83	99.50	93.71	102.76	59.18	60.61	56.46	59.12
4	-37.28	-37.18	-40.77	-24.94	132.09	134.41	128.85	134.04	81.92	83.00	89.23	81.17
5	-45.85	-43.05	-33.31	-29.42	157.65	164.15	146.92	184.38	106.55	108.73	97.15	102.01
6	-52.51	-54.98	-40.68	-42.37	196.39	200.20	176.63	213.30	126.26	132.35	125.49	130.27
7	-61.95	-66.03	-51.95	-49.14	225.69	232.40	219.30	238.39	149.45	149.69	148.41	151.41
8	-72.29	-71.39	-66.50	-64.61	255.13	271.88	262.18	280.87	169.53	171.48	164.17	158.10
9	-83.72	-84.25	-67.29	-72.02	287.53	299.87	277.75	324.55	184.63	190.55	182.91	176.66
10	-93.73	-98.34	-78.85	-78.42	319.19	330.42	303.02	341.75	205.42	209.67	203.95	210.64

CVP2	SG37T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-4.86	-7.42	6.73	-3.77	-3.16	-3.16	-11.01	-14.73	-5.50	3.24	106.96	25.75
1	78.54	77.67	69.28	46.23	-13.85	-10.26	0.58	-22.69	73.07	75.59	152.08	83.76
2	165.53	161.55	163.47	147.64	-23.34	-24.55	-27.13	-31.76	143.41	142.08	237.66	170.97
3	248.54	249.95	245.11	238.36	-32.92	-33.68	-38.64	-39.15	218.26	221.15	228.78	230.00
4	332.44	331.53	331.97	323.40	-44.64	-44.37	-46.97	-46.51	292.80	293.28	301.48	297.30
5	415.52	414.13	402.52	403.58	-48.51	-54.97	-49.24	-70.23	364.70	366.64	375.11	372.75
6	496.84	499.40	481.35	492.71	-62.42	-65.92	-60.60	-77.31	438.29	440.27	448.09	438.79
7	579.13	583.19	568.70	557.37	-70.73	-79.44	-77.29	-85.89	511.93	513.51	526.16	521.31
8	663.75	663.58	644.52	644.08	-83.95	-91.02	-97.94	-99.16	584.63	586.33	607.26	601.65
9	746.19	747.26	729.43	726.32	-95.82	-99.11	-99.33	-115.63	656.46	660.04	680.05	677.75
10	830.04	831.07	819.60	805.48	-105.68	-110.91	-112.39	-129.16	729.96	735.29	752.11	744.74

CVP2	SG37-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	9.81	8.01	19.52	12.45	-2.53	-0.24	-12.53	1.25	23.16	22.74	10.91	9.98
1	34.49	34.12	30.86	28.43	12.06	2.17	-14.20	21.70	53.84	52.11	18.25	22.39
2	77.15	70.60	73.32	72.07	12.06	12.35	30.67	32.66	95.00	97.27	79.11	72.19
3	116.53	114.42	109.70	106.55	21.16	23.13	26.83	36.37	142.48	148.69	130.68	133.19
4	152.84	151.38	145.88	156.66	34.12	37.62	26.04	28.25	194.17	187.23	193.77	197.58
5	190.75	187.46	182.02	199.75	46.90	42.27	25.24	41.35	242.70	239.23	238.04	246.78
6	231.96	229.75	220.88	250.88	61.91	51.62	29.34	54.04	288.75	286.41	277.86	282.72
7	272.68	266.51	261.86	272.09	67.43	56.72	46.33	64.52	337.10	337.77	327.78	349.57
8	301.64	303.54	290.24	302.99	73.67	76.00	64.26	70.90	389.76	387.91	367.61	376.39
9	345.93	343.37	330.79	349.82	76.73	79.88	63.20	87.58	436.50	431.83	420.62	427.59
10	386.55	377.89	365.41	389.31	86.58	81.26	59.84	88.69	478.74	479.51	464.67	479.07

CVP2	SG37L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	15.62	5.50	19.40	-7.84	-8.88	3.05	14.34	20.09	-1.77	-15.88	-28.91	-16.17
1	-3.92	-7.69	11.28	18.43	21.63	35.03	-0.52	48.65	19.41	13.71	-20.32	-22.11
2	-11.77	-16.28	-7.20	2.65	52.27	72.42	71.43	89.88	44.11	44.49	18.92	11.55
3	-20.04	-21.99	-18.95	-17.55	92.48	102.28	100.05	105.56	71.22	70.58	63.16	67.49
4	-25.65	-25.43	-22.47	-17.17	133.61	143.23	133.16	135.05	97.49	95.62	95.57	92.33
5	-32.99	-29.65	-13.98	-8.77	160.55	169.88	138.48	189.79	124.58	119.67	114.51	119.49
6	-36.47	-39.92	-16.95	-21.86	198.26	205.61	177.22	227.42	147.84	145.29	137.35	149.55
7	-41.77	-46.70	-28.42	-28.92	225.16	246.03	223.17	248.87	173.63	167.71	160.65	170.74
8	-50.92	-50.92	-35.89	-36.31	257.64	284.89	269.36	284.87	199.52	194.67	178.16	186.55
9	-58.21	-56.72	-39.52	-33.75	290.70	312.72	284.36	337.66	219.07	215.06	205.14	205.96
10	-64.66	-67.83	-47.31	-40.07	322.79	343.38	305.96	350.89	243.16	237.48	226.94	238.56

CVP3	SG1											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	187.54	151.95	246.03	147.72	-22.05	-76.08	-66.30	-70.91	120.31	90.57	117.12	205.09
1	107.21	62.09	109.21	39.15	-53.96	-78.28	-57.51	7.57	41.63	37.22	-11.61	32.87
2	82.82	69.80	95.27	70.14	-62.77	-82.69	-65.94	-112.35	19.05	41.06	9.84	-45.44
3	105.39	71.64	120.76	120.74	-69.56	-71.32	-85.01	-133.81	7.14	12.80	-8.50	23.52
4	129.03	121.32	174.49	138.18	-77.07	-91.12	-87.76	-38.47	5.70	-6.82	13.69	-6.01
5	169.93	141.86	192.64	219.60	-98.16	-110.19	-86.84	-172.13	44.93	12.81	23.03	3.91
6	204.04	175.98	273.53	223.08	-115.22	-128.91	-140.38	-136.19	59.06	1.99	24.13	5.18
7	228.61	190.46	304.87	292.73	-142.36	-149.81	-147.90	-156.55	43.84	19.06	53.12	20.61
8	284.00	229.34	356.52	285.61	-147.14	-173.83	-183.47	-239.43	48.59	15.57	20.30	8.85
9	312.79	250.43	380.78	326.69	-198.48	-196.58	-200.35	-237.41	45.85	15.57	21.03	12.32
10	328.39	276.12	409.39	414.21	-199.76	-231.96	-230.24	-282.13	49.32	12.44	22.32	28.45

CVP3	SG2											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	218.61	173.43	302.12	163.74	2.00	-76.81	-83.10	-97.86	124.33	69.27	127.81	244.09
1	117.91	57.87	130.22	35.14	-43.69	-87.27	-73.03	12.92	21.60	5.44	-27.37	24.30
2	91.95	68.51	101.42	51.64	-61.29	-99.01	-89.72	-158.56	-2.40	11.49	-4.09	-83.02
3	119.52	77.32	134.44	135.46	-81.47	-92.04	-124.93	-193.24	-26.38	-24.93	-34.00	-13.30
4	147.81	136.38	210.92	154.56	-99.45	-121.75	-127.86	-59.73	-28.42	-54.88	-26.65	-57.50
5	199.36	162.98	219.91	247.19	-136.68	-151.10	-128.96	-249.18	13.40	-34.83	-15.29	-45.37
6	239.34	204.99	326.70	252.51	-163.97	-176.06	-208.56	-206.63	14.46	-57.76	-19.14	-52.18
7	272.54	219.29	353.44	345.82	-206.25	-203.39	-216.45	-232.31	0.93	-47.48	-2.24	-44.07
8	330.88	264.05	418.10	334.32	-201.45	-234.02	-270.88	-352.45	-9.27	-60.68	-42.59	-72.72
9	362.98	287.17	447.17	376.87	-252.94	-261.73	-300.97	-354.65	-26.59	-81.87	-48.64	-84.12
10	377.86	307.18	473.21	457.82	-262.11	-310.42	-334.72	-409.52	-39.40	-103.59	-68.27	-89.62

CVP3	SG3											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	133.20	79.43	333.35	131.07	-196.62	-208.79	-284.18	-291.34	-108.91	-158.23	-117.51	27.71
1	45.49	-7.72	156.87	40.51	-53.53	-64.67	-54.66	-3.88	-18.95	-12.24	-39.50	7.96
2	64.95	19.96	143.47	42.53	83.23	70.04	47.94	-31.32	160.73	170.72	139.56	36.13
3	119.61	70.44	184.40	180.19	201.80	205.47	155.04	77.26	288.26	295.09	243.70	263.67
4	178.22	164.35	266.82	188.35	304.34	310.76	282.17	345.14	468.18	411.49	416.90	349.40
5	220.49	203.21	310.70	268.75	408.80	401.89	381.01	239.53	644.89	564.69	551.12	508.52
6	262.30	253.33	460.39	309.68	508.30	506.94	421.34	384.73	763.18	665.11	647.83	592.44
7	294.37	258.66	467.28	419.35	584.31	577.63	503.69	503.32	874.78	796.42	768.74	701.82
8	355.01	310.61	568.40	428.63	649.42	643.41	565.36	440.54	964.84	888.02	828.59	780.41
9	394.11	338.33	596.69	475.26	696.66	698.81	596.88	559.49	1064.01	964.38	906.78	843.74
10	421.35	348.87	644.97	539.44	755.96	762.56	662.97	532.39	1142.93	1041.25	993.98	923.95

CVP3	SG4											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	220.29	172.20	347.73	162.28	-94.47	-133.04	-159.31	-188.78	51.28	-5.82	78.09	210.26
1	89.44	37.46	156.60	41.39	-80.20	-100.49	-66.68	-9.46	-23.12	-22.87	-23.85	36.89
2	95.12	57.15	122.82	34.06	-43.44	-65.29	-61.18	-158.28	48.68	61.12	55.10	-45.87
3	144.75	93.96	170.35	164.41	-15.24	-8.11	-59.85	-145.14	96.15	96.10	73.91	80.16
4	194.14	184.61	264.41	184.65	-12.45	-8.44	-26.23	49.31	172.81	131.31	133.57	83.28
5	251.25	228.76	294.30	284.58	2.49	3.66	-0.62	-151.74	272.15	211.76	198.57	157.82
6	305.08	281.85	431.34	300.35	17.07	22.56	-39.42	-74.37	314.45	235.05	231.01	190.54
7	345.10	298.72	455.46	413.74	14.83	16.14	-27.08	-46.13	353.87	294.03	286.74	230.72
8	409.42	354.65	534.12	418.06	16.21	5.59	-52.93	-182.54	381.87	320.07	284.54	240.60
9	453.98	388.02	573.91	461.15	-26.66	3.07	-83.31	-135.05	409.67	334.00	310.95	248.19
10	482.46	409.17	613.15	529.65	-14.97	-10.77	-84.78	-211.26	436.88	352.11	328.91	266.89

CVP3	SG5											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	210.22	166.80	293.41	145.52	5.65	-62.27	-78.50	-98.20	109.19	40.04	118.14	246.03
1	110.79	50.82	124.76	28.93	-36.94	-74.23	-69.55	13.33	8.19	-16.96	-29.72	25.53
2	92.50	66.09	96.17	35.85	-53.52	-86.96	-87.55	-163.16	-4.75	-2.12	-5.46	-82.68
3	122.29	82.58	134.29	134.68	-78.99	-83.98	-125.76	-201.11	-25.82	-29.48	-26.32	-14.11
4	155.88	144.27	219.06	158.17	-97.79	-114.88	-128.45	-62.12	-22.96	-56.34	-25.71	-58.55
5	212.66	176.43	225.66	248.76	-137.84	-146.22	-131.07	-257.29	20.84	-34.43	-9.14	-37.27
6	254.50	221.62	335.25	258.34	-165.97	-169.18	-214.83	-219.76	19.97	-54.50	-9.28	-42.01
7	293.30	239.35	361.29	357.57	-206.12	-196.86	-222.25	-240.98	14.38	-46.11	4.05	-34.86
8	347.29	285.45	427.67	349.06	-203.84	-223.25	-274.21	-366.66	3.42	-59.03	-27.62	-59.24
9	381.71	309.97	459.39	389.57	-247.54	-247.05	-307.44	-373.03	-16.88	-83.59	-32.66	-75.53
10	397.36	327.36	482.80	454.74	-260.83	-292.82	-337.36	-424.15	-30.59	-109.91	-57.95	-88.13

CVP3	SG6											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	18.31	15.81	22.57	17.31	-9.84	0.80	-3.86	-5.79	18.66	11.05	9.39	17.09
1	50.13	45.79	56.22	51.00	-27.95	-16.35	-19.68	-12.80	35.12	30.34	28.00	37.49
2	90.84	87.59	95.45	89.13	-47.02	-36.43	-39.39	-36.37	56.77	52.91	56.60	55.63
3	133.92	131.60	141.30	138.82	-67.06	-54.91	-61.30	-61.26	78.04	75.84	81.71	84.80
4	177.39	177.29	187.50	184.31	-85.25	-79.52	-80.51	-76.75	101.49	96.56	105.00	106.62
5	223.63	220.92	234.44	231.43	-104.69	-100.51	-99.67	-99.35	129.38	122.78	132.31	136.70
6	268.35	266.58	281.60	281.30	-121.43	-119.60	-125.19	-119.98	154.30	145.51	158.34	163.09
7	313.06	308.76	328.88	331.15	-138.89	-138.86	-142.11	-138.27	180.71	171.54	186.61	190.27
8	357.84	354.24	374.82	373.35	-161.00	-157.41	-164.02	-163.71	205.68	195.92	214.30	222.13
9	402.22	398.07	422.94	417.91	-195.79	-175.22	-183.24	-182.23	230.42	220.68	240.52	244.48
10	445.18	441.21	469.51	462.70	-212.15	-195.05	-202.13	-194.90	258.32	246.40	265.09	274.00

CVP3	SG7											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	262.22	216.37	328.68	199.61	-33.29	-66.07	-59.24	-43.35	170.54	100.74	174.06	276.47
1	103.04	46.51	173.32	64.55	-85.84	-85.81	-39.70	33.82	19.39	-2.86	3.51	44.83
2	92.82	69.77	100.23	59.24	-94.13	-97.22	-50.96	-159.91	3.09	6.00	7.18	-77.86
3	122.63	81.54	136.31	147.53	-114.10	-98.34	-109.83	-214.36	-11.76	-14.79	-10.22	-5.00
4	153.01	141.89	232.44	180.74	-161.71	-152.41	-127.94	-52.05	-24.86	-48.73	-4.36	-46.40
5	222.92	173.02	232.08	289.19	-188.32	-186.40	-114.27	-258.51	15.68	-29.73	16.98	-28.54
6	278.28	216.17	338.39	293.59	-211.22	-216.20	-195.37	-235.88	16.45	-45.40	23.90	-27.35
7	305.96	241.36	379.73	393.53	-250.43	-245.06	-191.59	-270.46	8.11	-34.55	41.84	-17.13
8	361.91	286.20	436.75	389.58	-275.25	-286.79	-245.22	-367.96	9.22	-37.43	11.39	-36.78
9	393.11	303.33	479.57	433.00	-360.86	-314.50	-274.01	-385.78	-13.46	-58.77	21.87	-50.75
10	405.24	321.41	496.61	521.20	-376.25	-365.94	-312.35	-436.87	-20.92	-88.45	-7.44	-63.34

CVP3	SG8											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	161.56	131.68	208.21	95.63	2.10	-30.41	-51.29	-58.51	85.58	15.82	88.02	201.50
1	88.43	45.55	89.00	19.88	-25.16	-39.15	-44.03	11.27	14.56	-19.21	-16.79	32.50
2	84.81	63.68	78.37	25.51	-34.04	-47.80	-60.24	-116.92	17.44	2.86	5.08	-40.97
3	113.16	87.08	116.97	117.26	-58.03	-51.65	-87.70	-145.55	10.16	2.04	13.44	22.61
4	151.21	142.04	193.35	147.55	-69.16	-73.04	-89.66	-48.19	23.35	-9.82	16.66	-7.84
5	205.16	176.61	207.22	218.80	-97.46	-96.16	-94.30	-188.09	65.80	13.58	38.66	28.77
6	243.53	219.38	291.55	236.89	-118.34	-110.64	-156.48	-164.60	73.13	10.74	50.38	34.83
7	283.08	244.79	320.36	319.94	-141.19	-131.57	-161.28	-172.11	82.65	22.69	68.19	48.12
8	327.97	286.55	375.90	323.01	-143.71	-146.49	-192.74	-267.53	85.08	20.31	60.36	50.91
9	362.59	311.56	406.99	358.55	-176.27	-158.26	-219.07	-278.75	74.91	12.52	66.13	39.98
10	381.07	330.22	428.06	399.63	-187.21	-186.42	-238.48	-308.92	77.34	-2.45	50.29	35.40

CVP3	SG9											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	23.19	19.97	26.59	18.49	3.87	0.93	-5.65	-3.32	17.36	3.52	10.31	28.51
1	54.61	48.63	56.34	53.38	-11.75	-12.29	-18.52	-8.28	37.20	28.50	27.03	38.97
2	97.59	93.26	98.78	91.22	-26.81	-27.54	-34.32	-33.25	66.97	60.29	61.55	60.82
3	144.61	141.20	148.74	147.97	-45.19	-41.69	-50.30	-53.28	95.26	92.08	98.09	101.24
4	192.94	192.31	201.82	196.30	-58.96	-59.69	-62.97	-58.79	127.20	119.64	128.22	127.87
5	244.21	239.87	251.97	246.45	-76.78	-75.12	-76.20	-80.28	164.14	152.87	162.73	168.31
6	292.69	289.28	301.97	300.09	-92.40	-88.54	-98.78	-95.34	195.53	182.82	196.15	200.25
7	341.89	335.76	353.00	355.52	-107.46	-104.34	-110.72	-107.10	228.96	214.58	229.82	232.63
8	390.05	385.00	402.14	400.38	-119.96	-117.93	-127.81	-132.26	260.43	244.15	263.07	272.44
9	438.18	431.66	452.56	446.85	-137.77	-131.16	-144.71	-148.61	288.88	274.46	295.03	297.02
10	483.24	476.35	501.05	491.73	-150.26	-146.58	-159.96	-157.41	321.97	303.36	322.40	330.44

CVP3	SG10											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-21.26	-20.96	-9.29	-27.46	-2.07	7.82	1.44	-5.91	-6.66	-8.89	-19.39	-24.72
1	-26.54	-25.78	-23.43	-28.06	33.04	32.52	34.16	37.28	22.81	14.74	17.57	13.23
2	-36.09	-36.88	-26.96	-27.69	67.51	66.41	74.32	66.71	53.54	48.17	55.79	47.51
3	-48.11	-49.65	-35.91	-34.53	104.21	103.18	109.95	105.31	81.40	80.08	89.93	86.63
4	-64.41	-65.77	-48.67	-48.07	146.44	146.09	148.29	144.26	110.30	110.84	120.23	114.54
5	-79.25	-75.36	-66.62	-47.02	184.22	181.28	187.66	176.64	141.71	145.35	153.86	153.40
6	-91.86	-93.17	-72.32	-68.32	219.66	217.32	221.72	219.24	171.67	168.90	186.17	183.63
7	-109.26	-109.79	-87.65	-73.00	256.66	252.35	258.69	254.49	202.10	198.13	219.17	215.26
8	-127.95	-122.92	-98.56	-85.16	294.01	288.17	300.18	289.52	228.09	230.49	242.17	239.40
9	-140.89	-140.09	-108.12	-96.50	327.77	324.75	333.22	322.15	252.99	254.59	276.32	273.56
10	-159.68	-162.96	-126.20	-113.58	358.94	356.12	369.57	355.77	276.02	274.29	302.99	291.10

CVP3	SG11											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	13.46	14.16	16.55	20.47	-0.39	5.25	-1.43	-1.79	22.56	19.00	17.42	19.95
1	-2.71	-3.30	-3.84	2.83	35.25	39.43	39.35	37.53	41.48	39.76	42.40	41.08
2	-20.54	-23.69	-22.40	-18.85	73.47	74.36	72.97	70.79	60.97	57.96	59.30	57.43
3	-37.62	-39.49	-42.43	-37.77	109.50	110.00	112.30	109.73	81.18	80.20	78.58	74.52
4	-55.82	-57.14	-55.29	-55.78	146.05	148.76	147.59	145.36	105.60	104.27	99.35	96.20
5	-73.28	-71.83	-75.50	-69.37	184.27	186.59	185.79	178.45	128.95	129.62	123.59	120.83
6	-86.32	-86.35	-89.65	-87.38	221.76	223.75	222.68	217.76	154.66	155.90	149.30	145.99
7	-100.27	-100.68	-103.98	-97.29	259.79	261.06	259.99	255.61	181.11	181.24	172.67	170.46
8	-114.62	-114.65	-118.47	-109.06	295.84	298.33	297.47	291.81	208.71	210.45	198.76	193.76
9	-125.09	-126.41	-129.88	-122.10	333.11	335.48	332.78	327.82	235.89	236.17	225.77	222.22
10	-136.86	-139.47	-143.85	-137.18	364.53	369.63	372.46	361.00	264.03	261.39	252.96	241.87

CVP3	SG12											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-6.08	-7.20	3.59	-1.08	-23.70	-18.28	-30.16	-34.53	-20.99	-31.09	-56.16	-44.87
1	-1.31	0.24	0.83	1.54	69.27	65.60	61.83	57.28	71.76	61.55	57.05	54.66
2	-3.60	-0.86	3.22	4.85	156.86	151.59	150.01	153.53	158.29	150.13	144.86	141.64
3	-4.06	-2.01	6.30	5.44	243.03	235.00	245.16	241.10	246.39	238.22	234.75	232.46
4	-1.63	-1.28	4.28	9.12	336.35	333.42	331.91	322.97	335.41	325.28	322.46	320.75
5	-0.57	-2.29	8.04	14.49	419.82	417.35	412.81	420.42	421.48	412.39	407.20	405.08
6	-3.51	-2.42	3.91	18.44	501.27	502.47	498.42	498.93	505.86	500.36	489.54	487.81
7	-3.42	-2.24	10.43	21.33	584.74	581.50	576.05	582.25	588.32	580.23	567.19	566.34
8	-4.06	-1.00	13.00	22.34	666.99	662.98	666.76	667.46	670.40	661.77	649.27	648.72
9	-4.61	-2.98	12.95	22.98	759.67	741.29	744.50	747.16	750.40	740.00	724.93	722.83
10	-7.14	-6.05	13.83	23.53	823.22	817.43	822.37	810.53	836.44	808.29	800.77	793.71

CVP3	SG13											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	27.27	24.45	20.00	18.10	-1.23	-8.95	-24.86	-29.01	18.75	6.18	-27.30	-7.81
1	15.90	9.82	-1.08	-4.09	111.54	99.20	103.25	101.49	119.70	108.11	96.97	99.18
2	3.34	-0.99	-5.94	-0.15	223.93	210.23	211.51	211.57	218.67	210.45	196.78	194.50
3	-5.00	-9.47	-8.74	-8.44	329.20	317.49	329.29	322.16	321.21	312.85	304.23	306.64
4	-10.41	-15.21	-12.45	-11.24	442.86	436.47	440.81	432.13	430.43	420.32	414.26	410.97
5	-14.87	-19.65	-18.55	-4.78	552.15	549.00	551.51	548.05	541.41	530.85	518.90	519.39
6	-16.92	-24.65	-25.70	-17.57	658.69	659.88	661.94	658.25	653.76	641.79	624.85	625.87
7	-21.82	-28.36	-22.86	-20.13	767.61	766.43	770.73	768.63	756.43	746.61	728.76	727.96
8	-22.01	-29.10	-26.79	-22.75	881.20	876.56	887.33	879.74	864.96	852.77	831.07	834.52
9	-21.55	-33.59	-29.82	-24.49	1002.88	981.92	993.21	983.88	967.75	956.92	928.98	932.89
10	-25.05	-37.31	-34.64	-21.01	1094.75	1080.29	1098.28	1079.01	1080.08	1048.25	1029.64	1026.94

CVP3	SG14											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-3.14	-5.13	10.68	-6.99	-76.56	-37.58	-57.28	-57.49	-53.69	-59.03	-91.59	-75.41
1	-3.70	-2.66	-0.28	-5.89	50.38	75.47	70.05	63.07	62.06	56.43	53.55	54.28
2	-13.60	-12.15	-10.14	-16.34	170.94	190.67	186.34	188.56	169.70	165.28	156.48	152.16
3	-21.99	-19.80	-11.84	-22.44	288.87	300.18	306.65	300.66	276.32	272.17	263.01	257.89
4	-26.86	-26.28	-23.35	-25.75	413.72	428.01	420.74	406.73	385.54	378.95	370.02	369.04
5	-32.96	-34.49	-30.46	-34.14	527.00	540.36	527.59	532.93	489.32	484.30	473.27	467.65
6	-43.37	-40.59	-39.27	-37.53	631.29	651.56	640.40	631.57	588.04	589.88	568.22	563.76
7	-48.50	-45.95	-41.42	-45.37	732.19	755.41	739.37	741.77	684.44	681.12	655.11	654.56
8	-55.89	-51.36	-43.92	-52.11	825.10	859.35	851.26	842.29	778.52	774.85	749.03	745.40
9	-62.72	-58.93	-49.21	-59.86	936.91	956.12	946.36	946.11	865.76	863.82	831.76	828.77
10	-69.24	-68.25	-55.31	-69.18	1011.40	1050.13	1041.56	1017.80	954.65	938.30	916.50	902.87

CVP3	SG15											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-10.34	-9.62	-15.89	-1.49	-12.90	-6.06	-15.02	-14.42	-16.63	-16.39	-28.93	-27.22
1	1.72	0.01	-7.22	1.62	46.97	50.75	51.04	43.62	53.98	51.60	49.80	47.47
2	2.32	-2.19	-5.30	0.39	109.01	110.16	107.89	111.40	112.15	108.48	105.21	107.93
3	0.67	-1.23	-7.22	-5.53	166.08	166.32	170.81	172.96	169.69	167.65	162.50	160.03
4	-1.35	-5.63	-10.80	-7.87	228.61	229.77	228.42	218.61	229.44	228.73	219.19	219.27
5	-4.38	-6.96	-13.73	-11.12	287.67	289.53	285.25	288.51	285.04	286.48	275.27	275.05
6	-3.92	-8.47	-20.24	-12.45	345.63	347.01	345.70	342.06	342.78	346.46	331.19	331.88
7	-4.01	-8.75	-21.16	-15.34	404.51	403.32	401.67	401.48	400.92	401.81	381.89	385.51
8	-5.94	-9.98	-24.28	-13.64	461.97	461.42	459.80	459.25	457.87	460.50	439.66	441.00
9	-3.69	-10.03	-25.29	-16.53	516.39	515.77	513.04	514.82	513.40	515.70	492.48	494.87
10	-2.86	-11.08	-26.71	-21.94	563.90	568.36	571.54	562.94	569.58	566.44	547.13	542.00

CVP3	SG16											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	1.46	-1.17	9.53	-4.00	-12.50	-20.28	-35.41	-38.32	-8.06	-23.86	-59.01	-49.27
1	-0.54	-0.14	-0.30	-5.30	97.52	82.63	81.52	75.68	96.65	81.92	73.96	71.22
2	-6.78	-5.38	-4.43	-5.58	201.94	187.37	186.62	189.54	198.36	184.62	174.35	170.05
3	-10.83	-9.65	-0.99	-6.45	304.35	288.33	297.91	294.88	301.57	287.67	279.31	275.15
4	-12.33	-11.77	-5.71	-3.86	413.45	405.46	404.27	394.47	410.25	393.40	385.74	383.33
5	-14.01	-16.00	-6.99	-4.14	516.32	511.29	505.14	513.30	516.07	500.57	489.11	484.84
6	-19.39	-19.26	-12.16	-5.24	615.21	616.88	612.24	611.39	620.10	608.94	588.97	585.43
7	-22.06	-21.92	-9.19	-6.49	715.65	715.54	709.58	714.89	721.26	706.54	682.47	679.81
8	-25.80	-23.34	-9.09	-8.77	815.68	815.02	816.74	817.25	820.51	804.27	780.28	777.95
9	-28.60	-27.37	-10.62	-10.83	935.33	908.65	909.98	913.33	918.34	897.04	869.03	863.83
10	-31.80	-32.26	-12.54	-12.83	1020.41	998.39	1002.76	990.82	1024.26	978.50	957.22	945.78

CVP3	SG17											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	45.48	7283.88	412.35	-281.55	-4606.13	283.89	-10.71	-278.16	-1535.61	-3491.52	-160.56	195.23
1	143.04	7193.30	218.70	-204.36	-416.43	189.01	116.78	51.34	-541.13	-3504.99	95.39	187.17
2	451.97	7059.56	45.12	-151.41	-734.17	206.59	240.33	27.16	189.22	9144.96	45.94	282.07
3	766.27	7118.39	153.98	-198.48	-833.76	138.95	395.78	433.80	865.68	6707.41	146.51	519.61
4	928.62	7012.95	-10.77	-169.76	-1265.02	64.70	436.51	184.36	1470.93	5141.23	384.23	416.64
5	526.04	32245.27	80.43	-281.55	-1721.07	263.33	554.64	277.87	2380.55	17744.48	390.65	645.40
6	757.97	35955.47	138.72	-296.26	-2383.08	235.32	670.24	427.91	3080.19	17791.56	805.38	637.29
7	786.86	36405.64	159.86	-701.51	-2606.70	-97.19	708.06	472.04	3518.54	21540.61	904.43	753.55
8	902.14	35831.89	237.43	-481.61	-3096.60	-461.97	887.50	504.41	3887.69	22058.40	960.33	937.37
9	1393.50	36435.06	195.17	-552.21	-2771.46	566.35	1016.54	542.65	3466.25	22317.30	766.16	1176.34
10	2167.99	37152.92	203.99	-520.58	-3280.48	393.49	1184.23	949.75	3952.43	23661.00	807.35	1311.66

CVP3	SG18											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-13.05	-9.03	-13.83	-19.01	-13.02	-13.66	-8.89	-14.17	-24.38	-22.75	-23.50	-23.71
1	-24.70	-21.97	-27.47	-30.85	55.85	53.99	60.43	54.80	31.33	30.84	38.35	39.24
2	-41.91	-38.86	-44.31	-47.59	123.31	120.19	123.75	119.47	82.43	86.38	82.71	81.63
3	-60.54	-57.67	-62.75	-68.93	186.53	184.75	190.25	186.21	134.37	136.37	131.69	127.76
4	-80.05	-79.20	-82.80	-86.73	254.06	253.84	253.01	247.08	184.12	186.99	181.08	177.04
5	-100.06	-91.77	-104.60	-107.15	320.70	319.39	318.92	313.64	230.08	237.31	226.15	219.51
6	-120.29	-110.95	-126.54	-129.13	384.58	383.43	384.54	377.33	276.31	286.78	272.21	265.00
7	-138.96	-129.45	-146.08	-148.44	447.91	445.21	445.51	439.55	321.64	329.06	312.48	308.76
8	-160.13	-150.28	-166.11	-174.61	510.74	508.67	510.67	503.98	369.45	377.33	359.28	350.35
9	-180.41	-170.52	-187.24	-197.09	576.40	569.67	571.84	565.28	413.83	424.14	401.31	397.11
10	-200.71	-191.10	-209.54	-219.59	629.82	629.46	635.53	618.93	454.26	464.61	450.32	434.36

CVP3	SG19											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-8.60	-2.96	-3.54	-18.28	-145.25	-72.36	-75.81	-84.34	-59.01	-59.74	-71.33	-66.23
1	-29.77	-25.96	-33.91	-41.29	-39.43	24.45	30.91	21.85	15.16	13.50	21.98	21.37
2	-58.85	-56.33	-61.70	-67.42	58.11	113.77	117.77	110.77	76.85	77.57	76.62	75.46
3	-89.03	-85.96	-89.31	-98.89	148.55	195.29	201.90	193.75	136.48	136.12	130.52	124.07
4	-119.04	-118.37	-121.15	-126.68	238.33	274.04	270.04	262.36	188.34	187.11	177.47	169.89
5	-149.42	-147.63	-155.93	-156.50	324.11	343.39	337.73	333.25	234.75	234.39	221.97	212.25
6	-180.51	-177.63	-186.68	-189.81	405.46	411.59	408.48	398.59	281.28	283.54	267.05	255.84
7	-208.84	-205.79	-215.56	-217.03	487.19	477.49	472.21	468.89	327.29	327.67	305.96	298.07
8	-239.96	-234.51	-245.15	-252.75	521.86	545.53	544.34	532.39	375.23	376.26	353.63	338.66
9	-268.86	-263.40	-274.09	-286.43	536.15	610.39	608.27	600.85	420.28	422.27	395.40	385.17
10	-297.60	-293.43	-305.38	-319.95	589.71	674.01	674.34	650.57	464.33	461.58	442.33	418.30

CVP3	SG20											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	0.17	-1.58	4.72	-3.55	-88.48	-60.72	-71.44	-72.25	-71.24	-73.22	-89.77	-82.45
1	-0.19	-3.23	-3.03	-6.69	20.46	41.26	45.39	36.16	32.95	30.74	34.47	34.41
2	-3.51	-5.81	-7.26	-8.72	126.66	143.66	145.69	142.76	131.30	131.09	126.09	124.19
3	-6.46	-8.57	-6.89	-9.27	225.76	237.70	246.40	239.72	225.89	224.45	218.25	216.07
4	-7.00	-9.48	-10.20	-10.54	325.67	336.69	335.72	325.80	316.19	311.90	306.63	299.45
5	-9.20	-13.53	-15.36	-13.67	418.08	424.25	421.07	420.46	398.15	394.50	385.89	379.02
6	-13.45	-14.82	-17.74	-14.22	504.41	508.87	507.44	498.87	477.79	477.88	463.55	454.79
7	-15.11	-16.85	-18.49	-10.56	590.74	590.42	587.01	585.56	554.35	552.73	534.54	528.56
8	-15.10	-18.50	-19.80	-16.43	660.59	672.99	675.71	666.36	633.28	629.85	612.21	604.42
9	-17.13	-22.55	-23.64	-24.16	734.32	751.13	754.21	749.18	707.39	704.39	681.60	674.27
10	-20.43	-27.15	-27.51	-28.20	800.77	827.06	833.35	811.19	779.08	771.02	757.06	740.53

CVP3	SG21											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-5.05	-6.25	5.47	-8.62	-111.38	-92.39	-102.51	-109.27	-106.11	-105.27	-125.90	-119.82
1	-12.22	-10.67	-7.43	-13.24	-16.37	-12.47	-5.50	-20.34	-28.03	-27.22	-20.95	-19.85
2	-22.90	-22.64	-23.45	-25.76	66.12	68.97	74.77	67.71	42.72	44.99	44.21	39.60
3	-33.22	-32.77	-27.31	-34.59	145.72	138.93	150.66	139.86	108.63	108.18	104.75	97.81
4	-42.61	-42.34	-40.76	-43.42	213.09	209.06	208.70	198.18	161.61	157.17	153.02	144.76
5	-52.55	-53.76	-53.09	-55.21	267.41	261.51	258.01	255.86	203.45	199.12	193.67	179.60
6	-66.00	-64.44	-62.85	-63.49	314.37	311.86	311.67	299.31	242.26	241.29	229.75	214.55
7	-75.38	-74.94	-72.79	-71.97	362.25	359.75	357.20	353.63	281.30	277.53	262.98	250.00
8	-86.44	-84.33	-80.71	-83.93	412.58	409.05	414.82	400.22	319.69	316.20	302.39	284.89
9	-96.75	-95.56	-89.73	-98.85	474.95	455.70	463.13	452.88	356.29	352.10	336.45	319.08
10	-108.17	-108.64	-100.97	-111.37	513.62	504.26	513.03	484.78	390.41	383.14	374.02	347.25

CVP3	SG22											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	20.86	16.63	11.09	11.93	-453.76	-174.57	-181.88	-194.22	-148.35	-161.61	-181.40	-157.16
1	20.90	13.82	-1.99	0.59	-341.02	-79.59	-70.38	-82.73	-55.94	-65.86	-67.06	-56.00
2	15.76	10.11	3.20	9.69	-232.32	-6.68	-1.78	-10.84	6.95	6.57	3.92	7.41
3	14.11	8.27	9.99	10.10	-139.27	45.12	53.06	32.68	65.60	64.00	61.03	68.96
4	15.44	10.65	11.28	14.18	-57.51	68.29	63.00	55.15	90.82	83.06	88.05	82.46
5	18.92	11.66	11.69	24.52	21.21	82.09	75.79	64.45	116.65	103.76	110.20	114.63
6	21.68	14.24	11.69	25.44	95.93	96.33	89.80	73.73	141.38	125.16	128.06	129.76
7	24.44	17.18	19.68	35.17	171.39	110.38	101.16	101.19	158.60	145.48	152.68	155.86
8	32.52	21.95	22.25	32.74	17.03	128.59	127.84	97.20	182.72	165.45	173.35	177.70
9	37.89	23.47	24.73	33.33	-135.08	144.83	143.94	125.53	202.40	190.66	191.16	202.42
10	38.90	24.80	26.52	41.60	-128.60	161.75	159.10	118.77	229.11	208.41	215.18	217.80

CVP3	SG23											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-13.16	-9.29	-5.43	-9.79	-83.78	-44.90	-56.74	-65.60	-31.34	-36.48	-64.65	-63.22
1	-33.36	-28.57	-37.01	-34.39	22.54	53.89	57.27	49.53	46.52	41.36	37.62	33.91
2	-62.75	-60.70	-67.49	-55.69	118.75	145.74	148.33	143.55	110.26	103.08	97.46	98.16
3	-93.03	-90.63	-87.50	-88.18	211.71	232.77	240.34	233.13	173.61	164.98	159.12	154.91
4	-124.08	-123.70	-125.88	-113.16	304.05	320.52	321.53	313.70	234.71	223.38	215.87	213.48
5	-156.96	-155.46	-158.74	-142.36	396.23	404.21	398.97	395.44	289.28	278.99	271.10	266.76
6	-188.53	-186.86	-191.81	-174.67	482.16	485.28	485.71	475.13	344.51	337.20	323.42	320.71
7	-219.54	-217.70	-222.09	-204.95	569.02	563.15	559.39	555.92	401.06	391.51	374.72	373.30
8	-252.62	-247.82	-251.78	-229.76	630.42	643.15	645.67	635.97	456.06	447.51	430.72	424.08
9	-281.08	-277.20	-279.92	-258.40	689.85	719.06	722.12	715.11	513.85	503.51	482.68	481.13
10	-310.86	-307.90	-308.57	-288.91	755.40	795.38	801.44	778.65	586.99	554.49	537.95	525.74

CVP3	SG24											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	13.54	9.04	14.61	2.98	-60.86	-39.34	-54.57	-58.05	-21.12	-33.00	-70.67	-64.02
1	7.30	5.92	-1.73	-6.57	51.70	65.34	66.79	62.77	78.05	67.79	56.95	58.27
2	0.50	-0.87	-11.28	0.60	154.16	166.57	166.67	168.93	172.11	161.29	151.12	151.16
3	-4.09	-5.65	0.47	-0.51	257.60	263.88	271.17	266.77	268.51	256.81	248.58	247.03
4	-7.21	-7.85	-6.87	4.64	358.57	365.40	365.96	356.70	363.20	347.53	340.41	339.21
5	-7.21	-11.34	-11.10	6.66	458.47	460.66	454.79	458.47	454.14	438.76	428.31	425.75
6	-10.70	-13.91	-15.51	5.92	550.84	554.43	552.35	544.96	543.70	530.03	512.76	511.45
7	-11.80	-15.56	-13.30	7.94	645.41	642.58	637.24	639.70	631.10	615.72	595.14	595.31
8	-13.46	-15.93	-14.22	7.57	727.21	733.78	734.36	728.03	719.39	701.66	681.44	681.66
9	-13.46	-18.14	-12.75	6.84	813.62	818.89	820.56	820.20	804.89	788.33	763.15	763.47
10	-16.21	-21.44	-14.59	8.13	888.54	905.30	909.80	893.09	910.39	865.81	845.23	838.20

CVP3	SG25											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-5.05	-4.91	2.98	-16.84	-12.88	-12.69	-25.19	-27.30	-26.90	-27.59	-53.41	-54.18
1	-9.38	-8.14	-6.55	-19.15	98.82	91.85	98.74	84.68	76.30	77.06	76.75	72.62
2	-16.19	-15.73	-18.75	-21.91	208.27	201.35	202.70	200.37	178.81	178.21	171.35	164.23
3	-24.20	-23.19	-18.10	-26.33	315.30	305.37	311.90	307.86	281.17	279.14	270.91	263.31
4	-31.29	-30.32	-27.03	-28.44	423.90	424.64	420.57	409.99	389.36	383.73	375.68	368.06
5	-39.58	-38.79	-35.82	-33.78	533.64	533.96	526.01	527.31	491.77	488.46	476.32	463.29
6	-49.29	-46.48	-41.53	-38.61	637.85	641.97	636.70	627.09	592.24	592.48	571.85	558.60
7	-56.78	-54.03	-47.42	-47.22	743.16	746.93	737.65	735.16	689.26	687.42	662.56	649.70
8	-63.79	-60.33	-54.69	-57.53	849.12	851.43	847.54	840.83	784.97	782.23	757.55	741.79
9	-71.84	-68.71	-60.49	-67.43	965.03	950.40	947.79	943.38	875.29	873.18	842.98	826.20
10	-79.95	-77.65	-66.38	-73.00	1052.49	1048.81	1046.46	1027.66	964.14	953.09	932.08	906.09

CVP3	SG26											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	21.35	19.16	10.00	-0.02	-4.86	-8.71	-23.20	-21.05	23.56	11.96	-27.95	-16.23
1	15.29	11.81	-9.67	-17.67	108.73	101.96	102.88	103.03	126.14	115.98	96.68	96.45
2	4.26	1.51	-11.87	-10.69	219.39	210.67	208.75	212.80	222.52	215.10	195.00	189.44
3	-2.73	-4.74	-8.75	-8.48	324.61	314.70	323.85	321.96	323.44	315.88	304.33	303.43
4	-6.59	-7.49	-10.96	-4.99	439.47	433.24	433.27	426.87	432.74	420.49	413.36	407.11
5	-9.34	-11.72	-15.73	-0.39	547.57	543.12	541.49	543.28	543.09	529.10	517.52	512.49
6	-11.92	-13.93	-19.04	-1.50	651.81	653.37	650.54	653.76	654.43	640.32	622.64	616.66
7	-12.65	-14.66	-20.15	-3.52	760.64	759.64	758.87	765.34	759.76	745.76	724.43	718.84
8	-12.47	-14.66	-24.19	-10.50	871.40	867.47	871.73	872.50	868.39	851.09	828.11	824.57
9	-13.57	-17.42	-26.95	-13.26	990.81	970.71	976.78	975.63	972.17	956.79	926.45	921.34
10	-15.96	-20.54	-29.34	-10.13	1085.30	1072.27	1079.17	1072.64	1084.98	1051.49	1028.29	1015.45

CVP3	SG27											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-0.67	-2.14	3.59	-13.21	23.02	2.14	-9.40	-8.64	11.04	-0.31	-35.32	-33.04
1	-1.86	-0.58	-2.80	-13.39	115.87	91.14	96.16	87.38	100.50	91.14	78.58	76.59
2	-4.76	-4.17	-7.03	-8.94	206.93	184.50	185.65	187.75	190.14	179.94	168.01	163.07
3	-7.89	-6.97	-0.18	-6.09	296.21	274.41	282.25	283.89	282.07	271.36	263.34	258.70
4	-9.13	-8.34	-2.48	-1.58	388.30	377.63	378.68	372.79	380.24	368.13	362.70	358.17
5	-11.19	-10.87	-4.41	0.91	480.61	475.91	472.64	481.08	476.72	467.21	458.33	449.84
6	-14.96	-13.22	-5.00	2.61	568.87	573.15	572.81	574.53	573.11	567.15	551.30	544.38
7	-17.08	-14.87	-4.00	1.77	665.09	667.40	664.61	670.78	667.11	659.34	640.14	632.59
8	-18.83	-15.79	-3.59	-1.94	768.14	760.88	763.70	770.99	760.16	750.21	731.39	723.19
9	-21.49	-19.24	-4.87	-5.71	880.23	849.23	854.43	859.79	852.58	838.28	815.04	804.92
10	-24.30	-22.69	-6.02	-5.34	964.45	936.12	942.69	941.59	950.31	917.90	900.36	884.34

CVP3	SG28											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-7.68	-3.84	-11.96	-5.17	-7.74	3.78	-3.44	-3.65	-2.90	-5.63	-12.44	-20.76
1	1.15	3.52	-10.48	-4.43	41.56	50.13	48.07	43.44	50.81	48.07	45.68	38.84
2	-1.06	-1.63	-12.69	-1.48	93.06	96.51	95.15	100.09	97.18	93.70	88.35	85.18
3	-3.27	-2.37	-13.42	-8.10	143.11	146.54	147.39	147.91	140.59	141.54	133.22	130.80
4	-8.42	-8.25	-20.78	-12.53	195.34	199.50	195.22	192.78	192.80	191.58	180.31	179.36
5	-14.31	-9.72	-25.93	-14.00	246.11	246.56	245.24	247.97	238.44	239.39	224.43	222.05
6	-17.25	-13.40	-31.09	-18.41	299.82	296.65	292.28	294.32	289.18	288.69	267.83	265.44
7	-17.98	-15.61	-37.70	-22.82	346.91	345.95	340.12	341.41	338.47	332.06	311.27	308.90
8	-20.93	-17.08	-44.30	-23.56	391.10	396.69	390.88	395.11	383.42	379.89	356.89	353.72
9	-20.19	-15.61	-46.53	-27.24	443.30	444.56	440.20	442.20	430.48	431.39	401.03	398.57
10	-20.20	-16.35	-48.00	-28.72	485.98	493.08	489.50	488.47	476.14	476.36	448.85	442.71

CVP3	SG29											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	2.17	0.21	13.84	7.92	-7.83	-14.18	-19.83	-18.45	-11.22	-15.19	-36.03	-31.62
1	1.44	1.87	7.41	8.10	75.93	66.28	75.30	65.31	69.79	67.26	61.87	62.06
2	-0.58	-0.52	1.35	3.69	160.78	150.82	153.90	154.05	151.58	147.56	140.83	139.00
3	-3.16	-3.09	7.23	4.79	242.94	231.09	238.60	239.25	234.41	228.60	226.02	222.96
4	-3.71	-3.08	4.84	7.73	324.85	319.41	321.48	316.36	318.67	310.91	311.82	307.45
5	-4.99	-4.92	3.37	10.85	407.14	401.30	401.16	404.19	400.63	392.80	393.50	384.27
6	-7.01	-5.66	4.84	13.98	484.48	481.31	484.99	482.26	481.22	475.28	471.73	463.03
7	-8.49	-6.03	6.68	16.36	564.57	560.85	562.18	562.52	558.73	551.63	547.88	540.48
8	-7.38	-6.03	9.98	17.83	646.57	639.60	645.19	647.57	637.85	628.59	625.95	617.13
9	-9.03	-7.31	12.19	17.28	736.51	714.81	724.61	721.59	714.57	704.45	698.68	688.51
10	-10.68	-10.25	13.29	19.68	807.42	790.23	799.00	796.36	794.38	773.87	773.62	759.03

CVP3	SG30											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	3.22	4.74	11.40	11.24	-2.61	1.03	-15.84	-13.76	7.50	12.01	-1.88	0.23
1	-1.33	-2.01	3.30	-5.40	29.50	33.46	10.39	10.30	32.76	36.77	20.67	18.72
2	-12.77	-12.71	-6.07	-4.21	62.93	66.44	34.73	34.49	56.65	61.52	33.74	30.68
3	-23.79	-23.27	-13.01	-13.21	97.16	100.43	57.58	54.12	80.58	82.89	45.28	41.86
4	-35.65	-35.55	-22.51	-20.49	132.94	136.62	79.06	75.95	106.15	108.89	60.55	57.30
5	-47.50	-45.51	-30.32	-26.01	166.24	169.63	100.75	95.31	130.82	134.92	75.50	69.91
6	-56.08	-54.97	-34.26	-32.76	201.74	203.70	119.93	114.33	157.54	161.61	90.79	82.92
7	-63.98	-63.79	-41.16	-37.60	235.73	237.60	139.71	133.07	184.27	188.33	104.81	97.18
8	-72.94	-71.28	-45.46	-41.90	268.69	271.52	159.09	152.13	210.76	217.49	119.32	109.15
9	-80.61	-78.40	-49.70	-45.98	298.80	304.94	178.92	170.08	239.27	245.28	134.02	125.88
10	-87.70	-86.31	-52.87	-49.14	329.30	338.54	196.47	186.31	264.46	271.96	152.71	141.49

CVP3	SG31											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-15.56	-19.57	-7.00	-17.13	14.67	13.25	14.02	7.37	4.40	2.18	0.89	4.76
1	-21.57	-23.66	-12.05	-19.01	47.04	47.51	50.25	45.48	32.36	32.12	44.05	40.21
2	-30.62	-30.04	-24.30	-26.26	82.35	80.90	80.36	68.17	62.63	62.52	69.16	66.06
3	-41.08	-46.89	-35.78	-31.17	109.91	112.72	113.66	108.71	92.11	87.27	94.77	95.17
4	-61.25	-63.07	-44.87	-44.45	143.79	146.69	147.46	149.51	123.96	115.56	126.91	123.00
5	-75.90	-74.27	-64.71	-51.06	180.48	182.64	188.36	173.72	156.99	147.74	159.59	155.20
6	-88.39	-90.61	-66.65	-66.71	216.16	220.41	226.89	217.85	188.65	173.78	192.18	182.36
7	-102.52	-109.44	-83.03	-69.14	253.59	257.93	261.25	253.11	219.74	202.19	223.30	223.77
8	-117.64	-123.35	-88.25	-85.40	289.80	294.88	298.30	287.50	248.94	235.98	252.55	245.50
9	-131.00	-136.90	-104.15	-99.64	326.78	331.60	336.76	326.16	281.43	263.39	284.04	284.36
10	-148.10	-154.92	-121.55	-103.96	361.27	369.40	376.15	362.32	310.06	289.52	319.72	308.69

CVP3	SG32T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-42.77	-38.12	-43.26	-25.03	-1.34	-1.46	1.80	16.89	-47.24	-41.29	-21.06	-22.57
1	40.30	43.57	39.21	41.08	-28.54	-27.01	-26.58	-28.48	12.33	14.83	9.84	13.78
2	122.17	123.60	123.73	126.97	-55.28	-53.53	-55.70	-40.26	63.60	63.16	63.27	73.99
3	200.18	203.77	200.51	200.08	-82.22	-80.96	-85.19	-72.76	112.45	113.54	114.12	119.28
4	275.80	278.65	270.25	274.73	-113.58	-112.83	-113.64	-121.78	155.82	158.52	158.27	166.57
5	347.51	351.42	351.43	340.94	-140.32	-140.61	-140.59	-127.79	194.22	197.64	198.12	209.86
6	419.08	422.58	411.86	422.67	-167.66	-169.94	-168.81	-169.87	231.92	235.56	236.53	249.36
7	487.21	491.87	483.84	487.00	-196.60	-196.41	-195.56	-197.85	272.07	273.67	274.21	288.06
8	553.80	559.45	545.59	556.41	-223.77	-224.69	-227.66	-219.96	309.23	312.22	315.79	335.34
9	619.05	626.03	614.84	618.63	-255.76	-251.05	-255.75	-250.96	348.26	349.54	352.46	368.59
10	684.70	693.69	682.65	678.91	-276.96	-278.08	-281.48	-266.37	383.15	391.52	390.33	411.49

CVP3	SG32-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	2.41	-2.03	0.20	12.52	-15.22	2.10	-6.57	1.93	-2.81	-3.74	-20.60	-13.33
1	37.32	38.62	26.86	29.86	25.10	32.52	29.12	28.90	67.01	64.43	50.18	53.88
2	68.25	66.87	58.05	78.39	52.81	65.19	62.97	85.01	129.84	126.51	115.45	120.80
3	103.01	103.52	105.72	105.63	97.28	94.60	98.71	105.32	196.45	194.98	186.35	187.74
4	141.10	140.02	129.39	147.06	124.94	134.37	131.20	121.32	263.99	263.07	254.52	263.01
5	175.66	175.52	175.44	185.46	163.06	166.24	162.01	176.01	330.44	330.71	320.59	327.73
6	212.12	208.82	200.23	228.76	197.60	199.07	191.06	194.87	395.83	398.10	381.50	391.27
7	246.41	244.29	237.55	257.18	233.53	230.82	223.18	225.60	461.79	461.92	447.99	453.89
8	280.98	281.45	268.29	295.51	263.19	264.06	262.68	269.36	525.56	526.14	511.02	521.09
9	314.97	313.24	304.48	330.46	290.51	295.24	294.22	298.08	591.03	594.77	571.39	581.96
10	349.69	348.18	342.51	365.45	321.29	328.52	323.80	332.24	660.27	655.63	631.57	646.54

CVP3	SG32L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	9.88	5.76	31.31	18.28	-33.81	-23.62	-37.02	-37.36	-26.90	-35.76	-44.56	-27.20
1	7.63	5.40	12.88	5.48	66.66	66.53	62.06	60.63	64.41	57.86	58.28	56.48
2	-3.38	-2.35	2.42	-7.35	158.64	156.96	154.31	154.37	148.00	146.11	139.93	130.61
3	-7.46	-8.31	2.61	-7.86	247.46	244.54	251.07	241.38	234.43	231.29	223.62	218.89
4	-3.47	-4.78	0.27	-0.57	346.90	346.04	339.65	328.55	324.48	317.88	310.26	303.49
5	-0.99	-6.85	2.84	5.21	431.28	432.52	421.51	423.87	410.40	405.48	393.47	384.42
6	-4.93	-6.98	2.37	7.50	514.92	521.41	510.22	500.40	493.54	493.43	473.52	464.16
7	-4.57	-8.45	6.27	8.42	601.73	603.73	589.59	588.44	574.74	572.06	547.95	539.02
8	-5.76	-9.14	8.89	-0.43	684.03	687.86	682.75	671.16	653.84	650.61	626.77	617.31
9	-8.19	-13.54	5.27	-2.54	780.07	768.47	762.06	755.71	727.69	725.62	697.75	684.91
10	-13.33	-18.54	3.20	-2.50	844.46	849.46	840.93	815.88	805.37	789.80	769.10	750.38

CVP3	SG33T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-44.32	-36.21	-33.89	-21.79	15.19	6.13	12.63	20.91	-45.05	-35.55	-14.17	-11.62
1	40.14	45.54	38.95	45.62	-29.84	-36.14	-36.84	-33.11	-2.08	1.66	-2.74	-4.69
2	121.25	124.84	123.91	122.12	-74.45	-80.03	-81.35	-73.64	32.46	33.30	34.48	38.77
3	197.33	203.04	200.28	195.69	-119.09	-124.24	-126.48	-118.66	63.34	65.72	69.21	70.03
4	270.33	276.18	269.08	272.08	-167.82	-172.88	-170.74	-173.21	87.73	93.54	95.79	107.30
5	340.88	347.89	351.78	338.03	-214.46	-215.55	-212.95	-206.32	109.55	115.14	119.32	131.87
6	410.29	418.35	411.90	419.59	-258.34	-258.74	-254.02	-253.55	131.42	137.63	142.03	149.80
7	477.48	486.92	483.96	482.46	-303.37	-300.01	-295.34	-298.57	153.59	159.00	165.42	173.56
8	541.98	553.62	544.48	545.44	-340.40	-343.26	-341.10	-335.42	174.25	180.71	190.57	205.52
9	607.02	620.72	613.30	610.15	-379.33	-384.79	-382.49	-381.23	196.90	202.74	212.56	225.41
10	672.96	688.69	682.42	672.27	-414.72	-425.75	-423.66	-410.89	215.84	229.88	235.96	254.97

CVP3	SG33-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	4.58	-0.09	15.81	10.38	-107.53	-90.72	-93.20	-88.00	-107.06	-102.34	-101.70	-98.01
1	31.62	30.07	23.34	18.09	-85.36	-74.98	-73.05	-67.85	-61.76	-58.37	-61.08	-68.69
2	55.76	54.21	47.07	48.42	-71.18	-55.79	-53.09	-45.13	-17.45	-12.60	-15.79	-10.77
3	83.85	82.80	84.33	76.51	-45.70	-43.21	-40.10	-39.99	22.11	27.02	23.67	25.49
4	113.60	112.28	105.26	109.92	-42.40	-35.59	-37.62	-37.61	49.44	53.33	51.17	49.63
5	140.92	140.18	140.14	137.09	-40.61	-44.04	-42.44	-42.88	66.17	69.47	66.71	65.25
6	169.69	168.00	166.04	168.67	-48.55	-55.51	-57.22	-55.74	76.98	80.30	76.07	73.32
7	197.58	196.09	192.79	189.77	-58.97	-68.05	-68.83	-70.56	87.26	89.65	89.14	80.88
8	226.79	226.02	217.35	214.57	-63.83	-80.90	-78.33	-79.56	96.48	99.56	96.66	92.41
9	254.88	251.54	246.94	242.84	-100.14	-93.66	-89.81	-94.15	106.56	111.86	104.56	102.12
10	280.97	278.37	275.95	270.77	-110.97	-105.68	-105.82	-102.45	108.41	121.63	114.47	114.60

CVP3	SG33L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	21.23	14.47	54.67	18.00	-15.30	-24.26	-39.17	-42.81	-15.83	-27.14	-36.38	-3.72
1	2.34	-2.95	10.27	-7.32	98.42	86.54	88.11	91.83	79.38	74.82	72.58	80.10
2	-7.57	-8.82	-6.42	-12.63	210.68	197.58	196.87	188.34	185.27	182.16	171.97	169.58
3	-12.52	-15.42	-4.95	-10.43	317.32	306.16	311.91	300.38	292.03	287.68	277.40	276.37
4	-12.34	-15.79	-7.52	-10.06	434.14	429.58	426.41	423.04	406.96	397.21	388.76	376.33
5	-11.24	-21.29	-12.65	-8.60	543.47	541.61	532.57	527.28	515.43	506.86	492.88	481.13
6	-16.74	-24.23	-13.39	-11.35	646.20	651.62	643.22	635.50	619.01	614.91	592.64	587.09
7	-19.49	-28.63	-12.65	-9.88	749.30	755.65	745.26	745.37	720.26	713.89	685.04	679.51
8	-21.70	-31.75	-11.37	-12.81	855.05	861.05	856.04	845.34	819.85	811.66	784.09	776.75
9	-25.73	-37.99	-17.24	-22.17	985.02	960.58	955.55	951.73	912.03	904.47	871.95	859.56
10	-33.44	-45.33	-22.19	-25.84	1067.39	1059.53	1056.25	1030.56	1007.90	985.76	960.36	939.71

CVP3	SG34T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-34.72	-32.83	-29.11	-24.72	4.00	7.89	12.81	20.90	-10.23	-10.11	5.71	6.34
1	55.89	56.32	58.42	54.50	-33.79	-26.92	-25.52	-24.77	45.07	44.54	42.17	47.84
2	147.79	147.65	146.64	143.82	-70.88	-64.26	-65.95	-53.25	98.84	97.01	96.86	103.45
3	236.91	237.15	234.31	227.08	-106.39	-99.20	-103.70	-96.21	153.50	153.16	152.78	156.83
4	322.60	323.98	311.53	310.37	-143.11	-140.28	-138.84	-144.20	205.18	205.44	203.96	209.66
5	406.47	406.30	403.78	386.12	-177.78	-176.03	-175.23	-164.25	256.75	256.96	255.10	263.97
6	488.60	487.56	472.43	477.09	-210.57	-210.78	-211.22	-209.55	308.08	308.32	303.88	313.83
7	568.15	567.72	555.46	548.20	-244.18	-245.59	-245.68	-243.30	359.62	359.09	356.39	363.79
8	647.08	646.60	627.42	623.27	-281.31	-280.05	-280.94	-276.50	410.32	408.98	409.95	424.98
9	725.78	725.47	708.43	697.36	-324.71	-312.59	-314.26	-310.98	461.82	460.89	458.74	468.41
10	803.45	805.16	790.05	771.36	-352.17	-343.88	-347.59	-334.89	512.69	513.63	508.26	525.07

CVP3	SG34-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-19.31	-15.63	-19.41	-12.27	-55.80	-36.26	-40.23	-32.00	-34.03	-34.14	-46.83	-50.51
1	26.20	26.67	25.09	29.17	-25.42	-5.88	0.20	-8.26	41.97	41.52	27.42	28.32
2	66.77	66.22	66.94	68.67	8.04	20.17	20.18	23.82	103.37	100.98	92.86	96.55
3	105.30	103.89	103.46	107.89	28.77	45.10	47.81	55.30	168.03	165.04	155.94	162.79
4	141.89	142.66	139.85	146.08	61.86	64.07	66.20	57.36	228.86	223.16	215.90	217.97
5	179.68	176.74	178.99	178.57	84.87	84.32	77.28	90.92	284.80	278.87	268.11	272.26
6	213.94	212.49	206.15	221.01	104.35	100.89	104.62	105.40	342.15	334.97	320.17	325.03
7	248.20	247.88	247.37	259.12	123.10	118.03	118.34	126.85	398.25	391.95	371.20	381.76
8	285.08	281.61	280.50	293.61	126.05	131.36	131.81	139.27	454.44	446.40	428.03	442.73
9	320.65	316.81	313.74	325.51	132.24	144.76	145.85	161.40	508.11	499.56	479.18	491.44
10	354.24	352.97	349.85	362.02	144.00	160.87	162.85	165.31	569.59	555.96	531.24	540.38

CVP3	SG34L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-7.80	-7.59	-3.41	-8.19	-55.60	-43.80	-52.28	-53.65	-59.03	-59.16	-80.27	-84.80
1	-12.75	-13.45	-12.95	-8.75	50.60	56.73	61.24	51.26	38.74	38.21	40.05	30.57
2	-22.10	-22.81	-23.04	-15.35	155.51	160.05	162.29	160.23	131.60	133.44	126.24	118.96
3	-33.29	-33.08	-30.01	-24.34	255.36	255.79	263.19	258.52	220.00	221.34	212.22	209.04
4	-42.28	-43.17	-41.20	-31.12	354.20	359.40	357.51	348.91	307.07	306.64	299.00	292.49
5	-53.47	-54.73	-54.22	-41.21	449.77	451.43	449.00	449.46	386.35	387.87	375.98	369.21
6	-65.58	-65.00	-63.76	-48.91	539.29	541.80	539.48	534.38	464.44	469.68	450.62	443.08
7	-76.21	-75.45	-73.30	-54.05	628.44	629.49	625.93	624.81	540.01	544.46	520.98	514.56
8	-85.76	-84.99	-81.54	-60.10	711.25	718.02	719.64	714.87	616.08	620.58	596.18	588.35
9	-97.13	-97.47	-93.29	-71.66	803.35	802.12	804.09	800.52	688.65	693.03	663.49	655.95
10	-108.51	-109.95	-104.84	-81.93	875.16	884.03	888.28	871.50	756.43	758.49	737.23	720.69

CVP3	SG35T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	14.97	19.35	-305.51	13.74	44.89	27.55	28.43	35.76	25.10	31.23	180.63	10.25
1	81.46	84.23	-223.57	82.54	13.50	-4.57	-10.66	-17.87	61.85	60.34	124.52	57.46
2	142.26	143.26	-159.12	140.57	-17.38	-33.15	-34.61	-18.06	92.38	88.90	98.12	105.85
3	199.86	203.55	-99.02	190.34	-45.92	-59.90	-59.38	-44.25	124.31	123.09	110.39	129.16
4	259.35	261.41	315.07	256.11	-73.58	-83.21	-82.69	-90.17	157.91	160.99	144.63	171.46
5	321.00	325.15	645.52	317.44	-100.42	-104.03	-101.96	-80.40	192.15	197.59	160.98	211.76
6	386.21	389.53	445.71	390.16	-124.93	-125.57	-121.62	-113.94	230.90	236.41	191.21	251.10
7	451.49	456.01	421.59	445.57	-148.83	-145.16	-141.08	-136.60	272.19	275.83	227.33	290.43
8	515.96	522.31	361.59	510.59	-157.70	-165.38	-163.56	-143.76	313.36	317.72	266.78	341.25
9	584.19	591.04	505.09	574.08	-164.78	-185.04	-182.06	-170.00	355.63	358.64	305.00	377.82
10	652.85	661.03	636.16	639.57	-183.52	-205.99	-202.70	-177.63	396.73	403.32	350.83	428.74

CVP3	SG35-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	8.18	10.37	-0.25	12.11	-33.75	-28.25	-32.22	-24.38	-15.27	-10.26	-30.29	-41.95
1	42.17	41.96	41.06	46.81	-4.75	0.77	3.02	-8.22	48.28	48.84	37.11	32.78
2	68.43	67.48	72.28	72.33	27.02	26.32	26.34	31.46	95.69	93.31	87.77	93.36
3	93.76	93.37	95.60	97.12	46.70	50.56	56.29	67.25	148.21	144.39	140.08	143.51
4	121.32	120.95	123.51	125.97	78.82	73.68	75.95	66.87	198.30	193.06	190.60	191.07
5	150.36	147.38	155.65	150.02	101.04	96.62	90.44	109.12	242.58	238.40	235.73	237.38
6	178.99	177.68	177.34	188.03	119.59	115.02	121.98	125.65	292.13	287.43	281.45	283.08
7	209.26	208.54	215.33	220.69	138.88	134.86	138.72	148.60	340.43	336.61	325.41	332.56
8	240.88	237.92	245.94	252.31	151.21	150.45	153.40	168.25	390.10	384.91	377.38	385.91
9	273.39	270.06	277.22	280.59	172.83	165.53	170.14	190.47	438.54	431.37	424.03	430.30
10	305.01	303.52	311.37	314.05	184.61	182.77	189.61	198.31	493.51	480.51	470.67	473.63

CVP3	SG35L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-6.53	-6.43	-0.88	-7.62	-54.35	-43.06	-51.74	-52.38	-57.17	-58.02	-77.50	-79.59
1	-12.58	-13.78	-12.28	-10.75	48.90	54.71	60.70	51.63	37.11	36.76	37.71	30.10
2	-21.77	-22.79	-22.57	-17.00	151.07	155.29	157.89	155.66	128.13	129.05	122.21	114.96
3	-31.89	-32.71	-28.27	-23.62	247.80	248.08	256.23	252.10	214.86	214.73	206.88	203.93
4	-39.60	-41.71	-38.19	-30.04	344.62	348.56	347.42	339.89	299.87	297.07	291.25	284.97
5	-49.52	-52.55	-50.50	-39.04	437.06	437.64	435.58	436.60	377.46	376.05	366.72	359.63
6	-61.47	-62.29	-59.69	-46.58	524.53	525.24	524.75	519.29	453.67	455.44	439.65	431.42
7	-71.39	-72.77	-68.33	-50.81	611.09	610.15	608.24	608.04	527.36	528.15	507.76	501.94
8	-80.21	-82.32	-75.68	-57.24	691.48	695.53	698.64	695.51	601.56	601.65	581.08	573.83
9	-91.06	-94.27	-86.70	-68.63	780.44	777.40	781.41	779.30	672.05	671.84	646.86	639.54
10	-102.27	-106.77	-98.28	-78.73	850.73	857.62	863.73	848.20	739.22	735.41	718.71	702.01

CVP3	SG36T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-61.25	-57.98	-50.57	-26.86	15.18	7.29	13.89	21.23	-66.18	-61.49	-34.57	-20.46
1	38.63	39.14	30.94	33.16	-27.77	-34.57	-35.85	-33.11	-6.87	-8.08	-14.74	-11.47
2	133.56	132.58	132.83	131.56	-71.65	-77.37	-77.71	-70.57	41.80	39.49	39.41	52.78
3	221.66	223.09	223.34	216.18	-115.19	-120.33	-121.78	-115.90	84.94	84.30	87.86	92.08
4	307.25	308.90	302.28	304.88	-162.73	-169.15	-167.47	-171.79	118.69	122.13	125.87	132.28
5	388.63	392.03	396.46	380.88	-210.51	-213.24	-210.86	-204.39	148.82	152.96	158.16	167.91
6	468.27	471.16	462.42	471.94	-256.04	-255.70	-251.19	-252.68	178.72	182.88	188.81	199.11
7	544.95	547.18	544.06	540.73	-300.11	-296.19	-292.34	-296.87	208.83	211.31	218.96	227.79
8	617.35	620.80	613.52	614.22	-342.83	-337.79	-335.48	-331.85	236.07	238.85	251.09	266.67
9	690.61	694.06	689.46	682.69	-369.47	-377.58	-375.13	-376.09	265.41	267.12	278.63	290.14
10	762.12	767.95	764.18	750.88	-402.93	-416.97	-414.69	-406.61	292.44	299.69	307.82	325.56

CVP3	SG36-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	0.56	-4.34	5.10	10.26	-117.71	-93.56	-98.92	-102.67	-114.94	-116.08	-104.49	-81.79
1	28.50	22.96	18.30	22.64	-89.88	-67.09	-66.77	-69.51	-58.47	-57.20	-60.69	-51.66
2	66.76	61.11	55.91	55.76	-63.41	-48.14	-52.05	-59.50	-3.07	-4.43	-6.12	1.67
3	101.15	95.97	93.16	95.11	-51.65	-34.15	-34.20	-39.56	47.93	43.98	44.91	48.51
4	136.16	133.20	131.78	135.30	-37.03	-35.12	-36.03	-40.21	81.69	76.46	76.57	80.29
5	173.38	171.40	169.71	170.80	-38.59	-40.36	-48.42	-49.42	105.52	98.18	96.96	103.62
6	208.50	205.71	196.20	210.06	-45.47	-49.89	-51.19	-62.40	124.67	116.94	113.83	121.39
7	245.63	238.78	235.02	245.67	-56.34	-61.45	-65.35	-68.86	142.79	133.47	128.51	141.03
8	278.55	269.65	263.54	276.52	-91.56	-72.05	-76.40	-86.71	160.14	148.98	149.57	162.99
9	310.29	301.03	294.69	303.72	-90.47	-83.83	-89.01	-94.14	175.24	163.47	164.38	175.90
10	340.42	332.76	325.56	332.88	-109.32	-92.42	-97.22	-111.76	193.03	179.45	177.22	187.68

CVP3	SG36L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	17.83	12.70	38.09	10.34	-26.14	-32.71	-46.46	-46.32	-32.46	-36.14	-55.50	-35.69
1	0.75	-2.40	-0.58	-6.28	91.39	80.85	87.05	84.67	69.98	70.55	61.31	60.68
2	-4.81	-7.04	-11.73	-9.72	206.50	197.90	198.84	194.67	181.43	182.26	167.99	157.49
3	-9.31	-11.95	-5.31	-6.79	319.85	309.75	314.34	308.19	290.29	290.29	276.90	270.65
4	-11.65	-12.09	-7.14	-4.81	435.21	437.05	432.03	428.44	406.94	403.50	391.25	385.62
5	-14.45	-15.21	-11.41	-3.34	549.09	551.14	541.21	538.73	516.96	515.08	496.28	485.27
6	-18.31	-17.37	-9.99	-4.63	657.09	661.85	650.90	646.54	619.75	622.53	593.33	583.33
7	-19.45	-20.91	-12.19	-4.12	760.69	767.84	755.09	755.81	720.95	721.64	687.49	676.97
8	-20.60	-22.70	-13.02	-7.66	871.35	874.66	867.11	861.97	821.04	821.00	784.65	772.69
9	-25.97	-28.44	-16.19	-10.96	990.36	975.97	968.22	966.66	914.63	915.59	873.54	859.83
10	-31.07	-34.13	-19.77	-13.49	1076.61	1075.79	1068.50	1052.38	1004.92	999.91	965.00	944.30

CVP3	SG37T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	27.27	25.29	15.94	33.50	-50.55	-32.77	-21.96	-20.48	-5.27	1.68	1.72	29.04
1	66.75	67.98	79.31	113.46	-75.94	-59.92	-58.10	-69.45	8.49	11.42	15.34	61.04
2	104.36	105.58	104.76	102.83	-104.51	-88.88	-87.04	-74.69	17.65	19.44	14.28	30.92
3	141.13	146.53	137.73	132.26	-132.14	-119.92	-120.38	-109.25	26.42	28.61	20.51	22.62
4	179.48	184.50	166.71	172.21	-167.58	-160.35	-160.51	-167.75	25.92	31.59	24.96	27.52
5	219.11	226.89	212.93	185.19	-205.00	-202.75	-201.82	-184.83	23.30	31.77	24.23	34.95
6	262.07	271.60	208.47	238.02	-240.23	-244.03	-241.68	-238.16	26.56	36.91	28.35	19.22
7	307.50	318.43	277.04	277.11	-274.76	-283.52	-282.18	-279.47	35.14	43.19	32.76	27.34
8	353.01	366.12	331.35	324.96	-319.60	-324.26	-323.68	-311.89	43.02	53.33	45.83	41.92
9	402.31	416.57	379.44	368.52	-383.18	-363.51	-362.64	-353.85	55.45	63.97	49.59	51.09
10	452.89	467.93	416.90	414.00	-418.07	-401.72	-401.25	-384.32	65.08	80.76	58.81	69.53

CVP3	SG37-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-8.76	-4.02	-15.32	-8.53	-162.61	-95.42	-94.88	-102.83	-109.93	-104.90	-107.78	-122.21
1	20.62	25.73	28.71	34.77	-136.76	-76.15	-73.63	-92.55	-63.49	-57.96	-45.94	-46.79
2	41.18	43.33	45.23	44.86	-114.37	-65.65	-67.21	-67.21	-35.01	-33.70	-23.75	-15.06
3	56.39	59.66	56.61	57.52	-106.81	-60.35	-58.38	-56.40	-6.02	-8.71	-3.41	-1.28
4	73.30	73.98	70.00	72.41	-96.36	-73.58	-73.77	-84.31	0.17	-7.06	-5.22	-1.83
5	92.04	86.84	85.79	81.95	-101.50	-91.03	-99.12	-85.58	-8.98	-15.16	-11.12	-4.19
6	107.80	104.28	94.07	105.26	-109.76	-111.19	-109.61	-117.69	-12.68	-17.91	-14.97	-7.88
7	124.85	124.10	118.64	125.42	-120.59	-131.57	-134.37	-131.27	-13.59	-21.42	-19.69	-5.82
8	142.68	142.27	135.46	146.00	-168.66	-151.40	-153.08	-154.03	-14.28	-23.44	-15.10	-2.75
9	164.88	163.93	155.16	160.68	-228.15	-171.95	-173.99	-168.71	-15.04	-25.83	-15.47	-4.24
10	185.47	185.99	177.00	178.15	-256.59	-187.01	-188.86	-193.68	-11.71	-24.50	-17.31	-9.01

CVP3	SG37L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-8.23	-9.19	-10.48	-25.91	-16.84	-3.72	-16.19	-18.07	-15.14	-11.43	-49.35	-69.25
1	-8.22	-6.43	-3.34	-1.73	84.50	90.13	93.20	74.49	78.34	80.73	83.35	69.49
2	-27.10	-26.60	-25.52	-20.97	185.86	189.35	189.05	194.02	162.17	162.89	159.01	150.84
3	-44.52	-42.37	-37.43	-39.30	286.56	285.57	292.82	295.34	251.97	250.54	242.73	234.26
4	-60.10	-60.15	-58.69	-53.04	390.09	395.88	393.31	380.89	344.64	339.64	331.28	327.92
5	-76.23	-78.29	-77.20	-72.65	492.74	496.09	489.30	503.01	429.74	427.76	417.00	407.52
6	-94.74	-93.87	-93.70	-83.83	591.91	594.28	592.71	588.23	514.91	518.68	499.28	490.67
7	-109.22	-107.98	-106.53	-97.39	688.32	692.18	686.25	690.32	602.70	602.20	579.13	571.10
8	-123.89	-121.37	-117.71	-107.84	784.65	789.98	790.16	793.88	689.01	688.16	664.36	653.80
9	-137.45	-134.93	-131.09	-123.79	888.76	883.93	884.46	891.39	772.33	771.00	742.99	729.96
10	-150.66	-150.70	-143.18	-136.62	965.84	977.50	978.30	971.82	851.25	843.95	823.63	803.63

CVP3	SG38T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-0.65	3.67	9.00	16.14	5.80	5.03	10.55	19.45	8.52	8.66	32.94	48.17
1	65.42	66.25	73.22	75.22	-33.66	-30.76	-28.35	-26.25	41.92	42.04	47.44	56.24
2	147.28	149.01	149.01	145.13	-69.45	-65.82	-64.69	-62.95	88.01	88.67	90.56	94.58
3	227.82	228.65	226.46	220.18	-107.08	-102.34	-107.27	-106.62	133.70	137.32	135.13	140.29
4	307.50	308.30	299.13	295.08	-146.90	-143.08	-143.06	-145.70	178.26	182.48	180.47	184.15
5	385.18	385.60	385.75	365.36	-183.06	-179.77	-176.63	-175.44	222.88	227.24	223.94	230.78
6	462.04	463.05	452.59	452.53	-217.74	-216.33	-215.87	-219.67	267.27	272.39	267.05	273.52
7	538.14	539.40	532.56	521.85	-253.35	-250.65	-249.28	-255.09	312.96	317.50	312.80	317.63
8	614.55	615.02	602.54	594.57	-289.16	-286.42	-287.27	-291.42	358.37	362.83	359.78	373.35
9	690.35	691.18	679.37	665.04	-332.05	-318.93	-320.14	-327.21	404.76	408.71	403.27	410.56
10	766.41	769.08	759.20	736.50	-360.35	-353.23	-357.03	-355.22	442.99	457.07	449.34	463.59

CVP3	SG38-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-6.36	-3.99	4.11	1.59	-14.27	-11.77	-7.05	-13.76	-4.24	-13.21	-6.90	0.66
1	27.43	27.78	32.76	32.07	26.68	29.91	25.46	28.29	67.20	57.11	62.32	59.79
2	62.13	63.76	64.89	62.36	60.47	59.12	59.98	57.67	134.98	125.44	123.09	126.99
3	95.36	98.28	95.74	93.02	86.56	93.27	96.15	89.62	203.10	192.67	190.64	192.36
4	129.90	130.05	126.77	128.46	127.87	125.40	128.29	119.91	271.73	259.88	255.83	254.79
5	166.64	165.13	160.01	156.01	158.72	157.34	158.95	159.39	337.69	325.78	318.78	322.94
6	198.57	197.82	183.89	188.87	190.85	193.55	194.54	186.20	403.75	394.46	382.11	387.18
7	232.34	230.51	222.62	223.01	221.52	222.93	220.44	213.01	470.59	459.79	443.69	450.05
8	260.27	263.01	251.78	256.99	252.76	253.58	258.45	251.38	535.69	525.15	515.11	522.87
9	295.53	295.70	285.23	283.99	285.39	283.90	285.82	278.56	601.01	586.85	574.97	577.90
10	325.31	327.50	316.81	313.02	305.25	313.99	321.26	302.38	682.62	647.02	635.01	639.40

CVP3	SG38L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	15.78	12.65	19.19	6.93	-50.09	-32.49	-50.43	-52.57	-10.34	-17.74	-60.38	-57.48
1	3.43	5.03	-7.33	-13.76	59.49	68.71	69.56	66.60	78.97	73.06	57.14	57.06
2	-13.41	-13.78	-26.56	-13.94	160.95	169.16	166.92	172.17	161.66	155.05	140.23	140.97
3	-27.03	-26.77	-23.39	-25.51	262.75	266.44	271.75	271.31	248.11	239.74	228.03	226.02
4	-38.97	-38.42	-40.69	-29.50	362.21	367.65	365.91	359.93	335.76	324.70	311.65	311.33
5	-49.35	-49.35	-54.50	-38.08	460.84	463.29	453.84	461.15	419.27	410.21	392.46	389.10
6	-60.59	-59.81	-65.62	-48.91	552.03	556.38	552.61	548.85	502.51	495.21	470.18	469.14
7	-68.98	-69.18	-73.55	-55.61	645.65	645.79	637.83	644.34	585.07	575.73	545.67	545.43
8	-78.03	-76.47	-82.38	-63.97	728.70	737.83	734.60	734.19	666.61	655.95	625.56	623.87
9	-87.02	-86.20	-88.87	-72.00	821.42	823.55	820.58	825.88	745.43	736.21	699.90	700.21
10	-95.98	-95.44	-97.36	-78.11	898.61	911.76	909.97	903.88	839.83	809.01	774.06	767.29

CVP3	SG39T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-50.05	-48.33	-51.01	-33.36	0.26	1.58	4.29	12.74	-51.96	-46.89	-33.14	-39.53
1	41.83	42.08	42.52	50.81	-27.61	-26.29	-28.90	-32.18	12.04	12.33	14.17	17.32
2	128.39	128.27	129.81	133.69	-56.22	-54.37	-56.22	-41.18	67.27	66.81	68.45	79.12
3	210.35	210.97	210.50	206.67	-83.20	-82.61	-83.92	-73.63	117.88	118.92	119.78	123.87
4	289.05	289.27	280.73	283.34	-112.53	-113.78	-112.54	-120.38	162.59	165.87	166.18	174.30
5	364.29	365.05	367.10	351.75	-141.51	-142.74	-140.03	-123.88	203.70	207.30	207.78	219.43
6	438.89	439.33	429.86	435.18	-168.65	-171.11	-168.33	-165.37	243.65	248.93	247.93	261.04
7	511.28	510.67	504.27	500.97	-197.72	-199.45	-196.63	-194.52	285.09	288.33	289.24	299.61
8	580.11	580.36	570.18	572.35	-224.52	-227.53	-225.97	-216.03	324.04	328.86	331.61	349.06
9	649.80	650.24	641.44	637.27	-254.64	-254.79	-253.18	-245.87	365.09	367.55	368.83	383.50
10	717.92	719.64	712.96	701.16	-279.38	-281.54	-279.54	-264.33	401.08	410.00	410.28	430.63

CVP3	SG39-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-23.67	-22.30	-32.69	-28.56	-4.49	13.28	4.54	7.36	-1.71	-6.57	-31.28	-34.44
1	27.49	32.08	20.21	22.68	26.13	39.87	39.40	31.24	74.11	69.92	51.79	54.46
2	75.89	76.98	68.06	74.57	53.41	59.85	53.54	62.37	138.15	128.94	117.39	126.58
3	119.96	121.93	118.15	121.53	69.59	81.53	84.30	91.43	209.05	198.40	192.67	196.16
4	163.97	166.20	161.09	173.16	101.49	101.36	103.78	93.17	278.57	265.82	257.34	263.52
5	209.50	209.38	209.85	216.00	127.07	129.96	118.79	139.92	345.51	333.16	322.41	330.55
6	250.67	250.99	239.81	264.85	152.61	157.58	159.12	155.17	415.55	403.97	387.05	397.51
7	292.01	293.65	289.15	309.46	182.82	182.15	180.16	188.14	484.10	471.29	448.79	465.00
8	331.31	332.86	324.67	350.26	198.87	209.73	208.31	215.87	552.35	535.94	520.70	538.98
9	371.35	373.09	364.04	386.17	227.57	232.85	232.80	244.02	617.28	600.96	582.27	597.01
10	409.46	414.10	404.04	423.54	245.78	263.42	262.19	268.68	700.01	664.10	640.18	653.30

CVP3	SG39L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-7.16	-8.51	1.27	-16.25	-7.03	-8.17	-19.76	-16.40	-23.01	-26.69	-49.08	-55.18
1	-8.43	-9.14	-8.11	-17.03	81.93	76.01	84.98	72.94	63.36	62.58	58.24	48.66
2	-7.79	-7.87	-11.36	-12.09	171.49	164.98	166.71	164.44	150.59	148.83	139.91	131.93
3	-7.29	-7.59	-1.80	-4.35	256.99	246.89	253.04	251.14	236.26	234.41	226.87	223.94
4	-4.96	-4.20	0.17	3.80	342.14	340.83	339.67	332.75	324.98	319.46	314.21	309.39
5	-4.26	-5.16	-1.02	9.52	429.38	427.15	422.38	423.31	410.02	405.28	397.45	389.29
6	-6.42	-5.53	0.26	12.45	511.81	512.11	510.41	505.42	493.26	491.01	476.01	469.47
7	-8.53	-6.81	0.12	11.98	597.49	596.79	591.23	592.41	573.40	570.77	552.41	547.67
8	-8.43	-7.54	0.39	9.06	682.69	681.03	680.78	679.28	653.08	649.48	632.13	625.71
9	-11.77	-11.61	-1.11	6.27	778.06	761.85	764.06	761.01	729.17	726.00	704.40	695.61
10	-15.94	-15.96	-2.81	7.01	851.83	842.83	844.38	833.65	807.57	795.28	778.72	764.57

CVP3	SG40T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	4.14	6.83	0.51	4.88	-6.29	-4.06	6.78	0.81	-10.94	-4.67	2.72	-4.69
1	60.71	62.10	63.27	59.68	-19.65	-17.28	-17.07	-21.51	30.64	33.62	37.31	36.12
2	112.20	112.66	113.56	109.82	-35.01	-32.56	-30.91	-24.39	66.67	68.57	72.26	78.83
3	160.95	163.12	161.11	154.06	-48.28	-43.37	-45.01	-41.30	102.77	102.16	103.25	100.57
4	209.19	210.83	202.81	200.26	-63.60	-60.65	-61.23	-66.14	135.58	138.96	136.53	138.84
5	258.80	262.15	260.42	244.07	-79.15	-75.06	-74.54	-65.96	166.60	172.75	169.53	170.59
6	311.06	314.47	304.25	303.88	-90.82	-88.97	-89.08	-91.71	200.31	207.29	202.51	202.53
7	364.90	366.51	359.62	352.52	-106.04	-103.33	-104.72	-108.86	235.58	240.19	235.56	234.24
8	416.30	420.08	407.81	402.93	-120.18	-117.42	-120.90	-118.43	269.17	275.51	272.71	273.06
9	470.97	475.72	464.52	452.39	-142.94	-133.32	-136.40	-134.66	305.32	308.68	305.02	303.02
10	526.05	532.30	522.19	501.65	-158.72	-149.25	-149.54	-145.77	336.89	345.52	341.68	342.16

CVP3	SG40-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	15.51	16.25	3.88	-3.64	-3.84	12.19	9.53	0.11	34.79	32.03	7.17	-2.54
1	37.23	42.55	30.72	22.66	37.42	49.62	50.59	41.01	92.13	89.72	76.72	73.40
2	54.77	55.69	45.88	44.93	74.31	80.49	75.45	78.59	138.87	131.56	123.07	129.63
3	69.38	71.75	66.14	64.29	102.05	114.64	117.77	120.57	196.37	184.13	179.52	175.08
4	84.90	86.37	81.26	86.00	144.05	146.22	147.52	137.95	254.85	241.65	232.04	231.70
5	105.35	106.99	102.85	104.80	180.95	186.57	173.83	189.96	312.50	301.18	288.44	286.07
6	124.89	127.11	112.85	129.97	218.33	225.86	226.19	217.86	376.07	365.86	346.71	343.98
7	148.10	149.53	141.55	155.35	259.59	262.17	257.25	260.09	439.39	426.81	400.92	404.68
8	169.26	171.44	159.24	173.78	287.56	301.61	296.83	298.76	502.98	487.34	468.65	468.80
9	194.12	197.05	183.15	191.88	326.27	334.45	331.73	338.78	564.76	547.51	526.57	523.33
10	217.65	223.50	208.74	213.94	352.05	374.88	373.07	371.00	643.70	606.67	582.26	573.83

CVP3	SG40L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	12.88	12.32	14.46	-6.62	8.12	7.24	1.49	-3.91	21.02	22.88	-2.53	-15.10
1	-3.75	-3.03	-3.26	-19.77	87.61	82.53	90.09	77.23	81.52	84.27	81.70	68.58
2	-24.95	-23.68	-26.64	-34.57	166.76	162.97	165.59	162.33	143.66	145.71	140.15	131.62
3	-45.42	-44.15	-40.16	-47.17	246.23	239.74	245.37	242.35	209.43	207.65	202.32	193.01
4	-64.25	-63.71	-60.44	-62.34	324.26	326.89	325.39	318.43	278.93	276.37	271.32	263.02
5	-83.25	-81.25	-81.64	-76.04	405.45	408.58	403.81	405.54	346.85	347.46	340.01	324.74
6	-101.53	-97.71	-95.70	-91.03	484.48	489.78	488.90	480.95	418.17	420.61	406.74	390.93
7	-116.89	-114.14	-111.24	-107.10	565.24	571.43	566.24	563.65	487.39	489.11	472.15	457.88
8	-131.32	-127.85	-124.76	-126.10	647.17	653.67	652.95	650.56	557.80	559.54	543.41	523.35
9	-146.13	-142.31	-136.81	-141.09	739.10	731.45	734.52	730.30	627.13	628.19	608.52	587.04
10	-160.01	-156.74	-149.61	-152.59	808.81	810.75	811.07	798.28	696.26	691.06	677.77	648.94

CVP4	SG1											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	92.16	245.67	284.32	244.97	-105.86	-26.19	-146.64	-0.83	126.32	106.43	197.84	228.15
1	79.82	141.86	164.87	155.24	-94.07	-35.41	-95.57	-24.78	42.09	58.49	30.98	112.04
2	106.55	171.91	149.55	117.28	-106.23	-60.67	-58.17	-180.50	7.26	7.98	-50.51	19.14
3	219.87	227.41	196.15	179.02	-119.68	-100.30	-99.63	-84.49	61.07	56.47	31.18	50.84
4	270.18	312.19	242.47	292.21	-131.67	-126.47	-106.27	-217.93	136.09	108.09	62.29	99.52
5	333.75	372.87	333.70	351.35	-168.72	-147.30	-155.49	-213.32	141.24	161.73	120.75	144.31
6	393.24	446.25	418.50	426.41	-205.19	-174.79	-183.70	-226.58	189.36	168.00	118.17	196.10
7	483.25	544.86	509.57	510.46	-220.32	-201.51	-220.76	-332.00	208.52	172.81	121.85	180.80
8	540.56	585.41	534.14	557.65	-285.93	-229.91	-258.55	-246.13	218.86	216.84	157.28	210.13
9	617.73	715.43	578.02	619.22	-318.21	-288.01	-257.10	-386.04	246.49	254.11	155.01	237.96
10	688.74	745.80	658.59	679.43	-349.18	-309.88	-309.61	-427.83	290.56	247.64	163.36	239.60

CVP4	SG2											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	118.49	302.82	343.83	293.29	-163.12	-44.25	-183.27	-31.21	160.03	124.66	214.31	312.03
1	113.21	164.34	183.62	177.52	-146.31	-67.48	-136.15	-63.09	41.24	80.08	11.66	135.82
2	135.07	201.96	176.22	113.15	-158.97	-99.88	-91.41	-291.12	-19.12	-10.13	-100.64	6.12
3	260.77	274.47	224.49	203.56	-195.98	-171.60	-161.28	-148.98	34.17	27.72	-18.93	18.48
4	331.94	370.89	279.67	327.09	-221.89	-217.03	-197.32	-353.79	103.86	64.59	15.32	63.51
5	414.04	441.30	395.61	401.72	-285.45	-255.02	-259.59	-356.17	95.34	123.42	58.85	97.44
6	486.99	526.67	504.02	494.12	-346.01	-306.96	-312.04	-371.22	142.52	114.34	48.71	150.94
7	591.02	644.27	606.34	594.22	-373.83	-357.13	-369.52	-557.01	151.92	103.91	38.23	116.97
8	661.06	696.45	627.06	642.15	-475.85	-401.23	-433.99	-421.10	148.10	138.90	68.64	136.75
9	760.54	857.65	672.23	705.94	-538.56	-490.00	-444.70	-651.01	163.72	170.99	42.05	152.61
10	835.98	884.33	772.17	770.95	-580.73	-538.51	-525.64	-704.79	209.58	153.70	22.91	146.70

CVP4	SG3											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	82.08	203.79	218.65	299.77	-175.04	-56.82	-207.88	-39.18	35.04	-5.70	-2.69	291.83
1	86.25	107.82	185.97	102.61	-64.06	6.82	-77.44	37.58	42.31	119.58	-4.16	180.74
2	138.96	156.48	142.04	96.97	67.08	127.81	48.19	-94.35	134.39	160.12	7.46	154.17
3	303.17	290.16	261.83	197.37	85.80	104.55	98.77	124.85	349.39	359.13	244.53	320.44
4	406.67	439.13	338.46	369.20	190.96	177.82	142.33	48.29	562.35	522.16	433.80	527.22
5	515.52	534.58	466.36	481.39	183.58	230.43	219.28	137.98	719.36	733.09	595.18	716.05
6	614.39	629.47	594.84	559.13	250.01	275.86	251.21	275.26	884.45	852.15	686.93	866.78
7	720.01	753.86	715.74	709.18	332.31	305.20	277.30	123.02	1020.96	971.91	777.55	951.32
8	809.87	833.78	780.22	748.68	309.43	382.20	318.45	366.27	1110.37	1115.28	928.28	1082.09
9	921.65	992.22	808.28	794.45	348.39	389.98	330.87	196.87	1226.37	1237.30	959.83	1192.11
10	1019.69	1015.79	896.52	842.74	390.09	408.72	384.69	307.18	1356.40	1304.94	1014.86	1276.34

CVP4	SG4											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	118.39	187.67	291.01	269.32	-220.95	-78.75	-132.62	-66.52	59.15	-25.16	51.37	247.87
1	107.18	102.39	173.66	88.32	-88.30	-40.04	-58.81	-40.03	21.11	20.12	-29.22	79.06
2	141.70	158.57	173.60	83.07	-53.11	9.25	5.50	-129.29	46.26	48.98	-56.09	61.60
3	259.76	248.73	230.67	187.31	-32.30	-8.90	10.45	-1.08	159.66	161.50	87.89	149.71
4	340.90	373.44	296.54	308.11	-8.12	20.72	25.60	-97.56	283.76	251.56	201.57	260.59
5	435.62	446.92	401.99	402.43	-20.23	33.48	29.00	-52.09	351.17	373.80	283.47	356.57
6	511.67	520.09	514.27	483.73	-19.27	44.69	36.92	-11.61	442.85	422.13	321.71	446.92
7	614.69	626.08	617.84	596.23	3.44	41.74	46.72	-117.64	504.50	466.07	355.77	467.92
8	682.72	689.43	660.56	633.54	-41.42	68.93	41.41	9.08	538.76	542.66	437.60	537.91
9	781.19	838.21	696.59	682.19	-54.09	32.21	48.62	-129.62	590.50	607.72	429.42	590.62
10	860.00	859.85	790.64	734.56	-43.31	28.41	55.09	-106.17	668.13	624.63	445.71	626.31

CVP4	SG5											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	362.78	184.50	313.32	193.86	-257.50	-47.56	-168.85	-57.13	-96.78	-12.13	230.31	481.92
1	328.73	56.48	162.89	139.10	-250.60	-74.73	-131.79	-71.95	-210.06	-39.90	60.71	326.28
2	377.72	150.51	171.02	65.87	-261.27	-97.66	-84.59	-296.61	-226.40	-102.57	-40.33	176.69
3	559.89	299.67	213.91	193.76	-318.80	-172.47	-156.75	-140.71	-10.64	39.26	31.98	187.56
4	1141.06	412.44	269.25	300.59	-251.94	-216.89	-202.74	-346.35	154.95	122.21	72.19	246.45
5	1674.97	536.97	382.82	380.21	-380.23	-255.21	-254.02	-347.47	200.45	260.04	109.00	315.89
6	1952.06	654.21	492.09	474.35	-474.66	-309.58	-306.60	-346.80	229.74	255.76	115.12	451.98
7	2307.32	745.15	585.37	582.27	-577.34	-361.22	-362.57	-540.87	194.40	245.32	105.99	459.07
8	2576.88	834.80	605.87	583.24	-685.69	-402.05	-426.97	-392.31	230.25	168.99	138.99	566.38
9	2581.83	986.74	647.55	606.77	-752.35	-488.52	-444.40	-633.37	251.90	298.25	130.39	608.32
10	2659.74	1014.47	744.26	770.78	-792.82	-542.37	-518.85	-679.75	261.42	357.20	183.61	617.63

CVP4	SG6											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	13.93	18.58	5.71	15.15	-14.67	-6.41	-3.42	-9.71	9.03	3.54	-1.24	6.21
1	49.13	48.90	43.96	50.94	-23.24	-18.80	-14.80	-20.86	29.53	34.19	19.58	33.34
2	87.63	89.26	81.74	85.95	-31.66	-29.35	-24.20	-37.71	53.85	54.32	42.21	55.91
3	133.12	132.76	123.93	129.98	-46.22	-44.41	-39.46	-43.56	83.93	84.13	74.84	86.86
4	175.67	176.59	168.55	175.32	-58.75	-59.38	-55.62	-63.66	113.59	111.42	106.70	116.36
5	219.87	219.01	213.13	219.90	-73.96	-72.52	-68.79	-75.44	140.11	143.10	139.51	146.77
6	263.51	262.14	258.84	265.43	-88.82	-87.41	-82.10	-86.72	170.91	169.45	150.38	178.64
7	307.05	307.27	303.43	310.95	-100.72	-102.98	-95.68	-109.66	197.24	194.73	176.58	205.72
8	351.82	349.10	345.85	352.59	-120.57	-116.17	-110.46	-115.06	225.45	225.82	209.74	233.75
9	396.55	398.90	386.40	394.79	-136.47	-133.46	-121.77	-139.49	251.41	254.06	233.66	263.42
10	440.62	439.04	416.63	437.50	-147.39	-146.64	-136.29	-149.96	283.50	280.95	262.82	292.33

CVP4	SG7											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0			468.80				-150.35	45916.87			314.55	
1			330.64				-112.65	13540.93			188.49	
2			330.59				-76.37	-1201.30			73.32	
3			350.70				-134.15	-12112.52			119.15	
4			387.03				-152.98	-16622.83			154.52	
5			492.54				-200.70	-23258.74			217.17	
6			585.43				-259.94	-28753.48			240.65	
7			660.56				-301.16	-32658.94			263.73	
8			668.51				-359.70	-30837.74			289.18	
9			713.08				-342.63	-35891.86			468.54	
10			1198.51				-427.43	-46946.56			344.80	

CVP4	SG8											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	109.47	234.28	218.80	236.15	-118.70	-33.58	-106.50	-27.15	149.79	105.28	122.48	246.23
1	112.45	135.61	116.40	151.73	-104.74	-57.87	-86.99	-46.65	66.62	100.84	21.27	127.71
2	119.09	161.39	133.93	98.77	-90.00	-65.97	-45.43	-216.72	26.87	26.49	-45.97	37.88
3	200.08	217.35	165.81	172.71	-126.82	-118.98	-100.25	-100.61	72.47	52.26	9.40	48.94
4	263.37	285.10	213.46	245.18	-145.97	-149.15	-141.24	-255.28	112.94	78.02	52.14	87.21
5	334.02	346.21	300.01	307.01	-190.16	-174.20	-167.74	-253.46	112.81	136.95	85.70	121.08
6	388.47	403.65	388.55	399.61	-228.41	-213.26	-200.73	-249.35	152.31	136.22	102.86	168.94
7	465.79	492.00	456.38	476.91	-242.42	-250.06	-237.93	-401.67	193.22	136.94	103.67	163.05
8	522.47	542.80	479.76	512.25	-309.41	-273.65	-282.96	-284.98	197.63	172.30	140.66	182.20
9	606.35	668.75	513.12	558.63	-354.35	-333.33	-299.40	-465.43	212.36	203.96	119.46	202.08
10	656.44	687.12	579.67	606.45	-381.59	-375.19	-341.43	-493.04	263.16	206.17	103.10	216.06

CVP4	SG9											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	23.77	31.69	18.79	25.94	-19.98	-7.32	-9.62	-12.33	21.19	15.62	9.11	23.28
1	57.14	56.44	52.34	56.66	-27.60	-21.90	-20.05	-21.94	37.85	46.50	28.54	45.66
2	94.56	96.82	92.08	88.22	-31.60	-30.62	-24.93	-45.69	61.89	63.07	49.63	64.77
3	142.80	143.25	134.62	138.43	-48.35	-47.47	-42.67	-44.35	95.76	95.52	83.79	97.48
4	189.44	189.85	181.99	184.07	-61.37	-62.73	-61.17	-71.18	128.66	125.71	119.04	129.70
5	237.23	236.03	230.07	231.68	-77.34	-76.22	-73.02	-82.20	159.52	163.08	154.44	164.31
6	283.06	280.98	279.54	280.52	-92.74	-92.30	-87.28	-90.31	193.96	191.05	175.07	199.51
7	330.73	330.11	326.39	330.27	-104.47	-108.62	-102.17	-120.48	224.40	218.82	204.18	230.25
8	377.98	375.39	370.91	372.54	-125.28	-121.88	-119.15	-119.21	256.07	255.36	241.18	261.09
9	428.51	430.85	412.45	417.30	-142.19	-140.68	-132.38	-151.06	284.89	287.43	264.58	294.23
10	473.30	471.61	454.64	462.11	-154.46	-155.82	-146.22	-160.90	322.94	318.52	292.74	327.29

CVP4	SG10											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-14.01	-3.65	-13.81	-15.13	-31.13	-18.48	-30.89	-14.97	-16.61	-18.99	-24.34	5.55
1	-13.22	-13.06	-16.67	-30.72	21.61	30.97	18.47	24.92	25.40	32.86	14.83	37.14
2	-18.15	-24.86	-30.46	-39.03	67.30	77.00	66.07	56.41	60.96	56.53	41.81	64.41
3	-31.92	-38.20	-41.56	-47.42	98.42	101.54	100.03	109.43	95.24	89.14	79.52	96.31
4	-40.77	-48.75	-53.76	-55.00	142.88	139.90	132.87	128.65	127.14	119.05	114.18	131.02
5	-50.32	-63.48	-60.39	-66.79	168.90	177.37	169.20	166.09	158.68	150.03	145.37	161.83
6	-63.77	-75.16	-65.93	-77.04	207.07	211.91	198.35	216.06	193.02	179.00	177.29	196.50
7	-72.10	-85.80	-80.41	-86.36	244.71	245.28	229.78	230.63	224.73	209.48	206.67	227.50
8	-85.10	-96.41	-94.82	-103.06	274.60	288.30	262.24	281.76	255.56	237.47	237.47	260.91
9	-92.75	-107.77	-114.70	-124.60	305.61	313.43	300.31	300.97	287.27	271.09	258.27	292.65
10	-103.32	-129.21	-129.05	-143.17	343.62	346.18	334.73	345.18	317.74	296.90	278.44	324.17

CVP4	SG11											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-6.43	-6.93	-8.06	-7.89	-2.02	-2.62	0.44	3.09	-9.55	-6.03	-9.80	-1.01
1	-4.86	-9.10	-9.07	-12.36	40.01	40.57	41.11	42.17	33.31	36.13	30.17	36.10
2	-10.77	-14.37	-12.90	-15.54	88.76	87.65	83.09	93.01	73.22	73.00	69.40	77.51
3	-21.75	-21.29	-23.43	-21.45	134.03	133.52	130.38	133.79	111.87	110.39	105.70	111.54
4	-29.23	-32.87	-33.31	-36.91	183.59	181.17	176.48	185.71	144.85	147.61	143.78	149.88
5	-37.99	-40.81	-39.40	-41.62	229.39	226.61	225.93	231.28	184.93	185.79	178.23	184.49
6	-43.34	-50.37	-45.58	-50.85	275.68	273.93	270.42	277.77	220.79	222.71	216.45	221.76
7	-52.53	-58.95	-57.35	-57.08	320.75	320.05	313.53	324.83	258.97	261.36	252.88	260.34
8	-59.31	-63.38	-63.54	-66.40	366.52	365.32	357.44	369.53	296.66	295.98	288.11	296.74
9	-66.55	-72.66	-71.62	-74.89	412.15	407.83	397.41	414.43	332.25	332.97	321.46	333.30
10	-73.25	-78.66	-79.51	-82.41	453.86	449.79	444.55	456.98	367.18	369.86	356.43	372.40

CVP4	SG12											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-1.00	1.65	-3.56	1.00	5.65	7.23	4.87	21.85	-2.32	-1.43	-9.65	7.79
1	1.86	-4.72	-2.73	-7.16	70.61	72.82	67.90	79.17	66.58	69.59	54.38	69.74
2	-4.19	-4.86	-7.39	-7.30	149.07	153.44	142.69	156.86	138.10	136.46	127.95	142.82
3	-8.07	-8.50	-11.55	-11.13	224.97	226.41	216.95	227.04	212.12	207.65	192.07	211.87
4	-12.68	-10.77	-18.19	-17.35	306.29	303.13	290.41	307.27	276.85	281.22	265.94	282.73
5	-16.83	-15.01	-18.60	-18.60	380.02	378.85	361.78	380.48	348.48	349.98	335.16	351.87
6	-20.24	-20.55	-20.86	-23.02	455.41	455.70	431.89	459.57	417.69	417.60	397.06	422.73
7	-23.00	-21.65	-28.15	-23.95	533.72	534.90	504.56	536.91	489.18	488.93	465.25	491.87
8	-27.06	-24.05	-28.94	-29.16	612.02	612.74	577.25	612.60	559.06	558.47	528.59	562.41
9	-27.94	-25.11	-34.38	-34.32	685.05	684.18	647.88	686.32	628.14	628.75	593.65	634.83
10	-30.84	-30.19	-41.07	-39.90	756.21	754.25	725.77	762.55	698.40	697.60	658.27	705.84

CVP4	SG13											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-5.59	33.72	10.83	11.33	-28.77	-15.03	-27.36	-0.35	-14.51	-8.63	-16.80	-4.88
1	-1.69	14.18	10.00	6.04	76.35	84.60	82.85	91.81	86.71	100.13	79.35	102.40
2	1.07	17.63	9.49	4.61	195.71	201.64	194.42	195.49	189.04	188.60	184.92	199.34
3	12.62	15.19	10.26	6.36	303.48	305.65	297.03	308.91	306.87	299.95	291.78	305.18
4	10.41	18.68	9.31	7.94	423.75	413.98	407.65	412.62	410.00	413.70	398.71	414.70
5	9.35	22.01	16.30	12.67	524.38	522.37	511.24	521.96	515.78	521.13	509.14	522.78
6	11.74	22.70	25.38	14.02	630.23	627.90	613.68	632.97	618.34	619.16	607.35	628.66
7	18.94	31.08	24.92	22.58	736.41	734.15	713.04	733.00	723.28	720.29	708.49	729.07
8	18.52	34.72	28.61	20.14	839.75	840.20	813.40	844.36	823.59	824.15	805.16	830.13
9	21.33	44.82	27.60	21.39	942.27	932.63	907.95	935.65	924.64	928.27	899.50	933.69
10	30.68	43.61	32.29	21.56	1037.70	1032.00	1013.97	1034.55	1026.82	1022.51	996.63	1034.19

CVP4	SG14											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-7.54	-11.83	-414.78	868.01	-12.70	-7.39	-5.48	-37.13	-323.22	-430.42	-523.13	-331.64
1	-124.41	-28.62	-410.31	814.90	73.17	99.99	96.14	88.82	-220.20	-290.37	-356.63	-277.78
2	-66.51	-1.22	-420.40	811.34	189.18	224.75	201.52	193.21	-99.98	-170.80	-93.42	22.18
3	-105.50	110.59	-371.89	341.77	308.78	339.24	323.00	278.09	118.14	-19.69	145.69	41.00
4	-95.51	-153.92	57.09	158.90	445.64	461.73	443.64	436.22	342.23	257.08	152.22	-104.34
5	-79.53	-137.33	42.76	158.28	561.65	580.85	562.41	485.87	211.46	97.63	185.02	-86.51
6	-72.87	-120.14	-73.77	125.31	675.84	699.05	672.33	617.12	221.15	1.65	357.49	-148.92
7	-112.39	-133.09	71.61	28.19	784.69	819.51	784.68	736.15	267.14	72.14	184.68	-155.60
8	-163.57	-128.11	-424.46	180.32	902.66	935.64	893.26	797.47	359.79	84.50	279.38	-318.14
9	-199.78	-99.22	-379.85	238.74	990.31	1042.67	995.13	930.67	462.47	165.37	367.48	-155.40
10	-234.92	-108.12	-167.97	745.37	1086.31	1145.14	1104.93	991.15	545.46	251.39	470.62	-47.38

CVP4	SG15											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-16.45	-19.53	-25.74	-24.29	5.33	2.07	3.14	6.97	-23.98	-18.49	-26.76	-23.34
1	-6.14	-10.96	-9.51	-12.91	47.20	47.31	47.06	48.57	34.93	34.62	29.46	32.64
2	-2.92	-7.51	-7.76	-3.93	96.33	97.90	88.64	108.39	84.86	83.44	79.40	86.28
3	-8.96	-9.03	-10.03	-7.93	145.62	147.34	137.06	144.27	128.76	126.67	120.86	127.39
4	-10.44	-14.94	-12.28	-17.93	199.34	197.90	184.55	205.19	165.73	169.55	163.88	169.50
5	-14.77	-17.55	-16.29	-18.44	248.28	246.90	235.71	251.83	212.09	210.65	204.45	210.28
6	-15.55	-22.21	-19.61	-23.92	298.23	298.16	281.55	300.49	252.83	254.75	244.50	251.53
7	-20.29	-27.28	-26.52	-26.82	346.59	348.58	326.03	356.14	295.83	299.01	286.54	296.27
8	-22.64	-26.64	-26.06	-29.91	397.26	398.94	372.82	396.53	339.73	338.34	325.22	337.22
9	-26.83	-33.82	-28.32	-33.36	447.05	445.62	414.20	451.50	381.88	380.08	365.68	379.25
10	-27.01	-33.64	-33.15	-36.54	492.02	492.47	465.85	499.67	420.63	423.53	407.98	423.25

CVP4	SG16											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-6.79	-2.37	-10.39	-6.74	2.47	2.38	13.62	13.96	-12.92	-13.36	-22.65	-10.00
1	-5.23	-8.64	-9.46	-13.55	69.51	70.00	77.53	74.43	55.56	58.81	45.68	57.86
2	-11.63	-10.22	-14.99	-15.71	147.49	150.75	148.08	156.11	125.33	123.29	120.02	128.86
3	-18.55	-19.10	-20.34	-21.01	223.99	225.41	224.17	225.23	196.86	191.24	182.77	195.42
4	-25.27	-25.24	-28.17	-30.45	308.29	303.59	302.00	308.59	258.59	263.01	254.83	264.02
5	-33.46	-31.59	-31.49	-34.23	382.79	380.51	379.73	384.37	328.57	329.84	321.93	331.10
6	-39.31	-40.94	-36.28	-42.70	459.38	457.99	455.09	462.76	394.10	393.73	381.27	397.66
7	-45.62	-46.06	-46.28	-46.62	535.97	536.12	531.67	541.37	460.65	459.76	446.97	462.89
8	-53.45	-51.35	-49.78	-55.60	614.72	613.26	607.22	614.07	525.29	523.49	507.74	527.44
9	-57.59	-56.93	-57.80	-63.34	687.88	684.24	677.66	688.89	588.56	588.25	568.84	593.08
10	-63.77	-64.81	-67.93	-72.32	759.18	755.74	754.90	764.69	653.34	651.25	629.60	658.47

CVP4	SG17											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	4.09	16.98	-0.32	2.26	6.32	10.21	-13.42	15.93	1.47	21.27	17.76	14.74
1	-2.70	10.55	4.45	-2.89	94.31	99.16	80.73	95.62	87.60	93.70	135.99	94.77
2	-5.40	0.13	-0.23	-4.73	186.74	186.86	169.12	190.14	166.05	168.41	184.56	170.95
3	-11.22	-8.89	-6.97	-8.50	278.70	275.62	262.19	276.80	252.45	250.57	242.53	250.36
4	-15.17	-11.22	-15.81	-23.44	373.33	370.51	354.99	372.06	333.00	333.31	326.60	333.88
5	-24.45	-20.33	-15.76	-28.76	466.79	459.54	446.98	468.41	416.85	418.54	409.42	416.54
6	-29.31	-24.46	-17.18	-32.95	558.56	554.46	535.10	558.54	497.32	498.72	488.82	499.35
7	-32.27	-26.62	-21.27	-32.77	650.53	647.27	625.46	654.36	584.66	582.03	571.53	582.04
8	-37.79	-28.36	-22.57	-40.30	746.53	742.27	710.97	749.05	666.40	665.26	653.42	663.65
9	-37.41	-28.83	-27.30	-43.10	843.90	832.97	796.40	839.81	749.85	751.45	734.26	750.17
10	-42.24	-34.93	-31.89	-49.34	927.92	918.92	886.74	927.07	836.02	834.50	813.42	834.69

CVP4	SG18											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-16.30	-14.18	769.17	1349.67	17.81	17.10	3.42	19.97	4.48	17.39	1759.53	878.74
1	-30.60	-23.47	548.94	914.35	73.77	73.96	60.99	70.52	52.04	51.56	1447.63	564.06
2	-46.14	-44.39	-61.90	276.69	130.60	127.97	116.91	137.88	92.90	94.22	560.89	192.86
3	-73.48	-71.06	-389.79	-51.66	193.06	190.17	178.96	189.35	131.40	131.00	248.84	153.40
4	-95.44	-96.61	-525.90	-164.80	253.51	253.48	241.60	257.85	167.65	170.23	-71.75	178.89
5	-123.24	-121.13	-960.77	-230.32	319.11	312.90	303.22	319.92	208.12	208.31	-39.87	211.53
6	-146.61	-146.09	-1280.37	-280.78	380.25	377.56	362.88	377.94	246.73	250.05	-28.65	250.33
7	-171.37	-169.99	-1352.82	-314.75	441.27	441.65	424.80	450.00	291.84	293.65	20.77	284.95
8	-196.83	-191.64	-1491.41	-361.41	509.29	505.15	483.05	507.77	335.12	334.83	70.91	349.53
9	-218.92	-218.96	-1509.61	-363.25	576.81	569.20	541.83	578.25	379.72	381.06	137.31	408.38
10	-243.02	-239.68	-1537.38	-333.64	635.46	630.08	603.08	634.94	422.92	426.67	159.73	454.10

CVP4	SG19											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-19.99	-9.81	-17.96	-23.89	-14.95	-15.91	-26.34	-1.43	-31.30	-18.81	-29.23	-19.01
1	-37.18	-34.23	-41.64	-46.27	75.27	77.70	66.17	77.54	42.13	47.61	36.63	47.21
2	-64.73	-62.16	-66.25	-69.95	165.86	168.34	152.34	174.99	102.79	104.41	98.97	109.00
3	-103.12	-100.23	-101.58	-100.33	254.44	255.46	241.19	254.14	159.96	157.32	147.85	159.11
4	-138.81	-137.34	-139.70	-145.99	348.22	345.70	331.62	348.54	207.86	212.29	203.65	213.15
5	-178.10	-171.28	-171.32	-178.20	434.43	430.82	417.78	437.29	264.24	264.79	254.92	265.14
6	-211.17	-209.81	-203.88	-215.64	521.31	520.63	500.10	522.51	314.05	316.78	300.24	318.20
7	-247.45	-242.99	-243.98	-248.65	605.14	608.46	584.46	614.05	369.88	371.61	353.24	371.66
8	-283.38	-272.77	-274.30	-283.75	695.39	696.21	664.69	697.89	422.08	420.71	402.04	423.31
9	-314.36	-309.07	-306.03	-317.93	781.09	776.95	741.27	782.86	474.75	475.18	453.74	477.33
10	-348.57	-341.18	-345.02	-352.99	859.88	857.75	824.27	862.06	525.67	528.97	502.87	531.85

CVP4	SG20											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-4.94	8.94	-7.54	-4.35	-20.02	-19.10	-36.20	-8.82	-30.45	-21.54	-45.99	-25.79
1	2.45	5.99	0.77	-5.10	69.03	73.31	54.20	68.97	65.82	71.65	49.40	70.31
2	1.53	6.36	0.41	-1.77	160.46	164.80	139.38	168.00	150.82	150.93	139.78	154.43
3	0.98	1.74	-0.70	-1.96	246.39	247.42	229.63	245.60	235.69	232.09	217.65	233.30
4	-0.68	1.92	-4.22	-10.64	339.17	335.73	317.96	336.43	314.02	315.49	303.88	314.87
5	-5.86	1.37	-0.89	-7.31	420.88	418.75	399.98	424.55	396.59	397.12	384.88	396.20
6	-4.01	-3.07	0.59	-11.38	506.01	505.35	478.35	508.76	475.22	473.65	458.81	474.71
7	-3.83	-0.48	-3.29	-7.13	588.11	590.88	559.66	595.06	555.93	552.88	535.08	553.07
8	-6.04	1.74	0.41	-11.57	675.88	676.53	635.77	676.43	633.61	629.40	608.78	628.91
9	-2.35	4.69	-2.18	-13.60	757.82	754.80	710.23	756.53	710.06	708.66	681.48	708.40
10	-3.64	1.37	-5.88	-17.29	834.51	831.83	787.27	835.84	787.94	785.29	750.57	786.50

CVP4	SG21											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-15.50	-14.97	-27.28	-25.54	-60.81	-65.14	-108.11	-59.14	-75.84	-71.14	-107.96	-78.28
1	-12.91	-20.12	-24.34	-32.54	23.51	24.94	-16.92	14.53	12.19	16.56	-11.42	11.78
2	-26.35	-27.49	-33.17	-36.42	88.50	92.17	51.77	94.62	62.84	60.95	49.00	63.37
3	-45.49	-47.02	-45.69	-49.86	137.12	139.88	116.28	135.32	97.48	95.04	78.50	93.74
4	-62.99	-63.40	-63.57	-75.65	191.09	189.04	172.08	188.42	124.54	126.37	119.90	124.71
5	-83.05	-79.63	-73.88	-85.96	234.02	233.82	217.73	239.60	159.89	158.58	154.55	156.40
6	-96.30	-101.18	-88.25	-106.42	283.53	283.62	258.63	286.16	191.24	189.90	167.08	187.88
7	-113.83	-115.36	-110.91	-119.31	325.92	332.03	304.43	334.41	224.19	222.37	197.71	219.93
8	-131.33	-127.70	-121.42	-139.57	378.96	381.44	341.97	379.57	256.45	251.03	230.29	250.35
9	-142.73	-144.66	-138.74	-157.62	422.83	423.13	378.36	422.53	288.83	284.43	258.23	279.64
10	-157.66	-159.94	-151.64	-176.76	466.48	468.12	418.75	467.38	317.05	317.56	287.59	313.50

CVP4	SG22											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0			316.91				-37.88				506.70	
1			490.81				55.23				349.86	
2			187.48				140.73				239.94	
3			14.20				214.46				225.52	
4			3.55				295.46				315.69	
5			21.29				370.66				410.27	
6			-25.72				444.80				492.86	
7			-42.48				518.52				566.87	
8			43.31				589.95				639.48	
9			39.04				659.10				708.22	
10			-7.70				733.16				794.90	

CVP4	SG23											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-32.55	-16.52	-21.25	-31.86	-13.40	-15.06	-25.34	-7.78	-31.25	-19.36	-65.87	-27.28
1	-48.05	-43.10	-41.92	-52.89	76.79	76.27	68.21	78.55	44.56	57.05	-12.12	53.54
2	-76.27	-69.85	-67.47	-71.71	177.27	176.82	162.62	178.69	111.52	115.53	118.38	122.00
3	-104.85	-107.32	-98.36	-104.92	269.88	271.28	259.25	267.60	177.05	175.51	170.03	178.42
4	-136.57	-132.39	-133.03	-141.08	369.51	359.98	353.33	365.47	228.87	236.24	232.11	238.61
5	-174.20	-163.41	-166.18	-167.64	457.90	450.61	447.20	455.27	292.11	291.91	290.95	296.18
6	-205.90	-201.80	-200.18	-209.72	551.37	542.79	535.39	548.37	348.82	352.62	343.86	355.74
7	-242.84	-237.21	-238.19	-242.19	640.52	634.07	624.33	639.87	407.44	412.68	404.83	415.34
8	-278.99	-267.47	-265.85	-274.66	732.38	725.67	710.44	727.93	466.16	469.37	459.41	474.43
9	-312.17	-307.35	-298.69	-310.82	825.07	810.45	789.40	818.04	524.77	527.97	518.17	534.39
10	-344.66	-337.58	-331.59	-348.43	912.33	902.63	884.74	905.49	581.10	587.14	576.04	594.85

CVP4	SG24											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-13.26	1.36	-0.41	-1.05	-13.97	-14.06	-22.72	-6.60	-29.70	-23.77	-30.11	-23.56
1	-6.07	-2.70	-0.78	-5.48	73.24	74.85	66.77	78.24	64.54	74.96	62.51	75.87
2	-7.55	1.17	-6.50	-6.77	174.82	177.22	163.03	177.25	158.22	158.32	156.77	165.35
3	-9.21	-8.05	-8.71	-10.64	267.40	271.11	257.54	268.16	250.50	243.56	237.63	249.60
4	-14.38	-10.08	-13.51	-17.65	371.25	364.04	353.06	364.91	329.04	334.56	327.92	334.52
5	-20.46	-12.29	-12.77	-16.91	460.18	455.94	444.51	458.38	417.70	419.15	414.48	419.56
6	-21.20	-20.41	-13.88	-22.81	552.34	550.68	532.32	551.10	501.73	499.95	493.25	505.47
7	-25.07	-20.96	-21.99	-22.07	642.76	641.94	622.35	642.76	582.64	581.62	577.69	587.93
8	-30.23	-22.81	-21.44	-29.45	734.79	735.00	706.78	730.43	667.19	664.07	654.93	669.53
9	-31.71	-22.99	-26.98	-32.40	825.80	817.37	786.65	818.87	749.01	747.79	735.21	753.10
10	-35.40	-27.79	-28.27	-38.86	912.11	909.89	880.30	908.88	830.99	828.51	813.41	837.13

CVP4	SG25											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-13.64	-4.22	-24.52	-27.54	-4.35	-5.07	-7.67	1.44	-19.54	-15.57	-48.46	-37.12
1	-9.94	-11.30	-24.29	-25.60	102.51	106.40	96.15	96.80	87.51	88.59	68.63	83.56
2	-22.24	-19.68	-29.01	-30.55	216.04	224.12	196.58	224.87	189.53	187.20	177.93	191.64
3	-39.21	-40.31	-40.48	-45.53	333.55	338.78	314.79	329.10	294.07	286.25	272.18	286.82
4	-56.23	-55.29	-58.57	-70.14	463.06	458.99	434.84	460.20	388.98	391.59	378.28	387.27
5	-76.80	-67.47	-69.21	-78.65	575.58	576.34	548.95	577.25	494.75	492.16	477.14	486.08
6	-86.32	-88.56	-82.95	-100.49	692.41	693.60	656.82	695.58	593.66	589.31	570.02	584.64
7	-102.29	-99.34	-103.53	-111.40	806.25	811.96	767.33	813.23	693.31	688.82	672.68	680.66
8	-118.90	-110.07	-111.64	-130.37	924.08	928.62	873.47	918.39	791.07	782.22	760.69	776.21
9	-128.18	-125.11	-126.95	-145.49	1032.95	1035.32	974.16	1028.76	885.89	879.17	847.49	872.25
10	-140.12	-137.68	-139.67	-163.01	1137.48	1140.09	1078.21	1134.73	979.79	972.15	934.64	965.22

CVP4	SG26											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-4.65	28.71	19.99	11.58	-12.55	-4.91	-20.04	11.79	-4.89	3.00	9.87	3.07
1	1.25	14.96	6.12	6.86	85.75	96.37	84.56	98.62	89.81	97.81	96.89	105.34
2	0.34	15.11	1.42	-2.11	194.50	200.91	192.81	196.40	186.58	185.94	177.43	192.34
3	5.40	10.11	-0.81	0.01	299.93	304.72	293.14	304.98	297.78	290.14	280.35	294.09
4	2.26	8.66	-3.43	-2.08	415.17	410.53	400.08	407.72	398.61	399.72	383.55	399.42
5	-2.86	18.00	0.88	2.97	516.76	515.10	502.01	515.37	503.84	506.62	487.95	503.61
6	1.82	11.12	5.82	-2.17	620.13	620.48	602.12	622.07	604.95	602.50	578.47	606.27
7	3.80	17.14	3.56	6.42	722.30	725.91	702.04	722.53	705.56	699.22	676.67	701.76
8	1.22	19.91	5.81	0.87	823.32	829.80	798.97	831.74	802.77	799.16	772.13	798.98
9	6.45	29.32	4.33	0.74	926.63	922.80	895.38	923.24	898.75	898.69	862.32	900.40
10	5.93	26.06	-5.74	-1.00	1022.48	1024.34	995.27	1021.15	1001.15	991.71	955.76	996.18

CVP4	SG27											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-9.45	-1.48	-8.24	-11.01	-3.58	-3.27	-10.16	5.03	-19.85	-17.38	-33.42	-26.07
1	-5.34	-5.41	-7.87	-10.73	64.32	67.05	57.18	65.83	48.66	50.34	39.65	50.17
2	-10.10	-7.77	-11.15	-13.13	137.60	142.09	123.10	145.50	115.64	114.28	112.10	118.47
3	-16.47	-17.10	-15.64	-19.00	212.25	215.32	197.81	213.45	185.58	180.41	175.91	183.40
4	-24.74	-23.02	-23.26	-29.44	295.24	290.28	274.45	294.42	247.56	250.23	244.97	249.48
5	-34.39	-27.45	-26.87	-31.34	364.52	363.83	345.48	367.62	316.09	315.33	309.78	314.40
6	-38.04	-37.16	-31.81	-41.04	436.72	437.48	412.57	440.94	379.60	376.37	370.27	377.95
7	-44.24	-42.29	-41.10	-43.76	508.09	510.82	481.49	515.78	441.28	438.39	435.99	438.01
8	-51.77	-46.35	-43.32	-53.05	582.75	584.63	546.69	583.10	502.32	498.12	492.51	498.87
9	-55.23	-51.35	-50.11	-59.57	654.33	652.36	611.52	656.53	562.14	559.61	549.69	560.80
10	-61.74	-57.86	-54.13	-67.28	723.81	723.49	680.27	728.83	624.30	619.43	605.45	622.28

CVP4	SG28											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-12.87	-18.74	-20.26	-24.28	13.39	12.89	18.00	10.36	-14.90	-11.25	-18.29	-22.48
1	-1.06	-6.17	-8.42	-6.51	51.87	53.57	56.49	50.32	42.06	45.77	33.52	42.64
2	-0.33	-1.00	-3.98	-0.58	99.19	99.45	95.69	107.27	90.15	90.89	90.49	93.73
3	-3.31	-3.21	-3.99	-5.02	145.07	146.81	143.08	142.04	133.11	130.12	127.54	132.90
4	-7.01	-6.93	-6.94	-10.18	196.88	194.14	189.69	200.57	173.78	177.51	171.13	175.13
5	-9.97	-6.17	-10.65	-11.68	242.04	238.57	238.50	244.19	220.36	218.16	212.60	216.57
6	-8.50	-9.13	-12.87	-17.58	290.09	287.48	285.12	292.25	261.12	263.30	249.60	257.98
7	-12.17	-12.84	-14.35	-21.28	338.21	337.77	333.33	346.25	305.48	308.53	295.56	304.60
8	-15.13	-9.88	-12.86	-19.80	389.26	385.18	382.88	387.73	350.66	348.36	337.71	347.56
9	-16.62	-15.05	-12.12	-20.54	438.14	434.08	425.90	441.06	397.23	393.60	381.29	391.97
10	-13.65	-12.84	-21.00	-23.51	485.50	484.24	476.83	487.56	437.24	439.43	425.05	437.79

CVP4	SG29											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-8.64	-0.11	-9.43	-12.02	11.67	11.13	8.56	15.68	4.28	5.49	-9.10	-6.12
1	-6.60	-5.97	-11.65	-9.35	59.53	62.42	58.75	59.71	49.88	50.56	41.51	51.91
2	-12.55	-10.82	-13.91	-13.83	109.64	111.31	104.22	111.72	91.15	89.76	89.25	94.07
3	-19.01	-20.38	-18.57	-20.52	159.86	162.65	156.56	160.23	135.81	132.98	131.52	135.69
4	-27.78	-27.44	-26.01	-29.99	218.77	213.42	211.95	215.31	176.42	178.99	177.84	180.23
5	-37.43	-31.88	-30.72	-32.52	267.90	267.18	265.30	268.83	223.67	224.39	223.10	226.22
6	-41.71	-42.68	-36.49	-42.50	321.78	321.71	317.56	324.57	268.96	268.16	265.58	271.62
7	-49.39	-48.87	-45.21	-46.01	374.99	376.35	370.48	378.30	313.62	312.73	313.29	315.95
8	-57.05	-54.59	-49.38	-55.33	430.75	431.80	423.27	431.14	357.60	357.52	355.56	360.30
9	-62.26	-60.88	-56.21	-61.80	484.71	482.46	475.09	483.45	401.51	402.29	399.26	407.21
10	-68.73	-67.66	-62.86	-70.38	537.89	536.43	527.40	537.45	447.90	446.20	442.56	451.86

CVP4	SG30											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-8.58	-9.95	-7.24	-17.19	2.91	5.85	6.85	7.85	-6.30	-2.65	-392.20	-10.64
1	-1.25	-0.15	-5.59	-8.02	37.46	41.55	40.40	38.43	37.33	37.04	-333.24	34.96
2	-2.72	-3.23	-4.46	-5.32	76.37	79.41	73.85	83.07	69.78	70.31	71.45	73.68
3	-10.53	-10.81	-9.74	-13.21	116.65	118.79	111.38	116.12	101.80	101.39	100.91	101.40
4	-16.12	-16.78	-15.13	-16.55	158.55	158.63	150.35	161.72	135.78	136.20	129.99	134.91
5	-22.58	-19.13	-19.78	-21.80	197.14	198.06	188.20	199.43	166.75	166.22	164.16	167.41
6	-22.93	-24.21	-24.67	-28.46	236.87	238.24	224.54	239.63	200.18	203.06	193.62	200.65
7	-29.40	-28.94	-26.24	-35.25	275.75	277.75	261.83	280.76	235.03	238.03	229.34	234.44
8	-33.41	-30.74	-29.35	-36.17	315.12	318.03	300.10	318.99	269.43	268.34	262.43	268.85
9	-39.02	-37.50	-32.45	-40.33	354.60	356.23	335.74	359.17	305.15	303.31	295.82	303.20
10	-37.38	-37.90	-38.17	-43.35	393.06	396.48	375.02	396.10	335.64	338.20	328.69	336.01

CVP4	SG31											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-46.78	-26.64	-30.83	-39.30	12.05	14.17	4.15	14.38	2.40	1.93	-5.27	-1.15
1	-33.65	-26.90	-38.63	-31.88	40.68	38.08	39.35	43.53	29.21	43.46	32.53	40.74
2	-37.29	-27.08	-37.10	-43.98	79.61	70.01	70.14	59.31	55.13	61.23	52.15	60.62
3	-50.55	-47.95	-51.94	-54.41	103.50	102.91	98.52	99.90	76.77	81.82	75.17	78.71
4	-69.88	-72.38	-72.64	-68.68	140.54	130.63	130.22	128.74	107.31	103.97	100.46	105.43
5	-90.77	-80.58	-84.39	-79.92	171.49	161.00	164.59	154.34	126.04	126.99	126.12	128.08
6	-98.36	-103.84	-97.68	-102.31	205.16	192.02	195.92	192.67	153.31	154.96	150.02	155.81
7	-123.74	-116.00	-114.94	-119.06	243.09	226.25	224.80	217.49	180.02	182.52	177.59	179.62
8	-142.14	-133.12	-137.80	-136.41	271.04	256.49	262.12	267.84	204.71	206.12	204.62	207.68
9	-159.14	-152.98	-153.44	-153.25	311.80	291.54	294.05	289.03	233.12	234.57	228.82	234.59
10	-169.87	-168.01	-173.38	-171.82	347.00	333.05	327.30	318.19	258.56	263.16	248.51	260.59

CVP4	SG32T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-89.06	-106.67	-124.32	-105.49	6.68	5.16	21.64	3.89	-99.24	-100.11	-109.10	-140.60
1	17.92	17.95	23.58	20.46	-18.11	-19.41	-8.59	-23.93	-4.25	-9.70	-1.76	-17.83
2	125.30	122.99	125.05	137.25	-42.94	-45.46	-45.04	-20.53	74.21	71.42	82.25	64.57
3	224.40	220.37	226.99	227.89	-67.50	-68.58	-67.30	-73.04	132.29	135.71	144.98	136.32
4	312.78	312.25	325.71	319.87	-93.36	-93.51	-94.09	-79.84	190.59	188.68	199.90	190.61
5	396.90	396.68	405.36	407.31	-115.94	-117.48	-119.25	-108.44	242.75	236.18	254.73	245.41
6	478.72	478.61	483.20	489.46	-139.51	-141.43	-140.94	-139.77	292.04	289.13	304.52	290.70
7	555.04	552.67	564.01	567.10	-163.16	-166.26	-165.32	-147.61	337.32	335.47	356.06	343.27
8	632.66	627.54	644.33	643.26	-186.88	-189.27	-187.74	-197.91	385.47	381.78	405.07	385.85
9	702.97	697.47	718.28	719.23	-208.26	-209.96	-209.75	-199.05	425.73	422.00	451.04	430.44
10	774.92	772.07	792.78	791.77	-229.53	-232.37	-232.72	-216.65	467.57	466.72	496.85	473.30

CVP4	SG32-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-78.40	-72.66	-88.54	-80.82	-12.40	-3.18	6.48	12.56	-93.83	-96.41	-96.10	-117.77
1	-9.18	1.69	10.25	-7.47	24.88	29.32	41.17	35.17	20.22	16.69	20.60	14.41
2	61.00	66.83	63.88	70.95	63.01	77.05	68.09	98.06	120.72	112.14	117.92	116.25
3	122.83	119.83	123.74	115.93	109.76	116.88	107.02	114.63	211.22	205.58	201.93	213.29
4	171.61	181.21	179.79	177.61	165.24	158.93	153.07	175.26	288.57	293.21	288.53	292.98
5	216.25	223.95	224.02	224.85	197.20	203.47	187.32	210.48	367.45	361.98	370.71	374.66
6	258.78	272.43	270.54	270.84	239.79	245.55	226.50	252.09	441.18	437.35	437.06	447.97
7	305.63	315.21	314.75	315.23	279.09	287.40	259.23	303.06	511.51	509.54	513.71	523.37
8	346.02	355.70	360.34	354.23	320.63	330.35	297.47	316.60	583.26	580.29	576.99	592.34
9	380.32	395.82	396.89	392.81	355.35	361.78	334.04	371.70	653.57	648.61	645.76	663.67
10	425.30	434.40	436.13	426.01	390.22	396.44	373.03	421.15	719.39	713.17	712.03	730.26

CVP4	SG32L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-33.74	-18.14	-39.29	-30.43	-15.47	-10.18	-7.91	10.95	-52.88	-56.00	-64.78	-58.54
1	-11.75	-9.96	-12.77	-19.69	72.05	75.61	73.85	81.81	50.79	57.19	40.05	52.04
2	-2.13	3.39	-4.27	-6.57	165.69	174.51	156.51	181.18	146.43	142.18	133.23	146.65
3	11.81	9.86	6.56	3.80	255.52	258.96	246.17	258.12	241.33	235.34	218.72	239.08
4	17.43	22.82	10.71	13.29	354.56	349.87	337.39	353.90	325.04	329.75	314.00	328.99
5	21.52	28.78	21.63	22.81	438.94	439.42	422.54	441.32	412.36	415.79	403.75	416.23
6	25.75	31.02	29.82	26.77	527.63	528.68	505.40	532.86	495.22	494.48	478.48	499.51
7	32.18	39.94	31.63	34.77	615.18	619.59	590.22	622.59	578.67	575.99	557.21	579.77
8	32.56	42.31	36.24	33.79	705.65	709.09	672.15	706.39	657.60	654.99	631.14	658.76
9	39.85	49.11	34.01	33.42	788.03	789.12	751.47	789.98	735.50	735.50	702.89	738.93
10	41.53	46.36	29.59	29.23	870.46	870.06	838.29	877.82	814.17	813.32	773.78	818.51

CVP4	SG33T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-84.67	-106.55	-107.44	-96.00	24.74	23.97	29.38	21.28	-68.34	-65.80	-48.82	-78.63
1	22.52	20.32	21.21	22.35	-31.59	-33.68	-28.75	-32.59	0.24	-3.24	14.85	-13.63
2	131.31	126.31	125.21	142.54	-94.00	-99.34	-99.52	-69.36	55.13	54.74	72.50	44.82
3	232.88	227.96	230.74	236.18	-156.29	-159.27	-159.30	-159.02	89.52	98.24	112.90	96.58
4	324.40	323.92	333.27	333.95	-221.44	-221.69	-222.34	-203.74	129.18	129.98	145.74	129.16
5	412.75	411.52	414.64	423.31	-278.36	-281.65	-282.71	-269.19	161.89	158.82	186.93	165.49
6	497.64	497.64	494.88	509.42	-334.28	-338.63	-337.29	-333.68	195.65	198.03	224.98	194.67
7	575.80	574.80	579.36	588.49	-390.56	-395.41	-394.27	-365.39	225.66	231.30	265.18	234.81
8	657.32	651.83	661.87	669.70	-442.80	-449.90	-446.82	-455.30	260.70	264.09	299.71	262.92
9	730.20	723.45	737.79	748.26	-493.78	-497.79	-499.04	-477.05	287.16	291.16	334.95	293.14
10	804.45	800.49	806.68	823.14	-543.47	-549.69	-550.67	-522.38	313.98	324.71	371.91	324.59

CVP4	SG33-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-79.36	-72.81	-72.03	-69.22	-43.74	-29.48	-71.96	-21.56	-101.79	-98.62	-90.55	-92.85
1	-13.65	-2.76	-1.79	-11.09	-38.91	-34.36	-63.27	-32.42	-29.59	-28.73	-33.28	-33.78
2	57.48	60.36	53.06	64.01	-55.54	-45.92	-80.09	-33.54	19.87	16.63	13.40	13.56
3	121.75	116.68	112.44	112.91	-76.24	-73.42	-94.21	-69.75	48.55	50.92	45.71	52.41
4	169.15	178.22	168.08	173.68	-94.91	-100.54	-110.47	-90.61	74.31	75.00	72.60	73.99
5	215.67	219.48	214.09	220.42	-129.13	-125.30	-144.46	-117.87	92.40	88.89	100.40	98.15
6	257.32	268.25	260.31	267.36	-151.46	-149.05	-171.31	-143.45	111.71	110.63	121.16	117.26
7	303.12	310.21	305.45	309.16	-177.80	-174.35	-203.33	-159.19	129.06	128.47	138.95	138.90
8	343.80	349.78	346.00	346.87	-198.55	-194.39	-234.96	-201.27	147.10	147.02	150.86	154.21
9	379.23	389.03	381.49	384.58	-226.11	-222.83	-259.70	-212.02	164.59	163.47	166.42	171.02
10	420.32	425.03	402.49	417.23	-249.98	-250.65	-293.06	-226.80	175.90	177.66	179.71	184.56

CVP4	SG33L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-47.30	-21.82	-11.38	-15.28	-15.88	-5.87	-18.28	14.70	-49.37	-52.35	-44.44	-21.13
1	-27.03	-19.35	-18.13	-26.25	72.09	78.18	65.37	86.31	48.42	52.90	24.04	53.90
2	-13.12	-3.35	-9.80	-17.13	168.26	176.64	150.88	172.56	147.80	144.11	122.23	148.99
3	2.54	2.23	-0.32	-6.34	259.13	261.57	244.85	264.95	247.89	239.43	215.88	241.73
4	7.42	12.88	2.99	-0.76	359.04	352.51	338.97	351.17	336.97	336.80	313.65	334.08
5	8.54	16.89	12.85	7.05	443.90	442.97	424.70	442.48	427.89	426.40	402.45	423.21
6	10.86	15.72	18.66	6.59	532.38	532.02	509.35	535.25	513.75	507.90	472.22	509.11
7	15.99	22.23	16.76	12.78	620.79	622.02	594.76	623.05	599.08	590.27	549.20	589.30
8	12.73	21.77	16.90	6.59	712.13	712.70	675.45	712.04	680.27	670.82	626.54	669.56
9	16.08	27.73	11.32	2.73	796.66	794.48	755.07	793.97	760.37	752.66	698.03	751.80
10	14.22	21.02	13.69	-3.79	881.86	878.14	839.31	883.65	842.50	830.91	767.97	829.86

CVP4	SG34T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-0.78	-6.45	1.18	11.41	-1.73	3.91	11.92	0.72	9.62	3.05	20.24	10.02
1	64.20	62.79	71.06	72.75	-34.51	-32.38	-23.21	-31.51	44.59	40.97	49.04	42.16
2	141.68	139.45	138.66	149.64	-68.91	-68.91	-61.11	-62.06	92.17	89.35	93.74	85.33
3	223.35	218.84	216.46	223.73	-103.93	-103.45	-97.98	-104.84	136.70	138.86	141.31	139.70
4	298.77	298.34	296.71	302.64	-141.57	-139.90	-135.60	-138.00	185.94	184.84	187.47	184.28
5	374.28	373.16	367.16	379.27	-175.25	-174.76	-172.75	-174.64	231.55	228.91	238.05	233.22
6	449.57	448.58	438.39	455.49	-211.74	-209.98	-204.53	-213.36	279.78	277.53	279.69	277.72
7	522.90	521.39	514.22	529.13	-244.60	-245.68	-238.14	-242.98	323.67	322.15	327.20	327.73
8	599.50	594.06	591.92	604.44	-283.94	-281.16	-272.73	-289.89	372.91	370.77	374.16	371.35
9	672.03	666.60	664.17	679.98	-317.09	-315.67	-304.62	-315.55	415.76	413.92	420.66	417.73
10	746.79	742.23	727.59	753.74	-348.90	-346.55	-336.39	-345.48	461.29	461.56	473.08	464.11

CVP4	SG34-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	2.30	-4.26	19.46	14.29	7.53	-5.40	-8.76	1.84	-5.50	-10.58	0.38	-6.06
1	30.48	23.94	43.78	33.40	27.76	27.25	17.22	25.03	47.92	38.62	48.63	46.09
2	60.16	59.19	66.78	67.18	47.41	44.90	40.22	56.74	110.07	105.41	109.67	102.51
3	96.48	96.69	104.61	102.43	68.74	69.93	67.14	63.61	165.95	163.68	167.24	163.70
4	130.61	126.16	139.72	131.20	87.49	92.55	89.95	92.03	221.21	221.61	221.72	220.34
5	159.91	167.58	174.77	172.18	117.93	111.49	110.91	114.28	282.96	282.04	279.46	277.68
6	198.28	192.82	203.16	199.67	136.64	135.64	134.28	125.39	341.47	337.52	323.81	332.56
7	227.11	226.75	233.41	235.47	156.51	159.93	160.69	162.30	395.60	391.80	376.41	387.48
8	259.20	258.11	272.22	268.32	176.55	178.33	180.53	170.49	452.98	448.62	439.83	441.52
9	294.41	290.43	305.44	303.57	206.25	201.73	200.25	202.80	503.39	499.94	495.21	495.71
10	322.46	323.99	352.20	336.74	227.77	232.64	224.30	220.92	558.00	555.00	555.45	551.31

CVP4	SG34L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	0.07	13.78	6.21	-5.04	-6.74	-10.12	-23.47	2.14	-16.22	-4.64	-39.28	-17.94
1	-2.45	1.90	1.93	-11.74	84.43	86.86	69.07	83.47	72.74	77.87	65.18	74.63
2	-13.66	-9.92	-7.47	-19.13	179.13	181.66	158.77	184.88	152.21	152.50	149.50	155.44
3	-26.46	-25.98	-17.52	-31.28	272.00	270.97	255.44	271.04	234.34	231.26	222.16	230.59
4	-38.50	-38.03	-31.86	-50.55	371.40	366.98	352.03	368.68	311.00	312.29	300.26	310.14
5	-53.95	-45.71	-38.84	-56.83	461.15	457.30	442.84	464.87	392.11	392.64	377.37	389.26
6	-61.06	-61.03	-47.54	-72.56	553.78	551.24	529.58	556.94	469.64	468.60	452.58	466.66
7	-70.85	-68.61	-61.55	-78.00	643.91	643.52	618.20	650.75	550.74	547.84	530.71	543.17
8	-82.29	-75.17	-67.42	-93.13	740.32	737.62	703.60	741.65	627.50	623.43	607.73	619.00
9	-87.22	-82.90	-78.41	-103.41	831.23	824.65	787.18	830.14	702.81	702.50	680.00	697.56
10	-97.65	-93.51	-63.98	-116.06	916.48	909.65	872.94	917.45	781.07	778.57	744.58	774.74

CVP4	SG35T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	2.33	-21.99	-48.20	-32.93	10.88	-1.89	23.92	-6.97	-27.73	-26.63	-25.82	-74.31
1	76.77	70.41	66.13	67.29	-17.82	-25.91	-10.47	-31.12	39.59	35.62	43.44	22.02
2	147.76	141.98	136.97	152.40	-40.89	-46.85	-44.12	-16.74	92.36	90.34	99.61	84.39
3	213.92	209.86	211.21	214.76	-65.50	-67.56	-62.60	-70.05	127.52	131.67	138.64	131.41
4	279.28	274.82	286.43	283.24	-90.49	-90.31	-85.96	-68.40	169.85	170.66	177.27	169.19
5	348.45	346.47	350.67	354.21	-111.06	-112.47	-106.01	-97.15	209.84	208.22	222.71	212.34
6	420.42	415.73	415.83	424.20	-132.68	-135.94	-127.37	-124.50	253.03	254.85	257.11	250.57
7	487.00	482.24	486.48	492.28	-156.15	-159.25	-150.50	-129.15	293.81	298.76	305.53	300.04
8	560.88	553.55	563.15	565.62	-176.66	-183.52	-168.82	-177.37	340.94	341.62	351.62	339.58
9	630.70	620.03	634.46	638.73	-200.27	-201.78	-190.27	-177.25	380.73	381.86	397.81	383.89
10	703.26	695.36	704.37	710.56	-222.14	-225.64	-212.69	-197.59	422.05	428.87	449.84	427.50

CVP4	SG35-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	3.21	-12.05	-3.39	-7.19	10.21	-13.31	-7.99	-4.81	-30.37	-31.10	-15.26	-51.50
1	38.46	29.16	43.68	30.94	33.52	28.96	19.15	23.29	43.43	33.46	49.00	33.79
2	65.58	62.98	68.58	69.26	60.54	54.95	45.76	79.34	110.17	105.74	117.42	101.54
3	94.31	93.42	104.94	99.27	87.20	87.31	83.04	80.04	161.21	160.24	170.10	158.50
4	123.24	115.97	137.25	122.23	111.31	117.63	112.39	126.38	213.35	214.44	220.72	212.11
5	149.66	157.17	168.92	161.42	148.99	142.82	142.20	152.29	272.78	271.91	276.22	266.74
6	187.20	179.38	194.52	185.69	175.17	172.59	169.84	168.62	328.82	326.91	319.65	317.90
7	214.06	210.62	222.21	219.88	199.94	203.42	201.50	218.64	381.31	380.38	374.33	372.44
8	245.69	241.71	260.98	251.00	228.41	227.37	228.56	224.79	437.71	433.53	437.62	424.33
9	279.66	271.33	294.02	285.47	261.70	258.62	252.73	270.67	486.15	483.76	493.12	477.01
10	307.00	305.17	349.26	318.70	288.68	292.68	280.71	292.81	539.02	539.60	555.63	530.85

CVP4	SG35L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-6.45	6.89	0.32	-10.60	-8.47	-11.24	-25.25	1.57	-24.63	-13.94	-33.24	-25.12
1	-6.32	-2.86	-1.13	-15.63	83.56	86.33	67.91	82.76	67.42	72.10	62.02	70.54
2	-16.11	-12.19	-8.92	-21.31	177.81	180.73	157.02	184.90	149.02	149.29	148.67	152.23
3	-27.76	-27.20	-18.10	-32.41	269.63	269.06	253.34	268.92	230.92	228.13	220.90	227.70
4	-39.64	-38.99	-32.09	-51.24	368.46	364.31	349.16	366.91	308.27	309.30	298.57	306.83
5	-54.74	-46.04	-38.61	-57.11	457.24	454.41	439.75	461.58	388.77	389.23	374.88	385.71
6	-61.77	-61.75	-47.38	-72.92	549.64	547.02	525.52	552.88	465.50	464.75	447.60	462.49
7	-72.22	-69.67	-61.60	-78.74	638.44	639.08	613.55	647.03	545.43	542.82	525.68	538.01
8	-83.78	-76.62	-67.76	-93.99	734.27	732.59	698.90	736.22	621.19	617.42	602.27	612.47
9	-89.46	-84.60	-78.71	-104.80	824.21	818.84	781.13	824.87	696.08	695.32	674.11	690.61
10	-100.51	-95.97	-64.63	-118.12	909.04	903.23	865.91	911.38	772.60	770.59	740.47	766.43

CVP4	SG36T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-58.39	-72.32	-77.95	-63.07	-9.95	-11.33	-7.24	-15.07	-73.03	-77.27	-79.85	-89.88
1	31.83	31.07	31.50	36.23	-47.37	-49.42	-46.22	-50.26	-8.27	-14.01	-17.26	-17.71
2	126.69	123.82	120.39	135.96	-89.30	-95.53	-93.14	-72.04	44.56	40.42	35.78	33.47
3	218.25	214.28	214.60	220.97	-137.85	-141.05	-138.01	-141.68	79.13	82.33	90.15	81.96
4	300.95	299.90	305.79	307.97	-191.25	-190.48	-188.15	-176.22	116.92	114.30	124.00	114.54
5	380.96	381.33	381.28	389.83	-236.24	-239.90	-236.23	-230.26	146.88	142.20	161.78	148.34
6	458.82	459.29	454.90	468.56	-284.95	-288.94	-281.39	-285.96	176.77	175.17	186.28	174.07
7	532.07	531.83	532.30	542.27	-332.69	-338.27	-328.70	-315.52	203.56	204.00	220.79	207.92
8	608.88	604.01	609.10	617.65	-379.94	-387.34	-375.14	-389.39	234.83	231.99	251.08	233.23
9	677.28	672.11	680.12	691.50	-425.14	-429.81	-421.89	-412.47	258.64	254.32	280.49	258.89
10	746.86	744.22	743.50	762.14	-469.51	-474.57	-467.03	-456.10	282.33	282.92	310.08	284.61

CVP4	SG36-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-19.60	-22.33	-28.20	-11.60	-50.43	-61.13	-85.06	-63.24	-85.57	-88.49	-83.50	-90.60
1	18.19	10.22	5.10	19.17	-32.47	-35.54	-64.58	-37.99	-23.88	-22.12	-21.74	-22.22
2	55.04	57.35	46.65	54.87	-12.38	-23.51	-40.82	-17.62	31.77	31.27	43.40	28.53
3	96.38	96.64	90.74	101.25	-18.78	-21.48	-28.78	-24.58	66.75	67.40	79.09	66.44
4	137.54	130.83	131.82	132.92	-30.99	-30.86	-33.20	-29.54	94.45	95.32	108.71	95.53
5	172.86	175.39	168.53	175.99	-32.52	-42.00	-36.96	-38.27	125.07	126.72	138.26	123.67
6	212.88	202.37	200.89	207.43	-42.82	-50.77	-44.16	-52.70	151.95	152.03	185.89	147.14
7	243.59	238.66	230.09	243.41	-51.32	-59.27	-48.19	-52.57	173.65	173.81	207.96	171.79
8	277.33	271.25	268.24	275.54	-60.09	-71.20	-59.57	-70.02	198.37	198.57	233.33	193.60
9	309.33	301.61	298.56	308.50	-62.92	-75.06	-77.58	-69.51	216.17	216.83	249.15	213.14
10	336.84	331.94	318.81	339.95	-67.66	-74.22	-81.39	-78.33	236.81	239.92	276.05	237.02

CVP4	SG36L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-4.45	14.50	8.86	3.25	-38.94	-32.24	-35.50	-13.49	-48.86	-43.48	-46.87	-40.62
1	-5.38	-5.11	-6.88	-14.16	70.64	75.88	67.35	77.16	48.02	55.85	45.17	56.29
2	-7.67	-1.39	-7.11	-16.67	185.87	195.52	173.87	192.79	160.88	162.20	157.86	166.59
3	-4.27	-4.69	-4.51	-13.97	300.22	303.69	291.10	304.52	275.49	270.82	264.86	272.33
4	-3.95	-1.53	-8.61	-19.60	422.04	415.41	406.94	416.39	374.54	379.11	371.30	374.49
5	-8.28	-1.20	-4.32	-14.67	523.03	522.75	511.76	525.67	477.29	479.62	467.47	473.03
6	-7.44	-7.76	-2.65	-20.90	628.18	628.88	611.97	634.37	573.89	572.20	578.13	569.84
7	-8.27	-5.16	-9.77	-18.02	731.05	734.99	714.10	737.36	668.44	665.68	670.87	660.18
8	-13.30	-6.18	-9.68	-27.94	836.83	839.96	812.02	838.95	758.30	757.29	755.75	750.05
9	-10.23	-3.20	-16.15	-33.57	936.01	934.90	907.80	935.90	846.87	848.93	837.90	842.26
10	-13.49	-11.17	-11.26	-42.93	1032.30	1030.15	1003.81	1037.75	937.87	935.84	917.09	931.20

CVP4	SG37T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	29.23	1.39	-4.35	7.61	-6.55	-16.59	-3.49	-25.39	-4.90	-3.80	-3.11	-33.94
1	66.62	55.30	60.84	59.43	-28.68	-34.47	-29.75	-42.62	26.85	19.91	28.47	9.46
2	109.91	96.18	100.03	113.79	-57.54	-60.60	-64.35	-39.87	47.79	44.80	55.84	39.81
3	143.20	135.57	140.39	145.46	-85.40	-86.35	-86.32	-91.42	49.37	52.96	61.58	52.22
4	181.36	174.91	184.15	182.04	-117.38	-115.86	-116.38	-100.74	59.49	58.92	71.51	59.11
5	223.65	216.48	219.79	225.38	-144.47	-144.88	-143.92	-132.72	71.44	66.38	84.63	72.44
6	269.43	262.41	258.62	269.03	-173.33	-174.05	-172.98	-166.25	84.38	85.54	112.04	82.24
7	313.51	302.72	303.90	312.16	-202.90	-203.38	-202.23	-184.31	99.91	103.76	133.83	104.84
8	364.05	349.70	357.70	362.72	-230.07	-233.37	-229.62	-230.70	118.94	116.92	149.27	118.83
9	409.56	390.04	406.53	413.36	-259.83	-258.47	-259.14	-243.46	135.47	132.58	169.00	135.84
10	459.27	444.31	452.09	462.82	-289.57	-289.98	-289.65	-273.25	149.97	154.02	184.02	154.25

CVP4	SG37-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	21.23	-1.68	-7.97	7.51	-11.99	-36.25	-38.40	-44.12	-36.93	-38.60	-25.36	-55.50
1	42.94	26.14	18.88	33.85	-11.66	-21.10	-36.34	-28.47	0.84	0.20	3.79	-8.18
2	52.20	44.09	37.98	53.95	-5.66	-18.90	-31.98	-3.74	21.12	20.94	41.57	20.55
3	55.55	52.91	57.80	67.12	-17.90	-20.41	-27.20	-28.74	18.56	19.98	40.94	22.61
4	69.95	57.67	92.10	69.33	-34.10	-31.70	-37.57	-24.21	16.63	17.83	46.97	24.68
5	83.21	79.30	106.92	90.39	-36.53	-43.87	-41.20	-35.17	23.83	22.87	56.25	29.18
6	105.22	89.63	117.21	104.30	-46.58	-52.73	-49.69	-50.50	27.60	29.89	99.86	32.02
7	118.47	105.74	127.86	121.92	-56.27	-61.04	-53.92	-48.89	32.05	35.41	107.19	41.57
8	140.58	125.20	168.63	145.38	-62.60	-73.25	-63.74	-68.63	40.59	40.48	115.76	49.88
9	157.78	136.73	190.07	168.33	-67.15	-75.23	-83.22	-65.74	44.25	43.67	119.68	53.60
10	175.46	160.96	206.00	191.44	-72.61	-75.67	-86.60	-77.02	49.36	54.17	127.19	65.30

CVP4	SG37L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	6.56	-7.64	150.98	-26.01	19.95	17.19	29.13	35.07	-1.38	3.18	61.98	-24.15
1	8.75	-2.01	174.55	-15.37	99.03	103.76	102.70	104.90	87.01	89.99	93.77	80.55
2	-17.16	-22.42	89.43	-27.47	188.35	201.12	178.57	217.20	158.90	159.26	158.60	163.43
3	-48.15	-51.54	-63.83	-54.20	286.24	295.81	279.66	291.19	233.37	229.25	227.54	230.38
4	-72.54	-74.70	-110.04	-85.61	391.03	396.52	382.26	406.76	301.85	307.03	305.36	303.86
5	-97.80	-95.53	-143.85	-102.81	481.30	495.38	479.76	500.57	381.86	381.44	377.18	376.51
6	-114.02	-119.10	-177.28	-127.25	580.36	595.98	572.81	600.56	457.52	456.88	483.21	451.67
7	-132.42	-136.89	-213.74	-143.72	671.43	697.69	669.50	707.76	535.61	536.11	563.92	527.29
8	-149.11	-151.34	-225.95	-163.94	774.64	799.49	764.46	793.57	611.79	610.09	629.40	603.89
9	-163.68	-169.19	-244.20	-182.28	869.87	893.80	854.95	898.76	687.47	688.24	698.09	682.41
10	-179.28	-184.36	-259.57	-201.53	963.59	986.88	949.07	998.29	765.55	764.66	761.03	760.06

CVP4	SG38T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-40.38	-53.33	-65.32	-50.94	1.52	-0.23	14.02	-4.31	-41.85	-46.33	-46.78	-67.28
1	50.01	46.07	53.72	49.34	-30.94	-32.14	-25.16	-38.22	24.85	20.08	27.02	13.53
2	142.43	138.65	140.73	148.67	-64.37	-68.17	-65.35	-55.24	88.95	85.50	89.37	79.27
3	235.55	230.34	232.68	234.91	-99.96	-103.28	-98.78	-102.73	143.59	147.30	148.26	146.52
4	319.78	318.36	322.63	322.64	-138.39	-136.20	-135.62	-130.73	203.35	200.79	201.72	199.97
5	402.33	401.17	400.35	407.22	-169.53	-170.88	-172.59	-164.30	254.31	251.32	258.64	255.90
6	483.89	483.02	477.22	488.82	-204.76	-206.70	-205.02	-204.14	306.52	304.64	306.43	304.58
7	562.28	560.21	558.50	567.64	-237.62	-241.95	-239.34	-228.84	355.52	354.13	358.19	358.92
8	642.71	637.12	639.95	646.08	-272.51	-275.85	-273.14	-278.79	407.01	404.87	409.67	404.37
9	719.48	712.20	715.52	724.98	-306.41	-307.11	-301.27	-300.08	451.86	450.19	455.74	452.90
10	796.39	790.67	793.14	801.76	-339.20	-343.11	-339.93	-330.81	498.39	499.14	504.69	499.75

CVP4	SG38-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-23.32	-23.73	-46.30	-28.10	13.54	5.53	21.58	-6.06	-18.14	-19.87	-44.73	-45.63
1	23.26	18.86	11.81	26.64	32.26	25.48	36.55	28.88	55.80	67.67	45.55	59.45
2	59.88	64.32	58.40	60.05	76.25	64.66	69.78	69.54	135.59	138.98	131.60	137.82
3	100.71	100.36	101.11	106.06	102.55	99.85	104.42	93.56	209.60	208.57	193.17	209.33
4	141.08	135.06	141.84	139.30	127.79	127.59	127.84	129.41	279.86	280.14	300.36	280.48
5	177.93	181.43	174.19	178.56	166.32	157.80	168.13	157.75	351.44	353.40	374.89	349.93
6	217.77	208.53	207.19	212.09	196.00	187.76	204.20	185.95	423.04	423.64	442.95	419.43
7	248.08	243.80	239.87	246.48	230.12	218.57	240.93	222.43	492.71	492.15	509.04	491.01
8	282.23	278.57	279.50	282.46	261.21	247.13	272.11	251.02	565.64	563.59	582.82	559.85
9	315.34	309.28	311.53	318.06	295.62	283.79	294.70	285.62	630.83	630.46	648.53	628.09
10	350.31	345.13	345.70	352.51	332.15	326.01	339.76	315.55	700.24	701.61	715.22	700.54

CVP4	SG38L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-18.74	2.69	-6.24	-10.86	-10.26	-10.60	-18.00	-1.35	-25.51	-19.22	-34.30	-27.80
1	-14.83	-6.96	-10.57	-15.14	78.63	80.93	73.46	83.51	64.60	74.21	56.41	73.19
2	-21.72	-11.99	-20.49	-21.06	181.18	183.41	168.09	186.88	152.48	153.16	149.99	159.16
3	-31.13	-27.93	-29.20	-31.26	274.84	279.74	265.60	276.66	239.91	233.81	227.47	238.34
4	-42.16	-37.66	-40.34	-46.53	381.05	373.00	363.72	376.85	313.42	320.78	314.96	319.32
5	-57.53	-45.49	-48.77	-54.17	470.78	467.23	457.92	471.22	399.08	400.93	396.19	396.74
6	-65.91	-61.75	-56.69	-67.96	565.40	564.05	547.82	566.74	480.13	478.68	473.43	477.84
7	-76.16	-68.50	-72.20	-74.02	658.33	657.81	640.53	661.98	558.13	557.49	555.22	556.57
8	-89.20	-76.65	-77.66	-87.53	752.08	753.53	727.78	751.24	637.48	637.43	629.24	635.03
9	-97.35	-84.91	-89.35	-97.82	846.05	838.46	809.76	843.69	715.19	716.95	705.63	715.90
10	-107.51	-94.68	-97.74	-111.09	936.09	934.67	907.47	936.98	794.50	793.51	778.56	796.13

CVP4	SG39T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-87.40	-106.05	-119.54	-102.29	10.27	6.49	20.96	2.81	-95.66	-97.99	-107.90	-128.10
1	18.36	15.43	24.80	18.72	-18.37	-21.00	-11.75	-24.26	-2.69	-7.43	-8.24	-14.70
2	125.41	120.69	122.86	135.10	-43.34	-47.71	-47.61	-18.86	76.88	73.42	75.35	68.02
3	224.13	218.98	223.95	226.64	-70.82	-72.72	-70.98	-75.13	135.02	138.74	139.03	138.92
4	313.13	311.06	319.67	317.10	-100.73	-99.69	-99.26	-80.60	194.57	194.18	195.25	193.63
5	397.33	395.17	400.06	403.25	-123.72	-126.03	-125.90	-111.48	244.96	241.81	253.80	248.94
6	478.74	477.57	476.96	485.40	-149.47	-151.51	-149.48	-143.14	295.64	295.58	295.53	295.47
7	555.00	552.69	556.65	561.64	-173.62	-177.64	-174.37	-150.11	341.55	343.92	344.47	348.50
8	632.90	625.73	636.46	638.95	-198.82	-203.39	-197.62	-201.80	391.23	390.44	393.42	392.37
9	703.14	695.40	708.67	713.19	-222.43	-224.35	-222.79	-202.06	434.16	432.22	440.72	437.45
10	775.12	768.36	780.13	785.20	-244.61	-247.44	-245.10	-222.57	474.17	478.60	484.61	481.03

CVP4	SG39-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-61.22	-72.78	-89.13	-71.54	27.31	9.78	30.62	9.03	-61.57	-70.60	-90.64	-102.19
1	10.57	-1.94	-0.16	8.88	43.85	39.11	48.61	39.41	35.62	34.47	27.70	30.95
2	65.94	66.70	61.33	70.69	83.23	71.56	75.55	93.16	129.01	124.94	131.24	125.12
3	120.49	120.77	121.81	129.52	108.00	110.25	111.03	102.27	209.64	203.78	204.68	208.21
4	172.15	166.92	177.58	172.80	140.72	138.12	140.35	152.62	278.29	282.09	285.55	282.91
5	216.74	223.03	222.68	227.93	178.83	171.09	178.95	181.23	362.25	358.05	363.90	358.52
6	265.53	259.47	263.91	269.00	210.13	204.68	214.64	208.58	436.09	429.76	431.52	428.65
7	304.52	303.03	301.23	314.54	244.20	240.49	255.38	260.57	503.23	497.69	495.03	501.38
8	345.60	343.46	352.67	356.69	278.08	270.40	290.45	270.78	576.85	568.75	569.11	569.66
9	386.20	380.32	392.74	399.21	319.09	308.46	314.77	326.38	639.80	632.10	638.97	636.31
10	422.21	422.75	428.99	438.85	356.86	356.23	364.36	362.79	706.65	701.55	708.41	707.06

CVP4	SG39L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	-34.27	-13.80	-39.81	-39.09	1.88	-0.44	1.03	11.77	-30.52	-26.31	-63.11	-50.75
1	-12.37	-8.14	-17.11	-18.58	84.47	86.39	84.27	84.16	62.29	66.51	49.05	65.75
2	-7.59	0.73	-8.15	-12.40	168.14	172.25	160.45	174.49	144.93	145.08	139.32	147.87
3	0.15	2.40	0.66	-4.33	251.62	254.69	247.86	253.00	233.30	228.27	222.88	231.23
4	2.70	6.29	3.46	-4.79	347.42	341.16	338.90	344.00	310.49	312.79	311.91	313.77
5	0.75	12.89	8.79	6.07	427.18	426.88	423.76	430.80	396.26	396.41	394.47	396.21
6	4.36	4.68	11.11	2.18	512.69	513.50	506.19	517.85	475.57	471.79	474.27	477.29
7	5.17	9.17	7.63	8.58	596.51	600.20	591.44	603.93	554.46	548.78	553.21	553.69
8	1.27	11.31	10.19	1.15	684.49	687.49	674.39	686.55	630.64	626.06	627.14	629.13
9	6.23	16.51	6.47	-0.01	769.67	767.37	756.29	770.95	704.50	703.31	697.83	707.44
10	2.66	12.66	12.41	-5.86	852.97	851.42	840.82	856.09	783.76	778.10	771.61	783.71

CVP4	SG40T											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	41.77	25.49	25.07	34.78	-9.55	-12.22	4.65	-19.03	12.63	15.93	14.43	5.55
1	74.45	68.95	65.79	73.86	-24.89	-27.20	-16.17	-29.44	43.32	44.06	36.53	36.04
2	110.43	103.64	101.22	116.03	-34.56	-38.34	-35.71	-26.70	70.90	71.83	67.94	68.36
3	140.75	136.18	137.21	142.36	-46.98	-49.48	-47.41	-51.17	88.05	92.26	87.65	89.18
4	177.28	173.07	176.66	178.87	-62.14	-63.54	-62.60	-52.45	115.25	115.47	113.41	113.48
5	217.62	211.38	212.27	218.32	-75.11	-77.14	-75.20	-70.67	138.99	135.55	141.00	139.58
6	262.72	258.15	250.42	261.76	-89.35	-93.21	-89.99	-86.42	166.37	168.77	160.16	164.25
7	303.99	299.24	295.90	303.03	-103.56	-109.61	-105.46	-96.74	195.03	200.02	189.75	197.28
8	352.89	345.60	344.84	353.10	-119.30	-127.19	-119.41	-121.83	228.29	227.78	220.98	225.77
9	397.67	386.76	391.78	402.59	-137.37	-140.62	-138.16	-129.94	258.03	256.95	254.58	255.01
10	451.17	439.32	439.04	452.59	-154.11	-160.04	-155.42	-146.92	283.83	290.42	283.07	285.72

CVP4	SG40-45											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	41.35	28.87	27.41	39.39	22.56	7.79	27.45	4.46	36.71	31.46	23.46	20.13
1	52.49	38.37	31.43	50.89	42.11	37.38	46.82	39.71	77.27	77.86	66.39	74.76
2	51.21	50.06	40.20	55.28	85.22	75.02	78.96	85.56	124.96	123.90	125.40	124.44
3	50.48	50.44	48.42	59.48	115.91	116.85	115.52	110.22	168.61	163.52	161.56	165.17
4	59.43	52.44	59.38	60.39	152.82	149.54	148.37	158.81	208.78	213.41	212.17	213.78
5	68.38	71.44	67.79	76.65	193.55	186.23	191.67	190.25	269.06	265.66	262.62	264.36
6	87.74	78.93	76.74	86.33	228.45	222.24	228.20	224.96	322.74	319.70	309.18	314.62
7	98.16	94.28	85.87	102.77	266.11	260.81	270.58	271.54	374.79	372.71	356.13	370.13
8	115.14	111.81	111.99	123.24	303.35	293.17	308.63	296.15	433.64	427.70	414.04	425.29
9	133.41	123.51	130.08	144.61	345.33	334.46	333.99	345.20	485.48	479.49	473.05	478.86
10	152.77	149.08	145.05	166.16	385.41	382.44	383.87	381.70	539.82	538.04	531.32	538.28

CVP4	SG40L											
	Load Condition 1a				Load Condition 1b				Load Condition 1c			
Load Step	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2	Air1	Air2	Water1	Water2
0	36.89	47.36	32.50	34.75	16.33	11.27	15.57	20.00	43.89	46.59	22.18	35.68
1	16.25	17.04	-0.01	14.29	89.22	90.17	87.93	88.13	96.14	97.57	76.62	94.50
2	-12.07	-8.35	-17.73	-14.20	167.77	170.02	158.05	170.68	148.57	147.81	144.21	153.49
3	-42.03	-42.71	-42.22	-43.63	248.15	250.39	240.87	247.78	207.75	203.13	198.81	204.64
4	-69.43	-67.01	-65.79	-70.84	338.57	332.20	326.10	334.91	265.45	267.64	260.76	269.14
5	-94.45	-84.71	-82.96	-86.55	416.21	415.09	408.12	417.52	334.13	333.22	324.73	333.23
6	-108.15	-107.74	-100.12	-109.92	498.97	498.24	486.84	502.46	400.22	399.13	389.00	399.94
7	-126.96	-123.08	-119.85	-123.26	581.78	583.24	569.23	585.77	468.71	467.49	456.23	465.30
8	-143.20	-135.12	-128.80	-139.17	669.41	668.44	650.64	668.57	537.26	533.44	519.80	533.07
9	-155.09	-149.59	-140.50	-152.14	752.09	748.46	729.49	750.80	604.05	602.56	585.38	603.45
10	-166.23	-160.90	-160.39	-167.10	833.72	830.87	811.52	832.93	675.05	670.82	656.26	674.76

APPENDIX G—FATIGUE CRACK GROWTH DATA

SUMMARY.

The fatigue crack growth was measured during the constant-amplitude loading, defined by load conditions, are defined in table G-1. The loading rate was 0.2 Hz at an R ratio (minimum load to maximum load) of 0.1. The growth of the lead crack and the multiple cracks was monitored and recorded. All the fatigue crack growth data are provided in the tables in this appendix.

For panels CVP1 and CVP2, the lead crack growth data are provided in table G-2. The crack tip positions measured from the central frame on the right- and left-hand sides of CVP2 are given in tables G-3 and G-4, respectively. For panels CVP3 and CVP4, the lead crack growth data are provided in table G-5. The crack tip positions measured from the central frame on the right- and left-hand sides of CVP4 are given in tables G-6 and G-7, respectively.

TABLE G-1. FATIGUE LOADING CONDITIONS OF PANELS

Panel	Maximum Load			
	Pressure (psi)	Hoop (lb./in)	Frame (lb./in)	Long. (lb./in)
CVP1	10.1	554.6	111.9	333.3
CVP2	10.1	554.6	111.9	333.3
CVP3	8.8	483.2	97.6	875.7
CVP4	8.8	483.2	97.6	875.7

TABLE G-2. LEAD CRACK GROWTH IN PANELS CVP1 AND CVP2

CVP1			CVP2 (Multiple Cracks)		
Cycles	a, right (in)	a, left (in)	Cycle	a, right (in)	a, left (in)
0	3.503	3.540	50	3.528	3.514
645	3.522	3.559	85	3.528	3.535
700	3.525	3.562	200	3.563	3.554
750	3.541	3.576	205	3.567	3.554
800	3.541	3.578	303	3.577	3.556
900	3.547	3.583	400	3.581	3.562
1000	3.563	3.589	500	3.588	3.562
1200	3.558	3.607	600	3.598	3.566
1300	3.577	3.617	801	3.607	3.583
1400	3.590	3.635	1000	3.637	3.608
1503	3.610	3.656	1005	3.638	3.607
1600	3.628	3.656	1200	3.640	3.617
1750	3.628	3.693	1400	3.653	3.632
1900	3.645	3.717	1600	3.668	3.646
2100	3.672	3.752	1817	3.696	3.678
2300	3.711	3.818	2000	3.734	3.705
2500	3.759	3.871	2200	3.799	3.750
2750	3.785	3.947	2400	3.840	3.778
3000	3.829	4.000	2500	3.872	3.814
3250	3.905	4.131	2600	3.917	3.843
3457	3.995	4.326	2800	4.016	3.912
3472	4.016	4.378	2852	4.092	3.929
3477	4.016	4.397	2884	4.196	3.952
3477	4.016	4.653	2888	4.725	3.956
3550	4.048	4.653	2900	4.740	3.962
3650	4.103	4.653	2950	4.758	4.011
3750	4.183	4.653	3000	4.784	4.076
3850	4.257	4.653	3020	4.791	4.123
3890	4.325	4.653	3024	4.791	4.691
3909	4.359	4.653	3102	4.827	4.751
3914	4.387	4.653	3201	4.869	4.808
3914	4.638	4.653	3300	4.928	4.861
4000	4.638	4.653	3400	4.988	4.936
4100	4.638	4.653	3500	5.059	4.988
4200	4.638	4.653	3600	5.130	5.061
4300	4.638	4.653	3700	5.224	5.154
4400	4.638	4.674	3800	5.303	5.249
4500	4.638	4.735	3900	5.491	5.385
4550	4.638	4.762	3940	5.640	5.484
4600	4.638	4.792	3945	5.671	5.496
4700	4.638	4.840	3950	5.703	5.517
4800	4.638	4.895	3958	6.226	5.559

TABLE G-2. LEAD CRACK GROWTH IN PANELS CVP1 AND CVP2 (Continued)

CVP1			CVP2 (Multiple Cracks)		
Cycles	a, right (in)	a, left (in)	Cycle	a, right (in)	a, left (in)
4825	4.660	4.912	3970	6.255	6.188
4900	4.687	4.957	3977	6.268	6.231
5000	4.730	5.041	4001	6.304	6.263
5100	4.775	5.115	4025	6.336	6.299
5200	4.837	5.225	4050	6.378	6.340
5300	4.910	5.305	4110	6.458	6.451
5400	4.995	5.408	4175	6.543	6.577
5500	5.071	5.528	4250	6.667	6.781
5600	5.205	5.696	4283	6.715	7.718
5690	5.256	5.792	4290	6.736	7.760
5707	5.297	5.850	4305	6.792	7.794
5715	5.297	5.914	4312	6.821	7.818
5715	5.297	6.167	4325	6.878	7.846
5800	5.444	6.167	4337	6.908	7.863
5923	5.642	6.167	4349	6.999	7.890
5971	5.774	6.167	4351	7.021	7.890
5983	5.851	6.167	4354	7.787	7.890
5990	5.892	6.167	4360	7.821	7.890
5990	6.144	6.167	4400	7.887	7.945
6045	6.144	6.167	4450	8.010	8.066
6050	6.144	6.185	4470	8.040	8.156
6100	6.144	6.258	4475	8.056	8.168
6150	6.144	6.351	4484	8.081	8.229
6200	6.178	6.429	4500	8.173	8.355
6250	6.289	6.549	4504	8.202	9.273
6300	6.376	6.655	4509	8.279	9.306
6350	6.519	6.808	4515	8.350	9.344
6400	6.647	6.995	4517	8.382	9.344
6425	6.740	7.102	4519	8.428	9.344
6475	6.824	7.267	4520	9.315	9.344
6490	6.912	7.410	4530	9.412	9.405
6490	6.912	7.652	4540	9.513	9.465
6525	7.052	7.652	4550	9.644	9.540
6560	7.264	7.652	4560	9.760	9.635
6569	7.364	7.652	4566	9.890	9.707
6575	7.424	7.652	4568	10.839	9.753
6575	7.667	7.652	4570	10.903	10.821
6600	7.667	7.652	4575	10.947	10.896
6625	7.667	7.652	4580	11.032	10.982
6628	7.667	7.696	4585	11.114	11.050
6650	7.775	7.780	4590	11.202	11.134
6710	8.180	8.122	4595	12.315	11.290
6760	8.565	8.462	4597	12.397	12.288

TABLE G-2. LEAD CRACK GROWTH IN PANELS CVP1 AND CVP2 (Continued)

CVP1		
Cycles	a, right (in)	a, left (in)
6760	8.565	8.462
6785	8.799	8.769
6795	8.902	8.920
6795	9.178	9.167
6800	9.178	9.167
6825	9.178	9.167
6850	9.178	9.167
6875	9.178	9.167
6900	9.178	9.167
6925	9.178	9.167
6950	9.178	9.167
6975	9.204	9.213
7000	9.302	9.351
7050	9.598	9.745
7101	10.256	10.418
7107	10.387	10.416
7107	10.387	10.416
7111	10.405	10.660
7111	10.654	10.660
7120	10.654	10.660
7158	10.718	10.829
7175	10.937	11.181
7200	11.414	11.577
7207	11.622	11.746
7213	11.829	11.917
7213	11.829	12.170
7221	11.923	12.170
7221	12.215	12.170
7230	12.215	12.170
7240	12.215	12.170
7242	12.215	12.216
7268	12.267	12.796

TABLE G-3. RIGHT CRACK TIP POSITION FOR CVP2

Cycle	Lead Crack Right (in)	Rivet 3R		Rivet 4R		Rivet 5R		Rivet 6R		Rivet 7R		Rivet 8R	
		Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip
50	3.528	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
85	3.528	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
200	3.563	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
205	3.567	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
303	3.577	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
400	3.581	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
500	3.588	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
600	3.598	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
801	3.607	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
1000	3.637	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
1005	3.638	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
1200	3.640	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
1400	3.653	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
1600	3.668	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
1817	3.696	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
2000	3.734	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
2200	3.799	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
2400	3.840	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
2500	3.872	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
2600	3.917	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
2800	4.016	4.343	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
2852	4.092	4.326	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
2884	4.196	4.279	4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
2888			4.725	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
2900			4.740	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
2950			4.758	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3000			4.784	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3020			4.792	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3024			4.792	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3102			4.827	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219

TABLE G-3. RIGHT CRACK TIP POSITION FOR CVP2 (Continued)

Cycle	Lead Crack Right (in)	Rivet 3R		Rivet 4R		Rivet 5R		Rivet 6R		Rivet 7R		Rivet 8R	
		Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip
3201			4.869	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3300			4.928	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3400			4.988	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3500			5.059	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3600			5.130	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3700			5.224	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3800			5.303	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3900			5.491	5.841	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3940			5.640	5.798	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3945			5.671	5.774	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3950			5.703	5.748	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3958			5.736	5.734	6.226	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3970			5.782	5.712	6.255	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
3977			5.787	5.709	6.269	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
4001			5.787	5.691	6.304	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
4025			5.797	5.686	6.336	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
4050			5.812	5.678	6.378	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
4110			5.830	5.660	6.458	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
4175			5.835	5.651	6.543	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
4250			5.850	5.650	6.667	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
4283				5.644	6.715	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
4290					6.736	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
4305					6.792	7.285	7.765	8.766	9.248	10.273	10.761	11.843	12.219
4312					6.821	7.277	7.765	8.766	9.248	10.273	10.761	11.843	12.219
4325					6.878	7.269	7.765	8.766	9.248	10.273	10.761	11.843	12.219
4337					6.908	7.268	7.765	8.766	9.248	10.273	10.761	11.843	12.219
4349					6.999	7.208	7.773	8.766	9.248	10.273	10.761	11.843	12.219
4351					7.021	7.185	7.773	8.766	9.248	10.273	10.761	11.843	12.219
4354							7.787	8.766	9.248	10.273	10.761	11.843	12.219
4360							7.821	8.766	9.248	10.273	10.761	11.843	12.219

TABLE G-3. RIGHT CRACK TIP POSITION FOR CVP2 (Continued)

Cycle	Lead Crack Right (in)	Rivet 3R		Rivet 4R		Rivet 5R		Rivet 6R		Rivet 7R		Rivet 8R	
		Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip
4400							7.887	8.766	9.248	10.273	10.761	11.843	12.219
4450							8.010	8.766	9.248	10.273	10.761	11.843	12.219
4470							8.040	8.766	9.248	10.273	10.761	11.843	12.219
4475							8.056	8.766	9.248	10.273	10.761	11.843	12.219
4484							8.081	8.762	9.248	10.273	10.761	11.843	12.219
4500							8.174	8.756	9.248	10.273	10.761	11.843	12.219
4504							8.202	8.745	9.248	10.273	10.761	11.843	12.219
4509							8.279	8.735	9.248	10.273	10.761	11.843	12.219
4515							8.350	8.714	9.248	10.273	10.761	11.843	12.219
4517							8.382	8.712	9.248	10.273	10.761	11.843	12.219
4519							8.428	8.653	9.248	10.273	10.761	11.843	12.219
4520									9.315	10.273	10.761	11.843	12.219
4530									9.413	10.273	10.761	11.843	12.219
4540									9.513	10.273	10.761	11.843	12.219
4550									9.644	10.273	10.761	11.843	12.219
4560									9.760	10.273	10.761	11.843	12.219
4566									9.890	10.227	10.761	11.843	12.219
4568											10.839	11.843	12.219
4570											10.903	11.843	12.219
4575											10.948	11.843	12.219
4580											11.032	11.843	12.219
4585											11.114	11.843	12.219
4590											11.202	11.843	12.219
4595												11.843	12.316
4597													12.398

TABLE G-4. LEFT CRACK TIP POSITION FOR CVP2

Cycle	Lead Crack	Rivet 3L		Rivet 4L		Rivet 5L		Rivet 6L		Rivet 7L		Rivet 8L	
	Left (in)	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip
50	3.514	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
85	3.535	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
200	3.554	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
205	3.554	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
303	3.556	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
400	3.562	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
500	3.562	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
600	3.566	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
801	3.583	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
1000	3.608	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
1005	3.607	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
1200	3.617	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
1400	3.632	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
1600	3.646	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
1817	3.678	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
2000	3.705	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
2200	3.750	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
2400	3.778	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
2500	3.814	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
2600	3.843	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
2800	3.912	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
2852	3.929	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
2884	3.952	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
2888	3.956	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
2900	3.962	4.321	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
2950	4.011	4.314	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3000	4.076	4.312	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3020	4.123	4.285	4.677	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3024			4.691	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3102			4.751	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167

TABLE G-4. LEFT CRACK TIP POSITION FOR CVP2 (Continued)

Cycle	Lead Crack	Rivet 3L		Rivet 4L		Rivet 5L		Rivet 6L		Rivet 7L		Rivet 8L	
	Left (in)	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip
3201			4.808	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3300			4.861	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3400			4.936	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3500			4.988	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3600			5.060	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3700			5.154	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3800			5.249	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3900			5.385	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3940			5.484	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3945			5.495	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3950			5.517	5.812	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3958			5.559	5.804	6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3970					6.188	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
3977					6.231	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
4001					6.263	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
4025					6.299	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
4050					6.340	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
4110					6.451	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
4175					6.577	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
4250					6.781	7.232	7.718	8.747	9.206	10.245	10.716	11.792	12.167
4283							7.718	8.747	9.206	10.245	10.716	11.792	12.167
4290							7.718	8.747	9.206	10.245	10.716	11.792	12.167
4305							7.760	8.747	9.206	10.245	10.716	11.792	12.167
4312							7.794	8.747	9.206	10.245	10.716	11.792	12.167
4325							7.818	8.747	9.206	10.245	10.716	11.792	12.167
4337							7.846	8.747	9.206	10.245	10.716	11.792	12.167
4349							7.863	8.747	9.206	10.245	10.716	11.792	12.167
4351							7.890	8.747	9.206	10.245	10.716	11.792	12.167
4354							7.890	8.747	9.206	10.245	10.716	11.792	12.167
4360							7.890	8.747	9.206	10.245	10.716	11.792	12.167

TABLE G-4. LEFT CRACK TIP POSITION FOR CVP2 (Continued)

Cycle	Lead Crack	Rivet 3L		Rivet 4L		Rivet 5L		Rivet 6L		Rivet 7L		Rivet 8L	
	Left (in)	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip
4400							7.945	8.747	9.206	10.245	10.716	11.792	12.167
4450							8.066	8.747	9.206	10.245	10.716	11.792	12.167
4470							8.156	8.747	9.206	10.245	10.716	11.792	12.167
4475							8.168	8.739	9.206	10.245	10.716	11.792	12.167
4484							8.229	8.728	9.206	10.245	10.716	11.792	12.167
4500							8.355	8.698	9.206	10.245	10.716	11.792	12.167
4504									9.272	10.245	10.716	11.792	12.167
4509									9.305	10.245	10.716	11.792	12.167
4515									9.343	10.245	10.716	11.792	12.167
4517									9.343	10.245	10.716	11.792	12.167
4519									9.343	10.245	10.716	11.792	12.167
4520									9.343	10.245	10.716	11.792	12.167
4530									9.405	10.245	10.716	11.792	12.167
4540									9.464	10.245	10.716	11.792	12.167
4550									9.539	10.245	10.716	11.792	12.167
4560									9.634	10.245	10.716	11.792	12.167
4566									9.706	10.227	10.716	11.792	12.167
4568									9.752	10.178	10.716	11.792	12.167
4570											10.820	11.792	12.167
4575											10.895	11.792	12.167
4580											10.981	11.792	12.167
4585											11.049	11.792	12.167
4590											11.133	11.792	12.167
4595											11.289	11.752	12.167
4597													12.287

TABLE G-5. LEAD CRACK GROWTH IN PANELS CVP3 AND CVP4

CVP3			CVP4 (Multiple Cracks		
Cycles	a, right (in)	a, left (in)	Cycles	a, right (in)	a, left (in)
0	3.498	3.552	0	3.419	3.749
18	3.502	3.555	75	3.419	3.759
50	3.519	3.555	162	3.438	3.778
75	3.521	3.559	200	3.448	3.780
100	3.524	3.559	300	3.453	3.794
150	3.533	3.568	400	3.474	3.806
200	3.539	3.574	500	3.482	3.828
300	3.545	3.581	600	3.493	3.842
400	3.556	3.587	700	3.515	3.863
500	3.566	3.590	800	3.524	3.885
600	3.573	3.602	900	3.540	3.903
700	3.583	3.611	1000	3.554	3.915
800	3.593	3.618	1100	3.564	3.933
1000	3.613	3.634	1200	3.590	3.963
1050	3.622	3.637	1300	3.608	3.985
1200	3.648	3.656	1400	3.631	4.003
1400	3.669	3.670	1500	3.639	4.025
1600	3.689	3.685	1602	3.662	4.046
1800	3.710	3.702	1701	3.675	4.068
2000	3.748	3.723	1800	3.693	4.103
2207	3.773	3.743	1900	3.713	4.131
2400	3.798	3.754	2000	3.743	4.162
2600	3.827	3.768	2075	3.756	4.189
2800	3.851	3.793	2100	3.769	4.205
3000	3.882	3.811	2125	3.772	4.220
3300	3.936	3.847	2150	3.774	4.230
3600	3.993	3.872	2175	3.789	4.251
3800	4.011	3.891	2200	3.800	4.273
4000	4.053	3.896	2225	3.808	4.287
4200	4.102	3.919	2250	3.811	4.326
4400	4.155	3.945	2275	3.821	4.353
4583	4.214	3.974	2300	3.831	4.886
4715	4.263	4.001	2400	3.868	4.899
4800	4.307	4.023	2500	3.917	4.928
4881	4.362	4.044	2600	3.964	4.942
4918	4.424	4.055	2650	4.033	4.946
4918	4.655	4.055	2700	4.086	4.955
5100	4.655	4.117	2712	4.607	4.955
5300	4.655	4.180	2753	4.619	4.973
5500	4.655	4.257	2800	4.634	4.982
5650	4.655	4.302	2901	4.661	4.992
5790	4.655	4.365	3000	4.667	5.016

TABLE G-5. LEAD CRACK GROWTH IN PANELS CVP3 AND CVP4 (Continued)

CVP3			CVP4 (Multiple Cracks)		
Cycles	a, right (in)	a, left (in)	Cycles	a, right (in)	a, left (in)
5925	4.655	4.412	3100	4.687	5.034
6125	4.655	4.446	3200	4.705	5.053
6125	4.655	4.627	3300	4.726	5.067
6250	4.671	4.627	3400	4.751	5.083
6400	4.702	4.627	3500	4.761	5.109
6550	4.748	4.636	3600	4.774	5.126
6575	4.760	4.654	3800	4.814	5.191
6700	4.798	4.689	4000	4.885	5.268
6800	4.834	4.727	4200	4.949	5.314
7000	4.908	4.803	4401	5.011	5.396
7100	4.933	4.821	4600	5.080	5.473
7300	5.011	4.895	4800	5.171	5.550
7508	5.109	4.994	5000	5.244	5.647
7700	5.197	5.064	5100	5.273	5.679
8000	5.331	5.191	5200	5.323	5.762
8254	5.485	5.325	5270	5.341	5.812
8450	5.611	5.439	5308	5.372	5.856
8500	5.626	5.425	5325	5.384	5.882
8750	5.784	5.572	5340	5.387	6.325
8852	5.932	5.637	5375	5.399	6.336
8852	6.164	5.637	5500	5.483	6.360
9045	6.164	5.888	5575	5.555	6.395
9045	6.164	6.119	5600	5.603	6.404
9100	6.164	6.119	5608	5.618	6.408
9200	6.164	6.119	5618	6.035	6.420
9300	6.164	6.119	5651	6.047	6.424
9400	6.164	6.119	5800	6.124	6.479
9627	6.214	6.119	6000	6.181	6.540
9800	6.239	6.119	6100	6.209	6.556
10000	6.291	6.119	6200	6.235	6.572
10250	6.379	6.119	6300	6.265	6.605
10350	6.413	6.137	6400	6.292	6.627
10500	6.482	6.195	6500	6.320	6.661
10750	6.623	6.308	6600	6.361	6.691
11000	6.747	6.413	6800	6.423	6.760
11257	6.880	6.518	7000	6.483	6.826
11500	7.046	6.652	7200	6.528	6.876
11750	7.223	6.782	7400	6.593	6.924
11875	7.319	6.851	7600	6.630	6.957
12012	7.436	6.939	8000	6.731	7.070
12012	7.663	6.939	8400	6.869	7.221
12264	7.663	7.084	8700	6.960	7.294

TABLE G-5. LEAD CRACK GROWTH IN PANELS CVP3 AND CVP4 (Continued)

CVP3			CVP4 (Multiple Cracks)		
Cycles	a, right (in)	a, left (in)	Cycles	a, right (in)	a, left (in)
12500	7.663	7.217	8800	7.014	7.336
12750	7.663	7.333	8900	7.090	7.397
12850	7.663	7.366	8950	7.131	7.439
12850	7.663	7.602	8965	7.150	7.455
12950	7.663	7.602	8975	7.187	7.490
13000	7.663	7.602	9000	7.211	7.509
13100	7.663	7.602	9050	7.226	7.825
13200	7.663	7.602	9100	7.237	7.831
13300	7.663	7.602	9200	7.584	7.849
13400	7.663	7.602	9500	7.584	7.914
13500	7.663	7.602	9750	7.594	7.946
13750	7.663	7.602	10000	7.620	7.970
14000	7.663	7.602	10250	7.625	7.988
14116	7.663	7.602	10500	7.625	8.001
14250	7.663	7.602	10750	7.629	8.025
14500	7.663	7.602	11000	7.629	8.046
14625	7.681	7.602	11410	7.643	8.096
14750	7.690	7.602	11800	7.667	8.146
15000	7.714	7.602	12200	7.701	8.201
15250	7.741	7.602	12600	7.739	8.267
15500	7.773	7.602	13000	7.775	8.309
15750	7.829	7.602	13400	7.812	8.363
16000	7.859	7.602	13800	7.834	8.407
16250	7.916	7.602	14200	7.875	8.456
16500	7.954	7.602	14600	7.915	8.511
16750	8.021	7.624	15000	7.952	8.572
17000	8.062	7.652			
17254	8.101	7.662			
17500	8.148	7.685			
18000	8.245	7.755			
18250	8.285	7.790			
18501	8.355	7.840			
18750	8.415	7.879			
19001	8.464	7.904			
19250	8.509	7.983			
19500	8.570	8.037			
19750	8.638	8.087			
20000	8.719	8.132			
20500	8.876	8.247			
20633	8.973	8.271			
20633	9.193	8.271			

TABLE G-6. RIGHT CRACK TIP POSITIONS FOR PANEL CVP4

Cycles	Lead Crack	Rivet 3R		Rivet 4R		Rivet 5R	
	Right (in)	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip
0	3.142	4.229	4.595	5.761	6.035	7.290	7.584
75	3.142	4.229	4.595	5.761	6.035	7.290	7.584
162	3.161	4.229	4.595	5.761	6.035	7.290	7.584
200	3.171	4.229	4.595	5.761	6.035	7.290	7.584
300	3.176	4.229	4.595	5.761	6.035	7.290	7.584
400	3.197	4.229	4.595	5.761	6.035	7.290	7.584
500	3.205	4.229	4.595	5.761	6.035	7.290	7.584
600	3.216	4.229	4.595	5.761	6.035	7.290	7.584
700	3.237	4.229	4.595	5.761	6.035	7.290	7.584
800	3.247	4.229	4.595	5.761	6.035	7.290	7.584
900	3.263	4.229	4.595	5.761	6.035	7.290	7.584
1000	3.277	4.229	4.595	5.761	6.035	7.290	7.584
1100	3.287	4.229	4.595	5.761	6.035	7.290	7.584
1200	3.313	4.229	4.595	5.761	6.035	7.290	7.584
1300	3.330	4.229	4.595	5.761	6.035	7.290	7.584
1400	3.353	4.229	4.595	5.761	6.035	7.290	7.584
1500	3.362	4.229	4.595	5.761	6.035	7.290	7.584
1602	3.385	4.229	4.595	5.761	6.035	7.290	7.584
1701	3.398	4.229	4.595	5.761	6.035	7.290	7.584
1800	3.415	4.229	4.595	5.761	6.035	7.290	7.584
1900	3.436	4.229	4.595	5.761	6.035	7.290	7.584
2000	3.466	4.229	4.595	5.761	6.035	7.290	7.584
2075	3.479	4.229	4.595	5.761	6.035	7.290	7.584
2100	3.492	4.229	4.595	5.761	6.035	7.290	7.584
2125	3.495	4.229	4.595	5.761	6.035	7.290	7.584
2150	3.497	4.229	4.595	5.761	6.035	7.290	7.584
2175	3.512	4.229	4.595	5.761	6.035	7.290	7.584
2200	3.523	4.229	4.595	5.761	6.035	7.290	7.584
2225	3.531	4.229	4.595	5.761	6.035	7.290	7.584
2250	3.534	4.229	4.595	5.761	6.035	7.290	7.584
2275	3.544	4.229	4.595	5.761	6.035	7.290	7.584
2300	3.554	4.229	4.595	5.761	6.035	7.290	7.584
2400	3.591	4.229	4.595	5.761	6.035	7.290	7.584
2500	3.640	4.220	4.595	5.761	6.035	7.290	7.584
2600	3.687	4.211	4.595	5.761	6.035	7.290	7.584
2650	3.756	4.198	4.595	5.761	6.035	7.290	7.584
2700	3.809	4.166	4.595	5.761	6.035	7.290	7.584
2712			4.608	5.761	6.035	7.290	7.584
2753			4.619	5.761	6.035	7.290	7.584
2800			4.634	5.761	6.035	7.290	7.584
2901			4.661	5.761	6.035	7.290	7.584

TABLE G-6. RIGHT CRACK TIP POSITIONS FOR PANEL CVP4 (Continued)

Cycles	Lead Crack	Rivet 3R		Rivet 4R		Rivet 5R	
	Right (in)	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip	Right Tip
3000			4.667	5.761	6.035	7.290	7.584
3100			4.687	5.761	6.035	7.290	7.584
3200			4.705	5.761	6.035	7.290	7.584
3300			4.726	5.761	6.035	7.290	7.584
3400			4.751	5.761	6.035	7.290	7.584
3500			4.761	5.761	6.035	7.290	7.584
3600			4.774	5.761	6.035	7.290	7.584
3800			4.814	5.761	6.035	7.290	7.584
4000			4.885	5.761	6.035	7.290	7.584
4200			4.949	5.761	6.035	7.290	7.584
4401			5.011	5.761	6.035	7.290	7.584
4600			5.080	5.761	6.035	7.290	7.584
4800			5.171	5.761	6.035	7.290	7.584
5000			5.244	5.761	6.035	7.290	7.584
5100			5.273	5.761	6.035	7.290	7.584
5200			5.323	5.761	6.035	7.290	7.584
5270			5.341	5.761	6.035	7.290	7.584
5308			5.372	5.761	6.035	7.290	7.584
5325			5.384	5.761	6.035	7.290	7.584
5340			5.387	5.761	6.035	7.290	7.584
5375			5.399	5.761	6.035	7.290	7.584
5500			5.483	5.752	6.035	7.290	7.584
5575			5.555	5.746	6.035	7.290	7.584
5600			5.603	5.727	6.035	7.290	7.584
5608			5.618	5.717	6.035	7.290	7.584
5618			5.653	5.701	6.035	7.290	7.584
5651					6.047	7.290	7.584
5800					6.124	7.290	7.584
6000					6.181	7.290	7.584
6100					6.209	7.290	7.584
6200					6.235	7.290	7.584
6300					6.265	7.290	7.584
6400					6.292	7.290	7.584
6500					6.320	7.290	7.584
6600					6.361	7.290	7.584
6800					6.423	7.290	7.584
7000					6.483	7.290	7.584
7200					6.528	7.290	7.584
7400					6.593	7.290	7.584
7600					6.630	7.290	7.584
8000					6.731	7.290	7.584
8400					6.869	7.290	7.584

TABLE G-6. RIGHT CRACK TIP POSITIONS FOR PANEL CVP4 (Continued)

Cycles	Lead Crack	Rivet 3R		Rivet 4R		Rivet 5R	
	Right (in)	Left Tip	Right Tip	Left Tip	Right (in)	Left Tip	Right Tip
8700					6.960	7.290	7.584
8800					7.014	7.277	7.584
8900					7.090	7.265	7.584
8950					7.131	7.246	7.584
8965					7.171	7.226	7.584
8975					7.187	7.219	7.584
9000					7.211	7.204	7.584
9050					7.226	7.188	7.584
9100					7.237	7.178	7.584
9200					7.244	7.171	7.584
9500					7.259	7.165	7.584
9750					7.259	7.164	7.594
10000							7.620
10250							7.625
10500							7.625
10750							7.628
11000							7.629
11410							7.643
11800							7.667
12200							7.701
12600							7.739
13000							7.775
13400							7.812
13800							7.834
14200							7.875
14600							7.915
15000							7.952

TABLE G-7. LEFT CRACK TIP POSITIONS FOR PANEL CVP4

Cycles	Lead Crack Left (in)	Rivet 3L		Rivet 4L		Rivet 5L	
		Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip
0	3.749	4.468	4.868	6.018	6.303	7.524	7.813
75	3.759	4.468	4.868	6.018	6.303	7.524	7.813
162	3.778	4.468	4.868	6.018	6.303	7.524	7.813
200	3.780	4.468	4.868	6.018	6.303	7.524	7.813
300	3.794	4.468	4.868	6.018	6.303	7.524	7.813
400	3.806	4.468	4.868	6.018	6.303	7.524	7.813
500	3.828	4.468	4.868	6.018	6.303	7.524	7.813
600	3.842	4.468	4.868	6.018	6.303	7.524	7.813
700	3.863	4.468	4.868	6.018	6.303	7.524	7.813
800	3.885	4.468	4.868	6.018	6.303	7.524	7.813
900	3.903	4.468	4.868	6.018	6.303	7.524	7.813
1000	3.915	4.468	4.868	6.018	6.303	7.524	7.813
1100	3.933	4.468	4.868	6.018	6.303	7.524	7.813
1200	3.963	4.468	4.868	6.018	6.303	7.524	7.813
1300	3.985	4.468	4.868	6.018	6.303	7.524	7.813
1400	4.003	4.468	4.868	6.018	6.303	7.524	7.813
1500	4.025	4.468	4.868	6.018	6.303	7.524	7.813
1602	4.046	4.468	4.868	6.018	6.303	7.524	7.813
1701	4.068	4.468	4.868	6.018	6.303	7.524	7.813
1800	4.103	4.468	4.868	6.018	6.303	7.524	7.813
1900	4.131	4.456	4.868	6.018	6.303	7.524	7.813
2000	4.162	4.452	4.868	6.018	6.303	7.524	7.813
2075	4.189	4.443	4.868	6.018	6.303	7.524	7.813
2100	4.205	4.443	4.868	6.018	6.303	7.524	7.813
2125	4.220	4.436	4.868	6.018	6.303	7.524	7.813
2150	4.230	4.432	4.868	6.018	6.303	7.524	7.813
2175	4.251	4.418	4.868	6.018	6.303	7.524	7.813
2200	4.273	4.407	4.868	6.018	6.303	7.524	7.813
2225	4.287	4.389	4.868	6.018	6.303	7.524	7.813
2250	4.326	4.369	4.868	6.018	6.303	7.524	7.813
2275	4.353	4.352	4.868	6.018	6.303	7.524	7.813
2300	4.373	4.337	4.886	6.018	6.303	7.524	7.813
2400	4.396	4.318	4.899	6.018	6.303	7.524	7.813
2500	4.413	4.304	4.928	6.018	6.303	7.524	7.813
2600	4.415	4.302	4.942	6.018	6.303	7.524	7.813
2650	4.416	4.301	4.946	6.018	6.303	7.524	7.813
2700	4.420	4.299	4.955	6.018	6.303	7.524	7.813
2712	4.421	4.298	4.955	6.018	6.303	7.524	7.813
2753			4.973	6.018	6.303	7.524	7.813
2800			4.982	6.018	6.303	7.524	7.813
2901	4.430	4.292	4.992	6.018	6.303	7.524	7.813

TABLE G-7. LEFT CRACK TIP POSITIONS FOR PANEL CVP4 (Continued)

Cycles	Lead Crack Left (in)	Rivet 3L		Rivet 4L		Rivet 5L	
		Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip
3000			5.016	6.018	6.303	7.524	7.813
3100			5.034	6.018	6.303	7.524	7.813
3200			5.053	6.018	6.303	7.524	7.813
3300			5.067	6.018	6.303	7.524	7.813
3400			5.083	6.018	6.303	7.524	7.813
3500			5.109	6.018	6.303	7.524	7.813
3600			5.126	6.018	6.303	7.524	7.813
3800			5.191	6.018	6.303	7.524	7.813
4000			5.268	6.018	6.303	7.524	7.813
4200			5.315	6.018	6.303	7.524	7.813
4401			5.396	6.018	6.303	7.524	7.813
4600			5.473	6.018	6.303	7.524	7.813
4800			5.550	6.018	6.303	7.524	7.813
5000			5.647	6.018	6.303	7.524	7.813
5100			5.679	6.018	6.303	7.524	7.813
5200			5.762	6.000	6.303	7.524	7.813
5270			5.812	5.974	6.303	7.524	7.813
5308			5.856	5.950	6.303	7.524	7.813
5325			5.882	5.937	6.303	7.524	7.813
5340			5.904	5.911	6.325	7.524	7.813
5375			5.926	5.897	6.336	7.524	7.813
5500					6.363	7.524	7.813
5575					6.395	7.524	7.813
5600					6.404	7.524	7.813
5608					6.408	7.524	7.813
5618					6.420	7.524	7.813
5651					6.424	7.524	7.813
5800					6.479	7.524	7.813
6000					6.540	7.524	7.813
6100					6.556	7.524	7.813
6200					6.572	7.524	7.813
6300					6.605	7.524	7.813
6400					6.627	7.524	7.813
6500					6.661	7.524	7.813
6600					6.691	7.524	7.813
6800					6.760	7.524	7.813
7000					6.826	7.524	7.813
7200					6.876	7.524	7.813
7400					6.924	7.524	7.813
7600					6.957	7.524	7.813
8000					7.070	7.524	7.813

TABLE G-7. LEFT CRACK TIP POSITIONS FOR PANEL CVP4 (Continued)

Cycles	Lead Crack Left (in)	Rivet 3L		Rivet 4L		Rivet 5L	
		Right Tip	Left Tip	Right Tip	Left Tip	Right Tip	Left Tip
8400					7.221	7.524	7.813
8700					7.294	7.524	7.813
8800					7.336	7.524	7.813
8900					7.397	7.524	7.813
8950					7.439	7.524	7.813
8965					7.479	7.524	7.813
8975					7.490	7.515	7.813
9000					7.509	7.506	7.813
9050					7.538		7.825
9100							7.831
9200							7.849
9500							7.914
9750							7.946
10000							7.970
10250							7.987
10500							8.001
10750							8.025
11000							8.046
11410							8.096
11800							8.146
12200							8.201
12600							8.267
13000							8.309
13400							8.363
13800							8.407
14200							8.456
14600							8.511
15000							8.571

APPENDIX H—BOEING FULL-SCALE FATIGUE TEST RESULTS

Fatigue crack growth data, which was generated by Boeing* for wide-body panels having a radius of 127″, using a full-barrel test fixture, is summarized in this appendix. The initial damage configuration for the Boeing wide-body panels consisted of a two-bay crack in the outer rivet row of a longitudinal lap joint with and without smaller, collinear multiple cracks of length approximately 0.05″. The raw data for the Boeing full-scale test are shown in table H-1 for the a baseline panel containing only a lead crack, test 1, and a second panel containing the same lead crack configuration with the addition of multiple cracks, test 2.

For panel test 1, a 5″ saw cut was made in the central tear strap and the outer rivet row of the skin placed symmetrically across a frame. The lead crack tips terminated at fastener holes. Consequently, no cracks developed after 1170 cycles. Similar phenomena was observed in panel CVP1 after the lead crack grew into a fastener hole, and a number of cycles were required to reform a crack on the opposite side of a hole. For test 1, the lead crack tips were saw cut 0.25″ beyond the fastener holes to a length of 5.71″ and the test was resumed. Stable fatigue crack growth occurred up to 3101 cycles, where the total crack length was 36.91″, at which the fatigue loading was terminated.

For panel test 2, small multiple cracks were saw cut in the outer rivet row of the skin. In addition, a 5″ saw cut was placed symmetrically across a frame in the outer critical rivet row of the skin. The tips of the lead crack extended 0.05″ beyond the fastener holes. Unlike panel test 1, the central tear strap was intact prior to the test for panel test 2. After 281 cycles, no crack growth was observed in panel test 2 and the tear strap was cut to match the initial condition in panel test 1. The test was then resumed. Stable crack growth occurred up to 1231 cycles where the total crack length was 17.20″. At 1233 cycles, dynamic crack extension occurred, where the total crack length was 37.44″, at which the fatigue test was terminated.

To compare the results from panel tests 1 and 2, the data in table H-1 were reduced in this study so that the initial damage configurations and corresponding cycle counts in both panels matched: an initial crack of length 5.71″ with the central tear strap severed. For panel test 1, the cycle count data was shifted by 1171 cycles corresponding to a crack length of 5.71″. For test 2, the cycle count data was shifted by 451 cycles corresponding to a crack length of 5.71″, which was approximated using a linear interpolation. In addition, the final crack lengths used were matched to correspond to stable fatigue crack growth. For panel test 1, the final crack length assumed in the comparison was 17.20″, which was selected to best compare with that in panel test 2, where the final crack length for stable cracking was 17.30″. The reduced data are shown in table H-2 for panel tests 1 and 2.

* Gruber, M.L., Mazur, C.J, Wilkens, K.E., and Worden, R.E., "Investigation of Fuselage Structure Subjected to Widespread Fatigue Damage," DOT/FAA/AR-95/47, 1996.

TABLE H-1. BOEING DATA*

Test 1, Baseline Panel			Test 2, Multiple-Crack Panel		
Cycle No.	Length of New Growth (in)	Total Crack Length (in)	Cycle No.	Length of New Growth (in)	Total Crack Length (in)
0	intact	5.00	0	saw cut in skin only	5.00
6	saw cut in skin and tear strap	5.00	281	tear strap cut	5.00
1172	Saw cut extended	5.72	369	0.63	5.63
1446	0.26	5.98	569	0.22	5.85
1614	0.14	6.12	789	0.25	6.10
1791	0.22	6.34	937	0.28	6.38
1961	0.36	6.70	968	0.2	6.58
2056	0.57	7.27	1111	1.97	8.55
2162	0.42	7.69	1190	2.49	11.03
2309	0.70	8.39	1231	6.18	17.20
2484	0.91	9.30	1233	20.24, dynamic crack extension	37.44
2680	2.45	11.75			
2859	5.55	17.30			
2974	6.97	24.27			
3025	7.97	32.24			
3035	1.54	33.78			
3045	0.53	34.31			
3056	0.36	34.67			
3075	0.32	34.99			
3099	1.72	36.71			
3101	0.20	36.91			

* Gruber, M.L., Mazur, C.J, Wilkens, K.E., and Worden, R.E., "Investigation of Fuselage Structure Subjected to Widespread Fatigue Damage," DOT/FAA/AR-95/47, 1996.

TABLE H-2. REDUCED DATA

Test 1, Baseline Panel		Test 2, Multiple-Crack Panel	
Cycle Number	Total Crack Length (in)	Cycle Number	Total Crack Length (in)
0	5.72	0	5.72
274	5.98	118	5.85
442	6.12	338	6.10
619	6.34	486	6.38
789	6.70	517	6.58
884	7.27	660	8.55
990	7.69	739	11.03
1137	8.39	780	17.20
1312	9.30	782	37.44
1508	11.75		
1687	17.30		
1802	24.27		
1853	32.24		
1863	33.78		
1873	34.31		
1884	34.67		
1903	34.99		
1927	36.71		

APPENDIX I—RESIDUAL STRENGTH DATA

For the residual strength tests, each panel was loaded quasi-statically to failure to measure the crack growth and residual strength. The longitudinal lap joint panels (CVP1 and CVP2) were loaded with internal pressure with reactive hoop and frame loads plus longitudinal stress 50% less than hoop stress. The circumferential butt joint panels (CVP3 and CVP4) were loaded with internal pressure with reactive hoop and frame loads plus longitudinal stress 50% higher than hoop stress. All the residual strength data are provided in the tables of this appendix.

For panels CVP1 and CVP2, the crack growth data for the lead crack are provided in table I-1. The crack tip positions measured from the central frame on the right- and left-hand sides of CVP2 are given in tables I-2 and I-3, respectively. For panels CVP3 and CVP4, the crack growth data for the lead crack are provided in table I-4. The crack tip positions measured from the central frame on the right- and left-hand sides of CVP4 are given in tables I-5 and I-6, respectively.

TABLE I-1. LEAD CRACK LENGTH FROM RESIDUAL STRENGTH TEST OF LONGITUDINAL LAP JOINT PANELS CVP1 AND CVP2

CVP1			CVP2 (Multiple Cracks)		
Pressure (psi)	a, right (in)	a, left (in)	Pressure (psi)	a, right (in)	a, left (in)
0.00	12.240	12.710	0.00	12.362	12.320
1.00	12.240	12.710	1.00	12.362	12.320
2.00	12.240	12.710	2.00	12.362	12.320
3.00	12.240	12.710	3.00	12.362	12.320
4.00	12.240	12.710	4.00	12.362	12.320
5.00	12.240	12.710	5.00	12.362	12.320
6.00	12.240	12.710	6.00	12.362	12.320
7.00	12.240	12.710	7.00	12.362	12.320
7.50	12.240	12.760	7.50	12.362	12.320
8.00	12.240	12.760	8.00	12.466	12.456
8.50	12.260	12.940	8.25	12.466	12.456
9.00	12.470	13.640	8.44	14.033	14.142
9.50	12.470	13.640	8.58	19.918	21.447
10.00	13.710	13.980	8.58	20.035	21.525
10.25	18.600	19.650	8.60	21.373	22.885
11.00	20.100	21.870	8.83	21.459	23.112
11.14	33.630	33.380	8.83	21.553	24.445
			9.02	23.020	26.002
			9.16	34.625	38.125

TABLE I-2. RIGHT CRACK TIP POSITION FOR PANEL CVP2

Press. (psi)	Lead Crack Right (in)	Rivet 9R		Rivet 10R		Rivet 11R		Rivet 12R		Rivet 13R		Rivet 14R		Rivet 15R		Rivet 16R		Rivet 17R		Rivet 18R	
		Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right
0.00	12.36	13.34	13.69	14.86	15.13	16.35	16.64	17.86	18.14	19.35	19.62	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
1.00	12.36	13.34	13.69	14.86	15.13	16.35	16.64	17.86	18.14	19.35	19.62	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
2.00	12.36	13.34	13.69	14.86	15.13	16.35	16.64	17.86	18.14	19.35	19.62	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
3.00	12.36	13.34	13.69	14.86	15.13	16.35	16.64	17.86	18.14	19.35	19.62	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
4.00	12.36	13.34	13.69	14.86	15.13	16.35	16.64	17.86	18.14	19.35	19.62	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
5.00	12.36	13.34	13.69	14.86	15.13	16.35	16.64	17.86	18.14	19.35	19.62	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
6.00	12.36	13.34	13.69	14.86	15.13	16.35	16.64	17.86	18.14	19.35	19.62	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
7.00	12.36	13.34	13.69	14.86	15.13	16.35	16.64	17.86	18.14	19.35	19.62	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
7.50	12.36	13.34	13.69	14.86	15.13	16.35	16.64	17.86	18.14	19.35	19.62	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
8.00	12.47	13.34	13.69	14.86	15.13	16.35	16.64	17.86	18.14	19.35	19.62	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
8.25	12.47	13.34	13.69	14.86	15.13	16.35	16.64	17.86	18.14	19.35	19.62	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
8.44	13.02	13.02	14.03	14.86	15.13	16.35	16.64	17.86	18.14	19.35	19.62	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
8.58			14.59	14.59	16.06	16.06	17.54	17.54	19.08	19.08	19.92	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
8.58											20.03	20.84	21.10	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
8.60											20.54	20.54	21.37	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
8.83													21.46	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
8.83													21.55	22.34	22.61	23.83	24.11	25.33	25.60	26.82	27.08
9.02													22.03	22.03	23.02	23.83	24.11	25.33	25.60	26.82	27.08
9.16															23.47	23.47	24.96	24.96	26.44	26.44	34.63

TABLE I-3. LEFT CRACK TIP POSITION FOR PANEL CVP2

Press. (psi)	Lead Crack Left (in)	Rivet 9L		Rivet 10L		Rivet 11L		Rivet 12L		Rivet 13L		Rivet 14L		Rivet 15L		Rivet 16L		Rivet 17L		Rivet 18L	
		Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left
0.00	12.32	13.31	13.70	14.86	15.16	16.37	16.65	17.87	18.15	19.35	19.65	20.85	21.14	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
1.00	12.32	13.31	13.70	14.86	15.16	16.37	16.65	17.87	18.15	19.35	19.65	20.85	21.14	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
2.00	12.32	13.31	13.70	14.86	15.16	16.37	16.65	17.87	18.15	19.35	19.65	20.85	21.14	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
3.00	12.32	13.31	13.70	14.86	15.16	16.37	16.65	17.87	18.15	19.35	19.65	20.85	21.14	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
4.00	12.32	13.31	13.70	14.86	15.16	16.37	16.65	17.87	18.15	19.35	19.65	20.85	21.14	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
5.00	12.32	13.31	13.70	14.86	15.16	16.37	16.65	17.87	18.15	19.35	19.65	20.85	21.14	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
6.00	12.32	13.31	13.70	14.86	15.16	16.37	16.65	17.87	18.15	19.35	19.65	20.85	21.14	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
7.00	12.32	13.31	13.70	14.86	15.16	16.37	16.65	17.87	18.15	19.35	19.65	20.85	21.14	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
7.50	12.32	13.31	13.70	14.86	15.16	16.37	16.65	17.87	18.15	19.35	19.65	20.85	21.14	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
8.00	12.46	13.31	13.70	14.86	15.16	16.37	16.65	17.87	18.15	19.35	19.65	20.85	21.14	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
8.25	12.46	13.31	13.70	14.86	15.16	16.37	16.65	17.87	18.15	19.35	19.65	20.85	21.14	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
8.44	13.00	13.00	14.14	14.86	15.16	16.37	16.65	17.87	18.15	19.35	19.65	20.85	21.14	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
8.58			14.53	14.53	16.07	16.04	17.55	17.55	19.02	19.02	20.49	20.50	21.45	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
8.58													21.52	22.34	22.63	23.83	24.11	25.31	25.60	26.82	27.10
8.60													21.97	21.97	22.88	23.83	24.11	25.31	25.60	26.82	27.10
8.83															23.11	23.83	24.11	25.31	25.60	26.82	27.10
8.83															23.47	23.47	24.45	25.31	25.60	26.82	27.10
9.02																	24.92	24.92	26.00	26.82	27.10
9.16																			26.42	26.42	38.13

TABLE I-4. LEAD CRACK GROWTH DURING RESIDUAL STRENGTH TESTS OF CIRCUMFERENTIAL LAP JOINT PANELS CVP3 AND CVP4

CVP3, Run 1			CVP3, Run 2			CVP3, Run 3			CVP4 (Multiple Cracks)		
Press. (psi)	a, Right (in)	a, Left (in)	Press. (psi)	a, Right (in)	a, Left (in)	Press. (psi)	a, Right (in)	a, Left (in)	Press. (psi)	a, Right (in)	a, Left (in)
0.00	9.618	9.557	0.00	10.664	10.878	0.00	11.074	12.604	0.00	9.365	9.600
1.76	9.618	9.557	4.20	10.664	10.878	4.20	11.074	12.604	2.00	9.365	9.600
3.52	9.618	9.557	8.40	10.664	10.878	12.60	11.074	12.604	4.00	9.365	9.600
5.28	9.618	9.557	12.60	10.664	10.878	14.70	11.074	12.604	6.00	9.365	9.600
6.16	9.618	9.557	14.70	10.664	10.878	15.75	11.074	12.604	8.00	9.365	9.600
7.04	9.618	9.557	15.75	10.664	10.878	16.27	11.074	12.604	10.00	9.365	9.600
7.92	9.618	9.557	16.27	10.664	10.878	16.80	11.074	12.604	12.00	9.365	9.600
8.80	9.618	9.557	16.80	10.664	10.878	17.32	11.102	12.656	14.00	9.365	9.600
9.24	9.618	9.557	17.32	10.664	10.878	17.85	14.015	13.509	15.00	9.365	9.600
9.68	9.618	9.557	17.85	10.664	10.878	17.85	14.015	13.908	16.00	9.365	9.600
10.12	9.618	9.557	18.38	10.664	10.878	17.85	14.236	14.638	17.00	9.365	9.600
10.56	9.618	9.557	18.38	10.824	11.177	17.33	14.314	15.035	18.00	9.365	9.684
11.00	9.618	9.557	18.38	10.824	11.920				18.25	9.365	9.684
11.44	9.618	9.557	18.38	10.824	12.254				18.50	9.365	9.684
11.88	9.618	9.557	17.85	10.824	12.505				18.75	9.436	9.697
12.32	9.618	9.557	18.38	11.074	12.604				19.00	9.436	9.697
12.76	9.618	9.557							19.25	9.436	9.697
13.20	9.750	9.583							19.50	9.436	9.697
13.64	9.750	9.583							19.75	9.436	9.697
13.73	9.750	9.583							20.00	10.736	11.061
14.08	9.750	9.583							20.25	10.736	11.061
14.43	9.788	9.625							20.50	10.736	11.144
14.78	9.788	9.625							20.75	Failure	Failure
15.14	9.788	9.625									
15.49	9.788	9.625									
15.84	9.834	9.719									
16.19	9.834	9.719									
16.68	10.049	10.127									
16.47	10.095	10.426									
16.47	10.095	10.664									
17.74	10.188	10.664									
17.95	10.429	10.741									
17.95	10.664	10.741									
18.37	10.664	10.802									
19.14	10.664	10.878									

TABLE I-5. RIGHT CRACK TIP POSITION FOR PANEL CVP4

Press. (psi)	Lead Crack Right (in)	Rivet 7R		Rivet 8R		Rivet 11R		Rivet 12R		Rivet 13R		Rivet 14R	
		Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right
0.00	9.365	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
2.00	9.365	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
4.00	9.365	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
6.00	9.365	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
8.00	9.365	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
10.00	9.365	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
12.00	9.365	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
14.00	9.365	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
16.00	9.365	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
17.00	9.365	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
18.00	9.365	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
18.25	9.365	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
18.50	9.365	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
18.75	9.436	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
19.00	9.436	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
19.25	9.436	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
19.50	9.436	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
19.75	9.436	10.209	10.465	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
20.00	9.925	9.925	10.736	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
20.25			10.736	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
20.50			10.736	11.700	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
20.75			10.736	11.600	11.971	13.207	13.485	14.869	15.154	16.336	16.592	17.844	18.092
20.75			11.366	11.366	12.762	12.762	14.510	14.510	15.846	15.846	17.386	17.386	Failure

TABLE I-6. LEFT CRACK TIP POSITION FOR PANEL CVP4

Press. (psi)	Lead Crack Left (in)	Rivet 7L		Rivet 8L		Rivet 11L		Rivet 12L		Rivet 13L		Rivet 14L	
		Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left
0.00	9.600	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
2.00	9.600	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
4.00	9.600	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
6.00	9.600	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
8.00	9.600	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
10.00	9.600	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
12.00	9.600	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
14.00	9.600	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
16.00	9.600	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
17.00	9.600	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
18.00	9.684	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
18.25	9.684	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
18.50	9.684	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
18.75	9.697	10.517	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
19.00	9.697	10.453	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
19.25	9.697	10.450	10.795	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
19.50	9.697	10.437	10.852	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
19.75	9.697	10.420	10.855	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
20.00	10.117	10.117	11.061	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
20.25			11.061	12.031	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
20.50			11.144	11.955	12.305	13.533	13.831	14.944	15.225	16.611	16.839	18.090	18.334
20.75			11.604	11.604	13.115	13.116	14.476	14.476	16.065	16.065	17.656	17.656	Failure

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