

LEVEL

AFWAL-TR-81-3058

AD A109585

CATEGORIZATION OF ATMOSPHERIC TURBULENCE
IN TERMS OF AIRCRAFT RESPONSE FOR USE IN
TURBULENCE REPORTS AND FORECASTS



Structural Integrity Branch
Structures and Dynamics Division

(12) 146

November 1981

Final Report for Period January 1979 - February 1980

Approved for public release; distribution unlimited.

DTIC FILE COPY

FLIGHT DYNAMICS LABORATORY
AIR FORCE WRIGHT AERONAUTICAL LABORATORIES
AIR FORCE SYSTEMS COMMAND
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

5

392662

DTIC
ELECTE
S JAN 13 1982 D
A

32 01 13 068

NOTICE

When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture use, or sell any patented invention that may in any way be related thereto.

This report has been reviewed by the Office of Public Affairs (ASD/PA) and is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations.

This technical report has been reviewed and is approved for publication.

Elijah W. Turner

ELIJAH W. TURNER
Project Engineer
Structural Integrity Branch

Davey L. Smith

Davey L. Smith, Chief
Structural Integrity Branch

FOR THE COMMANDER

Ralph L. Kuster

RALPH. L. KUSTER, Col, USAF
Chief, Structures and Dynamics Division

"If your address has changed, if you wish to be removed from our mailing list, or if the addressee is no longer employed by your organization please notify _____, W-PAFB, OH 45433 to help us maintain a current mailing list".

Copies of this report should not be returned unless return is required by security considerations, contractual obligations, or notice on a specific document.

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER AFWAL-TR-81-3058	2. GOVT ACCESSION NO. AD-A109585	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) CATEGORIZATION OF ATMOSPHERIC TURBULENCE IN TERMS OF AIRCRAFT RESPONSE FOR USE IN TURBULENCE REPORTS AND FORECASTS		5. TYPE OF REPORT & PERIOD COVERED Final Report January 1979-February 1980
7. AUTHOR(s) Elijah W. Turner Jackie C. Sims, Lt, USAF Ardy White, Lt, USAF		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Flight Dynamics Laboratory (AFWAL/FIBE) Air Force Wright Aeronautical Laboratories (AFSC) Wright-Patterson AFB, Ohio 45433		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS Flight Dynamics Laboratory(FIB) Air Force Wright Aeronautical Laboratories (AFSC) Wright-Patterson AFB, Ohio 45433		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 75007210
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE November 1981
		13. NUMBER OF PAGES 151
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE N/A
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Gusts Response prediction Turbulence Subsonic Aircraft Supersonic Response Transonic Flight Safety		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report describes a method of calculating the gust sensitivity of conventional aircraft and presents gust sensitivity values for a total of 69 military and civilian aircraft. Gust sensitivity is presented in terms of the vertical load factor response of aircraft per foot per second discrete gust. The information is intended to permit organizations engaged in the forecasting of atmospheric turbulence to properly take into consideration the capability of particular aircraft to operate safely in various turbulence levels.		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 85 IS OBSOLETE

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

20. ABSTRACT (Cont'd)

The basis for calculating the gust sensitivity is the so called "gust loads formula" which is a single degree of freedom mathematical model of the aircraft excited by a one-minus-cosine shaped wave form of 25 chord wave length. An empirical equation is used to calculate the aircraft normal force coefficient over the subsonic, transonic, and supersonic airspeed range.



FOREWORD

This report was prepared by Elijah W. Turner (AFWAL/FIBE), Aerospace Engineer in the Loads and Response Prediction Group of the Structures and Dynamics Division, and by Lt. Andy White and Lt. Jackie C. Sims, both in the Staff Meteorology Office, all being in the Flight Dynamics Laboratory at Wright-Patterson Air Force Base, Ohio. The work was conducted under Project 7500, Program Element 92iA to support Air Weather Service, Headquarters, Scott Air Force Base, Illinois in their effort to forecast turbulence.

This is a final report covering work accomplished between 1 January 1979 and 29 February 1980.

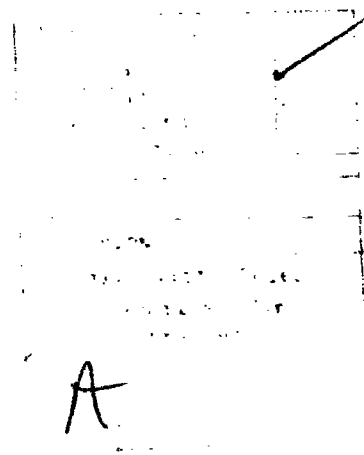


TABLE OF CONTENTS

SECTION	PAGE
I INTRODUCTION	1
II AIRCRAFT RESPONSE TO TURBULENCE	3
1. Atmospheric Turbulence Models	3
2. Aerodynamic Models of Aircraft	4
III TECHNICAL APPROACH	5
1. Implications of Gust Loads Formula	6
2. Gust Amplitude Variation with Aircraft Size	7
3. Lift Curve Slope	9
4. Gust Alleviation Factor	11
5. Airspeed	18
a. Calibrated Airspeed	19
b. Equivalent Airspeed	20
IV INDIVIDUAL AIRCRAFT RESPONSE CALCULATIONS	22
V CONCLUSIONS AND RECOMMENDATIONS	56
REFERENCES	58
APPENDIX A: LIFT CURVE SLOPE VS MACH NUMBER FROM EMPIRICAL EQUATION FOR VARIOUS AIRCRAFT	59
APPENDIX B: PLOTS OF GUST SENSITIVITY VERSUS CALIBRATED AIRSPEED FOR VARIOUS AIRCRAFT	102

LIST OF ILLUSTRATIONS

FIGURE		PAGE
1.	Effect of Aspect Ratio on Lift Curve Slope of Unswept Wings from Empirical Equation	12
2.	Effect of Aspect Ratio on Lift Curve Slope of Swept Wings from Empirical Equation	13
3.	Effect of Sweep on Lift Curve Slope of High Aspect Ratio Wings from Empirical Equation	14
4.	Effect of Sweep on Lift Curve Slope of Low Aspect Ratio Wings from Empirical Equation	15
5.	Effect of Taper Ratio on Lift Curve Slope of High Aspect Ratio Swept Wings from Empirical Equation	16
6.	Portion of Subsonic and Supersonic Equations Contributing to Gust Alleviation Factor	18
7.	U_{de} vs Δn_z for Various Values of Gust Sensitivity	24
8.	A-7 Lift Curve Slope Vs Mach Number from Empirical Equation	60
9.	A-10 Lift Curve Slope Vs Mach Number from Empirical Equation	61
10.	B-52 Lift Curve Slope Vs Mach Number from Empirical Equation	61
11.	BAC 1-11 (200) Lift Curve Slope Vs Mach Number from Empirical Equation	62
12.	BAC 1-11 (400) Lift Curve Slope Vs Mach Number from Empirical Equation	63
13.	Beech V35B Lift Curve Slope Vs Mach Number from Empirical Equation	64
14.	Beech E55 Lift Curve Slope Vs Mach Number from Empirical Equation	64
15.	Beech E90 Lift Curve Slope Vs Mach Number from Empirical Equation	64
16.	Boeing 707-300 Lift Curve Slope Vs Mach Number from Empirical Equation	65
17.	Boeing 727 Lift Curve Slope Vs Mach Number from Empirical Equation	65

LIST OF ILLUSTRATIONS (Cont'd)

FIGURE		PAGE
18.	Boeing 737 Lift Curve Slope Vs Mach Number from Empirical Equation	66
19.	Boeing 747 Lift Curve Slope Vs Mach Number from Empirical Equation	67
20.	Boeing 747-SP Lift Curve Slope Vs Mach Number from Empirical Equation	67
21.	C-5A Lift Curve Slope Vs Mach Number from Empirical Equation	68
22.	C-9 Lift Curve Slope Vs Mach Number from Empirical Equation	69
23.	C-130 Lift Curve Slope Vs Mach Number from Empirical Equation	70
24.	C-141 Lift Curve Slope Vs Mach Number from Empirical Equation	71
25.	Cessna 150 Lift Curve Slope Vs Mach Number from Empirical Equation	72
26.	Cessna 172 Lift Curve Slope Vs Mach Number from Empirical Equation	73
27.	Cessna 175 Lift Curve Slope Vs Mach Number from Empirical Equation	73
28.	Cessna 180 Lift Curve Slope Vs Mach Number from Empirical Equation	74
29.	Cessna 182 Lift Curve Slope Vs Mach Number from Empirical Equation	74
30.	Cessna 205 Lift Curve Slope Vs Mach Number from Empirical Equation	75
31.	Cessna 210 Lift Curve Slope Vs Mach Number from Empirical Equation	75
32.	Cessna 310 Lift Curve Slope Vs Mach Number from Empirical Equation	76
33.	Cessna 401, 402 Lift Curve Slope Vs Mach Number from Empirical Equation	76

LIST OF ILLUSTRATIONS (Cont'd)

FIGURE		PAGE
34.	Convair 440, 330 Lift Curve Slope Vs Mach Number from Empirical Equation	77
35.	DC-8-50, 61 Lift Curve Slope Vs Mach Number from Empirical Equation	78
36.	DC-8-62, 63 Lift Curve Slope Vs Mach Number from Empirical Equation	78
37.	DC-9-10 Lift Curve Slope Vs Mach Number from Empirical Equation	79
38.	DC-9-30, 40, 50 Lift Curve Slope Vs Mach Number from Empirical Equation	80
39.	DC-10-10 Lift Curve Slope Vs Mach Number from Empirical Equation	81
40.	DC-10-20 Lift Curve Slope Vs Mach Number from Empirical Equation	81
41.	F-4 Lift Curve Slope Vs Mach Number from Empirical Equation Compared with Test Data	82
42.	F-15 Lift Curve Slope Vs Mach Number from Empirical Equation	83
43.	F-16 Lift Curve Slope Vs Mach Number from Empirical Equation	83
44.	F-106 Lift Curve Slope Vs Mach Number from Empirical Equation	83
45.	F-111 @ 16° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation	84
46.	F-111 @ 26° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation	85
47.	F-111 @ 50° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation	86
48.	F-111 @ 72° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation	86
49.	Falcon 10 Lift Curve Slope Vs Mach Number from Empirical Equation	87

LIST OF ILLUSTRATIONS (Cont'd)

FIGURE		PAGE
50.	Falcon 50 Lift Curve Slope Vs Mach Number from Empirical Equation	87
51.	FB-111 @ 16° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation	88
52.	FB-111 @ 26° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation	89
53.	FB-111 @ 50° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation	90
54.	FB-111 @ 72° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation	91
55.	Fan Jet Falcon (FJF) 20 C, D, E Lift Curve Slope Vs Mach Number from Empirical Equation	92
56.	KC-135 Lift Curve Slope Vs Mach Number from Empirical Equation	93
57.	Lear Jet 23, 24, 25 Lift Curve Slope Vs Mach Number from Empirical Equation	94
58.	Lear Jet 36 Lift Curve Slope Vs Mach Number from Empirical Equation	94
59.	SR-71 Lift Curve Slope Vs Mach Number from Empirical Equation	95
60.	T-34 Lift Curve Slope Vs Mach Number from Empirical Equation	96
61.	T-37 Lift Curve Slope Vs Mach Number from Empirical Equation	97
62.	T-38 Lift Curve Slope Vs Mach Number from Empirical Equation	98
63.	T-39A Lift Curve Slope Vs Mach Number from Empirical Equation	98
64.	T-41 Lift Curve Slope Vs Mach Number from Empirical Equation	99
65.	VC-140 Lift Curve Slope Vs Mach Number from Empirical Equation	99

LIST OF ILLUSTRATIONS (Cont'd)

FIGURE		PAGE
66.	O-2 Lift Curve Slope Vs Mach Number from Empirical Equation	100
67.	OV-10 Lift Curve Slope Vs Mach Number from Empirical Equation	100
68.	U-2 Lift Curve Slope Vs Mach Number from Empirical Equation	101
69.	Gust Sensitivity of A-7	103
70.	Gust Sensitivity of A-10	104
71.	Gust Sensitivity of B-52	105
72.	Gust Sensitivity of C-5A	106
73.	Gust Sensitivity of C-9	107
74.	Gust Sensitivity of C-130	108
75.	Gust Sensitivity of C-141	109
76.	Gust Sensitivity of F-4	110
77.	Gust Sensitivity of F-15	111
78.	Gust Sensitivity of F-16	112
79.	Gust Sensitivity of F-106	113
80.	Gust Sensitivity of F-111 @ 16° Sweep	114
81.	Gust Sensitivity of F-111 @ 26° Sweep	115
82.	Gust Sensitivity of F-111 @ 50° Sweep	116
83.	Gust Sensitivity of F-111 @ 72° Sweep	117
84.	Gust Sensitivity of FB-111 @ 16° Sweep	118
85.	Gust Sensitivity of FB-111 @ 26° Sweep	119
86.	Gust Sensitivity of FB-111 @ 50° Sweep	120
87.	Gust Sensitivity of FB-111 @ 72° Sweep	121
88.	Gust Sensitivity of KC-135	122

LIST OF ILLUSTRATIONS (Concluded)

FIGURE		PAGE
89.	Gust Sensitivity of SR-71	123
90.	Gust Sensitivity of T-34	124
91.	Gust Sensitivity of T-37 and A-37	125
92.	Gust Sensitivity of T-38 and F-5	126
93.	Gust Sensitivity of T-39A	127
94.	Gust Sensitivity of O-2 and T-41	128
95.	Gust Sensitivity of OV-10	129
96.	Gust Sensitivity of U-2	130

LIST OF TABLES

TABLE	PAGE
1 Turbulence Reporting Criteria	2
2 Gust Sensitivity for Various Aircraft at Typical Flight Conditions	25
3 Gust Sensitivity of A-7	27
4 Gust Sensitivity of A-10	28
5 Gust Sensitivity of B-52	29
6 Gust Sensitivity of C-5A	30
7 Gust Sensitivity of C-9	31
8 Gust Sensitivity of C-130	32
9 Gust Sensitivity of C-141	33
10 Gust Sensitivity of F-4	34
11 Gust Sensitivity of F-15	35
12 Gust Sensitivity of F-16	36
13 Gust Sensitivity of F-106	37
14 Gust Sensitivity of F-111 @ 16° Sweep	38
15 Gust Sensitivity of F-111 @ 26° Sweep	39
16 Gust Sensitivity of F-111 @ 50° Sweep	40
17 Gust Sensitivity of F-111 @ 72° Sweep	41
18 Gust Sensitivity of FB-111 @ 16° Sweep	42
19 Gust Sensitivity of FB-111 @ 26° Sweep	43
20 Gust Sensitivity of FB-111 @ 50° Sweep	44
21 Gust Sensitivity of FB-111 @ 72° Sweep	45
22 Gust Sensitivity of KC-135	46
23 Gust Sensitivity of SR-71	47
24 Gust Sensitivity of T-34	48

LIST OF TABLES (Concluded)

TABLE		PAGE
25	Gust Sensitivity of T-37 and A-37	49
26	Gust Sensitivity of T-38 and F-5	50
27	Gust Sensitivity of T-39A	51
28	Gust Sensitivity of T-41	52
29	Gust Sensitivity of O-2	53
30	Gust Sensitivity of OV-10	54
31	Gust Sensitivity of U-2	55

LIST OF SYMBOLS

AR	Aspect ratio
$\bar{c}$	Mean aerodynamic chord
$C_{L\alpha}$	Lift curve slope
g	Acceleration due to gravity
K_g	Gust alleviation factor
M	Mach number
M^*	Critical Mach number
n	Normal load factor
P	Pitot static pressure
P_o	Sea level static pressure
P_t	Pitot total pressure
S	Wing reference area
t	Time
U_{de}	Derived gust velocity
V	Aircraft true airspeed
V_A	True speed of sound
V_c	Calibrated airspeed
V_e	Equivalent airspeed
$V_g(t)$	Equivalent vertical gust velocity
V_g	Maximum equivalent vertical gust velocity
V_i	Instrument indicated airspeed
V_I	Instrument indicated airspeed corrected for instrument errors
W	Aircraft gross weight
$\Lambda_{.5\bar{c}}$	Sweep angle of 50% chord line
Δ	Incremental value

LIST OF SYMBOLS (Concluded)

γ	Specific heat ratio c_p/c_v
λ	Taper ratio
μ	Airplane mass ratio
π	3.14...
ρ	Density of air at flight altitude
ρ_0	Density of air at sea level
σ	Air density ratio

SECTION I

INTRODUCTION

Atmospheric turbulence is categorized as light, moderate, severe, and extreme. Each category is defined in terms which can be perceived by the pilot in terms of effects on the aircraft and objects in the aircraft. USAF Air Weather Service uses these categories when forecasting turbulence intensity for aircraft operations. The description of each category is presented in Table 1, which is reprinted from the Airman's Information Manual, Part 1. The significant aspect of these descriptions is that they are highly dependent on individual aircraft response characteristics.

With respect to flight safety, the effect of turbulence on the aircraft and pilot is considered to be the important aspect and not the turbulence intensity itself. In an effort to improve flight safety, USAF Air Weather Service identified a need to take into account the particular aircraft response characteristics in forecasting turbulence. Two particular applications are intended: (1) pilot reports of turbulence received from one type of aircraft are to be used to predict how the pilot of another type of aircraft will perceive the same turbulence, and (2) Air Weather Service is to present forecasted turbulence in a manner that will allow individual preflight briefers to interpret the turbulence in terms of the anticipated response of each particular aircraft type.

This report describes a method of determining the response of aircraft to turbulence and presents vertical load factor response as a function of derived gust velocity for a variety of aircraft. These results are intended to provide Air Weather Service with a method of easily determining aircraft response to a given intensity of turbulence. Methods of predicting turbulence intensity from geographic and meteorological data are not included.

TABLE 1 TURBULENCE REPORTING CRITERIA

TURBULENCE REPORTING CRITERIA			
INTENSITY	AIRCRAFT REACTION	REACTION INSIDE AIRCRAFT	REPORTING TERM-DEFINITION
Light	Turbulence that momentarily causes slight, erratic changes in altitude and/or attitude (pitch, roll, yaw). Report as <i>Light Turbulence</i> .*	Occupants may feel a slight strain against seat belts or shoulder straps. Unsecured objects may be displaced slightly. Food service may be conducted and little or no difficulty is encountered in walking.	Occasional - Less than 1/3 of the time.
	or Turbulence that causes slight, rapid and somewhat rhythmic bumpiness without appreciable changes in altitude or attitude. Report as <i>Light Chop</i> .		Intermittent - 1/3 to 2/3.
Moderate	Turbulence that is similar to Light Turbulence but of greater intensity. Changes in altitude and/or attitude occur but the aircraft remains in positive control at all times. It usually causes variations in indicated airspeed. Report as <i>Moderate Turbulence</i> .*	Occupants feel definite strains against seat belts or shoulder straps. Unsecured objects are dislodged. Food service and walking are difficult.	NOTE 1. Pilots should report location(s), time (GMT), intensity, whether in or near clouds, altitude, type of aircraft and, when applicable, duration of turbulence. 2. Duration may be based on time between two locations or over a single location. All locations should be readily identifiable. EXAMPLES: a. Over Omaha, 1232Z, Moderate Turbulence, in cloud, Flight Level 310, B707. b. From 50 miles south of Albuquerque to 30 miles north of Phoenix, 1210Z to 1250Z, occasional Moderate Chop, Flight Level 330, DC8.
	or Turbulence that is similar to Light Chop but of greater intensity. It causes rapid bumps or jolts without appreciable changes in aircraft altitude or attitude. Report as <i>Moderate Chop</i> .		
Severe	Turbulence that causes large, abrupt changes in altitude and/or attitude. It usually causes large variations in indicated airspeed. Aircraft may be momentarily out of control. Report as <i>Severe Turbulence</i> .*	Occupants are forced violently against seat belts or shoulder straps. Unsecured objects are tossed about. Food service and walking are impossible.	
Extreme	Turbulence in which the aircraft is violently tossed about and is practically impossible to control. It may cause structural damage. Report as <i>Extreme Turbulence</i> .*		

* High level turbulence (normally above 15,000 feet ASL) not associated with cumulonimbus cloudiness, including thunderstorms, should be reported as CAT (clear air turbulence) preceded by the appropriate intensity, or light or moderate chop.

SC/AMS Meeting 7/67

SC/AMS Meeting 7/67

SECTION II

AIRCRAFT RESPONSE TO TURBULENCE

There are a variety of procedures for calculating aircraft response to turbulence. They differ in the amount of effort required, and the accuracy generally increases with the complexity of the procedure. All of the procedures have in common the requirements for a mathematical model of the turbulence and a mathematical model of the aircraft. These two aspects are discussed to provide insight into the reason for adopting the particular technical approach in this report.

1. ATMOSPHERIC TURBULENCE MODELS

Both discrete and statistical turbulence models are currently used in aircraft design. Normally the simplest conservative model available is used unless the results indicate that the aircraft is gust critical. Gust critical aircraft warrant the use of a more precise gust model to prevent overdesign which tends to increase weight and decrease performance. Of the discrete gust models, the smoothly varying one-minus-cosine is considered to be a fairly realistic although idealized waveform. This waveform is in use today as well as actual measured time histories of gust velocity of particular interest. A one-minus-cosine gust with a wavelength of 25 times the mean aerodynamic chord normally produces the highest center of gravity vertical load factor for a given maximum vertical gust velocity. The gust velocity of a one-minus-cosine gust is:

$$V_g(t) = \frac{1}{2} V_g \left[1 - \text{Cosine} \left(\frac{2\pi V_e t}{25\bar{c}} \right) \right]$$

where:

- π = 3.14159...
- V_e = Equivalent airspeed of aircraft
- $\bar{c}$ = Mean aerodynamic chord
- t = Time
- V_g = Maximum vertical gust velocity
- $V_g(t)$ = Vertical gust velocity

There are a variety of statistical models for turbulence, the least complex of which is the Power Spectral Density (PSD) model. The PSD model assumes that turbulence is a stationary random process with mean square gust amplitudes given by a spectral function. The important aspect of the PSD gust model is that all frequencies of turbulence are represented, not just a single frequency as is the case with the one-minus-cosine gust. This becomes an advantage only if the aerodynamic model of the aircraft realistically predicts the response of the real aircraft as a function of frequency.

Other statistical models for turbulence drop either one or both of the assumptions that turbulence is stationary and Gaussian. These models are important in the analysis of aircraft response in turbulence fields whose statistical properties are rapidly varying and/or whose gust amplitudes do not follow a normal distribution. It is equally important (possibly more so) that the aerodynamic model for the aircraft be very realistic in order to gain any advantage from this more complex model of turbulence.

2. AERODYNAMIC MODELS OF AIRCRAFT

Mathematical models for the aircraft increase in complexity with the number of degrees of freedom (DOF). Vertical translation is the most important degree of freedom for analyzing aircraft response to turbulence and is always included. Pitch is the second most important degree of freedom and is included in analyses involving two or more degrees of freedom. For analysis of turbulence in the vertical plane, those degrees of freedom numbering more than two are usually flexible modes of vibration for the aircraft structure. The motion of the aircraft is represented by a linear sum of the motion of the aircraft in each of the degrees of freedom. The various combinations of aircraft and turbulence models that could effectively be used in this analysis are:

1. One-minus-cosine gust, single DOF aircraft
2. One-minus-cosine gust, two DOF aircraft
3. Power spectral gust, two DOF aircraft
4. Power spectral gust, multi-DOF aircraft

SECTION III

TECHNICAL APPROACH

The most accurate approach to this problem would be to utilize the power spectral density technique (PSD) with a multi-degree of freedom aircraft. However, such an analysis is computationally more difficult than other approaches that may provide sufficient accuracy for the intended application. Thus the selected approach in this report is to utilize the so called "gust loads formula" that has been used successfully in design since about 1952. This formula gives the maximum vertical load factor response of a one degree of freedom aircraft to a one-minus-cosine gust whose wavelength is 25 times the mean aerodynamic chord and whose maximum amplitude is U_{de} . The gust loads formula is:

$$\Delta n = U_{de} \left[\frac{K_g \rho_0 V_e C_{L\alpha}}{2 \frac{l}{S}} \right]$$

where:

Δn = Maximum incremental center of gravity vertical load factor due to gust

$K_g = 0.88 \mu / (5.3 + \mu)$ = gust alleviation factor for subsonic speed

$= \mu^{1.03} / (6.95 + \mu^{1.03})$ = gust alleviation factor for supersonic speed

$\mu = 2 (W/S) / (\rho \bar{c} C_{L\alpha} g)$ = airplane mass ratio

U_{de} = Derived gust velocity

ρ = Density of air at flight altitude

ρ_0 = Density of air at sea level

W = Aircraft gross weight

S = Wing reference area

$\bar{c}$ = Mean aerodynamic chord

g = Acceleration due to gravity

V_e = Equivalent airspeed

$C_{L\alpha}$ = Aircraft lift curve slope at flight condition

This approach requires that categories of turbulence intensities be defined in terms of aircraft incremental vertical load factor response. Such a definition appears in the FORECASTING GUIDE ON TURBULENCE INTENSITY.

Light	0.2	<	$ \Delta n $	$\leq$	0.5
Moderate	0.5	<	$ \Delta n $	$\leq$	1.0
Severe	1.0	<	$ \Delta n $	$\leq$	2.0
Extreme	2.0	<	$ \Delta n $		

The assumption is made that flight safety is related more to the load factor response of the aircraft than it is to the actual gust intensity. This is considered a reasonable assumption. Aircraft with high wing and power loadings can safely operate in turbulence levels that would be dangerous for other aircraft, particularly light aircraft.

1. IMPLICATIONS OF GUST LOADS FORMULA

The gust loads formula serves to relate the peak accelerations due to gust to be expected on a given airplane to the peak accelerations measured on another airplane for flight through the same rough air. The underlying concept is that a measured acceleration increment may be used to derive an effective gust velocity which in turn is used to calculate the acceleration on another airplane by reversing the process. The derived effective gust velocity, U_{de} is not, therefore, a direct physical quantity but is rather a gust-load transfer factor definable in terms of the formula. The gust alleviation factor, K_g , is a semi-empirical factor intended to account for the reduction in lift due to a number of factors. One of these factors is the motion of the aircraft in pitch and vertical translation. During the initial gust encounter, the aircraft pitches into the gust and translates with the gust. Both of these motions tend to decrease the angle of attack of the gust and thus alleviate the load factor. The motion of the aircraft in pitch is known to be a function of the aerodynamic pitching moment characteristics and the mass moment of inertia in pitch of the aircraft, neither of which are factors in the gust loads formula. Therefore the correction made using the factor K_g implies that on all aircraft the acceleration is affected by the motion of the aircraft to about the same degree; this assumption being reasonable

only for conventional aircraft having satisfactory flying qualities. This method is not suitable for all airplane configurations.

For a one-minus-cosine gust, the critical wavelength is approximately 25 times the length of the mean aerodynamic chord, $25 \bar{c}$. The critical wavelength is the wavelength that results in the highest acceleration for a given amplitude gust. Wavelengths significantly less than $25 \bar{c}$ do not provide sufficient travel into the gust for circulation to become fully developed about the wing; thus the lift is not a maximum. At wavelengths significantly greater than $25 \bar{c}$, sufficient time is available for aircraft motion in pitch and vertical translation to decrease the angle of attack of the gust. Thus the critical wavelength is bounded and occurs in the range of $25 \bar{c}$.

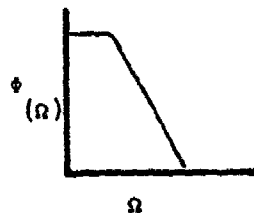
2. GUST AMPLITUDE VARIATION WITH AIRCRAFT SIZE

Use of the gust loads formula implies that turbulence contains gusts of the critical length for each aircraft, and that the amplitudes of the critical gusts are the same. This assumption is not entirely satisfactory when two aircraft of significantly different size are compared.

Consider the spectral content of turbulence. One of the best models for atmospheric turbulence is the von Karman spectrum:

$$\phi(\Omega) = \frac{\sigma^2 L}{\pi} \frac{1 + \frac{8}{3} (1.339 L \Omega)^2}{[1 + (1.339 L \Omega)^2]^{11/6}}$$

This formula describes how the average mean square gust amplitude, ϕ , varies with respect to spacial frequency, Ω . For a given scale of turbulence, L , and a given rms gust intensity, σ , the von Karman spectral equation has the following shape on a log normal plot:



The von Karman spectra shows a constant -5/3 slope after a knee in the curve. Whereas the gust wavelength, λ , is the inverse of the spacial frequency, Ω , the gust wavelengths associated with the constant slope portion of the curve include all values less than 10,000 feet. Hence, the critical gust for all aircraft of practical consideration are associated with the constant slope portion of the curve.

It can be shown that the presence of the constant -5/3 slope implies that on a statistical basis there is a relation between gust amplitude, h , and wavelength, λ . This relation is:

$$\frac{h_2}{h_1} = \sqrt[3]{\frac{\lambda_2}{\lambda_1}}$$

Substituting the critical gust length of $\lambda = 25\bar{c}$ for two different aircraft indicated by subscripts 1 and 2 gives the following equation:

$$\frac{h_2}{h_1} = \sqrt[3]{\frac{\bar{c}_2}{\bar{c}_1}}$$

Hence, for flight through turbulence having a von Karman spectral distribution, the larger aircraft is expected to encounter critical wavelength gusts of higher amplitude than the smaller aircraft. The ratio of the gust amplitudes is the cube root of the ratio of the mean aerodynamic chords of the two aircraft. Consider, for example, the largest and the smallest aircraft for which gust sensitivity is given in this report:

C-5A	$\bar{c} = 30.93$ feet
Cessna 172	$\bar{c} = 4.87$ feet

The ratio of the critical gust amplitudes is:

$$\frac{h_{C-5A}}{h_{Cessna\ 172}} = \sqrt[3]{\frac{30.93}{4.87}} = 1.85$$

The variation in the amplitude of critical gust with aircraft size has been taken into account by presenting gust amplitudes referenced to an aircraft of a particular size. A mean aerodynamic chord length of 12 feet was selected as being a median value of the aircraft considered in this report. The amplitude of the critical gust for each aircraft, U_{de} , is given in terms of the reference critical gust velocity, U_R , by the following equation:

$$U_{de} = U_R \sqrt[3]{\frac{c}{12}}$$

Substituting the right hand side of the foregoing equation into the gust loads formula gives:

$$\Delta n = U_R \sqrt[3]{\frac{c}{12}} \frac{K_g \rho_o V_e C_{L\alpha}}{2 \frac{W}{S}}$$

The coefficient of U_R is the gust sensitivity presented in this report:

$$\text{Gust Sensitivity} = \sqrt[3]{\frac{c}{12}} \frac{K_g \rho_o V_e C_{L\alpha}}{2 \frac{W}{S}}$$

3. LIFT CURVE SLOPE

In order to evaluate the gust loads formula, a value of the lift curve slope is required. During the detail design of an aircraft, aeroelastic analyses and wind tunnel tests provide aerodynamic data required for loads and performance calculations. This includes sufficient data to define the slope of the normal force coefficient, referred to as the lift curve slope. However, this data is too voluminous to be efficiently used in this report and it is not readily available for the large number of aircraft to be considered in this report. Therefore, empirical equations originally developed for use in preliminary design were used to define the lift curve slope as a continuous function over the subsonic, transonic and supersonic Mach number range in terms of the following parameters:

M	Mach number
AR	Aspect ratio

- $\Lambda_{.5c}$ Sweep angle of the 50% chord line of the wing
 λ Taper ratio of wing, equal to tip chord divided by root chord

One equation is used to cover the subsonic range up to a particular Mach number called the "critical Mach number" and another equation is used to cover the higher Mach number range. The so called critical Mach number, M^* , is given by:

$$M^* = M_0^* + (1 - M_0^*) (1 - \cos \Lambda_{.5c})^2$$

where:

$$M_0^* = (10 + 0.91 AR^3)/(10 + AR^3)$$

For Mach numbers less than or equal to the critical Mach number, the slope of the lift curve, $C_{L\alpha}$, is given by:

$$C_{L\alpha} = C_{L\alpha_1}$$

where

$$C_{L\alpha_1} = \frac{\pi AR}{1 + \sqrt{1 + ABS \left[(1 - \cos \Lambda_{.5c})^{4/3} (M/M^*)^{8/3} (AR/2 \cos \Lambda_{.5c})^2 \right]}}$$

For Mach numbers greater than or equal to M^* , $C_{L\alpha}$ is given by:

$$C_{L\alpha} = \frac{1}{\left(\frac{1}{C_{L\alpha_1}} \right) \left(\frac{M^*}{M} \right)^2 + \frac{B}{4}}$$

where:

$$Z = M^* C_{La_1} + \frac{AR^2}{\left(\frac{3\pi AR}{C_{La_1}}\right)\left(\frac{\pi AR}{C_{La_1}} - 1\right) (\cos \Lambda_{.5c})^{2/3}}$$

$$\beta = (M - M^*) [1 + (M^*/M)^y]^2$$

$$y = \frac{1 + \pi AR}{3 + \pi AR} \left(2 - \frac{2}{3} \lambda - \lambda^2\right)$$

The foregoing equations were taken from Reference 1. The equations were evaluated for various combinations of Mach number, aspect ratio, taper ratio, and wing sweep. The results are presented in Figures 1 through 5 to demonstrate the reasonableness of the equations. Some anomalies are apparent. For example, in Figure 2 the plot for $AR = 9$ and $AR = 2$ have a reasonable shape whereas the plot for $AR = 5$ has discontinuities in the slope of the curve. However, the values of the curves, including the curve for $AR = 5$ are considered to be reasonable considering the purpose for which the equations were derived. The piece-wise continuous appearance is the result of the particular curve fitting used in assembling the equations. More precise empirical equations could be derived, but such work is beyond the scope of this report. The value of lift curve slope given by the equations was checked for two aircraft. The F-4E was evaluated between Mach numbers 0.70 and 1.80 (See Figure 41). The maximum error given by the equations when compared with test data was 15% at Mach number 1.8. The average error was 9%. The Boeing 707-100 was evaluated at Mach number 0.85 and the error was 12%.

4. GUST ALLEVIATION FACTOR

The gust alleviation factor accounts for the reduction in load factor due to aircraft motion in pitch and vertical translation and also the reduction in lift due to the finite time required for lift to develop on

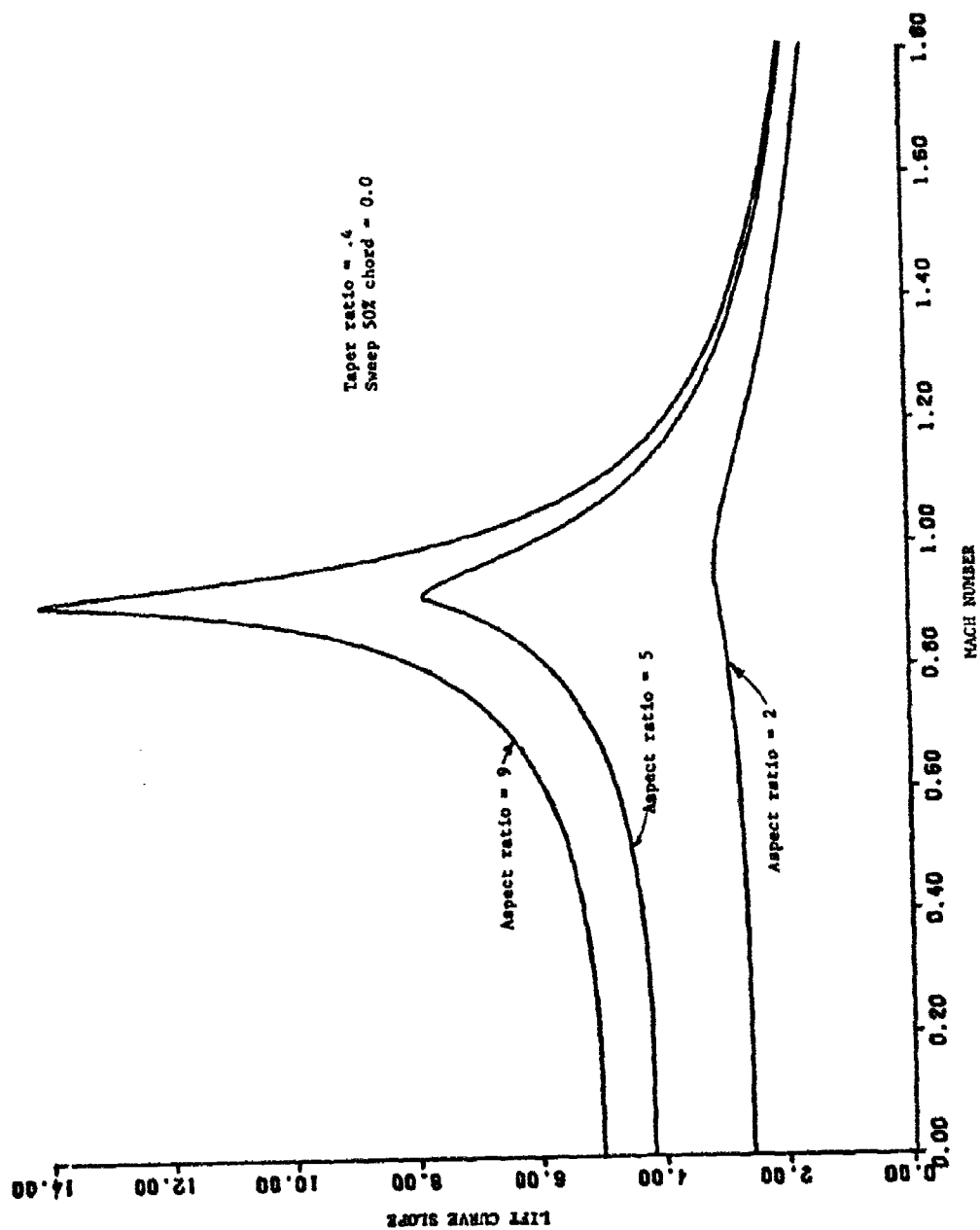


Figure 1. Effect of Aspect Ratio on Lift Curve Slope of Unswept Wings from Empirical Equation

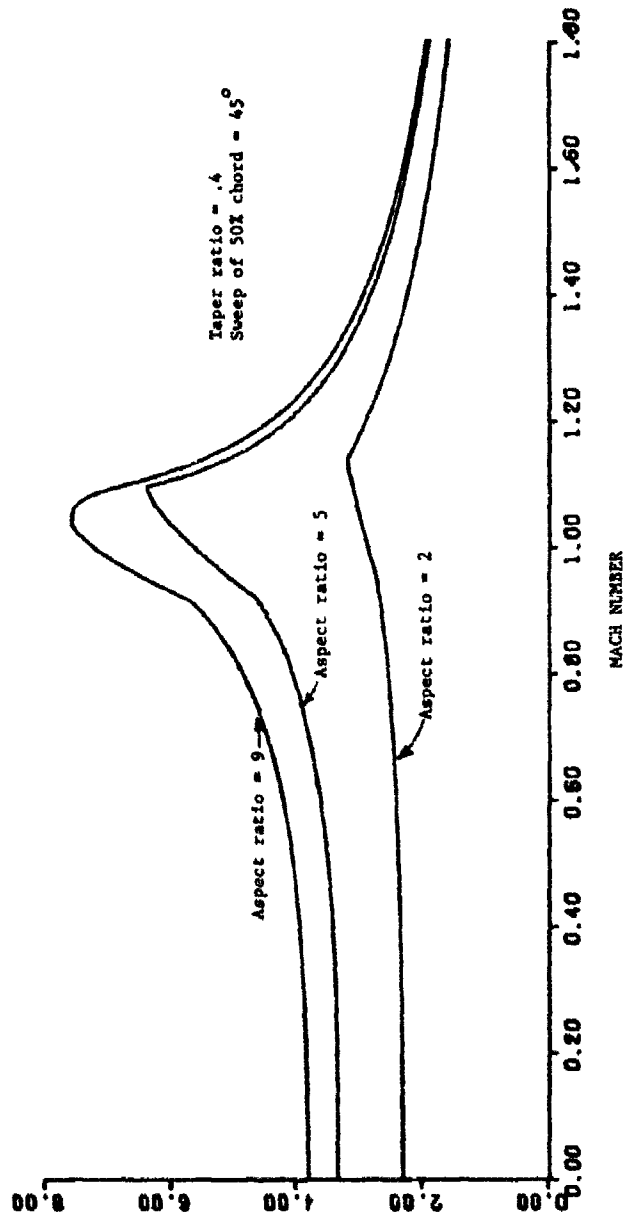


Figure 2. Effect of Aspect Ratio on Lift Curve Slope of Swept Wings from Empirical Equation

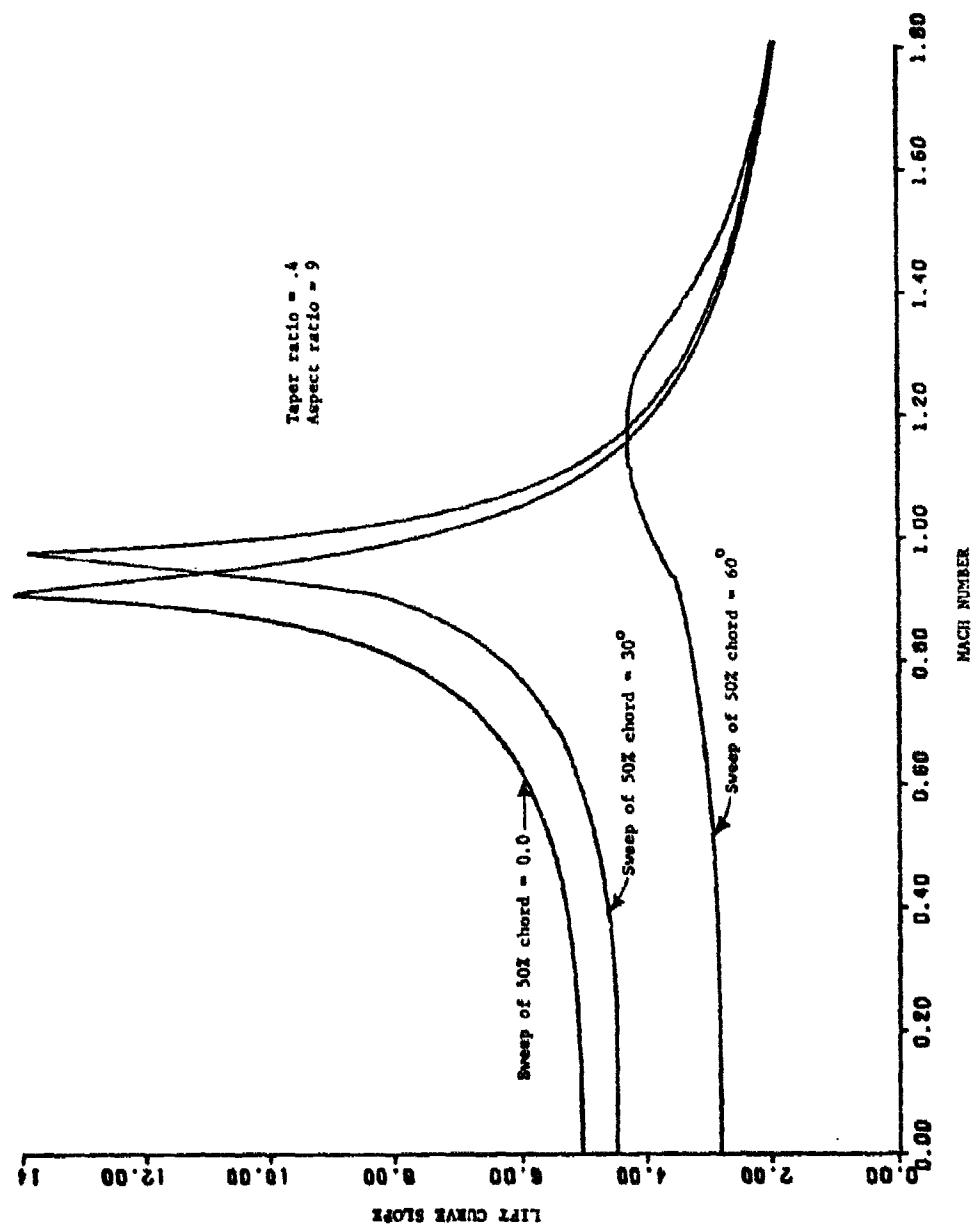


Figure 3. Effect of Sweep on Lift Curve Slope of High Aspect Ratio Wings from Empirical Equation

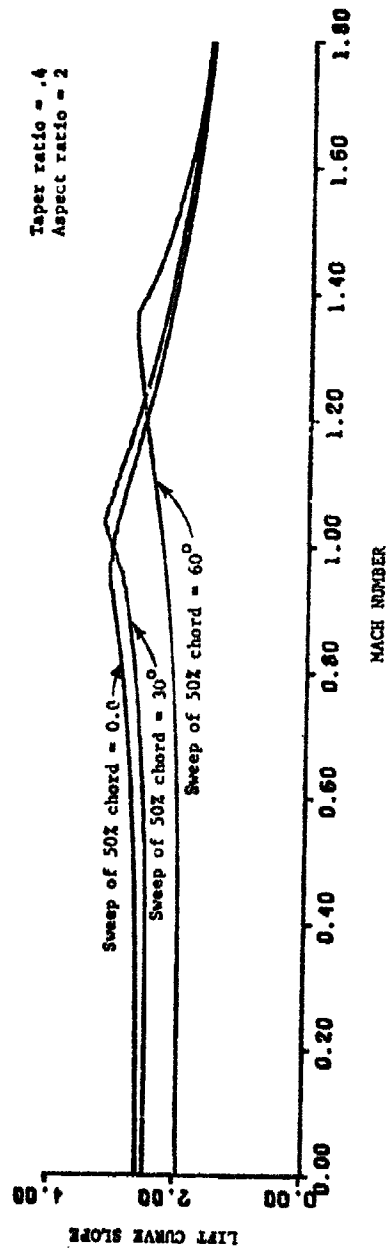


Figure 4. Effect of Sweep on Lift Curve Slope of Low Aspect Ratio Wings from Empirical Equation

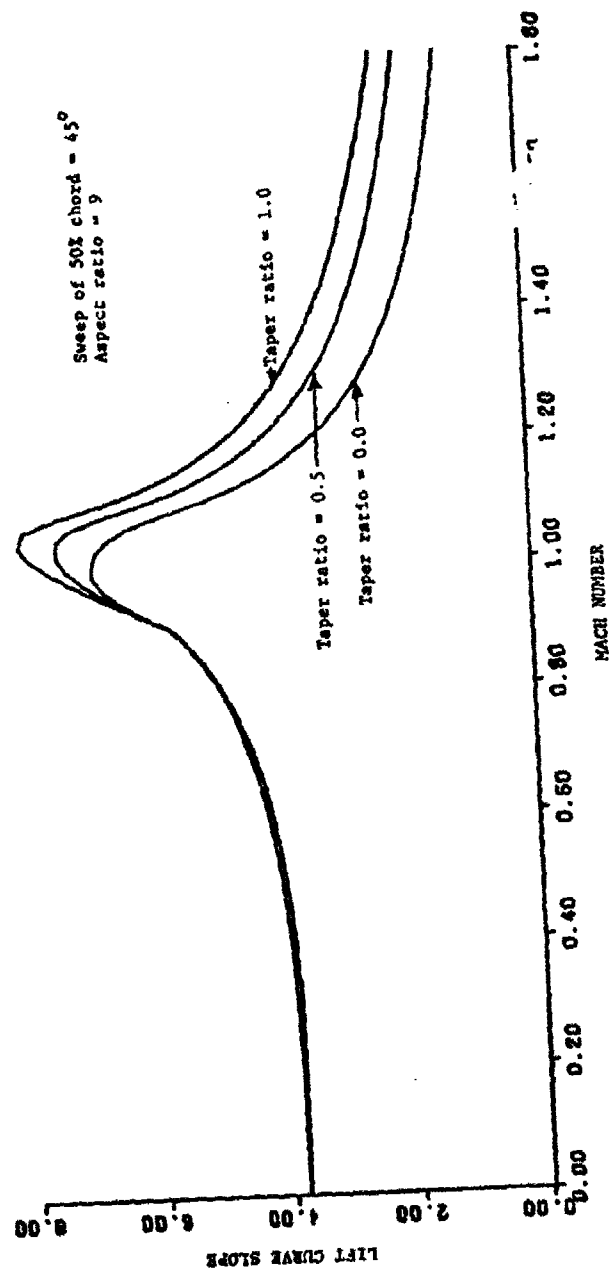


Figure 5. Effect of Taper Ratio on Lift Curve Slope of High Aspect Ratio Swept Wings from Empirical Equation

a wing following gust encounter (lift growth). Two expressions for K_g closely approximate the alleviation for subsonic flow and for supersonic flow respectively:

$$K_g = \frac{0.88\mu}{5.3 + \mu} \quad \text{SUBSONIC}$$

$$K_g = \frac{\mu^{1.03}}{6.95 + \mu^{1.03}} \quad \text{SUPERSONIC}$$

The alleviation for subsonic and supersonic flow differ by up to 11 percent, depending on the aircraft mass ratio, μ . Neither of the expressions were developed with the intension of using them in the transsonic flow regime.

The objective of this report, however, requires analysis over the entire speed range of the various aircraft, including the transsonic range. In an effort to remove the discontinuity in the subsonic and supersonic expressions that occurs at Mach 1, the value of K_g was made to transition smoothly from the subsonic value to the supersonic value beginning 0.2 below the critical Mach number and ending 0.2 above the critical Mach number. Although there is no analytical basis for the form of the transition that was used, it is considered reasonable for this application because: (1) the magnitude of the discontinuity is small, and (2) flow about a wing normally begins to deviate from subsonic flow at approximately 0.2 below the critical Mach number as shock waves begin to form on the upper surface of the wing, and the flow is normally fully supersonic by 0.2 above the critical Mach number.

The following equations were used in the transition:

$$\theta = \frac{M - M^* + 0.2}{0.4} \pi$$

If $\theta < 0.0$, then let $\theta = 0.0$

If $\theta > \pi$, then let $\theta = \pi$

Therefore:

$$0.0 \leq \theta \leq \pi$$

$$K_g = K_{g\text{SUBSONIC}} \left(\frac{1 + \cos \theta}{2} \right) + K_{g\text{SUPERSONIC}} \left(\frac{1 - \cos \theta}{2} \right)$$

Figure 6 indicates the portions of the subsonic and the supersonic equations contributing to the value of K_g used in calculating the values of gust sensitivity presented in this report. The sum of the portions is identically one.

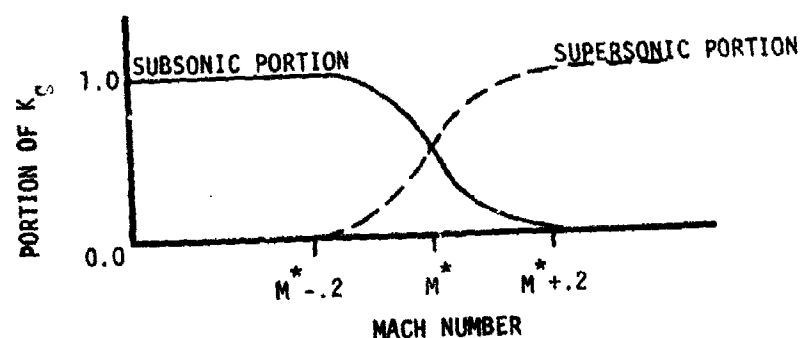


Figure 6. Portion of Subsonic and Supersonic Equations Contributing to Gust Alleviation Factor

5. AIRSPEED

There are a variety of different airspeeds, each of which is important from a different aspect. Since this report concerns both the engineering and operational aspects of aircraft, it is important to define a number of airspeeds and show how they are related.

V_i is the instrument indicated airspeed which is read by the pilot. It is uncorrected for position error. It includes the sea level standard adiabatic compressible flow correction in the calibration of the airspeed instrument dial.

V_I is the instrument indicated airspeed corrected for instrument error only. It is abbreviated IAS and is related to V_i by the following expression:

$$V_I = V_i + \Delta V_i$$

Where ΔV_i is the instrument error correction

V_C is calibrated airspeed and is equal to the airspeed indicator reading corrected for position and instrument error. The abbreviation for this airspeed is CAS and the equation relating V_C and V_I is:

$$V_C = V_I + \Delta V_p$$

Where ΔV_p is the position error correction.

V_e is the equivalent airspeed and is equal to the airspeed indicator reading corrected for position error, instrument error, and for adiabatic compressible flow for the particular altitude. The abbreviation for this airspeed is EAS and the relationship between V_C and V_e is:

$$V_e = V_C - \Delta V_c$$

Where ΔV_c is the compressibility correction.

V is true airspeed. It is related to V_e by the following:

$$V = V_e / \sqrt{\alpha}$$

Where α is the density ratio ρ/ρ_0 .

a. Calibrated Airspeed

The position error ΔV_p and the instrument error ΔV_i are small quantities which can vary from one aircraft to another. It is therefore not possible to account for these errors in this report. The tables in this report are presented in terms of calibrated airspeed, V_C . For modern aircraft with sensitive airspeed indicators, there is no significant loss of accuracy in neglecting position and instrument errors at normal flight speeds. It is suggested that indicated airspeed and calibrated be considered approximately equal:

$$V_i \approx V_C$$

For those rare circumstances when an aircraft is known to have significant position and/or instrument errors, they may be taken into account by the following equation:

$$V_c = V_i + \Delta V_i + \Delta V_p$$

3. EQUIVALENT AIRSPEED

The response of an aircraft to turbulence is directly proportional to the equivalent airspeed. Determination of gust sensitivity for various values of calibrated airspeed therefore requires the calculation of equivalent airspeed from calibrated airspeed. For the subsonic case ($V \leq V_A$), the following equations are sufficient:

$$P_t - P = P_o \left[\left\{ 1 + \frac{\gamma - 1}{2} \left(\frac{V_c}{V_{A_o}} \right)^2 \right\}^{\frac{\gamma}{\gamma - 1}} - 1 \right] \quad (1)$$

$$V = V_A \sqrt{\frac{2}{\gamma - 1} \left[\left\{ \frac{P_t - P}{P} + 1 \right\}^{\frac{\gamma - 1}{\gamma}} - 1 \right]} \quad (2)$$

$$V_e = V \sqrt{\frac{\rho}{\rho_o}} \quad (3)$$

Each equation is evaluated in turn and substituted into the next equation.

For the supersonic case ($V \geq V_A$) a detached normal shock wave will form in front of the pitot tube and the effect of the shock must also be taken into account. Equation 1 is valid for both the supersonic and subsonic case, but Equation 2 must be replaced by the following equation:

$$P_t - P = P \left\{ \frac{\left[\frac{\gamma + 1}{2} \left(\frac{V}{V_A} \right)^2 \right]^{\frac{\gamma}{\gamma - 1}}}{\left[\frac{2\gamma}{\gamma + 1} \left(\frac{V}{V_A} \right)^2 - \frac{\gamma - 1}{\gamma + 1} \right]^{\frac{1}{\gamma - 1}}} - 1 \right\} \quad (4)$$

It is difficult to solve Equation 4 for V in terms of $(P_t - P)$. Therefore, a trial and error solution was used to solve for true airspeed from calibrated airspeed using Equations 1 and 4. Equation 3 is also valid for the supersonic case and was used to give the value of equivalent airspeed from true airspeed. A trial value of true airspeed was selected and substituted into Equation 4 to produce a corresponding trial value of $(P_t - P)$. The difference in the value of $(P_t - P)$ as calculated from Equation 1 and the trial value from Equation 4 is a measure of the error in the trial value of V . Newton's method provided a rapid and systematic method of converging on the value of V which produces zero error. This method requires an evaluation of the first derivative of $(P_t - P)$ with respect to V either by differentiation of Equation 4 or by finite difference methods. The first derivative is denoted by:

$$\frac{\partial(P_t - P)}{\partial V}$$

If V_1 is a reasonable guess for V , then application of Newton's method gives a value of V_2 which is an improved estimate of V according to the following equation:

$$V_2 = V_1 + \frac{\text{Error in } (P_t - P)}{\frac{\partial(P_t - P)}{\partial V}}$$

SECTION IV

INDIVIDUAL AIRCRAFT RESPONSE CALCULATIONS

The gust loads formula has been evaluated for each of a number of aircraft to give load factor response in terms of derived gust velocity. The plot for each aircraft is a straight line although the slopes vary. Figure 7 presents response curves varying from a slope of 0.005 to 0.150 g's per foot per second derived gust velocity. This covers the range of interest for the aircraft that have been considered.

A value of gust sensitivity is required in order to be able to use Figure 7. Table 2 lists all of the aircraft for which gust sensitivity has been evaluated in this report and gives the table in which this information is presented. For some aircraft, gust sensitivity is presented as a function of various parameters including gross weight, altitude, and airspeed. For other aircraft the gust sensitivity is presented as a function of only one of two of these parameters because the other parameters tend not to vary over a sufficient range to cause significant changes in gust sensitivity. For a few aircraft, a single value of gust sensitivity is presented.

The range of airspeed for which gust sensitivity is reported does not cover the entire flight envelope. At low speeds the effect of turbulence is to cause a possibility of loss of control due to stall. For this reason, the lowest speed for which gust sensitivity is reported approximates the recommended gust penetration speed. The highest speed for which gust sensitivity is reported is approximately the maximum cruise speed. Flight in turbulence at speeds above the maximum cruise is contrary to safe operating procedures and is therefore not considered in this report.

The extent to which the lift curve slope given by the empirical equation correctly represents the real aircraft is of considerable importance. Aircraft for which the gust sensitivity seems unreasonable should first be checked to see if the lift curve slope matches test data

for the particular aircraft. To facilitate this check, a plot of lift curve slope vs Mach number is presented in Appendix A for all of the aircraft considered in this report. If reasonable agreement is found between the empirical equation and the real aircraft, yet the gust sensitivity still seems unreasonable, then it should be concluded that the value of K_g is not reasonable for that aircraft. In this event, the only recourse is to a more complex analysis in which the stability of the aircraft is correctly represented. Such an analysis is beyond the scope of this report.

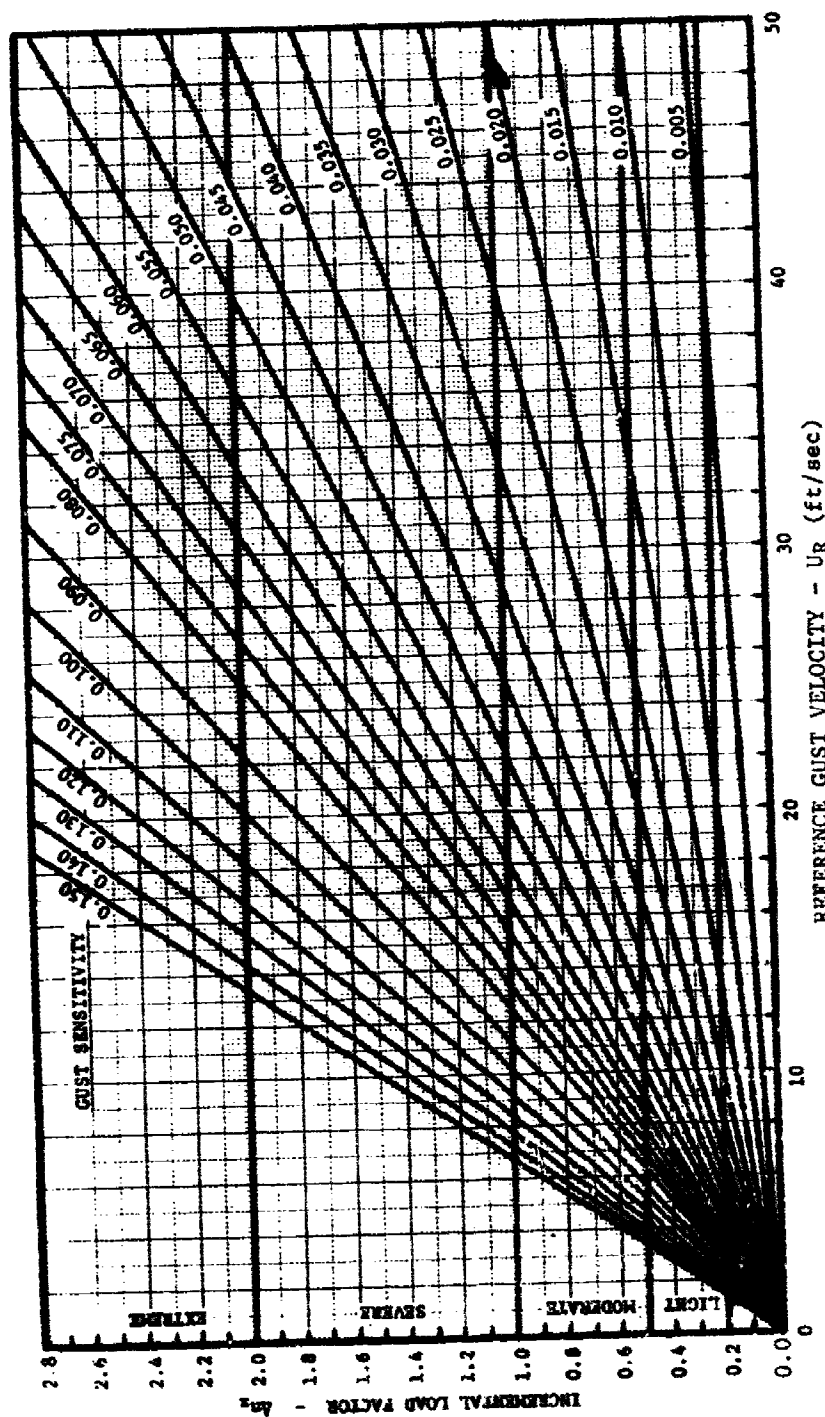


Figure 7. U_R vs Δn_z for Various Values of Gust Sensitivity

TABLE 2 GUST SENSITIVITY FOR VARIOUS AIRCRAFT AT TYPICAL FLIGHT CONDITIONS

AIRCRAFT	TABLE NO.	GUST SENSITIVITY	ALTITUDE	GROSS WEIGHT	CALIBRATED AIRSPEED	MACH NUMBER	TRUE AIRSPEED
			1000	1000			
			FT	LB	KNOTS		KNOTS
		$\frac{g}{FT/SEC}$					
A-7	3	.020	35	35	265	.781	450
A-10	4	.020	15	34	192	.383	240
B-52	5	.032	31	325	257	.699	410
BAC 1-11-200		.019	30	75	181	.492	290
BAC 1-11-400		.018	33	82	178	.516	300
BEECH V35B		.036	7	3.4	131	.225	145
BEECH E55		.033	7	5.3	153	.263	170
BEECH E90		.028	20	10.1	147	.326	200
BOEING 707-300		.032	30	300	303	.798	470
BOEING 727		.031	30	170	303	.798	470
BOEING 737		.027	30	100	282	.747	440
BOEING 747		.034	33	550	301	.842	490
BOEING 747SP		.027	39	660	267	.854	490
C-5A	6	.034	31	590	270	.733	430
C-9	7	.037	31	90	298	.801	470
C-130	8	.027	27	120	198	.503	300
C-141	9	.037	33	260	261	.739	430
CESSNA 150		.038	7	1.6	86	.147	95
CESSNA 172		.034	7	2.5	99	.170	110
CESSNA 175		.036	7	2.5	104	.178	115
CESSNA 180		.036	7	2.95	117	.201	130
CESSNA 182		.036	7	2.95	117	.201	130
CESSNA 205		.034	7	3.3	122	.209	135
CESSNA 210		.034	7	3.8	135	.232	150
CESSNA 310		.028	7	5.5	153	.263	170
CESSNA 401, 402		.029	7	6.3	162	.279	180
CONVAIR 440, 330		.029	23	48	183	.428	260
DC-8-50, 61		.032	36	280	266	.802	460
DC-8-62, 63		.032	36	300	266	.802	460
DC-9-10		.031	32	86	279	.770	450
DC-9-30, 40, 50		.029	32	100	279	.770	450
DC-10-10		.027	36	400	276	.828	475
DC-10-20		.026	36	480	276	.828	475

TABLE 2 (Concluded)
GUST SENSITIVITY FOR VARIOUS AIRCRAFT
AT TYPICAL FLIGHT CONDITIONS

AIRCRAFT	TABLE NO.	GUST SENSITIVITY	ALTITUDE 1000	GROSS WEIGHT 1000	CALIBRATED AIRSPEED	MACH NUMBER	TRUE AIRSPEED
		$\frac{g}{ft/sec}$	FT	LB	KNOTS		KNOTS
F-4	10	.020	31	50	305	.818	480
F-15	11	.033	36	42	306	.906	520
F-16	12	.031	25	25	383	.897	540
F-106	13	.035	37	38	305	.924	530
F-111 @ 16°	14	.027	25	70	336	.797	480
F-111 @ 26°	15						
F-111 @ 50°	16						
F-111 @ 72°	17						
FALCON 10		.046	35	16	291	.850	490
FALCON 50		.046	35	33.2	291	.850	490
FB-111 @ 16°	18	.026	38	70	267	.837	480
FB-111 @ 26°	19						
FB-111 @ 50°	20						
FB-111 @ 72°	21						
FJF 20 C, D, E		.044	30	26	304	.799	471
KC-135	22	.030	33	220	274	.774	450
LEAR JET 23,24,25		.023	35	13.5	202	.607	350
LEAR JET 36		.020	35	18	202	.607	350
T-34	23						
T-37	24	.025	15	11	241	.479	300
T-38	25	.032	33	13	322	.394	520
T-39A	26	.043	35	16	258	.763	440
T-41	27						
VC 140		.039	35	32	271	.798	460
O-2	27	.027	10	4.2	103	.188	120
OV-10	27	.026	10	10	155	.282	180

TABLE 3 GUST SENSITIVITY OF A-7

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: A-7

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	200.	240.	280.	320.	360.	400.	440.	480.	520.	560.	600.	640.	680.	720.	760.	800.
20000.	.020	.024	.028	.033	.038	.043	.048	.053	.058	.063	.067	.070	.072	.075	.078	.081
25000.	.017	.020	.024	.027	.031	.036	.040	.045	.050	.055	.058	.060	.062	.065	.068	.071
30000.		.017	.020	.023	.027	.030	.034	.038	.044	.047	.048	.051	.053	.056	.058	.061
35000.		.015	.017	.020	.023	.026	.030	.034	.038	.041	.043	.045	.046	.048	.050	.052
40000.			.015	.018	.021	.023	.026	.030	.034	.037	.038	.040	.041	.043		

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	200.	240.	280.	320.	360.	400.	440.	480.	520.	560.	600.	640.	680.	720.	760.	800.
20000.	.021	.026	.030	.035	.041	.047	.054	.058	.064	.070	.074	.078	.084	.091		
25000.	.017	.021	.025	.029	.033	.038	.044	.048	.053	.058	.061	.064	.067	.070	.073	.075
30000.		.018	.021	.024	.028	.032	.036	.041	.045	.049	.052	.055	.058	.061	.064	.066
35000.		.015	.018	.021	.024	.028	.033	.038	.043	.045	.048	.050	.052	.055	.058	.061
40000.			.016	.019	.021	.025	.028	.031	.034	.038	.040	.042	.045	.048	.050	.052

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	200.	240.	280.	320.	360.	400.	440.	480.	520.	560.	600.	640.	680.	720.	760.	800.
20000.	.022	.028	.032	.038	.044	.051	.058	.064	.070	.076	.081	.085	.090	.095	.100	.105
25000.		.021	.024	.027	.031	.035	.039	.044	.048	.053	.058	.061	.064	.067	.070	.073
30000.		.017	.020	.023	.026	.029	.033	.037	.040	.044	.048	.051	.054	.057	.060	.063
35000.			.017	.020	.022	.024	.026	.028	.032	.034	.036	.038	.040	.042	.045	.048
40000.			.015	.017	.020	.021	.023	.026	.028	.030	.032	.034	.037	.041		

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	200.	240.	280.	320.	360.	400.	440.	480.	520.	560.	600.	640.	680.	720.	760.	800.
20000.	.023	.029	.033	.039	.045	.052	.059	.065	.071	.077	.082	.086	.091	.096	.101	.106
25000.		.020	.023	.026	.029	.033	.037	.041	.045	.049	.053	.057	.061	.064	.067	.070
30000.			.019	.021	.023	.025	.028	.031	.034	.037	.040	.043	.046	.049	.052	.055
35000.				.018	.020	.021	.023	.024	.026	.027	.029	.031	.033	.035	.037	.039
40000.					.018	.019	.020	.021	.022	.024	.026	.028	.030	.032	.034	.036

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	200.	240.	280.	320.	360.	400.	440.	480.	520.	560.	600.	640.	680.	720.	760.	800.
20000.	.024	.030	.034	.040	.046	.053	.060	.067	.073	.079	.084	.088	.093	.098	.103	.108
25000.		.021	.022	.023	.025	.027	.029	.031	.033	.035	.037	.039	.041	.043	.045	.047
30000.			.020	.021	.023	.025	.027	.028	.030	.032	.034	.036	.038	.040	.042	.044
35000.					.021	.023	.024	.025	.026	.028	.029	.031	.032	.034	.035	.037
40000.						.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031

ALTITUDE: 50000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	200.	240.	280.	320.	360.	400.	440.	480.	520.	560.	600.	640.	680.	720.	760.	800.
20000.	.027	.033	.037	.043	.049	.056	.063	.070	.076	.082	.087	.092	.097	.102	.107	.112
25000.		.025	.026	.027	.029	.031	.033	.035	.037	.039	.041	.043	.045	.047	.049	.051
30000.			.024	.025	.026	.028	.030	.032	.034	.036	.038	.040	.042	.044	.046	.048

TABLE 4 GUST SENSITIVITY OF A-10

GUST SENSITIVITY (G'S/FT/SEC GUST)		AIRSPEED (KNOTS CAS)													
AIRCRAFT TYPE: A-10		ALTITUDE: 0. FEET													
WEIGHT		CALIBRATED AIRSPEED (KNOTS CAS)													
20000.	.032	.035	.038	.042	.045	.048	.053	.057	.061	.065	.069	.072	.075	.078	.081
25000.	.026	.029	.032	.035	.038	.041	.044	.047	.049	.050	.052	.054	.056	.058	.060
30000.	.022	.025	.027	.030	.032	.035	.037	.039	.040	.042	.043	.045	.046	.048	.049
35000.	.019	.022	.024	.026	.028	.030	.033	.034	.035	.036	.038	.039	.040	.042	.043
40000.	.018	.021	.023	.025	.027	.029	.030	.031	.032	.033	.035	.036	.037	.038	.039
45000.	.013	.016	.018	.020	.022	.024	.026	.027	.028	.029	.030	.031	.032	.033	.034
ALTITUDE: 10000. FEET		CALIBRATED AIRSPEED (KNOTS CAS)													
20000.	.033	.037	.041	.044	.048	.053	.057	.061	.065	.069	.072	.075	.078	.081	.084
25000.	.027	.030	.033	.037	.040	.043	.047	.049	.051	.053	.055	.057	.060	.062	.064
30000.	.023	.026	.028	.031	.034	.037	.040	.042	.043	.045	.047	.048	.051	.053	.054
35000.	.022	.025	.027	.029	.032	.035	.036	.038	.039	.041	.043	.044	.046	.048	.049
40000.	.020	.022	.024	.026	.028	.031	.032	.033	.035	.036	.038	.039	.041	.043	.044
45000.	.020	.021	.023	.025	.028	.031	.032	.033	.035	.036	.038	.039	.041	.043	.044
ALTITUDE: 20000. FEET		CALIBRATED AIRSPEED (KNOTS CAS)													
20000.	.035	.039	.043	.045	.048	.050	.052	.055	.058	.059	.061	.062	.064	.066	.068
25000.	.029	.032	.035	.037	.039	.041	.043	.045	.046	.047	.048	.050	.051	.052	.054
30000.	.024	.027	.030	.031	.033	.035	.036	.038	.039	.040	.041	.042	.043	.044	.046
35000.	.023	.026	.028	.029	.031	.033	.034	.035	.036	.038	.039	.041	.042	.043	.044
40000.	.021	.023	.024	.025	.027	.029	.030	.031	.032	.033	.035	.036	.037	.038	.039
45000.	.020	.022	.023	.024	.025	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036
ALTITUDE: 30000. FEET		CALIBRATED AIRSPEED (KNOTS CAS)													
20000.	.037	.041	.044	.047	.050	.053	.056	.059	.061	.062	.064	.066	.068	.070	.072
25000.	.030	.033	.035	.037	.039	.041	.043	.045	.046	.047	.048	.050	.051	.052	.054
30000.	.026	.028	.030	.031	.033	.035	.036	.038	.039	.040	.041	.042	.043	.044	.046
35000.	.025	.027	.029	.030	.031	.033	.034	.035	.036	.038	.039	.041	.042	.043	.044
40000.	.023	.025	.026	.027	.028	.030	.031	.032	.033	.035	.036	.037	.038	.039	.040
45000.	.022	.024	.025	.026	.027	.029	.030	.031	.032	.033	.035	.036	.037	.038	.039
ALTITUDE: 40000. FEET		CALIBRATED AIRSPEED (KNOTS CAS)													
20000.	.039	.043	.046	.049	.052	.055	.058	.061	.062	.064	.066	.068	.070	.072	.074
25000.	.032	.035	.037	.039	.041	.043	.045	.046	.047	.048	.050	.051	.052	.054	.056
30000.	.028	.030	.031	.033	.035	.036	.038	.039	.040	.041	.042	.043	.044	.046	.048
35000.	.027	.029	.030	.031	.033	.034	.035	.036	.038	.039	.041	.042	.043	.044	.046
40000.	.025	.027	.028	.029	.030	.031	.032	.033	.035	.036	.037	.038	.039	.040	.042
45000.	.024	.026	.027	.028	.029	.030	.031	.032	.033	.035	.036	.037	.038	.039	.040

TABLE 5 GUST SENSITIVITY OF B-52

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: B-52

ALTITUDE: 0. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	220.	260.	300.	340.	380.	420.	440.	460.	480.	500.	510.	520.	530.	540.
200000.	.030	.036	.042	.048	.054	.060	.063	.067	.072	.078	.081	.084	.087	.090
225000.	.028	.033	.039	.045	.051	.058	.062	.068	.070	.075	.078	.081	.083	.087
250000.	.026	.031	.038	.042	.048	.054	.058	.061	.065	.070	.072	.075	.078	.081
275000.	.024	.028	.034	.039	.044	.050	.054	.057	.061	.065	.068	.070	.073	.078
300000.	.023	.027	.031	.036	.041	.047	.050	.054	.057	.061	.063	.066	.068	.071
325000.	.021	.025	.030	.034	.039	.044	.047	.050	.054	.058	.060	.062	.065	.067
350000.		.024	.028	.032	.037	.042	.045	.048	.051	.055	.057	.059	.061	.064
375000.		.022	.026	.030	.035	.040	.042	.045	.048	.052	.054	.056	.058	.060
400000.		.021	.025	.029	.033	.038	.040	.043	.046	.049	.051	.053	.055	.057
425000.		.020	.024	.027	.031	.036	.038	.041	.044	.047	.049	.051	.053	.055
450000.		.018	.023	.026	.030	.034	.036	.039	.042	.045	.048	.049	.050	.052
475000.			.022	.025	.029	.033	.035	.037	.040	.043	.044	.046	.048	.050
ALTITUDE: 10000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	220.	240.	260.	280.	300.	320.	340.	360.	380.	400.	410.	420.	430.	440.
200000.	.033	.038	.040	.043	.047	.051	.054	.058	.063	.068	.071	.073	.075	.078
225000.	.030	.033	.038	.040	.043	.048	.050	.054	.058	.062	.065	.067	.070	.073
250000.	.028	.031	.033	.038	.039	.043	.046	.049	.053	.057	.060	.062	.065	.068
275000.	.026	.028	.031	.034	.037	.039	.043	.046	.049	.053	.055	.058	.060	.063
300000.	.024	.026	.028	.031	.034	.037	.040	.043	.046	.050	.052	.054	.056	.058
325000.		.025	.027	.029	.032	.034	.037	.040	.043	.047	.048	.051	.053	.055
350000.		.023	.025	.028	.030	.032	.035	.038	.041	.044	.046	.048	.050	.052
375000.		.022	.024	.026	.028	.031	.033	.036	.038	.041	.043	.045	.047	.049
400000.			.023	.025	.027	.029	.031	.034	.036	.038	.041	.043	.044	.047
425000.			.021	.023	.025	.027	.030	.032	.035	.037	.039	.040	.042	.044
450000.			.020	.022	.024	.026	.028	.030	.033	.035	.037	.039	.040	.042
475000.				.021	.023	.025	.027	.029	.031	.034	.035	.037	.039	.040
ALTITUDE: 20000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	220.	240.	260.	280.	300.	310.	320.	330.	340.	350.	360.	370.	375.	380.
200000.	.038	.040	.044	.048	.052	.055	.057	.060	.062	.065	.068	.072	.074	.078
225000.	.033	.038	.040	.043	.047	.050	.052	.054	.057	.060	.063	.066	.068	.070
250000.	.030	.033	.038	.040	.044	.048	.048	.050	.052	.055	.058	.061	.062	.064
275000.	.028	.030	.033	.037	.040	.042	.044	.046	.048	.051	.053	.055	.058	.059
300000.	.026	.028	.031	.034	.037	.039	.041	.043	.045	.047	.050	.052	.054	.055
325000.		.026	.028	.032	.035	.036	.038	.040	.042	.044	.046	.048	.050	.052
350000.		.025	.027	.030	.033	.034	.036	.037	.039	.041	.043	.045	.047	.049
375000.		.023	.026	.028	.031	.032	.034	.035	.037	.038	.041	.043	.044	.046
400000.			.024	.027	.029	.030	.032	.033	.035	.037	.038	.041	.042	.043
425000.			.023	.025	.028	.029	.030	.032	.033	.035	.037	.039	.040	.041
450000.				.024	.026	.027	.028	.030	.031	.033	.035	.037	.038	.039
475000.				.023	.025	.026	.027	.028	.030	.032	.033	.035	.036	.037
ALTITUDE: 30000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	220.	230.	240.	250.	255.	260.	265.	270.	275.	280.	285.	290.	295.	300.
200000.	.038	.042	.044	.048	.049	.050	.052	.053	.055	.058	.059	.060	.062	.064
225000.	.035	.038	.040	.042	.043	.044	.045	.047	.048	.050	.051	.053	.054	.056
250000.	.032	.034	.036	.038	.038	.040	.042	.043	.044	.045	.047	.048	.050	.051
275000.	.030	.031	.033	.035	.036	.037	.038	.039	.040	.042	.043	.044	.045	.047
300000.	.028	.028	.031	.033	.033	.034	.035	.036	.037	.038	.040	.041	.042	.044
325000.		.027	.028	.030	.031	.032	.033	.034	.035	.036	.037	.038	.039	.041
350000.			.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.039
375000.				.027	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036
400000.					.026	.027	.027	.028	.029	.030	.031	.032	.033	.034
425000.						.026	.027	.027	.028	.029	.030	.031	.032	
450000.							.025	.026	.027	.028	.028	.029	.030	
475000.								.025	.026	.027	.028	.028	.029	
ALTITUDE: 40000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	220.	225.	230.	235.	240.									
200000.	.045	.048	.048	.050	.052									
225000.	.040	.042	.043	.045	.047									
250000.	.037	.038	.040	.041	.043									
275000.	.034	.035	.036	.038	.039									
300000.		.032	.034	.035	.036									
325000.				.032	.034									

TABLE 6 GUST SENSITIVITY OF C-5A

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: C-5A

ALTITUDE: 0. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
HEIGHT	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380
325000.	.030	.032	.033	.044	.048	.054	.058	.063	.067	.071	.074	.078	.081	.084	.087	.091	.094
350000.	.029	.033	.036	.042	.047	.051	.057	.060	.064	.068	.071	.073	.075	.078	.081	.084	.087
375000.	.028	.032	.036	.040	.045	.048	.054	.058	.061	.065	.068	.070	.072	.075	.078	.081	.084
400000.	.027	.030	.034	.038	.043	.047	.052	.055	.058	.062	.065	.067	.069	.072	.075	.078	.081
425000.	.026	.029	.032	.035	.038	.044	.048	.051	.055	.058	.060	.062	.064	.066	.069	.072	.075
450000.	.024	.028	.032	.035	.038	.044	.048	.051	.055	.058	.060	.062	.064	.066	.069	.072	.075
475000.	.024	.027	.030	.034	.038	.042	.046	.048	.053	.056	.058	.060	.062	.064	.066	.069	.072
500000.	.023	.026	.029	.033	.037	.040	.045	.048	.051	.054	.056	.058	.060	.062	.064	.066	.069
525000.	.022	.025	.028	.031	.034	.038	.042	.044	.047	.051	.053	.055	.057	.059	.061	.063	.065
550000.	.021	.024	.027	.030	.033	.036	.040	.043	.046	.048	.051	.053	.055	.057	.059	.061	.063
575000.	.020	.023	.026	.029	.032	.035	.038	.041	.044	.046	.048	.050	.052	.054	.056	.058	.060
600000.	.019	.022	.025	.028	.031	.034	.037	.040	.042	.044	.046	.048	.050	.052	.054	.056	.058
625000.	.018	.021	.024	.027	.030	.033	.036	.039	.041	.043	.045	.047	.049	.051	.053	.055	.057
650000.	.017	.020	.023	.026	.029	.032	.035	.038	.040	.042	.044	.046	.048	.050	.052	.054	.056
675000.	.016	.019	.022	.025	.028	.031	.034	.037	.039	.041	.043	.045	.047	.049	.051	.053	.055
700000.	.015	.018	.021	.024	.027	.030	.033	.036	.038	.040	.042	.044	.046	.048	.050	.052	.054
725000.	.014	.017	.020	.023	.026	.029	.032	.035	.037	.039	.041	.043	.045	.047	.049	.051	.053
750000.	.013	.016	.019	.022	.025	.028	.031	.034	.036	.038	.040	.042	.044	.046	.048	.050	.052
775000.	.012	.015	.018	.021	.024	.027	.030	.033	.035	.037	.039	.041	.043	.045	.047	.049	.051
ALTITUDE: 10000. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
HEIGHT	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380
325000.	.034	.036	.044	.048	.052	.058	.063	.067	.071	.074	.078	.081	.084	.087	.091	.094	.097
350000.	.032	.037	.042	.046	.050	.055	.060	.064	.068	.071	.074	.077	.080	.083	.086	.089	.092
375000.	.031	.036	.040	.044	.047	.050	.054	.058	.062	.065	.068	.071	.074	.077	.080	.083	.086
400000.	.029	.033	.036	.041	.044	.048	.052	.056	.060	.063	.066	.069	.071	.074	.077	.080	.083
425000.	.028	.032	.036	.039	.043	.046	.050	.053	.057	.060	.062	.065	.068	.071	.074	.077	.080
450000.	.027	.031	.035	.038	.041	.044	.047	.051	.054	.057	.060	.062	.065	.068	.071	.074	.077
475000.	.026	.029	.033	.036	.039	.042	.045	.048	.051	.054	.057	.060	.062	.065	.068	.071	.074
500000.	.025	.028	.032	.035	.038	.041	.044	.047	.051	.053	.056	.059	.062	.065	.068	.071	.074
525000.	.024	.027	.031	.034	.037	.040	.043	.046	.049	.051	.054	.057	.060	.063	.066	.069	.072
550000.	.023	.026	.030	.033	.036	.039	.042	.045	.048	.051	.054	.057	.060	.063	.066	.069	.072
575000.	.022	.025	.029	.032	.035	.038	.041	.044	.047	.050	.053	.056	.059	.062	.065	.068	.071
600000.	.021	.024	.028	.031	.034	.037	.040	.043	.046	.049	.051	.054	.057	.060	.063	.066	.069
625000.	.020	.023	.027	.030	.033	.036	.039	.042	.045	.048	.051	.054	.057	.060	.063	.066	.069
650000.	.019	.022	.026	.029	.032	.035	.038	.041	.044	.047	.050	.053	.056	.059	.062	.065	.068
675000.	.018	.021	.025	.028	.031	.034	.037	.040	.043	.046	.049	.051	.054	.057	.060	.063	.066
700000.	.017	.020	.024	.027	.030	.033	.036	.039	.042	.045	.048	.051	.054	.057	.060	.063	.066
725000.	.016	.019	.023	.026	.029	.032	.035	.038	.041	.044	.047	.050	.053	.056	.059	.062	.065
750000.	.015	.018	.022	.025	.028	.031	.034	.037	.040	.043	.046	.049	.051	.054	.057	.060	.063
775000.	.014	.017	.021	.024	.027	.030	.033	.036	.039	.042	.045	.048	.051	.054	.057	.060	.063
ALTITUDE: 20000. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
HEIGHT	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380
325000.	.037	.041	.045	.050	.054	.059	.063	.067	.071	.074	.078	.081	.084	.087	.091	.094	.097
350000.	.036	.040	.044	.048	.052	.056	.060	.064	.068	.071	.074	.077	.080	.083	.086	.089	.092
375000.	.035	.039	.043	.047	.051	.054	.058	.062	.066	.069	.072	.075	.078	.081	.084	.087	.090
400000.	.034	.038	.042	.046	.050	.053	.057	.060	.064	.067	.070	.073	.076	.079	.082	.085	.088
425000.	.033	.037	.041	.045	.048	.051	.055	.058	.062	.065	.068	.071	.074	.077	.080	.083	.086
450000.	.032	.036	.040	.044	.047	.050	.053	.057	.060	.063	.066	.069	.072	.075	.078	.081	.084
475000.	.031	.035	.039	.043	.046	.049	.052	.055	.058	.061	.064	.067	.070	.073	.076	.079	.082
500000.	.030	.034	.038	.042	.045	.048	.051	.054	.057	.060	.063	.066	.069	.072	.075	.078	.081
525000.	.029	.033	.037	.041	.044	.047	.050	.053	.056	.059	.062	.065	.068	.071	.074	.077	.080
550000.	.028	.032	.036	.040	.043	.046	.049	.052	.055	.058	.061	.064	.067	.070	.073	.076	.079
575000.	.027	.031	.035	.039	.042	.045	.048	.051	.054	.057	.060	.063	.066	.069	.072	.075	.078
600000.	.026	.030	.034	.038	.041	.044	.047	.050	.053	.056	.059	.062	.065	.068	.071	.074	.077
625000.	.025	.029	.033	.037	.040	.043	.046	.049	.052	.055	.058	.061	.064	.067	.070	.073	.076
650000.	.024	.028	.032	.036	.039	.042	.045	.048	.051	.054	.057	.060	.063	.066	.069	.072	.075
675000.	.023	.027	.031	.035	.038	.041	.044	.047	.050	.053	.056	.059	.062	.065	.068	.071	.074
700000.	.022	.026	.030	.034	.037	.040	.043	.046	.049	.052	.055	.058	.061	.064	.067	.070	.073
725000.	.021	.025	.029	.033	.036	.039	.042	.045	.048	.051	.054	.057	.060	.063	.066	.069	.072
750000.	.020	.024	.028	.032	.035	.038	.041	.044	.047	.050	.053	.056	.059	.062	.065	.068	.071
775000.	.019	.023	.027	.031	.034	.037	.040	.043	.046	.049	.052	.055	.058	.061	.064	.067	.070
ALTITUDE: 30000. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
HEIGHT	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380
325000.	.041	.045	.049	.053	.057	.061	.065	.069	.073	.076	.080	.083	.086	.089	.092	.095	.098
350000.	.040	.044	.048	.052	.056	.060	.064	.068	.072	.075	.078	.081	.084	.087	.090	.093	.096
375000.	.039	.043	.047	.051	.054	.058	.062	.066	.070	.073	.076	.079	.082	.085	.088	.091	.094
400000.	.038	.042	.046	.050	.053	.057	.061	.065	.069	.072	.075	.078	.081	.084	.087	.090	.093
425000.	.037	.041	.045	.049	.052	.056	.060	.064	.068	.071	.074	.077	.080	.083	.086	.089	.092
450000.	.036	.040	.044	.048	.051	.055	.059	.063	.067	.070	.073	.076	.079	.082	.085	.088	.091
475000.	.035	.039	.043	.047	.050	.054	.058	.062	.066	.069	.072	.075	.078	.081	.084	.087	.090
500000.	.034	.038	.042	.046	.049	.053	.057	.061	.065	.068	.071	.074	.077	.080	.083	.086	.089
525000.	.033	.037	.041	.045	.048	.052	.056	.060	.064	.067	.070	.073	.076	.079	.082	.085	.088
550000.	.032	.036	.040	.044	.047	.051	.055	.059	.063	.066	.069	.072	.075	.078	.081	.084	.087
575000.	.031	.035	.039	.043	.046	.050	.054	.058	.062	.065	.068	.071	.074	.077	.080	.083	.086
600000.	.030	.034	.038	.042	.045	.049	.053	.057	.061	.064	.067	.070	.073	.076	.079	.082	.085
625000.	.029	.033	.037	.041	.044	.048	.052	.056	.060	.063	.066	.069	.072	.075	.078	.081	.084
650000.	.028	.032	.036	.040	.043	.047	.051	.055	.059	.062	.065	.068	.071	.074	.077	.080	.083
675000.	.027	.031	.035	.039	.042	.046	.050	.054	.058	.061	.064	.067	.070	.073	.076	.079	.082
700000.	.026	.030	.034	.038	.041	.045	.049	.053	.057	.060	.063	.066	.069	.072	.075	.078	.081
725000.	.025	.029	.033	.037	.040	.044	.048	.052	.056	.059	.062	.065	.068	.071	.074	.077	.080
750000.	.024	.028	.032	.036	.039	.043	.047	.051	.055	.058	.061	.06					

TABLE 7 GUST SENSITIVITY OF C-9

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: C-9

		ALTITUDE: 0. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		220.	260.	300.	340.	380.	420.	460.	480.	500.	520.	540.	560.	570.	580.		
50000.		.031	.037	.043	.050	.057	.065	.075	.081	.087	.085	.104	.115	.121	.128		
60000.		.028	.031	.037	.043	.048	.056	.065	.070	.075	.082	.080	.100	.106	.113		
70000.		.023	.028	.032	.038	.043	.050	.057	.061	.067	.073	.060	.088	.095	.101		
80000.		.021	.025	.029	.033	.039	.044	.051	.055	.060	.065	.072	.080	.085	.091		
90000.		.022	.028	.030	.035	.040	.046	.050	.054	.058	.065	.065	.073	.077	.083		
100000.		.020	.024	.027	.032	.036	.042	.045	.049	.054	.058	.067	.071	.076			
110000.		.018	.022	.025	.029	.033	.038	.042	.045	.050	.055	.061	.068	.070			
		ALTITUDE: 10000. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		220.	260.	300.	340.	380.	420.	440.	460.	480.	500.	505.	510.	515.	520.		
50000.		.032	.038	.046	.054	.064	.076	.084	.093	.108	.123	.128	.134	.143	.158		
60000.		.028	.033	.040	.047	.055	.065	.072	.080	.091	.107	.112	.117	.125	.139		
70000.		.024	.028	.035	.041	.048	.057	.063	.071	.081	.095	.098	.104	.111	.124		
80000.		.021	.026	.031	.036	.043	.051	.056	.063	.072	.085	.080	.084	.100	.112		
90000.		.023	.028	.032	.036	.046	.051	.057	.065	.077	.081	.085	.091	.102			
100000.		.021	.025	.028	.035	.042	.046	.052	.060	.070	.074	.078	.084	.094			
110000.		.019	.023	.027	.032	.038	.042	.048	.055	.065	.068	.072	.077	.087			
		ALTITUDE: 20000. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		220.	260.	300.	320.	340.	350.	360.	370.	380.	390.	395.	400.	405.	410.		
50000.		.034	.042	.051	.058	.068	.075	.084	.093	.108	.123	.128	.134	.143	.158		
60000.		.028	.036	.043	.048	.055	.065	.072	.080	.091	.107	.112	.117	.125	.139		
70000.		.025	.031	.036	.042	.046	.055	.062	.069	.081	.095	.098	.104	.111	.124		
80000.		.027	.033	.037	.041	.043	.046	.049	.053	.057	.058	.062	.064	.067			
90000.		.025	.030	.033	.037	.039	.041	.044	.047	.051	.053	.055	.058	.061			
100000.		.022	.027	.030	.033	.035	.038	.040	.043	.046	.048	.050	.053	.055			
110000.		.025	.027	.030	.032	.034	.037	.038	.042	.044	.046	.048	.051				
		ALTITUDE: 30000. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		220.	240.	260.	270.	280.	290.	300.	305.	310.	315.	320.	325.	330.	335.		
50000.		.037	.042	.047	.050	.053	.057	.062	.064	.067	.070	.073	.077	.081	.088		
60000.		.031	.035	.040	.042	.045	.049	.052	.055	.057	.059	.062	.065	.069	.073		
70000.		.027	.031	.034	.037	.038	.042	.045	.047	.049	.052	.054	.057	.060	.064		
80000.		.027	.030	.032	.035	.037	.040	.042	.044	.046	.048	.050	.053	.056			
90000.		.024	.027	.028	.031	.033	.036	.038	.039	.041	.043	.045	.048	.051			
100000.		.025	.028	.028	.030	.033	.034	.036	.037	.039	.041	.043	.045	.048			
110000.		.024	.026	.026	.028	.030	.033	.034	.036	.038	.040	.042	.044	.046			
		ALTITUDE: 40000. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		220.	225.	230.	235.	240.	245.	250.	255.	260.	265.	270.	275.	280.	285.		
50000.		.043	.044	.048	.049	.051	.054	.057	.060	.064	.068	.074	.080	.088	.107		
60000.		.038	.037	.038	.041	.043	.045	.048	.051	.054	.058	.062	.068	.075	.081		
70000.		.031	.032	.034	.035	.037	.038	.041	.044	.047	.050	.054	.058	.065	.078		
80000.			.030	.031	.033	.035	.037	.039	.041	.044	.048	.052	.058	.070			
90000.								.033	.035	.037	.040	.043	.047	.052	.063		
100000.											.036	.038	.042	.047	.057		
110000.												.038	.043	.052			

TABLE 8 GUST SENSITIVITY OF C-130

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: C-130

ALTITUDE: 0, FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	200.	220.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.	340.	350.
50000.	.040	.044	.048	.050	.052	.055	.057	.058	.061	.064	.068	.069	.071	.074
70000.	.038	.039	.043	.045	.047	.048	.051	.053	.055	.057	.058	.062	.064	.068
80000.	.032	.038	.038	.041	.043	.044	.046	.048	.050	.052	.054	.056	.058	.060
90000.	.029	.032	.036	.037	.038	.041	.042	.044	.048	.047	.049	.051	.053	.055
100000.	.027	.030	.033	.034	.036	.037	.039	.040	.042	.044	.045	.047	.048	.051
110000.	.025	.028	.030	.032	.033	.035	.036	.037	.039	.040	.042	.044	.045	.047
120000.		.026	.028	.030	.031	.032	.034	.035	.036	.038	.038	.041	.042	.044
130000.		.024	.026	.028	.028	.030	.031	.033	.034	.035	.037	.038	.038	.041
140000.		.023	.025	.026	.027	.028	.030	.031	.032	.033	.034	.036	.037	.038
150000.			.023	.025	.026	.027	.028	.030	.031	.033	.034	.035	.036	.038
160000.			.022	.023	.024	.025	.026	.027	.028	.030	.031	.032	.033	.034

ALTITUDE: 10000, FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	200.	220.	240.	250.	260.	270.	280.	290.	300.	310.	315.	320.	325.	330.
50000.	.043	.048	.053	.055	.058	.060	.063	.065	.068	.071	.073	.074	.078	.077
70000.	.038	.043	.047	.048	.051	.054	.056	.058	.061	.063	.065	.068	.067	.068
80000.	.035	.038	.042	.044	.046	.048	.050	.053	.055	.057	.058	.060	.061	.062
90000.	.031	.035	.038	.040	.042	.044	.046	.048	.050	.052	.053	.054	.055	.056
100000.	.028	.032	.035	.037	.039	.040	.042	.044	.046	.048	.048	.050	.051	.052
110000.	.027	.029	.032	.034	.036	.037	.038	.041	.042	.044	.045	.046	.047	.048
120000.		.027	.030	.032	.033	.035	.036	.038	.039	.041	.042	.043	.044	.045
130000.		.025	.028	.029	.031	.032	.034	.035	.037	.038	.038	.040	.041	.042
140000.		.024	.026	.028	.028	.030	.032	.033	.034	.036	.037	.037	.038	.039
150000.			.025	.026	.027	.028	.030	.031	.032	.034	.034	.035	.036	.037
160000.			.023	.025	.026	.027	.028	.031	.032	.033	.033	.034	.034	.036

ALTITUDE: 20000, FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	200.	210.	220.	230.	240.	250.	260.	270.	280.	290.	295.	300.	305.	310.
50000.	.047	.050	.052	.055	.058	.061	.064	.067	.071	.074	.076	.078	.080	.082
70000.	.041	.044	.048	.048	.051	.054	.057	.060	.062	.065	.067	.068	.071	.072
80000.	.037	.038	.041	.044	.046	.048	.051	.053	.056	.058	.060	.062	.063	.065
90000.	.034	.035	.037	.038	.041	.044	.046	.048	.051	.053	.055	.056	.057	.058
100000.	.031	.032	.034	.036	.038	.040	.042	.044	.046	.048	.050	.051	.052	.054
110000.	.028	.030	.031	.033	.035	.037	.038	.041	.043	.045	.046	.047	.048	.050
120000.		.028	.029	.031	.032	.034	.036	.038	.039	.042	.043	.044	.045	.046
130000.			.027	.028	.030	.032	.033	.035	.037	.038	.040	.041	.042	.043
140000.				.027	.028	.030	.031	.033	.034	.036	.037	.038	.039	.040
150000.				.025	.026	.028	.029	.031	.032	.034	.035	.036	.037	.038
160000.					.025	.026	.028	.029	.030	.032	.033	.034	.035	.036

ALTITUDE: 30000, FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	200.	210.	220.	230.	240.	250.	260.	270.	275.	280.	285.	290.	295.	300.
50000.	.052	.055	.058	.062	.065	.070	.074	.078	.082	.085	.088	.091	.093	.095
70000.	.045	.048	.051	.054	.058	.061	.065	.070	.072	.074	.077	.080	.083	.087
80000.	.040	.043	.045	.048	.051	.055	.058	.062	.064	.066	.068	.072	.075	.078
90000.	.038	.038	.041	.043	.046	.048	.052	.055	.058	.060	.062	.065	.067	.070
100000.	.033	.035	.037	.040	.042	.045	.048	.051	.053	.055	.057	.059	.062	.064
110000.	.030	.032	.034	.036	.038	.041	.044	.047	.048	.050	.052	.054	.057	.059
120000.		.030	.032	.034	.036	.038	.041	.043	.045	.046	.048	.050	.052	.055
130000.			.028	.031	.033	.035	.038	.040	.042	.043	.045	.047	.048	.051
140000.				.028	.031	.033	.035	.038	.039	.040	.042	.044	.046	.048
150000.					.028	.031	.033	.035	.037	.038	.039	.041	.043	.045
160000.						.028	.031	.033	.034	.036	.037	.038	.040	.042

ALTITUDE: 40000, FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	200.	205.	210.	215.	220.	225.	230.	235.	240.	245.	250.	255.	260.	265.
50000.	.058	.061	.064	.067	.068	.073	.078	.080	.084	.088	.093	.101	.108	.110
70000.	.051	.053	.056	.058	.061	.063	.066	.070	.074	.078	.083	.088	.095	.104
80000.	.046	.047	.048	.051	.054	.056	.058	.062	.066	.069	.074	.078	.085	.093
90000.	.041	.043	.044	.046	.048	.051	.053	.056	.058	.062	.067	.071	.077	.084
100000.	.037	.039	.040	.042	.044	.046	.048	.051	.054	.057	.061	.065	.070	.076
110000.		.035	.037	.038	.040	.042	.044	.046	.048	.052	.056	.059	.064	.070
120000.			.035	.037	.038	.041	.043	.045	.046	.051	.055	.058	.065	.068
130000.					.031	.036	.040	.042	.045	.048	.051	.055	.060	.065
140000.						.037	.039	.042	.044	.048	.052	.056	.062	.068
150000.							.037	.038	.042	.045	.048	.052	.058	.063
160000.									.038	.042	.045	.048	.053	.058

TABLE 9 GUST SENSITIVITY OF C-141

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: C-141

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.	340.	350.	360.	370.	380.	390.	400.	410.	420.	430.	440.	450.	470.	480.	490.	500.
140000.	.035	.040	.043	.051	.058	.062	.068	.073	.078	.083	.088	.089	.081	.084														
160000.	.032	.037	.041	.048	.051	.057	.063	.067	.071	.078	.078	.081	.084	.087														
180000.	.028	.034	.038	.043	.047	.052	.058	.062	.066	.070	.073	.075	.078	.080														
200000.	.027	.031	.035	.038	.044	.048	.054	.057	.061	.065	.068	.070	.072	.075														
220000.	.025	.028	.033	.037	.041	.045	.050	.053	.057	.061	.063	.065	.068	.070														
240000.	.024	.027	.031	.034	.038	.042	.047	.050	.054	.057	.058	.061	.064	.068														
260000.	.022	.025	.029	.032	.036	.040	.044	.047	.050	.054	.056	.058	.060	.062														
280000.	.024	.027	.030	.034	.038	.042	.045	.048	.051	.053	.055	.057	.059	.061														
300000.	.023	.026	.029	.032	.036	.039	.042	.045	.048	.050	.052	.054	.056	.058														
320000.	.022	.024	.027	.031	.034	.037	.040	.043	.046	.048	.049	.051	.053	.055														
340000.	.021	.023	.026	.029	.032	.035	.038	.041	.044	.045	.047	.048	.051	.053														

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.	340.	350.	360.	370.	380.	390.	400.	410.	420.	430.	440.	450.
140000.	.038	.044	.050	.055	.058	.061	.064	.068	.074	.080	.083	.086	.090	.093	.096	.100	.104	.108	.112	.116	.120	.124	.128	.132
160000.	.035	.040	.046	.049	.053	.056	.060	.064	.069	.073	.076	.079	.082	.085	.088	.092	.095	.098	.101	.104	.107	.110	.113	.116
180000.	.032	.037	.042	.045	.048	.052	.056	.060	.065	.069	.072	.075	.078	.081	.084	.087	.090	.093	.096	.099	.102	.105	.108	.111
200000.	.028	.034	.038	.042	.045	.048	.051	.054	.057	.062	.065	.068	.071	.074	.077	.080	.083	.086	.089	.092	.095	.098	.101	.104
220000.	.027	.031	.035	.038	.042	.045	.048	.051	.054	.057	.060	.063	.066	.069	.072	.075	.078	.081	.084	.087	.090	.093	.096	.099
240000.	.025	.028	.033	.036	.039	.042	.045	.048	.051	.054	.057	.060	.063	.066	.069	.072	.075	.078	.081	.084	.087	.090	.093	.096
260000.	.024	.027	.031	.034	.037	.040	.043	.046	.050	.052	.055	.057	.060	.063	.066	.069	.072	.075	.078	.081	.084	.087	.090	.093
280000.	.026	.029	.032	.034	.037	.040	.044	.047	.049	.051	.054	.056	.059	.062	.065	.068	.071	.074	.077	.080	.083	.086	.089	.092
300000.	.024	.028	.030	.032	.035	.038	.041	.045	.047	.049	.051	.053	.055	.058	.061	.064	.067	.070	.073	.076	.079	.082	.085	.088
320000.	.023	.026	.028	.031	.033	.036	.039	.042	.044	.046	.048	.051	.053	.055	.058	.061	.064	.067	.070	.073	.076	.079	.082	.085
340000.	.025	.028	.029	.032	.034	.037	.040	.042	.044	.046	.048	.051	.053	.055	.058	.061	.064	.067	.070	.073	.076	.079	.082	.085

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	240.	260.	280.	300.	310.	320.	330.	340.	350.	360.	370.	380.	390.	400.	410.	420.	430.	440.	450.	460.	470.	480.	490.	500.	
140000.	.042	.047	.051	.055	.059	.062	.065	.068	.071	.074	.077	.080	.082	.084	.086	.088	.090	.092	.094	.096	.098	.100	.102	.104	.106	.108
160000.	.038	.042	.046	.051	.055	.058	.061	.064	.067	.071	.074	.077	.079	.081	.083	.085	.087	.089	.091	.093	.095	.097	.099	.101	.103	.105
180000.	.035	.038	.042	.046	.051	.053	.056	.058	.061	.064	.067	.071	.074	.077	.079	.081	.083	.085	.087	.089	.091	.093	.095	.097	.099	.101
200000.	.032	.035	.038	.042	.046	.048	.051	.054	.056	.058	.061	.064	.067	.069	.071	.073	.075	.077	.079	.081	.083	.085	.087	.089	.091	.093
220000.	.028	.032	.035	.038	.043	.045	.047	.049	.052	.055	.058	.061	.064	.067	.069	.071	.073	.075	.077	.079	.081	.083	.085	.087	.089	.091
240000.	.027	.030	.033	.036	.040	.042	.044	.046	.048	.051	.054	.057	.060	.063	.066	.069	.072	.075	.078	.081	.084	.087	.090	.093	.096	.099
260000.		.029	.031	.034	.037	.039	.041	.043	.045	.048	.049	.050	.052	.053	.055	.057	.059	.061	.063	.065	.067	.069	.071	.073	.075	.077
280000.		.028	.029	.032	.035	.037	.039	.040	.042	.045	.046	.047	.048	.049	.051	.053	.055	.057	.059	.061	.063	.065	.067	.069	.071	.073
300000.		.025	.027	.030	.033	.035	.036	.038	.040	.042	.043	.045	.046	.047	.048	.049	.051	.053	.055	.057	.059	.061	.063	.065	.067	.069
320000.		.026	.028	.031	.033	.035	.037	.039	.040	.042	.043	.045	.046	.047	.048	.049	.051	.053	.055	.057	.059	.061	.063	.065	.067	.069
340000.		.024	.027	.029	.031	.033	.035	.037	.038	.040	.041	.042	.043	.044	.045	.046	.047	.048	.049	.051	.053	.055	.057	.059	.061	.063

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.	340.	350.	360.	370.	380.	390.	400.
140000.	.047	.049	.052	.055	.057	.059	.060	.062	.064	.066	.068	.070	.073	.075	.077	.079	.081	.083	.085
160000.	.042	.044	.047	.050	.051	.052	.054	.056	.057	.059	.061	.063	.065	.067	.069	.071	.073	.075	.077
180000.	.038	.040	.042	.045	.046	.048	.049	.050	.052	.054	.055	.057	.059	.061	.063	.065	.067	.069	.071
200000.	.034	.037	.039	.041	.042	.043	.045	.046	.047	.049	.051	.052	.054	.056	.057	.059	.061	.063	.065
220000.	.032	.034	.036	.038	.039	.040	.041	.042	.044	.045	.046	.047	.048	.050	.051	.052	.054	.056	.057
240000.	.028	.031	.033	.035	.036	.037	.038	.039	.041	.042	.043	.044	.045	.046	.047	.048	.049	.050	.051
260000.	.029	.031	.033	.035	.036	.037	.038	.039	.041	.042	.043	.044	.045	.046	.047	.048	.049	.050	.051
280000.	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038	.039	.040	.041	.042	.043	.044	.045	.046
300000.	.026	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038	.039	.040	.041	.042	.043	.044	.045
320000.	.024	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038	.039	.040	.041	.042	.043
340000.	.022	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038	.039	.040	.041

TABLE 10 GUST SENSITIVITY OF F-4

GUST SENSITIVITY (G/S/FT/SEC GUST)

AIRCRAFT TYPE: F-4

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	525.	550.	575.	600.	625.	650.	700.	800.
25000.	.028	.032	.037	.043	.050	.057	.063	.068	.071	.077	.083	.088	.103	.086
30000.	.022	.027	.032	.037	.043	.049	.053	.057	.062	.067	.073	.078	.090	.083
35000.	.020	.024	.028	.033	.039	.043	.046	.050	.054	.059	.065	.073	.080	.073
40000.	.017	.021	.025	.029	.034	.039	.041	.045	.048	.053	.058	.065	.072	.065
45000.	.016	.019	.023	.026	.030	.035	.037	.040	.044	.048	.053	.059	.065	.059
50000.	.014	.017	.021	.024	.028	.032	.034	.037	.040	.044	.048	.054	.059	.054
55000.	.013	.016	.019	.022	.026	.029	.031	.034	.037	.040	.044	.050	.055	.049
60000.	.013	.017	.020	.023	.027	.029	.031	.034	.037	.041	.046	.051	.046	

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	275.	300.	325.	350.	375.	400.	425.	450.	475.	500.	525.	575.	745.
25000.	.027	.030	.033	.036	.040	.043	.046	.050	.053	.056	.060	.065	.072	.080
30000.	.023	.026	.028	.031	.034	.037	.040	.043	.047	.051	.056	.062	.078	.070
35000.	.020	.023	.025	.027	.029	.032	.035	.037	.041	.045	.049	.054	.069	.061
40000.	.018	.020	.022	.024	.026	.028	.031	.033	.036	.040	.044	.048	.061	.054
45000.	.016	.018	.020	.022	.023	.025	.027	.030	.033	.036	.039	.043	.055	.049
50000.	.015	.016	.018	.020	.021	.023	.025	.027	.030	.032	.036	.040	.050	.044
55000.	.013	.015	.016	.018	.020	.021	.023	.025	.027	.030	.033	.036	.046	.040
60000.	.014	.015	.017	.018	.020	.021	.023	.025	.027	.030	.033	.042	.037	

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	425.	450.	475.	500.	550.	600.	650.	700.	750.	850.
25000.	.029	.035	.042	.052	.058	.066	.077	.080	.078	.072	.069	.067	.066	.064
30000.	.024	.030	.036	.044	.048	.056	.066	.069	.064	.061	.058	.057	.056	.054
35000.	.021	.026	.031	.038	.043	.049	.056	.060	.058	.053	.051	.048	.048	.047
40000.	.019	.023	.028	.034	.038	.044	.051	.053	.050	.047	.045	.043	.042	.041
45000.	.017	.021	.025	.030	.034	.039	.046	.048	.045	.042	.040	.039	.038	.037
50000.	.015	.018	.022	.026	.031	.036	.042	.044	.041	.038	.036	.035	.034	.033
55000.	.017	.021	.025	.028	.033	.038	.040	.037	.035	.033	.032	.031	.030	
60000.	.016	.019	.023	.026	.030	.035	.037	.034	.032	.031	.030	.029	.028	

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	275.	300.	325.	350.	375.	400.	450.	500.	600.	700.	800.	850.
25000.	.030	.034	.038	.043	.047	.052	.056	.060	.064	.068	.073	.078	.082
30000.	.025	.028	.032	.035	.039	.044	.051	.058	.064	.070	.076	.081	.083
35000.	.022	.025	.028	.031	.034	.038	.045	.051	.057	.064	.070	.076	.077
40000.	.019	.022	.024	.027	.030	.034	.039	.045	.051	.058	.064	.070	.071
45000.	.017	.019	.022	.024	.027	.030	.035	.041	.047	.054	.061	.067	.068
50000.	.016	.018	.020	.022	.024	.027	.032	.037	.043	.051	.058	.064	.065
55000.	.015	.016	.018	.020	.022	.025	.029	.034	.041	.048	.055	.061	.062
60000.	.015	.017	.018	.021	.023	.027	.031	.036	.043	.050	.057	.063	.064

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	270.	300.	310.	330.	350.	370.	390.	410.	430.	450.	500.	600.	700.
25000.	.033	.038	.043	.047	.052	.056	.061	.065	.069	.074	.078	.083	.088	.091
30000.	.028	.032	.036	.040	.044	.048	.053	.057	.061	.066	.070	.075	.080	.083
35000.	.024	.027	.031	.034	.038	.041	.045	.051	.054	.058	.063	.067	.072	.075
40000.	.021	.024	.028	.031	.035	.038	.043	.047	.051	.056	.060	.065	.070	.073
45000.	.019	.021	.025	.028	.032	.035	.040	.044	.048	.053	.057	.062	.067	.070
50000.	.018	.020	.023	.026	.029	.032	.037	.041	.045	.050	.054	.059	.064	.067
55000.	.016	.018	.020	.023	.026	.029	.034	.038	.042	.047	.051	.056	.061	.064
60000.	.016	.018	.020	.023	.026	.029	.034	.038	.042	.047	.051	.056	.061	.064

ALTITUDE: 50000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	280.	330.	370.	410.	450.	510.	530.	550.	570.	580.	590.	600.
25000.	.044	.042	.038	.034	.030	.024	.018	.013	.009	.005	.003	.002	.001
30000.	.037	.035	.031	.026	.022	.017	.012	.008	.005	.003	.002	.001	.001
35000.	.032	.030	.026	.021	.017	.013	.009	.006	.004	.002	.001	.001	.001
40000.	.028	.027	.023	.018	.014	.010	.007	.005	.003	.002	.001	.001	.001
45000.	.025	.024	.020	.015	.011	.008	.005	.003	.002	.001	.001	.001	.001
50000.	.021	.020	.016	.012	.009	.006	.004	.002	.001	.001	.001	.001	.001
55000.	.020	.018	.014	.010	.007	.005	.003	.002	.001	.001	.001	.001	.001
60000.	.016	.015	.011	.008	.005	.003	.002	.001	.001	.001	.001	.001	.001

TABLE 11 GUST SENSITIVITY OF F-15

GUST SENSITIVITY (G'S/FT/SEC GUST)														
AIRCRAFT TYPE: F-15														
ALTITUDE: 0. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
30000.	.027	.032	.038	.044	.051	.059	.068	.073	.078	.087	.101	.088	.084	.088
35000.	.023	.029	.034	.039	.045	.052	.060	.065	.069	.077	.090	.088	.083	.078
40000.	.021	.025	.030	.035	.040	.046	.054	.058	.062	.070	.081	.078	.075	.071
45000.	.019	.023	.027	.032	.038	.042	.049	.052	.056	.063	.074	.072	.068	.064
50000.	.017	.021	.025	.029	.033	.038	.045	.048	.052	.058	.068	.066	.062	.058
55000.	.016	.019	.023	.026	.031	.035	.041	.044	.048	.054	.063	.061	.057	.054
60000.	.015	.018	.021	.024	.028	.033	.039	.041	.044	.050	.058	.057	.053	.050
ALTITUDE: 10000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
30000.	.028	.034	.041	.048	.056	.062	.068	.078	.087	.097	.102	.097	.093	.088
35000.	.024	.030	.036	.042	.050	.054	.060	.069	.077	.087	.097	.092	.088	.081
40000.	.022	.028	.032	.037	.044	.048	.054	.061	.068	.078	.088	.083	.079	.074
45000.	.020	.024	.028	.034	.040	.044	.049	.055	.063	.072	.082	.077	.073	.068
50000.	.018	.022	.026	.030	.036	.040	.044	.051	.057	.067	.077	.072	.068	.063
55000.	.016	.020	.024	.028	.033	.037	.041	.047	.053	.062	.072	.067	.063	.058
60000.	.015	.018	.022	.026	.031	.034	.037	.043	.048	.057	.067	.062	.058	.053
ALTITUDE: 20000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
30000.	.028	.036	.044	.048	.054	.061	.070	.078	.087	.097	.102	.097	.093	.088
35000.	.026	.031	.038	.042	.047	.053	.062	.068	.078	.087	.097	.092	.088	.081
40000.	.023	.029	.034	.037	.042	.047	.055	.061	.068	.078	.088	.083	.079	.074
45000.	.020	.025	.030	.034	.038	.043	.049	.055	.063	.072	.082	.077	.073	.068
50000.	.018	.023	.027	.031	.034	.038	.045	.050	.058	.067	.077	.072	.068	.063
55000.	.017	.021	.025	.028	.031	.035	.041	.046	.054	.063	.073	.068	.064	.059
60000.	.015	.018	.023	.026	.029	.033	.038	.042	.049	.058	.068	.063	.059	.054
ALTITUDE: 30000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
30000.	.031	.038	.044	.048	.053	.059	.068	.078	.087	.097	.102	.097	.093	.088
35000.	.027	.034	.038	.042	.048	.057	.067	.078	.087	.097	.102	.097	.093	.088
40000.	.024	.030	.033	.038	.042	.050	.060	.071	.081	.091	.102	.097	.093	.088
45000.	.021	.027	.030	.034	.038	.045	.055	.066	.077	.087	.097	.092	.088	.081
50000.	.019	.024	.027	.031	.035	.041	.049	.059	.069	.079	.089	.084	.080	.074
55000.	.018	.022	.025	.028	.032	.038	.047	.057	.067	.077	.087	.082	.078	.072
60000.	.016	.021	.023	.026	.030	.034	.041	.050	.060	.070	.080	.075	.071	.065
ALTITUDE: 40000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
30000.	.034	.042	.048	.052	.057	.063	.072	.082	.092	.102	.107	.102	.098	.093
35000.	.028	.031	.034	.038	.042	.047	.055	.065	.075	.085	.095	.090	.086	.081
40000.	.026	.028	.030	.032	.035	.039	.047	.057	.067	.077	.087	.082	.078	.073
45000.	.023	.025	.026	.029	.031	.035	.043	.053	.063	.073	.083	.078	.074	.069
50000.	.021	.022	.024	.026	.028	.031	.039	.049	.059	.069	.079	.074	.070	.065
55000.	.019	.020	.022	.024	.026	.028	.036	.046	.056	.066	.076	.071	.067	.062
60000.	.018	.019	.020	.022	.024	.026	.034	.044	.054	.064	.074	.069	.065	.060
ALTITUDE: 50000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
30000.	.043	.042	.041	.039	.038	.037	.035	.033	.032	.030	.029	.028	.027	.026
35000.	.037	.036	.035	.034	.033	.032	.030	.028	.027	.026	.025	.024	.023	.022
40000.	.033	.032	.031	.030	.029	.028	.026	.025	.024	.023	.022	.021	.020	.019
45000.	.029	.028	.027	.026	.025	.024	.022	.021	.020	.019	.018	.017	.016	.015
50000.	.026	.025	.024	.023	.022	.021	.019	.018	.017	.016	.015	.014	.013	.012
55000.	.023	.022	.021	.020	.019	.018	.016	.015	.014	.013	.012	.011	.010	.009
60000.	.020	.019	.018	.017	.016	.015	.013	.012	.011	.010	.009	.008	.007	.006

TABLE 12 GUST SENSITIVITY OF F-16

GUST SENSITIVITY (G-S/FT/SEC GUST)

AIRCRAFT TYPE: F-16

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	400.	440.	480.	520.	560.	590.	610.	630.	640.	650.	660.
15000.	.025	.030	.036	.041	.047	.052	.058	.067	.074	.080	.088	.093	.098	.096
20000.	.018	.023	.028	.032	.036	.041	.046	.052	.058	.063	.069	.073	.076	.076
25000.	.015	.019	.023	.026	.030	.035	.037	.043	.048	.052	.057	.060	.063	.063
30000.	.013	.016	.018	.022	.025	.028	.032	.038	.040	.044	.048	.052	.054	.053
35000.	.014	.017	.019	.022	.024	.027	.031	.035	.038	.042	.045	.047	.047	

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	400.	450.	470.	480.	510.	530.	540.	550.	600.	700.	820.
15000.	.028	.031	.037	.044	.052	.056	.061	.068	.073	.078	.083	.082	.075	.068
20000.	.020	.024	.028	.034	.040	.044	.047	.052	.057	.061	.065	.064	.058	.053
25000.	.016	.020	.023	.028	.033	.036	.039	.042	.046	.050	.053	.052	.047	.043
30000.	.014	.017	.020	.023	.028	.030	.033	.036	.038	.042	.045	.044	.038	.035
35000.	.014	.017	.020	.024	.028	.028	.031	.034	.036	.038	.038	.034	.031	

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	370.	390.	410.	430.	450.	500.	550.	600.	650.	750.	840.
15000.	.027	.031	.040	.043	.047	.052	.056	.065	.071	.088	.082	.080	.057	.055
20000.	.020	.025	.031	.033	.038	.040	.044	.050	.054	.061	.068	.068	.048	.042
25000.	.017	.020	.025	.027	.028	.032	.036	.041	.044	.041	.039	.037	.035	.034
30000.	.014	.017	.021	.023	.025	.027	.030	.035	.037	.035	.033	.031	.028	.028
35000.	.015	.018	.020	.021	.024	.026	.030	.032	.030	.028	.027	.025	.024	

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	310.	340.	350.	360.	380.	400.	450.	500.	600.	700.	800.	860.
15000.	.028	.032	.037	.044	.047	.050	.060	.068	.085	.085	.081	.047	.045	.044
20000.	.021	.025	.028	.034	.036	.038	.046	.048	.047	.038	.036	.034	.034	.033
25000.	.017	.020	.023	.027	.028	.031	.037	.037	.034	.032	.028	.028	.027	.027
30000.	.017	.018	.023	.025	.026	.031	.031	.028	.028	.024	.024	.023	.023	.022
35000.	.014	.017	.020	.021	.023	.027	.027	.025	.023	.021	.020	.018	.018	

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	270.	280.	280.	300.	320.	350.	400.	500.	600.	700.	800.	850.
15000.	.031	.033	.035	.038	.042	.047	.048	.045	.042	.038	.038	.035	.034	.034
20000.	.023	.025	.027	.028	.032	.035	.037	.034	.032	.028	.027	.026	.026	.026
25000.	.019	.020	.022	.023	.025	.028	.030	.027	.025	.023	.022	.021	.021	.021
30000.	.018	.020	.021	.024	.025	.023	.021	.019	.018	.018	.018	.015	.015	.015
35000.				.018	.021	.021	.020	.018	.018	.016	.016	.015	.015	.015

ALTITUDE: 50000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	330.	370.	410.	450.	480.	530.	570.	610.	650.	690.	710.	720.
15000.	.038	.038	.033	.031	.030	.028	.028	.028	.028	.028	.027	.027	.027	.027
20000.	.030	.027	.025	.023	.022	.022	.021	.021	.021	.021	.021	.020	.020	.020
25000.	.024	.022	.020	.018	.018	.018	.017	.017	.017	.017	.016	.016	.016	.016
30000.		.018	.017	.016	.015	.015	.014	.014	.014	.014	.014	.014	.014	.013
35000.			.014	.013	.013	.013	.012	.012	.012	.012	.012	.012	.012	.012

TABLE 13 GUST SENSITIVITY OF F-106

GUST SENSITIVITY (G'S/FT/SEC GUST)																	
AIRCRAFT TYPE: F-108																	
ALTITUDE: 0. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	620.	640.	660.	680.	700.	720.	750.	800.	
25000.	.030	.038	.043	.048	.056	.064	.072	.082	.087	.092	.098	.105	.111	.113			
30000.	.026	.032	.037	.043	.048	.058	.063	.072	.076	.081	.087	.093	.098	.098			
35000.	.023	.028	.033	.038	.043	.048	.056	.064	.068	.073	.078	.083	.088	.088			
40000.	.021	.025	.030	.034	.038	.044	.050	.058	.062	.066	.071	.076	.080	.080			
ALTITUDE: 10000. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
WEIGHT	250.	300.	350.	400.	450.	480.	500.	520.	540.	560.	580.	600.	620.	640.	650.	800.	
25000.	.032	.039	.046	.053	.061	.067	.072	.078	.081	.088	.088	.102	.102	.102			
30000.	.028	.034	.040	.046	.053	.058	.062	.068	.071	.077	.086	.090	.088	.088			
35000.	.024	.030	.035	.041	.047	.051	.055	.058	.063	.068	.077	.080	.079	.078			
40000.	.022	.028	.031	.038	.042	.046	.048	.053	.056	.061	.068	.072	.071	.070			
ALTITUDE: 20000. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
WEIGHT	250.	300.	350.	400.	425.	450.	475.	500.	550.	600.	650.	700.	750.	800.			
25000.	.034	.041	.048	.058	.065	.071	.080	.088	.081	.080	.080	.089	.089	.089			
30000.	.028	.036	.042	.050	.058	.061	.069	.077	.078	.078	.078	.076	.076	.076			
35000.	.028	.031	.037	.044	.048	.054	.061	.068	.070	.068	.067	.067	.067	.066			
40000.	.023	.028	.033	.038	.043	.048	.054	.061	.062	.061	.060	.059	.059	.058			
ALTITUDE: 30000. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
WEIGHT	250.	300.	325.	350.	375.	400.	450.	500.	550.	600.	650.	700.	750.	800.			
25000.	.036	.044	.050	.056	.063	.073	.078	.077	.076	.075	.075	.075	.075	.075			
30000.	.031	.038	.042	.047	.054	.062	.067	.068	.065	.064	.064	.063	.063	.063			
35000.	.027	.033	.037	.041	.047	.055	.058	.057	.056	.056	.055	.055	.055	.055			
40000.	.024	.029	.033	.037	.042	.048	.052	.051	.050	.049	.049	.049	.048	.048			
ALTITUDE: 40000. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
WEIGHT	250.	275.	300.	325.	350.	400.	450.	500.	550.	600.	625.	650.	675.	700.			
25000.	.038	.045	.052	.061	.068	.084	.083	.082	.081	.081	.081	.081	.081	.081			
30000.	.033	.038	.044	.053	.058	.064	.053	.052	.052	.051	.051	.051	.051	.051			
35000.	.028	.033	.038	.046	.048	.047	.046	.045	.045	.044	.044	.044	.044	.044			
40000.	.025	.029	.034	.041	.043	.042	.041	.040	.039	.038	.038	.038	.038	.038			
ALTITUDE: 50000. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
WEIGHT	250.	280.	330.	370.	410.	450.	480.	510.	530.	550.	570.	590.	590.	590.			
25000.	.048	.054	.062	.071	.080	.080	.078	.078	.078	.078	.078	.078	.078	.078			
30000.	.040	.048	.054	.063	.062	.062	.062	.061	.061	.061	.061	.061	.061	.061			
35000.	.035	.038	.038	.037	.036	.036	.036	.035	.035	.035	.035	.035	.035	.035			
40000.	.031	.035	.039	.042	.042	.042	.041	.041	.041	.041	.041	.041	.041	.041			

TABLE 14 GUST SENSITIVITY OF F-111 @ 16° SHEEP

GUST SENSITIVITY (G'S/FT/SEC GUST)												
AIRCRAFT TYPE: F-111 16 DEG SHEEP												
ALTITUDE: 0. FEET												
CALIBRATED AIRSPEED (KNOTS CAS)												
WEIGHT	250.	270.	290.	310.	330.	340.	350.	360.	370.	380.	385.	400.
50000.	.018	.021	.023	.024	.028	.027	.028	.029	.030	.031	.032	.033
55000.	.018	.019	.021	.022	.024	.025	.028	.027	.028	.029	.029	.031
60000.	.018	.018	.019	.021	.022	.023	.024	.025	.026	.027	.028	.029
65000.	.018	.018	.018	.021	.021	.021	.022	.023	.024	.025	.025	.026
70000.	.017	.018	.018	.020	.021	.021	.022	.022	.023	.024	.024	.025
75000.	.017	.018	.018	.019	.020	.020	.021	.022	.022	.022	.022	.023
80000.	.016	.017	.018	.018	.018	.018	.019	.020	.020	.021	.021	.022
85000.	.015	.016	.017	.017	.017	.017	.018	.019	.020	.020	.020	.021
90000.	.015	.016	.016	.016	.016	.016	.017	.018	.018	.018	.018	.019
95000.	.014	.015	.015	.015	.015	.015	.016	.016	.017	.017	.017	.018
100000.	.014	.014	.014	.014	.014	.014	.015	.015	.016	.017	.017	.018
ALTITUDE: 10000. FEET												
CALIBRATED AIRSPEED (KNOTS CAS)												
WEIGHT	250.	270.	280.	310.	330.	340.	350.	360.	370.	380.	385.	400.
50000.	.020	.022	.024	.028	.028	.029	.030	.032	.033	.035	.036	.038
55000.	.020	.022	.024	.028	.028	.028	.029	.030	.032	.033	.033	.035
60000.	.018	.020	.022	.024	.024	.025	.026	.027	.028	.028	.030	.032
65000.	.018	.020	.022	.022	.023	.024	.025	.026	.027	.028	.028	.030
70000.	.017	.019	.020	.021	.022	.022	.023	.024	.025	.026	.027	.028
75000.	.018	.019	.020	.021	.022	.021	.022	.023	.024	.024	.025	.026
80000.	.017	.018	.019	.020	.021	.020	.021	.022	.023	.023	.024	.024
85000.	.017	.018	.018	.019	.020	.019	.020	.021	.021	.021	.022	.023
90000.	.018	.018	.018	.018	.019	.019	.019	.020	.020	.020	.021	.022
95000.	.016	.017	.017	.017	.018	.018	.018	.019	.019	.020	.020	.021
100000.	.015	.016	.016	.016	.017	.017	.017	.018	.018	.019	.019	.020
ALTITUDE: 20000. FEET												
CALIBRATED AIRSPEED (KNOTS CAS)												
WEIGHT	250.	270.	290.	310.	330.	340.	350.	360.	370.	380.	385.	400.
50000.	.021	.023	.025	.028	.031	.033	.035	.037	.038	.043	.045	.048
55000.	.021	.023	.025	.028	.029	.030	.032	.034	.035	.038	.041	.045
60000.	.018	.021	.024	.026	.026	.028	.029	.031	.034	.036	.038	.041
65000.	.020	.022	.024	.026	.026	.027	.029	.031	.034	.035	.036	.039
70000.	.018	.020	.022	.024	.025	.027	.029	.031	.033	.034	.035	.037
75000.	.018	.021	.022	.024	.025	.027	.029	.030	.032	.033	.034	.035
80000.	.018	.020	.021	.022	.023	.024	.025	.026	.028	.028	.030	.031
85000.	.018	.019	.020	.021	.021	.022	.023	.024	.025	.026	.028	.029
90000.	.018	.019	.020	.021	.021	.021	.022	.023	.024	.025	.026	.028
95000.	.018	.019	.020	.021	.021	.021	.022	.023	.024	.025	.026	.028
100000.	.018	.019	.020	.021	.021	.021	.022	.023	.024	.025	.026	.028

TABLE 15 GUST SENSITIVITY OF F-111 @ 26° SWEEP

GUST SENSITIVITY (G'S/FT/SEC GUST)
AIRCRAFT TYPE: F-111 26 DEG SWEEP
ALTITUDE: 0. FEET

WEIGHT	250.	280.	310.	340.	370.	380.	410.	430.	450.	480.	470.	480.	480.	500.
50000.	.018	.021	.023	.026	.028	.031	.033	.035	.038	.038	.041	.042	.044	.048
55000.		.018	.024	.024	.028	.028	.030	.032	.035	.038	.037	.039	.040	.042
60000.		.017	.020	.022	.024	.028	.028	.030	.032	.033	.034	.036	.037	.038
65000.		.018	.018	.020	.023	.024	.028	.028	.030	.031	.032	.033	.034	.036
70000.			.017	.019	.021	.023	.024	.028	.028	.029	.030	.031	.032	.034
75000.			.016	.018	.020	.021	.023	.024	.028	.027	.028	.028	.030	.031
80000.			.015	.017	.019	.020	.021	.023	.025	.025	.026	.027	.028	.030
85000.				.018	.018	.019	.020	.022	.023	.024	.025	.026	.027	.028
90000.				.015	.017	.018	.019	.020	.022	.023	.024	.024	.025	.027
95000.				.014	.018	.017	.018	.019	.021	.022	.022	.023	.024	.025
100000.				.013	.015	.016	.017	.018	.020	.021	.021	.022	.023	.024

ALTITUDE: 10000. FEET

WEIGHT	250.	280.	330.	380.	380.	420.	450.	480.	480.	500.	505.	510.	515.	520.
50000.	.018	.022	.028	.030	.034	.038	.045	.054	.058	.062	.065	.068	.072	.078
55000.		.020	.024	.027	.031	.035	.041	.048	.053	.057	.060	.063	.068	.073
60000.		.018	.022	.025	.028	.032	.038	.045	.048	.053	.055	.058	.061	.068
65000.		.017	.021	.023	.028	.030	.035	.042	.045	.048	.052	.054	.057	.063
70000.		.016	.018	.022	.025	.028	.033	.038	.042	.046	.048	.051	.053	.058
75000.			.018	.020	.023	.028	.031	.037	.040	.043	.045	.047	.050	.055
80000.			.017	.018	.022	.025	.028	.035	.038	.041	.043	.045	.047	.052
85000.			.016	.018	.020	.023	.027	.033	.035	.038	.040	.042	.045	.048
90000.			.015	.017	.018	.022	.028	.031	.034	.037	.038	.040	.042	.047
95000.				.018	.018	.021	.025	.030	.032	.035	.038	.038	.040	.045
100000.				.015	.017	.020	.023	.028	.030	.033	.035	.036	.038	.043

ALTITUDE: 20000. FEET

WEIGHT	250.	300.	350.	380.	410.	420.	430.	435.	440.	450.	460.	470.	500.	530.
50000.	.020	.025	.032	.038	.048	.054	.061	.068	.078	.078	.088	.082	.091	.095
55000.		.023	.030	.038	.048	.050	.058	.067	.070	.070	.082	.077	.087	.091
60000.		.021	.027	.033	.041	.048	.051	.057	.063	.063	.078	.073	.083	.088
65000.		.020	.028	.030	.038	.042	.048	.053	.061	.060	.074	.068	.078	.083
70000.		.018	.023	.028	.038	.040	.044	.050	.057	.058	.070	.068	.077	.083
75000.		.017	.022	.027	.034	.037	.042	.047	.053	.053	.067	.063	.073	.078
80000.			.021	.025	.032	.035	.038	.044	.050	.050	.064	.060	.070	.075
85000.			.018	.024	.030	.033	.037	.042	.047	.047	.062	.058	.068	.073
90000.			.018	.022	.028	.031	.035	.038	.045	.045	.060	.058	.068	.073
95000.			.017	.021	.027	.030	.033	.038	.043	.043	.058	.054	.064	.069
100000.			.017	.020	.028	.028	.032	.038	.041	.041	.056	.053	.063	.068

ALTITUDE: 30000. FEET

WEIGHT	250.	300.	330.	340.	350.	380.	370.	380.	390.	410.	430.	450.	470.
50000.	.021	.030	.038	.043	.048	.055	.064	.062	.054	.048	.042	.038	.032
55000.		.027	.035	.038	.045	.050	.058	.057	.050	.045	.038	.035	.030
60000.		.025	.032	.036	.041	.048	.054	.053	.048	.041	.038	.032	.027
65000.		.023	.030	.033	.038	.043	.050	.048	.043	.038	.033	.028	.023
70000.		.021	.028	.031	.036	.040	.047	.045	.040	.036	.031	.027	.023
75000.			.028	.028	.033	.038	.044	.043	.037	.033	.028	.025	.022
80000.			.025	.027	.031	.035	.041	.040	.035	.030	.027	.024	.021
85000.			.023	.028	.030	.033	.038	.038	.033	.028	.025	.022	.019
90000.				.028	.032	.037	.038	.031	.026	.024	.021	.020	.018
95000.					.030	.035	.034	.030	.027	.023	.020	.018	.017
100000.						.030	.032	.028	.025	.022	.018	.018	.017

ALTITUDE: 40000. FEET

WEIGHT	250.	280.	270.	280.	285.	290.	285.	300.	305.	310.	320.	340.	380.	390.
50000.	.030	.034	.040	.048	.058	.052	.047	.044	.041	.037	.031	.028	.028	.028
55000.		.031	.036	.042	.051	.047	.043	.040	.037	.034	.028	.025	.024	.024
60000.			.038	.047	.044	.044	.040	.037	.034	.031	.028	.024	.022	.022
65000.							.037	.034	.032	.028	.024	.022	.020	.020
70000.								.030	.027	.023	.020	.018	.018	.018
75000.									.020	.018	.018	.018	.018	.018
80000.										.018	.018	.018	.018	.018
85000.											.018	.018	.018	.018
90000.												.018	.018	.018
95000.													.018	.018
100000.														.018

TABLE 16 GUST SENSITIVITY OF F-111 @ 50° SWEEP

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: F-111 NO DEN SWEEP

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.
50000.	.014	.018	.021	.024	.028	.033	.039	.043	.048	.057	.068	.079
55000.	.013	.016	.019	.022	.025	.030	.035	.040	.044	.052	.061	.069
60000.	.015	.018	.021	.024	.028	.033	.037	.041	.045	.056	.064	.075
65000.	.014	.016	.019	.022	.026	.030	.034	.038	.043	.052	.060	.067
70000.	.010	.013	.016	.021	.024	.028	.032	.036	.042	.049	.058	.064
75000.	.012	.014	.017	.019	.023	.027	.030	.034	.040	.046	.053	.061
80000.	.011	.013	.016	.018	.021	.025	.028	.032	.037	.044	.050	.058
85000.		.013	.015	.017	.020	.024	.028	.030	.033	.041	.047	.055
90000.		.012	.014	.016	.019	.022	.025	.028	.034	.039	.045	.054
95000.		.011	.013	.016	.018	.021	.024	.027	.032	.037	.043	.050
100000.		.011	.013	.015	.017	.020	.023	.026	.030	.036	.041	.048

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.
50000.	.015	.018	.022	.026	.031	.036	.043	.050	.057	.064	.075	.083
55000.	.014	.017	.020	.024	.028	.033	.039	.045	.052	.059	.068	.075
60000.	.015	.018	.022	.026	.032	.036	.042	.048	.055	.062	.072	.079
65000.	.014	.017	.020	.024	.030	.033	.038	.045	.051	.058	.067	.073
70000.	.013	.016	.019	.022	.028	.031	.037	.042	.048	.054	.063	.069
75000.	.012	.015	.018	.021	.026	.029	.034	.040	.045	.051	.059	.065
80000.		.014	.017	.020	.024	.028	.032	.037	.042	.048	.055	.062
85000.		.013	.016	.019	.023	.026	.031	.035	.040	.045	.051	.057
90000.		.012	.015	.018	.022	.025	.029	.033	.038	.043	.048	.054
95000.		.012	.014	.017	.021	.023	.028	.032	.036	.042	.047	.052
100000.		.011	.013	.016	.020	.022	.026	.030	.034	.039	.044	.049

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.
50000.	.015	.018	.023	.028	.033	.038	.045	.053	.061	.069	.079	.087
55000.	.017	.021	.026	.030	.035	.042	.048	.054	.062	.070	.080	.088
60000.	.016	.019	.024	.028	.033	.038	.045	.051	.058	.066	.076	.083
65000.	.015	.018	.023	.027	.032	.036	.042	.048	.054	.061	.070	.077
70000.	.014	.017	.021	.024	.028	.034	.038	.043	.049	.055	.063	.069
75000.	.013	.016	.020	.022	.026	.031	.037	.042	.048	.053	.060	.066
80000.		.015	.019	.021	.025	.030	.034	.039	.044	.049	.056	.062
85000.		.014	.017	.020	.023	.028	.032	.036	.041	.045	.051	.056
90000.		.013	.017	.019	.022	.026	.031	.035	.039	.044	.048	.053
95000.		.012	.016	.018	.021	.025	.028	.032	.036	.041	.045	.049
100000.		.012	.015	.017	.020	.024	.028	.032	.036	.041	.045	.049

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	375.	400.	500.	550.	600.	650.	700.	750.	800.
50000.	.018	.024	.027	.034	.041	.053	.060	.067	.074	.082	.090	.098
55000.	.019	.025	.031	.037	.043	.055	.062	.069	.076	.084	.092	.099
60000.	.017	.023	.028	.034	.039	.051	.058	.065	.072	.079	.086	.093
65000.	.016	.021	.026	.032	.037	.048	.055	.062	.069	.076	.083	.089
70000.	.015	.020	.024	.030	.034	.045	.052	.059	.066	.073	.079	.085
75000.		.019	.023	.028	.032	.043	.050	.057	.064	.071	.077	.083
80000.		.017	.021	.026	.031	.041	.048	.055	.062	.069	.075	.081
85000.		.016	.020	.025	.030	.040	.047	.054	.061	.068	.074	.079
90000.		.016	.019	.023	.028	.038	.045	.052	.059	.066	.072	.077
95000.		.015	.018	.022	.027	.037	.044	.051	.058	.064	.070	.075
100000.		.017	.021	.025	.030	.040	.047	.054	.061	.067	.073	.078

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	275.	300.	325.	350.	375.	400.	425.	450.	500.	550.	600.	650.	700.
50000.	.021	.027	.034	.039	.045	.051	.057	.063	.069	.075	.081	.087	.093	.099
60000.		.023	.029	.034	.039	.045	.051	.057	.063	.069	.075	.081	.087	.093
70000.			.025	.030	.035	.040	.045	.051	.056	.062	.067	.073	.078	.083
80000.				.027	.032	.037	.042	.047	.052	.057	.062	.067	.072	.077
90000.					.029	.034	.039	.044	.049	.054	.059	.064	.069	.074
100000.						.031	.036	.041	.046	.051	.056	.061	.066	.071

ALTITUDE: 50000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	275.	300.	325.	350.	375.	400.	425.	450.	500.	550.	600.	650.	700.
50000.	.024	.031	.037	.042	.047	.052	.057	.062	.067	.072	.077	.082	.087	.092
60000.		.026	.032	.037	.042	.047	.052	.057	.062	.067	.072	.077	.082	.087
70000.			.028	.033	.038	.043	.048	.053	.058	.063	.068	.073	.078	.083
80000.				.030	.035	.040	.045	.050	.055	.060	.065	.070	.075	.080
90000.					.032	.037	.042	.047	.052	.057	.062	.067	.072	.077
100000.						.034	.039	.044	.049	.054	.059	.064	.069	.074

TABLE 17 GUST SENSITIVITY OF F-111 @ 72° SWEEP

DUST SENSITIVITY (G/SEC/SEC GAIN)

AIRCRAFT TYPE: F-117 72 GUN SHEEP

ALTITUDE: 0. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.010	.012	.013	.013	.014	.015	.020	.022	.025	.028	.032	.036	.038	.040
35000.	.008	.011	.012	.014	.016	.019	.020	.023	.026	.030	.033	.036	.038	.039
20000.	.006	.010	.011	.012	.015	.017	.019	.021	.024	.027	.031	.032	.034	.034
15000.	.007	.008	.011	.012	.016	.018	.019	.022	.025	.028	.030	.032	.033	.033
10000.	.008	.008	.010	.011	.013	.014	.016	.018	.021	.024	.026	.028	.029	.029
7500.	.008	.008	.010	.011	.012	.014	.015	.017	.019	.022	.024	.026	.027	.028
5000.	.007	.008	.010	.011	.013	.014	.016	.018	.021	.024	.026	.028	.029	.029
2500.	.007	.008	.009	.011	.012	.013	.015	.017	.020	.022	.024	.026	.027	.028
1000.	.007	.008	.008	.010	.011	.013	.014	.016	.018	.021	.022	.023	.024	.024
500.	.006	.007	.008	.010	.011	.012	.014	.016	.018	.020	.021	.022	.022	.022
100000.	.007	.008	.008	.010	.011	.011	.013	.015	.017	.018	.020	.021	.021	.021

ALTITUDE: 10000. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.010	.012	.014	.016	.019	.020	.024	.027	.031	.035	.038	.043	.044	.044
35000.	.008	.011	.012	.014	.016	.018	.022	.025	.028	.032	.036	.040	.041	.041
20000.	.006	.010	.012	.013	.015	.017	.020	.023	.026	.030	.033	.037	.037	.038
15000.	.008	.008	.011	.012	.014	.016	.018	.021	.025	.027	.031	.034	.035	.036
10000.	.008	.008	.010	.011	.013	.015	.017	.020	.023	.026	.029	.032	.032	.033
7500.	.008	.008	.010	.011	.013	.015	.017	.020	.023	.026	.029	.032	.032	.033
5000.	.008	.008	.011	.012	.014	.016	.018	.021	.024	.027	.030	.033	.033	.034
2500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
1000.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
100000.	.007	.008	.008	.010	.011	.012	.014	.016	.018	.020	.022	.023	.024	.024

ALTITUDE: 20000. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.011	.014	.016	.018	.021	.023	.028	.030	.035	.038	.043	.046	.048	.048
35000.	.009	.011	.013	.015	.017	.021	.024	.027	.031	.034	.038	.041	.043	.043
20000.	.006	.010	.012	.013	.015	.017	.021	.023	.026	.030	.033	.037	.037	.038
15000.	.008	.008	.011	.012	.014	.016	.021	.023	.026	.030	.033	.037	.037	.038
10000.	.008	.008	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.036
7500.	.008	.008	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.036
5000.	.008	.008	.011	.012	.014	.016	.018	.021	.024	.027	.030	.033	.034	.034
2500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
1000.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
100000.	.007	.008	.008	.010	.012	.014	.016	.018	.020	.022	.023	.024	.024	.024

ALTITUDE: 30000. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.012	.014	.016	.018	.021	.023	.028	.030	.035	.038	.043	.046	.048	.048
35000.	.009	.011	.013	.015	.017	.021	.024	.027	.031	.034	.038	.041	.043	.043
20000.	.006	.010	.012	.013	.015	.017	.021	.023	.026	.030	.033	.037	.037	.038
15000.	.008	.008	.011	.012	.014	.016	.021	.023	.026	.030	.033	.037	.037	.038
10000.	.008	.008	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.036
7500.	.008	.008	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.036
5000.	.008	.008	.011	.012	.014	.016	.018	.021	.024	.027	.030	.033	.034	.034
2500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
1000.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
100000.	.007	.008	.008	.010	.012	.014	.016	.018	.020	.022	.023	.024	.024	.024

ALTITUDE: 40000. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.012	.014	.016	.018	.021	.023	.028	.030	.035	.038	.043	.046	.048	.048
35000.	.009	.011	.013	.015	.017	.021	.024	.027	.031	.034	.038	.041	.043	.043
20000.	.006	.010	.012	.013	.015	.017	.021	.023	.026	.030	.033	.037	.037	.038
15000.	.008	.008	.011	.012	.014	.016	.021	.023	.026	.030	.033	.037	.037	.038
10000.	.008	.008	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.036
7500.	.008	.008	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.036
5000.	.008	.008	.011	.012	.014	.016	.018	.021	.024	.027	.030	.033	.034	.034
2500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
1000.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
100000.	.007	.008	.008	.010	.012	.014	.016	.018	.020	.022	.023	.024	.024	.024

ALTITUDE: 50000. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.012	.014	.016	.018	.021	.023	.028	.030	.035	.038	.043	.046	.048	.048
35000.	.009	.011	.013	.015	.017	.021	.024	.027	.031	.034	.038	.041	.043	.043
20000.	.006	.010	.012	.013	.015	.017	.021	.023	.026	.030	.033	.037	.037	.038
15000.	.008	.008	.011	.012	.014	.016	.021	.023	.026	.030	.033	.037	.037	.038
10000.	.008	.008	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.036
7500.	.008	.008	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.036
5000.	.008	.008	.011	.012	.014	.016	.018	.021	.024	.027	.030	.033	.034	.034
2500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
1000.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
100000.	.007	.008	.008	.010	.012	.014	.016	.018	.020	.022	.023	.024	.024	.024

ALTITUDE: 60000. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.012	.014	.016	.018	.021	.023	.028	.030	.035	.038	.043	.046	.048	.048
35000.	.009	.011	.013	.015	.017	.021	.024	.027	.031	.034	.038	.041	.043	.043
20000.	.006	.010	.012	.013	.015	.017	.021	.023	.026	.030	.033	.037	.037	.038
15000.	.008	.008	.011	.012	.014	.016	.021	.023	.026	.030	.033	.037	.037	.038
10000.	.008	.008	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.036
7500.	.008	.008	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.036
5000.	.008	.008	.011	.012	.014	.016	.018	.021	.024	.027	.030	.033	.034	.034
2500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
1000.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
100000.	.007	.008	.008	.010	.012	.014	.016	.018	.020	.022	.023	.024	.024	.024

ALTITUDE: 70000. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.012	.014	.016	.018	.021	.023	.028	.030	.035	.038	.043	.046	.048	.048
35000.	.009	.011	.013	.015	.017	.021	.024	.027	.031	.034	.038	.041	.043	.043
20000.	.006	.010	.012	.013	.015	.017	.021	.023	.026	.030	.033	.037	.037	.038
15000.	.008	.008	.011	.012	.014	.016	.021	.023	.026	.030	.033	.037	.037	.038
10000.	.008	.008	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.036
7500.	.008	.008	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.036
5000.	.008	.008	.011	.012	.014	.016	.018	.021	.024	.027	.030	.033	.034	.034
2500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
1000.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
500.	.007	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.031
100000.	.007	.008	.008	.010	.012	.014	.016	.018	.020					

TABLE 18 GUST SENSITIVITY OF FB-111 @ 16° SWEEP

GUST SENSITIVITY (G'S/FT/SEC GUST)																						
AIRCRAFT TYPE: FB-111 16 DEG SWEEP																						
ALTITUDE: 0. FEET																						
CALIBRATED AIRSPEED (KNOTS CAS)																						
WEIGHT	50000.	60000.	70000.	80000.	90000.	100000.	110000.	120000.	250.	270.	280.	310.	330.	340.	350.	360.	370.	380.	385.	390.	395.	400.
	.021	.022	.024	.026	.028	.029	.031	.032	.033	.034	.035	.036	.037	.038	.039	.040	.041	.042	.043	.044	.045	.046
	.019	.021	.022	.024	.025	.026	.028	.029	.030	.032	.032	.033	.034	.035	.036	.037	.038	.039	.040	.041	.042	.043
	.018	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038	.039	.040
	.017	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038	.039
	.016	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038
	.015	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037
	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035
	.015	.015	.016	.017	.018	.019	.020	.021	.022	.023	.024	.025	.026	.0								

TABLE 19 GUST SENSITIVITY OF FB-111 @ 26° SWEEP

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: FB-111 28 DEG SWEEP

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	310.	340.	370.	390.	410.	430.	450.	480.	470.	480.	490.	500.
50000.	.020	.022	.025	.028	.031	.033	.035	.038	.041	.043	.044	.045	.048	.050
80000.		.018	.021	.024	.026	.028	.030	.032	.035	.036	.037	.038	.041	.042
70000.		.018	.018	.020	.023	.024	.026	.028	.030	.031	.032	.034	.035	.037
80000.			.018	.018	.020	.022	.023	.025	.027	.028	.028	.030	.031	.033
90000.				.018	.018	.018	.021	.022	.024	.025	.026	.027	.028	.028
100000.				.015	.016	.017	.018	.020	.022	.022	.023	.024	.025	.026
110000.					.015	.016	.017	.018	.020	.021	.021	.022	.023	.024
120000.						.014	.015	.016	.017	.018	.018	.020	.021	.022

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	370.	380.	410.	430.	450.	470.	480.	500.	510.	515.	520.
50000.	.020	.025	.031	.034	.037	.040	.044	.048	.052	.055	.057	.058	.063	.063
80000.		.021	.025	.028	.031	.034	.037	.042	.047	.055	.060	.066	.071	.080
70000.		.018	.023	.025	.027	.028	.032	.038	.041	.048	.052	.058	.062	.070
80000.		.018	.020	.022	.024	.025	.028	.032	.038	.042	.048	.051	.055	.062
90000.			.018	.018	.021	.023	.026	.028	.032	.038	.041	.046	.050	.056
100000.			.018	.018	.021	.023	.026	.028	.034	.036	.042	.045	.051	
110000.			.018	.018	.017	.018	.021	.024	.027	.031	.034	.038	.041	.047
120000.			.015	.016	.016	.018	.019	.022	.025	.028	.032	.035	.038	.043

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	400.	420.	430.	435.	440.	450.	460.	470.	480.	510.	540.
50000.	.021	.027	.035	.036	.041	.047	.050	.053	.058	.059	.063	.063	.063	.047
80000.		.023	.030	.043	.052	.060	.068	.080	.078	.085	.098	.093	.044	.038
70000.		.020	.028	.037	.045	.052	.058	.068	.068	.057	.051	.048	.038	.034
80000.			.023	.032	.040	.048	.053	.062	.058	.050	.045	.041	.034	.030
90000.			.020	.029	.036	.041	.047	.055	.053	.045	.040	.037	.030	.027
100000.			.018	.028	.032	.037	.043	.050	.048	.041	.038	.033	.027	.024
110000.				.024	.028	.034	.038	.048	.044	.037	.033	.030	.025	.022
120000.				.022	.027	.031	.036	.042	.040	.034	.030	.028	.023	.020

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	310.	340.	350.	355.	360.	370.	380.	390.	400.	430.	460.	490.
50000.	.023	.030	.043	.044	.058	.065	.078	.072	.081	.094	.080	.041	.038	.034
80000.		.025	.038	.041	.048	.055	.066	.061	.052	.046	.042	.034	.030	.028
70000.		.022	.031	.035	.041	.048	.057	.053	.045	.040	.038	.030	.028	.024
80000.			.028	.031	.038	.042	.051	.047	.038	.035	.032	.028	.023	.021
90000.				.028	.032	.038	.045	.042	.035	.031	.028	.023	.020	.018
100000.					.034	.041	.038		.032	.028	.026	.021	.018	.017
110000.									.028	.026	.023	.019	.017	.015
120000.										.021	.018	.015	.014	

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	270.	280.	285.	290.	295.	300.	310.	320.	330.	340.	350.	360.
50000.	.028	.033	.038	.048	.058	.071	.081	.094	.048	.040	.037	.034	.030	.028
80000.				.038	.047	.060	.051	.045	.038	.034	.031	.028	.025	.023
70000.								.033	.028	.028	.025	.022	.020	
80000.										.023	.022		.018	.016
90000.												.017	.016	
100000.													.016	.014

TABLE 20 GUST SENSITIVITY OF FB-111 @ 50° SWEEP

GUST SENSITIVITY (G'S/FT/SEC GUST)													
AIRCRAFT TYPE: FB-111 50 DEG SWEEP													
ALTITUDE: 0, FEET													
CALIBRATED AIRSPEED (KNOTS CAS)													
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.
50000.	.018	.023	.031	.038	.043	.052	.057	.064	.071	.078	.085	.093	.094
60000.		.018	.028	.030	.038	.044	.048	.055	.061	.067	.073	.073	.063
70000.		.017	.023	.028	.031	.038	.043	.048	.053	.058	.064	.064	.053
80000.		.015	.020	.023	.028	.034	.038	.043	.047	.052	.057	.057	.048
90000.		.013	.018	.021	.025	.030	.034	.038	.043	.047	.051	.051	.044
100000.		.012	.018	.018	.022	.028	.031	.035	.038	.043	.047	.047	.040
110000.		.011	.015	.017	.021	.025	.028	.032	.035	.038	.043	.043	.038
120000.			.014	.018	.018	.023	.028	.028	.033	.038	.040	.040	.033
ALTITUDE: 10000, FEET													
CALIBRATED AIRSPEED (KNOTS CAS)													
WEIGHT	250.	300.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
50000.	.018	.024	.028	.034	.042	.048	.053	.060	.067	.077	.088	.098	.091
60000.		.020	.024	.028	.038	.048	.051	.057	.068	.078	.088	.098	.098
70000.		.017	.021	.025	.031	.038	.044	.050	.057	.068	.078	.088	.088
80000.		.015	.018	.022	.027	.034	.039	.044	.051	.061	.071	.081	.081
90000.		.014	.018	.020	.024	.027	.031	.036	.041	.048	.058	.068	.068
100000.		.012	.015	.018	.022	.024	.028	.032	.038	.041	.048	.058	.058
110000.		.011	.013	.018	.020	.022	.028	.032	.038	.041	.048	.058	.058
120000.			.012	.015	.018	.020	.024	.027	.030	.035	.040	.048	.048
ALTITUDE: 20000, FEET													
CALIBRATED AIRSPEED (KNOTS CAS)													
WEIGHT	250.	300.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
50000.	.017	.025	.032	.044	.051	.058	.064	.078	.083	.097	.103	.113	.103
60000.		.021	.027	.037	.043	.048	.054	.068	.073	.088	.093	.103	.103
70000.		.018	.023	.032	.037	.042	.047	.061	.066	.081	.086	.096	.096
80000.		.016	.021	.028	.033	.037	.042	.056	.061	.076	.081	.091	.091
90000.		.014	.018	.025	.028	.034	.037	.051	.056	.071	.076	.086	.086
100000.		.013	.017	.023	.027	.030	.034	.048	.053	.068	.073	.083	.083
110000.			.015	.021	.024	.028	.031	.045	.050	.065	.070	.080	.080
120000.			.014	.018	.022	.025	.028	.042	.047	.062	.067	.077	.077
ALTITUDE: 30000, FEET													
CALIBRATED AIRSPEED (KNOTS CAS)													
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.
50000.	.017	.023	.025	.028	.037	.047	.052	.062	.067	.077	.082	.092	.092
60000.		.018	.021	.024	.031	.040	.044	.054	.059	.069	.074	.084	.084
70000.		.016	.018	.021	.027	.034	.038	.048	.053	.063	.068	.078	.078
80000.			.018	.021	.028	.035	.039	.049	.054	.064	.069	.079	.079
90000.				.018	.021	.027	.030	.040	.045	.055	.060	.070	.070
100000.					.018	.024	.027	.037	.042	.052	.057	.067	.067
110000.					.017	.022	.025	.035	.040	.050	.055	.065	.065
120000.						.020	.023	.033	.038	.048	.053	.063	.063
ALTITUDE: 40000, FEET													
CALIBRATED AIRSPEED (KNOTS CAS)													
WEIGHT	250.	270.	290.	310.	330.	350.	370.	400.	450.	500.	550.	600.	700.
50000.	.020	.023	.027	.034	.041	.040	.034	.028	.028	.024	.023	.022	.021
60000.			.023	.028	.034	.034	.028	.024	.021	.020	.018	.018	.017
70000.				.025	.030	.028	.024	.021	.018	.017	.018	.018	.018
80000.					.028	.025	.021	.018	.018	.015	.014	.014	.013
90000.						.023	.018	.018	.014	.013	.013	.012	.012
100000.							.017	.015	.013	.012	.011	.011	.011
110000.								.013	.012	.011	.010	.010	.010
120000.									.011	.010	.010	.008	.008
ALTITUDE: 50000, FEET													
CALIBRATED AIRSPEED (KNOTS CAS)													
WEIGHT	250.	270.	290.	310.	330.	350.	370.	400.	450.	500.	550.	600.	700.
50000.	.035	.028	.024	.022	.021	.020	.018	.018	.018	.017	.017	.017	.018
60000.		.024	.020	.018	.017	.017	.018	.015	.015	.014	.014	.014	.014
70000.				.018	.015	.014	.014	.013	.013	.012	.012	.012	.012
80000.					.013	.012	.012	.011	.011	.011	.011	.010	.010
90000.						.011	.011	.010	.010	.010	.008	.008	.008
100000.							.008	.008	.008	.008	.008	.008	.008
110000.								.008	.008	.008	.008	.008	.008
120000.									.008	.007	.007	.007	.007

TABLE 21 GUST SENSITIVITY OF FB-111 @ 72° SWEEP

GUST SENSITIVITY (G'S/FT/SEC GUST)														
AIRCRAFT TYPE: FB-111 72 DEG SWEEP														
ALTITUDE: 0. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	770.	780.	800.
50000.	.010	.013	.015	.017	.019	.022	.024	.027	.031	.036	.040	.042	.044	.046
60000.	.008	.011	.012	.014	.016	.018	.020	.023	.026	.030	.034	.036	.037	.039
70000.	.008	.008	.011	.012	.014	.016	.018	.020	.023	.026	.030	.031	.033	.035
80000.	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.029	.029	.029	.029
90000.	.007	.008	.010	.011	.012	.014	.016	.018	.021	.024	.025	.025	.025	.025
100000.	.007	.008	.008	.010	.011	.013	.014	.016	.018	.021	.022	.022	.023	.024
110000.	.007	.008	.008	.008	.010	.012	.013	.015	.017	.020	.021	.021	.021	.022
120000.	.008	.007	.008	.008	.008	.011	.012	.014	.016	.018	.018	.019	.020	.020
ALTITUDE: 10000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	810.	820.
50000.	.011	.013	.015	.017	.020	.022	.025	.028	.033	.038	.044	.046	.048	.051
60000.	.008	.011	.013	.015	.017	.019	.022	.026	.029	.033	.037	.041	.042	.043
70000.	.008	.008	.011	.013	.014	.016	.018	.022	.026	.029	.032	.036	.037	.038
80000.	.008	.008	.010	.011	.013	.014	.017	.020	.023	.026	.028	.032	.033	.033
90000.	.007	.008	.010	.011	.013	.015	.018	.020	.023	.025	.028	.028	.028	.028
100000.	.007	.008	.008	.010	.012	.014	.016	.018	.021	.023	.025	.025	.025	.027
110000.	.007	.008	.008	.008	.010	.012	.014	.016	.017	.018	.021	.024	.024	.025
120000.	.007	.007	.008	.008	.010	.011	.013	.015	.017	.018	.019	.022	.022	.023
ALTITUDE: 20000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	810.	820.
50000.	.011	.013	.015	.018	.021	.023	.026	.030	.035	.040	.046	.048	.050	.053
60000.	.008	.011	.013	.015	.018	.021	.025	.028	.032	.036	.041	.038	.038	.037
70000.	.008	.008	.011	.013	.015	.018	.021	.024	.028	.031	.036	.033	.033	.032
80000.	.008	.010	.011	.013	.016	.018	.021	.024	.028	.031	.028	.028	.028	.028
90000.	.007	.008	.010	.012	.014	.017	.019	.022	.025	.028	.025	.025	.025	.025
100000.	.008	.008	.008	.011	.013	.015	.017	.020	.022	.025	.024	.023	.023	.023
110000.	.007	.008	.008	.010	.012	.014	.016	.018	.020	.023	.022	.021	.021	.021
120000.	.007	.008	.008	.008	.011	.013	.014	.016	.018	.021	.020	.018	.018	.018
ALTITUDE: 30000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	810.	820.
50000.	.011	.013	.015	.020	.024	.026	.030	.034	.039	.045	.051	.053	.055	.058
60000.	.008	.011	.013	.016	.020	.023	.027	.031	.035	.041	.046	.042	.042	.042
70000.	.008	.011	.014	.017	.020	.023	.027	.030	.034	.038	.044	.040	.040	.040
80000.	.008	.010	.012	.015	.018	.020	.023	.026	.029	.032	.036	.032	.032	.032
90000.	.007	.008	.011	.013	.016	.018	.021	.022	.025	.028	.031	.028	.028	.028
100000.	.008	.010	.012	.014	.016	.018	.021	.022	.025	.028	.031	.028	.028	.028
110000.	.008	.010	.012	.014	.016	.018	.021	.022	.025	.028	.031	.028	.028	.028
120000.	.007	.008	.010	.012	.014	.016	.018	.021	.022	.025	.028	.031	.028	.028
ALTITUDE: 40000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	770.	780.	810.
50000.	.011	.014	.016	.022	.026	.031	.036	.042	.048	.055	.062	.064	.066	.069
60000.	.008	.012	.015	.018	.022	.026	.030	.034	.039	.045	.051	.053	.055	.058
70000.	.008	.010	.013	.016	.020	.023	.027	.030	.034	.038	.044	.040	.040	.040
80000.	.008	.011	.014	.018	.021	.025	.028	.032	.036	.040	.046	.042	.042	.042
90000.	.008	.010	.012	.015	.017	.020	.023	.026	.029	.032	.036	.032	.032	.032
100000.	.008	.011	.013	.016	.018	.021	.024	.027	.030	.033	.036	.032	.032	.032
110000.	.008	.010	.012	.014	.016	.018	.021	.023	.026	.029	.032	.032	.032	.032
120000.	.008	.008	.011	.013	.015	.017	.020	.022	.025	.028	.031	.031	.031	.031
ALTITUDE: 50000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	770.	780.	810.
50000.	.012	.015	.018	.021	.025	.029	.034	.039	.045	.052	.060	.062	.064	.067
60000.	.013	.015	.018	.021	.025	.029	.034	.039	.045	.052	.060	.062	.064	.067
70000.	.011	.013	.015	.018	.021	.025	.029	.034	.039	.045	.052	.054	.056	.059
80000.	.011	.013	.015	.018	.021	.025	.029	.034	.039	.045	.052	.054	.056	.059
90000.	.010	.012	.014	.017	.020	.024	.028	.032	.036	.041	.048	.050	.052	.055
100000.	.011	.013	.015	.018	.021	.025	.029	.034	.039	.045	.052	.054	.056	.059
110000.	.010	.012	.014	.017	.020	.024	.028	.032	.036	.041	.048	.050	.052	.055
120000.	.011	.013	.015	.018	.021	.025	.029	.034	.039	.045	.052	.054	.056	.059

TABLE 22 GUST SENSITIVITY OF KC-135

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: KC-135

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.
100000.	.034	.040	.047	.054	.061	.068	.074	.078	.083	.088	.091	.094
120000.	.028	.035	.041	.047	.054	.061	.065	.068	.073	.078	.081	.084
140000.	.026	.031	.037	.042	.048	.054	.058	.062	.066	.069	.073	.078
160000.	.024	.028	.033	.038	.043	.048	.052	.056	.059	.061	.064	.068
180000.	.021	.026	.030	.035	.040	.045	.048	.051	.054	.058	.060	.063
200000.		.024	.028	.032	.036	.041	.044	.047	.050	.052	.055	.057
220000.		.022	.025	.028	.034	.038	.041	.043	.046	.048	.051	.053
240000.		.020	.024	.027	.031	.036	.039	.040	.043	.045	.048	.050
260000.		.018	.022	.025	.028	.033	.035	.038	.040	.042	.045	.047
280000.			.021	.024	.027	.031	.033	.035	.038	.039	.041	.044
300000.			.020	.023	.026	.029	.031	.033	.036	.037	.038	.041

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.
100000.	.037	.042	.048	.053	.058	.064	.068	.074	.078	.083	.088	.091
120000.	.032	.036	.041	.047	.052	.058	.060	.065	.070	.073	.078	.082
140000.	.028	.032	.037	.041	.046	.050	.053	.057	.062	.064	.067	.070
160000.	.025	.029	.033	.037	.041	.045	.048	.052	.056	.058	.060	.063
180000.	.023	.026	.030	.033	.037	.040	.043	.047	.051	.053	.055	.057
200000.		.024	.027	.031	.034	.037	.040	.043	.046	.048	.050	.053
220000.		.022	.025	.028	.032	.034	.037	.040	.043	.045	.047	.050
240000.		.020	.023	.026	.028	.032	.034	.037	.040	.041	.043	.045
260000.			.022	.024	.027	.028	.032	.034	.037	.038	.040	.042
280000.			.020	.023	.026	.028	.030	.032	.035	.036	.038	.040
300000.			.018	.021	.024	.026	.028	.030	.033	.034	.036	.041

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.
100000.	.040	.044	.048	.052	.057	.062	.065	.071	.075	.078	.082	.087
120000.	.034	.038	.041	.045	.048	.054	.056	.062	.065	.068	.071	.075
140000.	.030	.033	.036	.040	.043	.047	.048	.052	.054	.057	.060	.063
160000.	.027	.029	.032	.035	.038	.042	.044	.048	.051	.054	.057	.060
180000.	.024	.027	.029	.032	.035	.038	.040	.044	.046	.048	.051	.054
200000.		.024	.027	.029	.032	.035	.038	.040	.042	.044	.047	.050
220000.		.022	.024	.027	.028	.032	.033	.035	.037	.038	.041	.043
240000.			.023	.025	.027	.030	.031	.032	.034	.036	.038	.040
260000.			.021	.023	.025	.028	.029	.032	.033	.035	.037	.038
280000.			.021	.023	.025	.027	.028	.030	.032	.033	.035	.037
300000.			.020	.022	.024	.025	.026	.028	.029	.031	.033	.035

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.
100000.	.043	.046	.048	.051	.053	.058	.060	.063	.067	.069	.071	.074
120000.	.037	.039	.041	.043	.046	.048	.051	.054	.056	.058	.061	.063
140000.	.032	.034	.036	.038	.040	.042	.045	.047	.049	.050	.054	.056
160000.	.028	.030	.032	.034	.036	.037	.040	.042	.043	.045	.048	.050
180000.	.026	.027	.028	.030	.032	.034	.036	.038	.039	.040	.042	.043
200000.		.025	.026	.027	.028	.031	.032	.034	.036	.037	.038	.041
220000.			.024	.025	.027	.028	.030	.032	.033	.034	.035	.037
240000.				.025	.026	.027	.029	.030	.031	.032	.033	.034
260000.					.024	.025	.027	.028	.029	.030	.031	.032
280000.						.024	.025	.026	.027	.028	.029	.030
300000.							.024	.024	.025	.026	.027	.028

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.
100000.	.048	.051	.052	.055	.057	.060	.062	.064	.067			
120000.	.041	.043	.045	.046	.048	.050	.052	.053	.057			
140000.	.036	.037	.038	.040	.042	.044	.046	.048	.050			
160000.	.032	.033	.034	.036	.037	.039	.040	.042	.044			
180000.		.030	.031	.032	.033	.035	.036	.038	.040			
200000.			.028	.030	.031	.033	.034	.036	.038			
220000.				.028	.030	.031	.033	.034	.036			
240000.					.028	.030	.031	.033	.034			

TABLE 23 GUST SENSITIVITY OF SR-71

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: SR-71

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.
70000.	.025	.030	.035	.041	.048	.052	.058	.068	.078	.087	.093	.094	.093
80000.	.023	.027	.032	.037	.042	.048	.054	.061	.069	.080	.086	.086	.087
90000.	.021	.025	.029	.034	.039	.044	.049	.056	.064	.074	.079	.080	.081
100000.	.019	.023	.027	.031	.036	.040	.045	.052	.059	.069	.074	.074	.075
110000.	.018	.021	.025	.029	.033	.037	.042	.048	.055	.065	.069	.070	.070
120000.	.017	.020	.024	.027	.031	.035	.039	.045	.052	.061	.065	.065	.066
130000.	.016	.019	.022	.025	.029	.033	.037	.042	.048	.057	.061	.062	.062
140000.	.015	.018	.021	.024	.027	.031	.035	.040	.046	.054	.059	.059	.059

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	275.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.
70000.	.027	.030	.033	.038	.044	.051	.058	.068	.080	.088	.098	.098	.090	.090
80000.	.024	.027	.029	.035	.040	.046	.053	.062	.073	.079	.089	.081	.081	.082
90000.	.022	.024	.027	.031	.036	.042	.049	.057	.067	.072	.073	.074	.074	.075
100000.	.020	.022	.025	.029	.033	.038	.044	.052	.062	.067	.068	.068	.068	.068
110000.	.019	.021	.023	.027	.031	.036	.041	.048	.058	.062	.063	.063	.063	.064
120000.	.017	.019	.021	.025	.029	.033	.038	.045	.054	.059	.059	.059	.059	.059
130000.	.016	.018	.020	.023	.027	.031	.036	.042	.051	.055	.055	.055	.055	.055
140000.	.015	.017	.019	.022	.025	.029	.034	.040	.048	.052	.052	.052	.052	.052

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	275.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.
70000.	.028	.032	.035	.041	.048	.058	.071	.078	.078	.079	.080	.080	.081	.081
80000.	.026	.029	.031	.037	.044	.052	.064	.070	.071	.071	.072	.072	.073	.073
90000.	.023	.026	.028	.033	.040	.047	.058	.064	.064	.065	.065	.065	.066	.066
100000.	.021	.024	.026	.031	.038	.043	.054	.058	.058	.058	.058	.058	.059	.059
110000.	.020	.022	.024	.029	.033	.040	.050	.055	.055	.055	.055	.055	.055	.055
120000.	.018	.020	.022	.026	.031	.037	.046	.051	.051	.051	.051	.051	.051	.051
130000.	.017	.018	.021	.024	.029	.035	.043	.047	.047	.047	.047	.048	.048	.048
140000.	.016	.018	.019	.023	.027	.033	.041	.045	.045	.045	.044	.044	.045	.045

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	275.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.
70000.	.031	.034	.037	.043	.050	.058	.068	.078	.088	.088	.088	.088	.078	.078
80000.	.027	.030	.033	.041	.047	.055	.065	.075	.085	.085	.085	.085	.082	.082
90000.	.025	.027	.030	.037	.044	.052	.062	.072	.082	.082	.082	.082	.080	.080
100000.	.022	.025	.027	.034	.043	.050	.060	.070	.080	.080	.080	.080	.078	.078
110000.	.020	.023	.025	.031	.040	.048	.058	.068	.078	.078	.078	.078	.076	.076
120000.	.019	.021	.023	.029	.037	.043	.053	.063	.073	.073	.073	.073	.073	.073
130000.	.018	.020	.022	.027	.034	.040	.050	.060	.070	.070	.070	.070	.070	.070
140000.	.016	.018	.020	.025	.032	.037	.047	.057	.067	.067	.067	.067	.067	.067

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	275.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.
70000.	.033	.037	.040	.047	.054	.062	.072	.082	.092	.092	.092	.092	.087	.087
80000.	.029	.033	.036	.043	.051	.059	.069	.079	.089	.089	.089	.089	.084	.084
90000.	.026	.030	.033	.040	.048	.056	.066	.076	.086	.086	.086	.086	.081	.081
100000.	.024	.027	.031	.038	.046	.054	.064	.074	.084	.084	.084	.084	.079	.079
110000.	.022	.025	.029	.036	.043	.051	.061	.071	.081	.081	.081	.081	.076	.076
120000.	.020	.023	.026	.033	.040	.048	.058	.068	.078	.078	.078	.078	.073	.073
130000.	.019	.021	.024	.031	.038	.046	.056	.066	.076	.076	.076	.076	.071	.071
140000.	.017	.020	.023	.030	.037	.045	.055	.065	.075	.075	.075	.075	.070	.070

ALTITUDE: 50000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	275.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.
70000.	.038	.042	.045	.052	.060	.068	.078	.088	.098	.098	.098	.098	.093	.093
80000.	.035	.040	.043	.050	.058	.066	.076	.086	.096	.096	.096	.096	.091	.091
90000.	.031	.037	.039	.046	.054	.062	.072	.082	.092	.092	.092	.092	.087	.087
100000.	.028	.034	.036	.043	.051	.059	.069	.079	.089	.089	.089	.089	.084	.084
110000.	.026	.031	.033	.040	.048	.056	.066	.076	.086	.086	.086	.086	.081	.081
120000.	.024	.029	.031	.038	.046	.054	.064	.074	.084	.084	.084	.084	.079	.079
130000.	.022	.026	.027	.034	.042	.050	.060	.070	.080	.080	.080	.080	.075	.075
140000.	.020	.025	.025	.032	.040	.048	.058	.068	.078	.078	.078	.078	.073	.073

TABLE 24 GUST SENSITIVITY OF T-34

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: T-34

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	120.	130.	140.	150.	160.	170.	180.	190.	200.	210.	220.	230.	240.	250.
2500.	.039	.043	.048	.049	.053	.058	.060	.063	.066	.070	.073	.077	.080	.084
3000.	.034	.037	.040	.043	.046	.048	.052	.055	.058	.061	.064	.067	.070	.073
3500.	.030	.033	.036	.038	.041	.043	.046	.048	.051	.054	.057	.059	.062	.065
4000.	.027	.030	.032	.034	.037	.039	.041	.044	.046	.048	.051	.053	.056	.058
4500.		.027	.028	.031	.033	.035	.038	.040	.042	.044	.046	.048	.051	.053
5000.		.025	.027	.028	.030	.032	.034	.036	.038	.040	.042	.044	.046	.048
5500.			.024	.026	.028	.030	.032	.034	.035	.037	.038	.041	.043	.045

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	120.	130.	140.	150.	160.	170.	180.	190.	200.	210.	220.	230.	240.	250.
2500.	.042	.048	.050	.053	.057	.061	.064	.068	.072	.076	.078	.083	.087	.091
3000.	.037	.040	.043	.046	.048	.052	.056	.058	.062	.065	.068	.072	.075	.079
3500.	.032	.035	.038	.040	.043	.046	.048	.052	.055	.058	.060	.063	.066	.070
4000.	.028	.031	.034	.036	.039	.041	.044	.046	.048	.051	.054	.057	.059	.062
4500.		.028	.030	.033	.035	.037	.039	.042	.044	.046	.048	.051	.054	.056
5000.		.026	.028	.030	.032	.034	.036	.038	.040	.042	.045	.047	.049	.051
5500.			.025	.027	.028	.031	.033	.035	.037	.039	.041	.043	.045	.047

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	120.	130.	140.	150.	160.	170.	180.	190.	200.	210.	220.	230.	240.	250.
2500.	.045	.048	.053	.057	.061	.065	.068	.073	.077	.081	.086	.090	.095	.100
3000.	.038	.042	.045	.048	.052	.055	.058	.063	.066	.070	.074	.077	.081	.085
3500.	.034	.037	.040	.043	.046	.048	.052	.055	.058	.061	.064	.068	.071	.075
4000.	.030	.033	.035	.038	.040	.043	.046	.048	.051	.054	.057	.060	.063	.067
4500.		.028	.032	.034	.036	.038	.041	.044	.046	.048	.052	.054	.057	.060
5000.		.027	.028	.031	.033	.035	.038	.040	.042	.044	.047	.049	.052	.054
5500.			.026	.028	.030	.032	.034	.036	.038	.041	.043	.045	.048	.050

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	120.	130.	140.	150.	160.	170.	180.	190.	200.	210.	220.	230.	240.	250.
2500.	.048	.052	.056	.060	.065	.068	.074	.078	.083	.088	.094	.098	.104	.111
3000.	.041	.044	.048	.051	.055	.059	.063	.067	.071	.075	.080	.084	.089	.095
3500.	.035	.038	.041	.045	.048	.051	.055	.058	.062	.066	.069	.074	.078	.083
4000.	.031	.034	.037	.039	.042	.045	.048	.051	.055	.058	.062	.065	.069	.073
4500.		.030	.033	.035	.038	.041	.043	.046	.048	.052	.055	.058	.062	.066
5000.		.028	.030	.032	.034	.037	.038	.042	.044	.047	.050	.053	.056	.060
5500.			.027	.028	.032	.034	.036	.038	.041	.043	.046	.048	.052	.055

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	120.	140.	150.	160.	170.	180.	190.	200.	210.	220.	225.	230.	235.	240.
2500.	.050	.060	.064	.070	.075	.080	.087	.093	.100	.106	.112	.117	.122	.128
3000.	.042	.050	.054	.058	.063	.068	.073	.078	.085	.092	.098	.104	.108	.114
3500.	.037	.044	.047	.051	.055	.058	.064	.068	.074	.079	.083	.088	.090	.095
4000.	.032	.038	.042	.045	.048	.052	.056	.060	.065	.070	.073	.078	.080	.084
4500.		.034	.037	.040	.043	.047	.050	.054	.058	.063	.065	.069	.071	.075
5000.		.031	.034	.036	.038	.042	.045	.048	.053	.057	.059	.062	.065	.068
5500.		.028	.031	.033	.036	.038	.041	.045	.048	.052	.054	.057	.059	.062

TABLE 25 GUST SENSITIVITY OF T-37 AND A-37

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: T-37 AND A-37

ALTITUDE: C. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	150.	170.	190.	210.	230.	250.	270.	290.	300.	310.	320.	330.	340.	350.
5000.	.028	.033	.037	.041	.045	.050	.054	.058	.061	.063	.065	.068	.070	.073
6000.	.025	.028	.032	.035	.038	.043	.046	.050	.052	.054	.056	.058	.060	.063
7000.	.022	.025	.028	.031	.034	.037	.041	.044	.046	.047	.048	.051	.053	.055
8000.		.022	.025	.027	.030	.033	.036	.038	.041	.042	.044	.045	.047	.048
9000.			.022	.025	.027	.030	.032	.035	.036	.038	.039	.041	.042	.044
10000.			.020	.022	.025	.027	.028	.032	.033	.034	.036	.037	.038	.040
11000.			.018	.021	.023	.025	.027	.028	.030	.032	.033	.034	.035	.037
12000.				.018	.021	.023	.025	.027	.028	.028	.030	.031	.033	.034
13000.				.018	.021	.023	.025	.027	.028	.028	.028	.030	.031	.031
14000.					.018	.020	.022	.023	.024	.025	.026	.027	.028	.028

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	150.	170.	190.	210.	230.	250.	270.	290.	300.	310.	320.	330.	340.	350.
5000.	.031	.035	.038	.043	.048	.053	.057	.062	.065	.068	.071	.073	.076	.078
6000.	.026	.030	.033	.037	.041	.045	.048	.053	.055	.058	.060	.063	.065	.068
7000.		.026	.028	.032	.036	.039	.043	.046	.048	.050	.052	.055	.057	.058
8000.		.023	.026	.028	.031	.035	.038	.041	.043	.045	.046	.048	.050	.052
9000.			.023	.026	.028	.031	.034	.037	.038	.040	.042	.043	.045	.047
10000.			.021	.023	.026	.028	.031	.033	.035	.036	.038	.039	.041	.043
11000.			.018	.021	.023	.026	.028	.031	.032	.033	.035	.036	.038	.039
12000.				.020	.022	.024	.026	.028	.028	.031	.032	.033	.035	.036
13000.				.018	.020	.022	.024	.026	.027	.028	.030	.031	.032	.033
14000.					.018	.020	.022	.024	.025	.027	.028	.028	.030	.031

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	150.	170.	190.	210.	230.	250.	270.	290.	300.	310.	320.	330.	340.	350.
5000.	.032	.036	.041	.046	.051	.056	.062	.068	.071	.075	.078	.082	.085	.088
6000.	.027	.031	.035	.039	.043	.047	.052	.058	.060	.063	.066	.070	.073	.076
7000.		.027	.030	.034	.037	.041	.045	.050	.052	.055	.058	.061	.064	.067
8000.		.024	.027	.030	.033	.036	.040	.044	.046	.048	.051	.054	.057	.060
9000.			.024	.027	.028	.032	.036	.040	.041	.044	.046	.048	.051	.054
10000.			.021	.024	.027	.029	.033	.036	.038	.039	.041	.044	.046	.048
11000.				.022	.024	.027	.030	.033	.034	.036	.038	.040	.042	.044
12000.				.020	.022	.025	.027	.030	.032	.033	.035	.037	.039	.041
13000.				.018	.021	.023	.025	.028	.028	.031	.032	.034	.036	.038
14000.					.018	.021	.024	.026	.027	.028	.030	.032	.033	.035

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	150.	170.	190.	210.	230.	250.	270.	290.	300.	310.	320.	330.	340.	350.
5000.	.033	.038	.043	.048	.053	.058	.063	.068	.074	.078	.082	.086	.090	.094
6000.	.028	.032	.036	.041	.046	.052	.055	.058	.062	.067	.072	.077	.082	.086
7000.		.028	.031	.035	.040	.045	.048	.051	.054	.058	.060	.063	.065	.068
8000.		.024	.028	.031	.035	.040	.042	.045	.048	.051	.053	.055	.057	.060
9000.			.025	.028	.031	.035	.038	.040	.043	.046	.047	.048	.051	.053
10000.			.022	.025	.028	.032	.034	.036	.038	.041	.043	.045	.046	.048
11000.				.023	.026	.029	.031	.033	.035	.036	.038	.041	.042	.044
12000.				.021	.024	.027	.029	.030	.032	.035	.036	.037	.038	.041
13000.				.020	.022	.025	.026	.028	.030	.032	.033	.035	.036	.038
14000.					.021	.023	.025	.026	.028	.030	.031	.032	.034	.035

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	150.	170.	190.	210.	230.	250.	270.	290.	300.	310.	320.	330.	340.	350.
5000.	.035	.039	.044	.049	.054	.059	.064	.069	.074	.078	.082	.086	.090	.094
6000.	.028	.031	.034	.037	.039	.042	.046	.049	.051	.054	.056	.058	.062	.065
7000.		.027	.028	.032	.034	.037	.039	.043	.044	.046	.048	.051	.053	.056
8000.			.026	.028	.030	.032	.035	.037	.039	.041	.043	.045	.047	.050
9000.				.025	.027	.028	.031	.033	.035	.036	.038	.040	.042	.044
10000.					.024	.026	.028	.030	.031	.033	.034	.036	.038	.040
11000.						.024	.025	.027	.028	.030	.031	.033	.035	.037
12000.							.023	.025	.026	.028	.029	.030	.032	.034
13000.								.023	.024	.025	.027	.028	.029	.031
14000.									.023	.024	.025	.026	.027	.028

TABLE 26 GUST SENSITIVITY OF T-38 AND F-5

WIND VELOCITY IN KNOTS (GUST)															
AIRCRAFT WEIGHT T-10 AND F-4															
ALTITUDE 10,000 FEET															
CALIBRATED AIRSPEED (KNOTS CAS)															
WIND	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
7000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
8000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
9000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
10000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
11000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
12000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
13000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
14000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
15000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
16000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
17000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
18000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
19000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
20000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
ALTITUDE 10000, FEET															
CALIBRATED AIRSPEED (KNOTS CAS)															
WIND	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
7000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
8000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
9000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
10000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
11000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
12000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
13000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
14000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
15000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
16000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
17000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
18000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
19000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
20000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
ALTITUDE 20000, FEET															
CALIBRATED AIRSPEED (KNOTS CAS)															
WIND	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
7000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
8000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
9000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
10000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
11000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
12000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
13000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
14000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
15000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
16000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
17000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
18000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
19000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
20000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
ALTITUDE 30000, FEET															
CALIBRATED AIRSPEED (KNOTS CAS)															
WIND	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
7000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
8000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
9000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
10000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
11000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
12000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
13000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
14000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
15000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
16000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
17000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
18000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
19000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
20000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
ALTITUDE 40000, FEET															
CALIBRATED AIRSPEED (KNOTS CAS)															
WIND	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
7000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
8000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
9000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
10000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
11000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
12000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
13000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
14000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
15000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
16000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
17000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
18000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
19000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
20000	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16

TABLE 27 GUST SENSITIVITY OF T-39A

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: T-39A

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	180.	210.	240.	270.	300.	330.	360.	390.	420.	440.	450.	460.	470.
10000.	.033	.038	.043	.051	.057	.064	.071	.078	.081	.088	.092	.085	.098
11000.	.031	.036	.042	.047	.053	.059	.066	.070	.075	.080	.085	.081	.094
12000.	.028	.034	.039	.044	.050	.055	.061	.065	.070	.074	.078	.082	.085
13000.	.027	.032	.038	.041	.046	.052	.057	.061	.065	.070	.074	.077	.082
14000.	.025	.030	.034	.038	.044	.048	.054	.059	.062	.066	.070	.072	.075
15000.	.024	.028	.032	.037	.041	.046	.051	.054	.058	.062	.066	.068	.071
16000.	.023	.026	.030	.035	.039	.043	.048	.051	.055	.059	.063	.065	.068
17000.	.021	.025	.029	.033	.037	.041	.046	.049	.052	.056	.060	.062	.064
18000.	.020	.024	.027	.031	.035	.039	.043	.046	.050	.053	.057	.059	.061
19000.	.023	.028	.030	.033	.037	.041	.044	.047	.051	.054	.058	.059	.060

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	180.	210.	240.	270.	300.	330.	360.	390.	420.	440.	450.	460.	470.
10000.	.035	.044	.052	.062	.068	.078	.084	.090	.098	.107	.112	.117	.123
11000.	.033	.040	.048	.057	.064	.072	.077	.084	.091	.098	.104	.108	.114
12000.	.030	.037	.045	.053	.060	.067	.072	.078	.084	.092	.096	.101	.107
13000.	.028	.035	.042	.049	.056	.062	.067	.073	.079	.086	.090	.095	.100
14000.	.026	.033	.039	.046	.052	.058	.063	.068	.074	.081	.085	.089	.094
15000.	.025	.031	.037	.044	.049	.055	.060	.064	.070	.076	.080	.084	.088
16000.	.023	.029	.035	.041	.046	.052	.056	.061	.066	.072	.076	.080	.084
17000.	.022	.027	.033	.039	.044	.049	.053	.058	.063	.068	.072	.076	.080
18000.	.021	.026	.031	.037	.042	.047	.051	.055	.059	.063	.068	.072	.076
19000.	.023	.030	.035	.040	.045	.049	.052	.057	.062	.065	.069	.072	.077

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	180.	210.	240.	270.	300.	330.	360.	390.	420.	440.	450.	460.	470.
10000.	.037	.044	.051	.058	.068	.074	.081	.088	.098	.108	.113	.117	.121
11000.	.034	.040	.047	.054	.062	.068	.075	.083	.092	.098	.105	.112	.118
12000.	.032	.037	.044	.050	.058	.063	.069	.077	.081	.088	.091	.097	.104
13000.	.029	.035	.041	.047	.054	.059	.064	.071	.075	.080	.085	.091	.098
14000.	.028	.033	.038	.044	.050	.055	.060	.067	.071	.075	.080	.085	.090
15000.	.026	.031	.036	.041	.047	.052	.057	.063	.068	.071	.075	.080	.085
16000.	.024	.029	.034	.039	.044	.049	.054	.059	.063	.067	.071	.076	.082
17000.	.023	.027	.032	.037	.042	.046	.051	.055	.059	.063	.067	.072	.077
18000.	.022	.026	.030	.035	.040	.044	.048	.053	.058	.060	.064	.068	.073
19000.	.023	.029	.033	.038	.042	.046	.051	.054	.057	.061	.065	.070	.076

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	180.	210.	240.	270.	300.	330.	360.	390.	420.	440.	450.	460.	470.
10000.	.038	.047	.055	.068	.070	.074	.078	.085	.091	.098	.103	.108	.114
11000.	.036	.043	.051	.060	.063	.068	.073	.078	.084	.091	.095	.100	.105
12000.	.033	.040	.047	.056	.058	.063	.067	.072	.078	.084	.089	.092	.097
13000.	.031	.037	.044	.052	.055	.058	.062	.067	.072	.078	.082	.085	.091
14000.	.029	.034	.041	.048	.051	.055	.059	.063	.068	.074	.077	.081	.085
15000.	.027	.032	.038	.045	.048	.051	.055	.059	.064	.069	.072	.076	.080
16000.	.025	.030	.036	.043	.045	.048	.052	.055	.060	.065	.068	.071	.075
17000.	.024	.028	.034	.040	.043	.046	.049	.052	.057	.062	.064	.068	.071
18000.	.023	.027	.032	.038	.041	.043	.046	.050	.054	.058	.061	.064	.068
19000.	.026	.031	.036	.038	.041	.044	.047	.051	.055	.058	.061	.064	.068

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	180.	190.	200.	210.	220.	230.	240.	250.	260.	270.	280.	290.	300.
10000.	.042	.045	.048	.052	.056	.060	.063	.067	.072	.075	.078	.083	.088
11000.	.038	.041	.044	.047	.051	.055	.058	.062	.067	.071	.074	.078	.082
12000.	.035	.038	.041	.044	.047	.051	.054	.058	.063	.067	.071	.075	.078
13000.	.033	.035	.038	.041	.044	.047	.051	.054	.058	.062	.065	.068	.074
14000.	.031	.033	.035	.038	.041	.044	.048	.052	.055	.058	.061	.065	.074
15000.	.029	.031	.033	.035	.038	.041	.045	.048	.052	.054	.057	.061	.065
16000.	.027	.029	.031	.033	.036	.038	.042	.046	.048	.051	.054	.057	.061
17000.	.025	.027	.029	.031	.034	.037	.040	.044	.046	.049	.051	.054	.058
18000.	.023	.025	.028	.030	.032	.035	.038	.041	.043	.046	.049	.051	.054
19000.	.025	.028	.028	.030	.033	.036	.038	.041	.043	.046	.049	.052	.055

TABLE 28 GUST SENSITIVITY OF T-41

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: T-41

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	100.	105.	110.	115.	120.	125.	130.
1500.	.047	.050	.052	.054	.057	.059	.062
2000.	.039	.041	.043	.045	.047	.049	.051
2500.	.033	.035	.036	.038	.040	.041	.043

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	100.	105.	110.	115.	120.	125.	130.
1500.	.052	.055	.057	.060	.063	.065	.068
2000.	.042	.044	.046	.049	.051	.053	.055
2500.	.035	.037	.039	.041	.042	.044	.046

TABLE 29 GUST SENSITIVITY OF O-2

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: O2

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	100.	112.	124.	136.	148.	160.
3000.	.032	.036	.040	.044	.048	.052
3500.		.032	.036	.039	.042	.046
4000.		.029	.032	.035	.038	.041
4500.			.029	.032	.035	.038
5000.			.027	.029	.032	.035

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	100.	112.	124.	136.	148.	160.
3000.	.034	.039	.043	.047	.051	.055
3500.		.034	.038	.042	.045	.049
4000.		.031	.034	.037	.041	.044
4500.			.031	.034	.037	.040
5000.			.028	.031	.034	.036

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	100.	112.	124.	136.	148.	160.
3000.	.037	.041	.046	.050	.055	.059
3500.		.036	.040	.044	.048	.052
4000.		.032	.036	.039	.043	.046
4500.			.032	.035	.039	.042
5000.			.029	.032	.035	.038

TABLE 30
GUST SENSITIVITY OF OV-10

GUST SENSITIVITY (G/S/FT/SEC GUST)

AIRCRAFT TYPE: OV-10

WEIGHT	ALTITUDE: 0. FEET													
	CALIBRATED AIRSPEED (KNOTS CAS)													
	150.	160.	170.	180.	190.	200.	210.	220.	225.	230.	235.	240.	245.	250.
7000.	.033	.033	.033	.033	.041	.042	.043	.043	.043	.043	.043	.043	.043	.043
8000.	.029	.031	.033	.035	.037	.038	.041	.043	.044	.045	.047	.048	.048	.050
9000.	.027	.028	.030	.032	.034	.036	.038	.038	.040	.041	.042	.043	.044	.045
10000.	.024	.026	.028	.029	.031	.033	.034	.036	.037	.038	.039	.040	.040	.041
11000.	.022	.024	.025	.027	.028	.030	.032	.033	.034	.035	.036	.037	.037	.038
12000.		.022	.024	.025	.027	.028	.029	.031	.032	.032	.033	.034	.035	.035
13000.			.022	.023	.025	.026	.027	.028	.030	.030	.031	.032	.032	.033
14000.				.021	.022	.023	.024	.026	.027	.028	.028	.029	.030	.031
15000.					.021	.022	.023	.024	.025	.026	.027	.027	.028	.029
WEIGHT	ALTITUDE: 10000. FEET													
	CALIBRATED AIRSPEED (KNOTS CAS)													
	150.	160.	170.	180.	190.	200.	210.	220.	225.	230.	235.	240.	245.	250.
7000.	.035	.037	.038	.042	.044	.047	.048	.051	.053	.054	.055	.057	.058	.059
8000.	.031	.033	.035	.037	.038	.042	.044	.046	.047	.048	.049	.051	.052	.053
9000.	.028	.030	.032	.034	.036	.038	.040	.042	.043	.044	.045	.046	.047	.048
10000.	.025	.027	.028	.031	.033	.034	.036	.038	.039	.040	.041	.042	.043	.044
11000.	.023	.025	.027	.028	.030	.032	.033	.035	.036	.037	.038	.038	.039	.040
12000.		.023	.025	.026	.028	.029	.031	.032	.033	.034	.035	.036	.036	.037
13000.			.023	.024	.026	.027	.028	.030	.031	.032	.032	.033	.034	.035
14000.				.021	.023	.024	.025	.027	.028	.029	.030	.031	.032	.032
15000.					.021	.023	.024	.025	.026	.027	.028	.029	.030	.030
WEIGHT	ALTITUDE: 20000. FEET													
	CALIBRATED AIRSPEED (KNOTS CAS)													
	150.	160.	170.	180.	190.	200.	210.	220.	225.	230.	235.	240.	245.	250.
7000.	.048	.050	.051	.054	.057	.059	.062	.063	.063	.063	.063	.063	.063	.063
8000.	.042	.045	.047	.049	.052	.054	.056	.058	.059	.060	.061	.062	.062	.063
9000.	.038	.041	.043	.045	.047	.049	.051	.053	.054	.055	.056	.057	.057	.058
10000.	.035	.037	.039	.041	.043	.045	.047	.049	.050	.051	.052	.053	.053	.054
11000.		.035	.037	.039	.041	.043	.045	.047	.048	.049	.050	.051	.051	.052
12000.			.034	.036	.038	.040	.042	.044	.045	.046	.047	.047	.048	.048
13000.				.034	.036	.038	.040	.042	.043	.044	.045	.045	.046	.047
14000.					.034	.036	.038	.040	.041	.042	.043	.043	.044	.044
15000.						.034	.036	.038	.039	.040	.041	.041	.042	.042
WEIGHT	ALTITUDE: 30000. FEET													
	CALIBRATED AIRSPEED (KNOTS CAS)													
	150.	160.	170.	180.	190.	200.	210.	220.	225.	230.	235.	240.	245.	250.
7000.	.038	.041	.044	.047	.050	.053	.056	.058	.061	.063	.064	.066	.068	.070
8000.	.034	.036	.038	.041	.044	.047	.049	.052	.054	.055	.057	.058	.060	.062
9000.	.030	.032	.035	.037	.039	.042	.044	.047	.048	.050	.051	.053	.054	.056
10000.	.027	.029	.031	.034	.036	.038	.040	.043	.044	.045	.046	.048	.049	.051
11000.		.027	.029	.031	.033	.035	.037	.039	.040	.041	.042	.044	.045	.046
12000.			.025	.027	.028	.030	.032	.034	.035	.036	.037	.038	.040	.042
13000.				.025	.026	.028	.030	.031	.033	.034	.035	.036	.037	.038
14000.					.024	.026	.028	.029	.031	.032	.033	.034	.035	.036
15000.						.023	.024	.026	.028	.029	.030	.031	.032	.033

TABLE 31
GUST SENSITIVITY OF U-2

GUST SENSITIVITY (G/RYD/SEC GUST)

AIRCRAFT TYPE: U-2

HEIGHT	ALTITUDE: 0, FEET CALIBRATED AIRSPEED (KNOTS CAS)															
	100.	110.	120.	130.	140.	145.	150.	155.	160.	165.	170.	175.	180.	185.	190.	195.
16000.	.012	.036	.038	.042	.044	.046	.047	.048	.051	.052	.054	.056	.057	.058	.059	.060
18000.	.030	.033	.036	.038	.041	.042	.044	.046	.047	.048	.050	.052	.053	.055	.056	.058
20000.	.028	.031	.034	.037	.038	.040	.041	.043	.044	.045	.047	.049	.050	.051	.052	.054
22000.	.027	.028	.032	.035	.036	.037	.038	.040	.042	.043	.044	.046	.047	.048	.049	.051
24000.	.025	.028	.030	.033	.034	.035	.037	.038	.039	.040	.042	.043	.044	.045	.046	.048
26000.	.024	.026	.028	.031	.032	.033	.035	.036	.037	.038	.040	.041	.042	.043	.044	.046
28000.	.023	.025	.027	.029	.031	.032	.033	.034	.035	.036	.038	.039	.040	.041	.042	.044
30000.	.022	.024	.026	.028	.029	.030	.032	.033	.034	.035	.036	.037	.038	.039	.040	.042
32000.	.021	.023	.025	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038	.040
34000.	.020	.022	.024	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.039
HEIGHT	ALTITUDE: 10000, FEET CALIBRATED AIRSPEED (KNOTS CAS)															
	100.	110.	120.	130.	140.	145.	150.	155.	160.	165.	170.	175.	180.	185.	190.	195.
16000.	.016	.044	.044	.048	.048	.051	.053	.054	.057	.058	.061	.063	.065	.066	.068	.070
18000.	.034	.037	.041	.044	.046	.047	.048	.051	.053	.054	.056	.058	.060	.061	.063	.065
20000.	.031	.035	.038	.041	.043	.044	.046	.047	.048	.051	.052	.054	.056	.057	.059	.061
22000.	.028	.032	.035	.038	.040	.041	.043	.044	.046	.047	.048	.050	.052	.053	.055	.057
24000.	.028	.030	.033	.036	.037	.038	.040	.042	.043	.044	.046	.047	.049	.050	.052	.054
26000.	.026	.029	.031	.034	.035	.036	.038	.039	.040	.042	.043	.045	.046	.048	.049	.051
28000.	.024	.027	.029	.032	.033	.034	.035	.037	.038	.040	.041	.042	.044	.045	.047	.048
30000.	.023	.025	.028	.030	.031	.032	.034	.035	.036	.037	.039	.040	.041	.043	.044	.046
32000.	.022	.024	.027	.029	.030	.031	.032	.033	.034	.035	.037	.038	.039	.041	.042	.044
34000.	.021	.023	.025	.027	.028	.030	.031	.032	.033	.034	.035	.036	.037	.039	.040	.042
HEIGHT	ALTITUDE: 20000, FEET CALIBRATED AIRSPEED (KNOTS CAS)															
	100.	110.	120.	130.	140.	145.	150.	155.	160.	165.	170.	175.	180.	185.	190.	195.
16000.	.040	.045	.048	.053	.055	.057	.058	.060	.063	.065	.068	.070	.072	.074	.076	.078
18000.	.037	.041	.045	.048	.050	.052	.054	.056	.058	.060	.062	.064	.066	.068	.070	.072
20000.	.034	.038	.041	.045	.047	.048	.050	.052	.054	.056	.058	.060	.062	.064	.066	.068
22000.	.032	.035	.038	.042	.043	.045	.047	.048	.050	.052	.054	.056	.058	.060	.062	.064
24000.	.030	.033	.036	.039	.040	.042	.043	.045	.047	.048	.050	.052	.054	.056	.058	.060
26000.	.028	.031	.034	.037	.038	.040	.041	.042	.044	.045	.047	.048	.050	.052	.054	.056
28000.	.026	.029	.032	.034	.035	.037	.038	.040	.041	.042	.044	.045	.047	.048	.050	.052
30000.	.025	.027	.030	.032	.033	.034	.035	.036	.038	.039	.040	.042	.043	.044	.046	.047
32000.	.023	.026	.028	.031	.032	.033	.034	.035	.036	.037	.038	.040	.041	.042	.044	.045
34000.	.022	.025	.027	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038	.040	.041	.042
HEIGHT	ALTITUDE: 30000, FEET CALIBRATED AIRSPEED (KNOTS CAS)															
	100.	110.	120.	130.	140.	145.	150.	155.	160.	165.	170.	175.	180.	185.	190.	195.
16000.	.044	.048	.053	.058	.060	.063	.065	.068	.070	.072	.075	.078	.080	.082	.084	.086
18000.	.040	.044	.048	.053	.055	.057	.058	.062	.064	.066	.068	.071	.073	.075	.077	.079
20000.	.037	.041	.045	.049	.050	.052	.054	.057	.058	.061	.063	.065	.067	.069	.071	.073
22000.	.034	.038	.041	.045	.047	.048	.050	.052	.054	.056	.058	.060	.062	.064	.066	.068
24000.	.032	.035	.038	.042	.043	.045	.047	.048	.050	.052	.054	.056	.058	.060	.062	.064
26000.	.030	.033	.036	.039	.041	.042	.044	.045	.047	.048	.050	.052	.054	.056	.058	.060
28000.	.028	.031	.034	.037	.038	.040	.041	.042	.044	.045	.047	.048	.050	.052	.054	.056
30000.	.026	.029	.032	.034	.035	.037	.038	.040	.041	.042	.044	.045	.047	.048	.050	.052
32000.	.025	.027	.030	.032	.033	.034	.035	.037	.038	.039	.041	.042	.044	.045	.047	.048
34000.	.024	.026	.028	.031	.032	.033	.034	.035	.036	.037	.038	.040	.041	.042	.044	.045
HEIGHT	ALTITUDE: 40000, FEET CALIBRATED AIRSPEED (KNOTS CAS)															
	100.	110.	120.	130.	140.	145.	150.	155.	160.	165.	170.	175.	180.	185.	190.	195.
16000.	.048	.053	.058	.064	.066	.068	.071	.073	.075	.078	.081	.084	.086	.088	.091	.094
18000.	.043	.048	.053	.058	.060	.063	.065	.068	.071	.074	.076	.078	.081	.083	.086	.088
20000.	.040	.044	.048	.053	.055	.057	.060	.062	.065	.067	.070	.073	.075	.078	.080	.083
22000.	.036	.040	.044	.049	.051	.053	.055	.057	.059	.062	.064	.067	.069	.072	.074	.077
24000.	.034	.037	.041	.045	.047	.048	.051	.053	.055	.057	.060	.062	.064	.067	.069	.072
26000.	.031	.035	.039	.042	.044	.045	.047	.049	.051	.053	.055	.058	.060	.062	.064	.067
28000.	.028	.033	.036	.039	.041	.043	.044	.046	.048	.050	.052	.054	.056	.058	.060	.062
30000.	.026	.031	.034	.037	.038	.040	.042	.043	.045	.047	.048	.051	.053	.055	.057	.059
32000.	.025	.028	.032	.035	.036	.038	.039	.041	.042	.044	.045	.047	.048	.050	.052	.054
34000.	.024	.027	.030	.033	.034	.036	.037	.039	.040	.042	.043	.045	.046	.048	.050	.052
HEIGHT	ALTITUDE: 50000, FEET CALIBRATED AIRSPEED (KNOTS CAS)															
	100.	110.	120.	130.	140.	145.	150.	155.	160.	165.	170.	175.	180.	185.	190.	195.
16000.	.052	.058	.064	.071	.074	.076	.078	.082	.084	.086	.089	.092	.094	.097	.100	.103
18000.	.047	.052	.058	.064	.067	.070	.074	.077	.081	.083	.086	.089	.091	.094	.097	.100
20000.	.042	.047	.052	.058	.061	.064	.067	.070	.074	.076	.078	.082	.084	.087	.090	.093
22000.	.039	.043	.048	.053	.056	.058	.061	.065	.068	.071	.073	.076	.079	.081	.084	.087
24000.	.036	.040	.044	.048	.051	.054	.057	.060	.063	.066	.068	.071	.073	.076	.078	.082
26000.	.033	.037	.041	.045	.048	.050	.053	.056	.058	.061	.063	.066	.068	.071	.073	.076
28000.	.031	.035	.038	.042	.045	.047	.049	.052	.054	.057	.059	.062	.064	.067	.069	.072
30000.	.028	.032	.035	.040	.042	.044	.046	.048	.051	.053	.056	.058	.061	.063	.066	.068
32000.	.027	.031	.034	.037	.039	.041	.043	.045	.047	.049	.051	.053	.056	.058	.061	.063
34000.	.026	.030	.033	.036	.037	.039	.041	.043	.045	.047	.049	.051	.053	.056	.058	.061

SECTION V

CONCLUSIONS AND RECOMMENDATIONS

For most aircraft, the method used in this report for calculating gust sensitivity should provide sufficient accuracy for the application intended by Air Weather Service. However, the values of gust sensitivity have not been verified on an aircraft basis and therefore a certain amount of caution is in order. Also, the following should be considered:

1. Gust sensitivity of an aircraft is only one of the major considerations for flight through turbulence. The amount of time spent in turbulence and its effect on pilot fatigue should also be considered. The controllability of an aircraft is decreased by turbulence which in turn contributes to pilot fatigue. Certification of aircraft assures "satisfactory" controllability in turbulence, but an outlook for marginal conditions should be maintained. This report does not provide any information regarding the controllability of aircraft in turbulence.
2. For some sophisticated aircraft, the flight control system provides stability that is not inherent in the aircraft configuration. It is probable that these aircraft, and other aircraft of unusual configuration, will require more sophisticated analysis techniques to yield reasonable values of gust sensitivity. It is requested that if the gust sensitivity of particular aircraft seem unreasonable, either through observation of aircraft response or through the existence of more sophisticated analysis, that this be reported to the author.
3. The range of airspeed, gross weight, and altitude presented in the tables and graphs are intended to cover the normal range of operation of each aircraft. It is possible that the normal range may have been exceeded for some aircraft and underestimated for other aircraft, particularly fighter type aircraft. Hence, parameters in the tables should not be used as an indication of the flight envelope for any aircraft.

AFWAL-TR-81-3058

4. It is anticipated the Air Weather Service will determine the utility of the approach presented in this report by implementing procedures based on the given values of gust sensitivity. It is requested that any suggestions for improvement that may become apparent be relayed to the author. It is possible that a need may be identified to utilize a more sophisticated procedure for calculating gust sensitivity, at least for some aircraft.

REFERENCES

1. Schemensky, R. T., Development of an Empirically Based Computer Program to Predict the Aerodynamic Characteristics of Aircraft, AFFDL-TR-73-144, Vol I, Air Force Flight Dynamics Laboratory, Wright-Patterson Air Force Base, Ohio 45433, November 1973.
2. General Dynamics/Convair Aerospace Division, Aerospace Handbook, FZA-381-II, Rev. B, March 1976.
3. Turner, E. W., An Exposition on Aircraft Response to Atmospheric Turbulence Using Power Spectral Density Analysis Techniques, AFFDL-TR-76-162, Air Force Flight Dynamics Laboratory, Wright-Patterson Air Force Base, Ohio 45433, May 1977.

APPENDIX A

LIFT CURVE SLOPE VS MACH NUMBER
FROM EMPIRICAL EQUATION
FOR VARIOUS AIRCRAFT

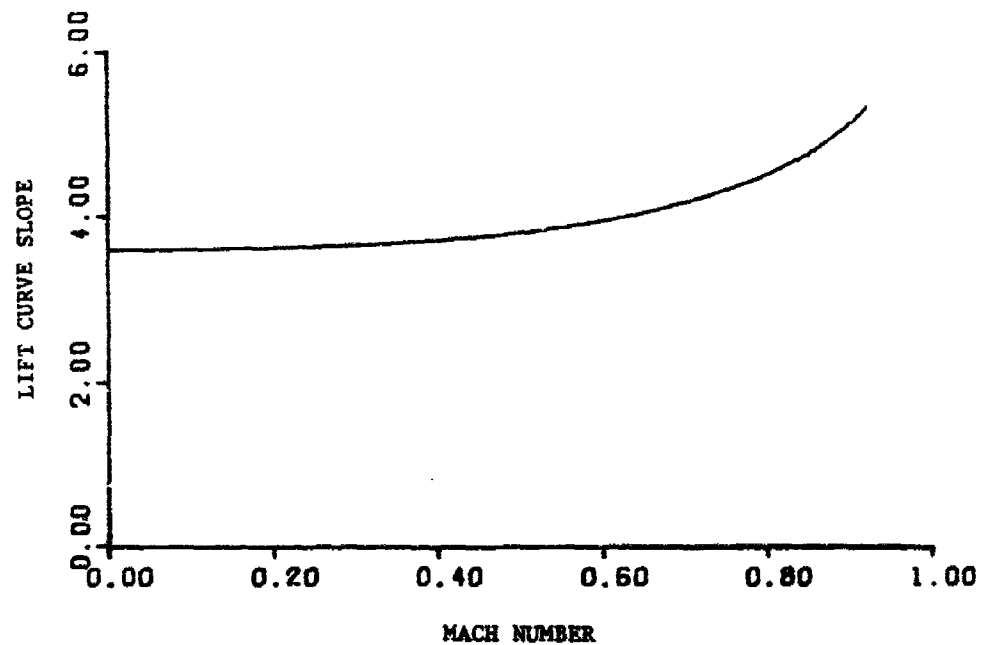


Figure 8. A-7 Lift Curve Slope Vs Mach Number from Empirical Equation

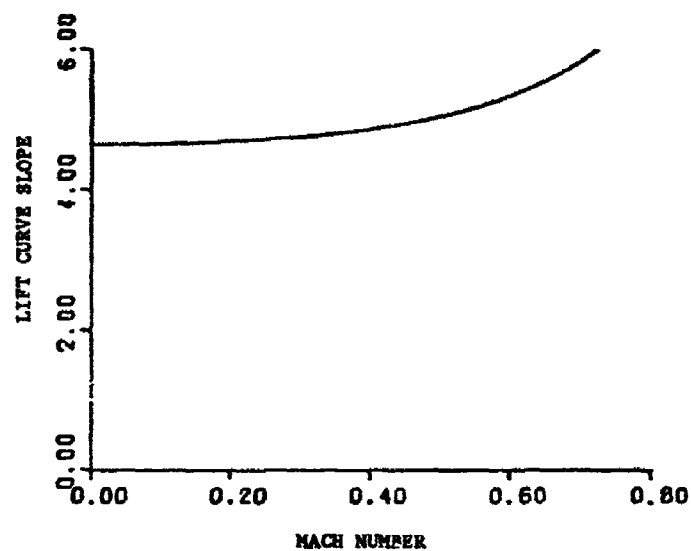


Figure 9. A-10 Lift Curve Slope Vs Mach Number from Empirical Equation

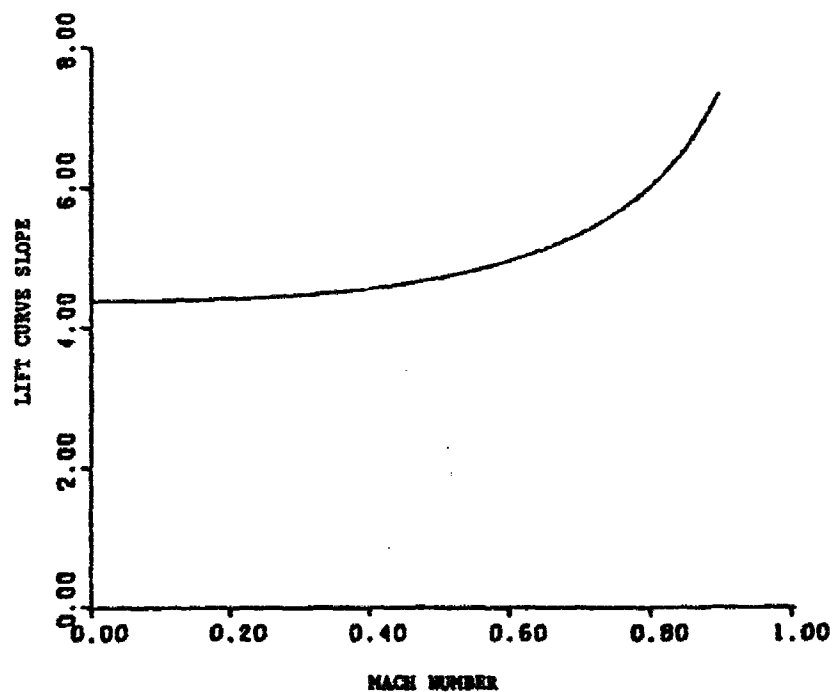


Figure 10. B-52 Lift Curve Slope Vs Mach Number from Empirical Equation

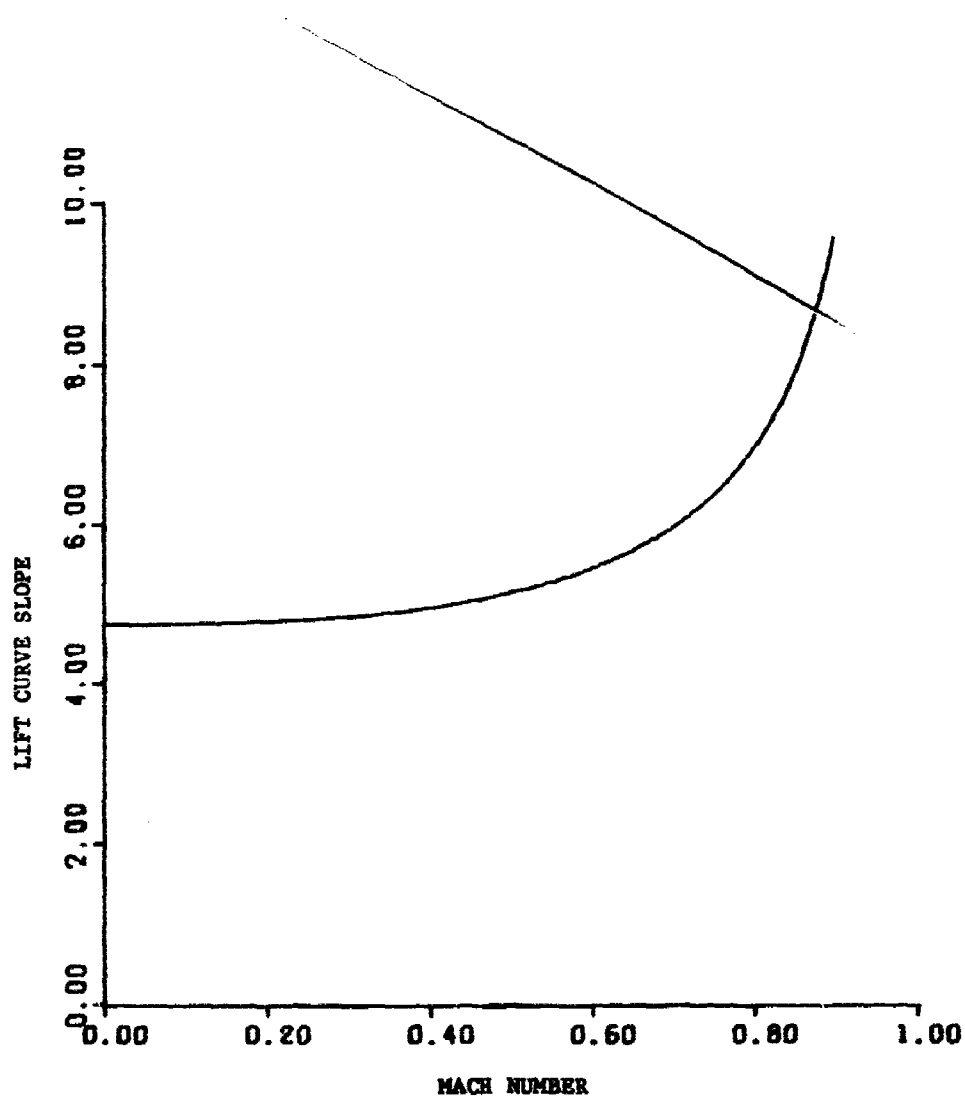


Figure 11. BAC 1-11 (200) Lift Curve Slope Vs Mach Number from Empirical Equation

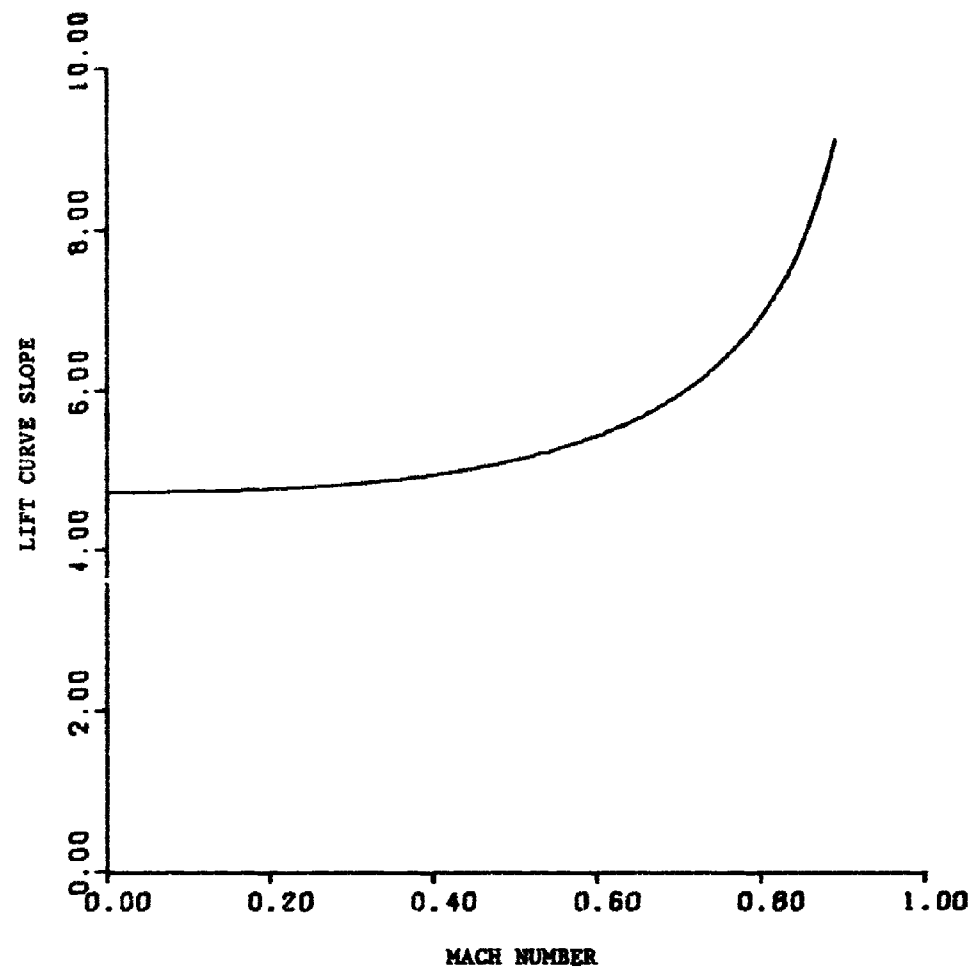


Figure 12. BAC 1-11 (400) Lift Curve Slope Vs Mach Number from Empirical Equation

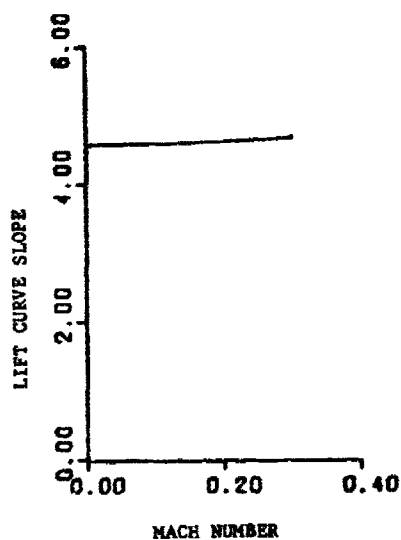


Figure 13. Beech V35B Lift Curve Slope vs. Mach Number From Empirical Equation

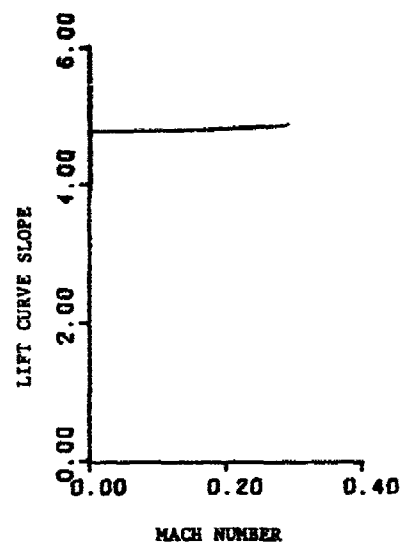


Figure 14. Beech E55 Lift Curve Slope vs. Mach Number From Empirical Equation

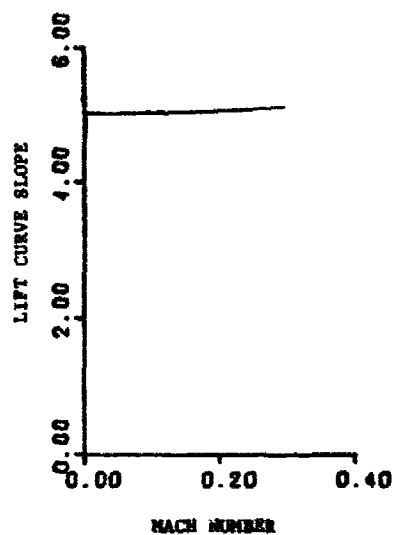


Figure 15. Beech E90 Lift Curve Slope vs. Mach Number From Empirical Equation

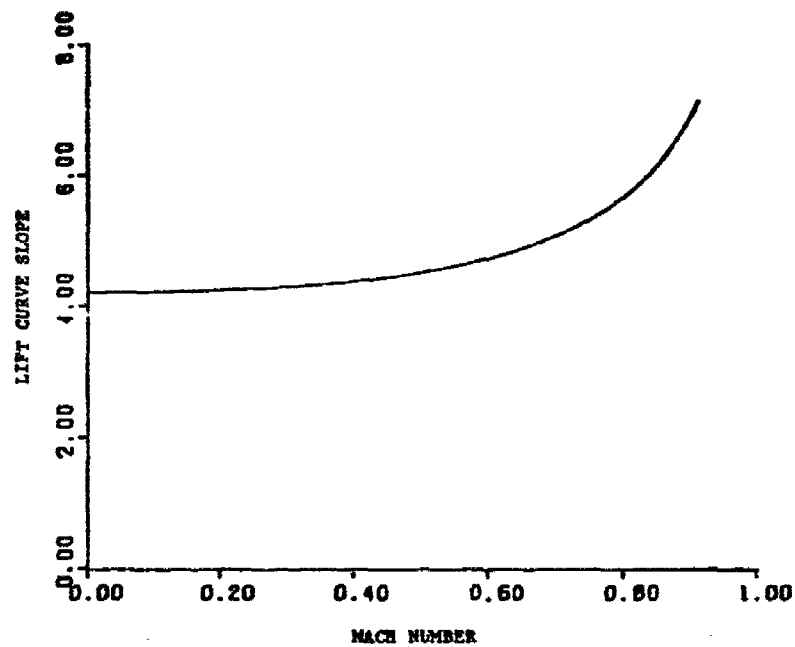


Figure 16. Boeing 707-300 Lift Curve Slope Vs Mach Number from Empirical Equation

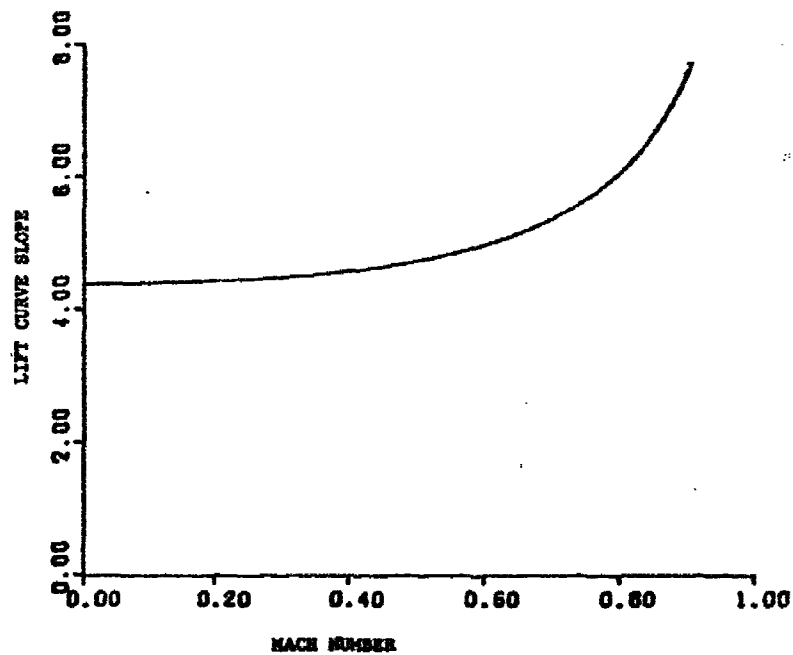


Figure 17. Boeing 727 Lift Curve Slope Vs Mach Number from Empirical Equation

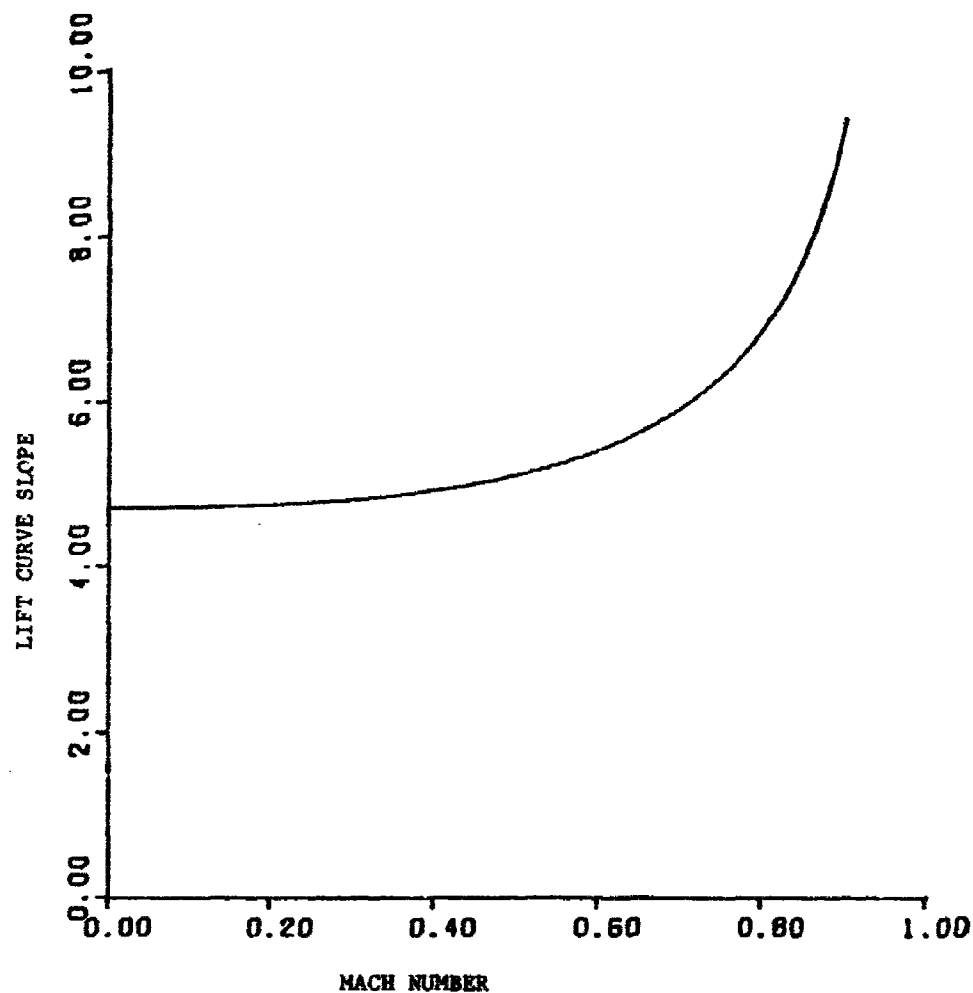


Figure 18. Boeing 737 Lift Curve Slope Vs Mach Number from Empirical Equation

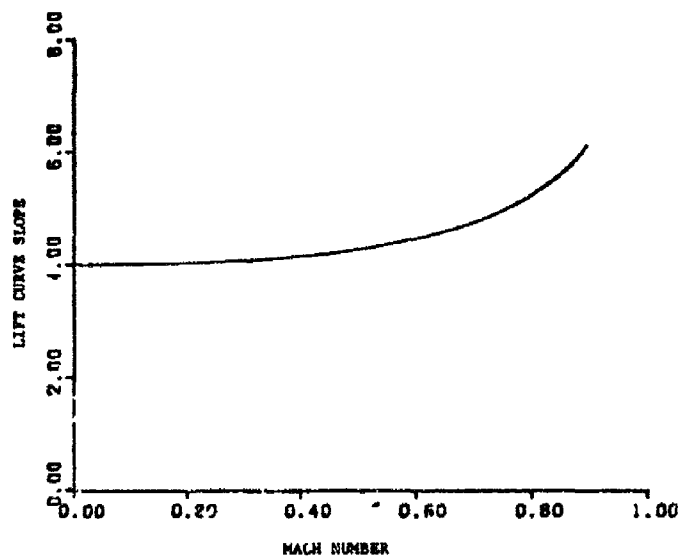


Figure 19. Boeing 747 Lift Curve Slope Vs Mach Number from Empirical Equation

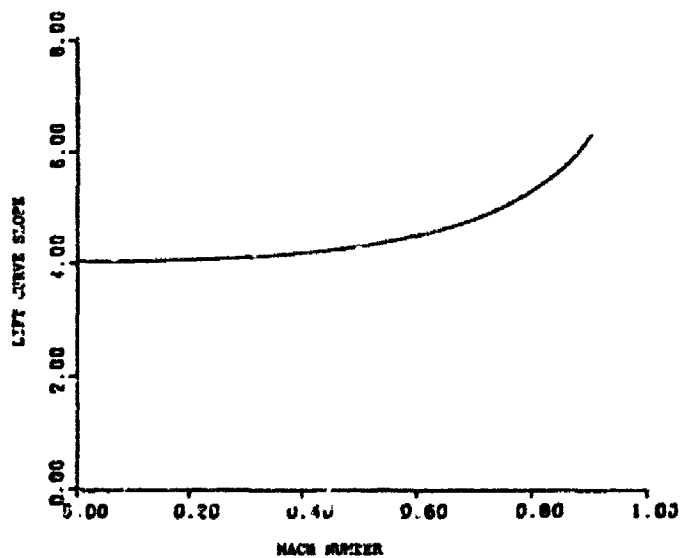


Figure 20. Boeing 747-SP Lift Curve Slope Vs Mach Number from Empirical Equation

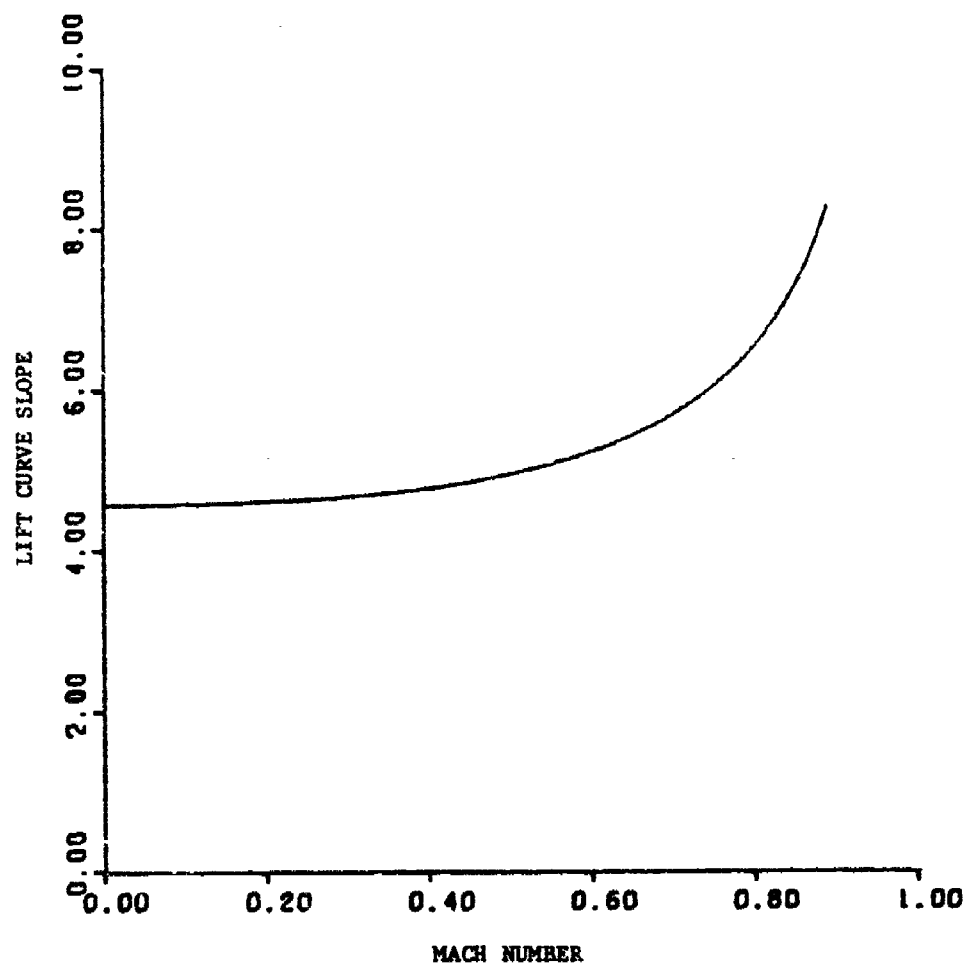


Figure 21. C-5A Lift Curve Slope Vs Mach Number from Empirical Equation

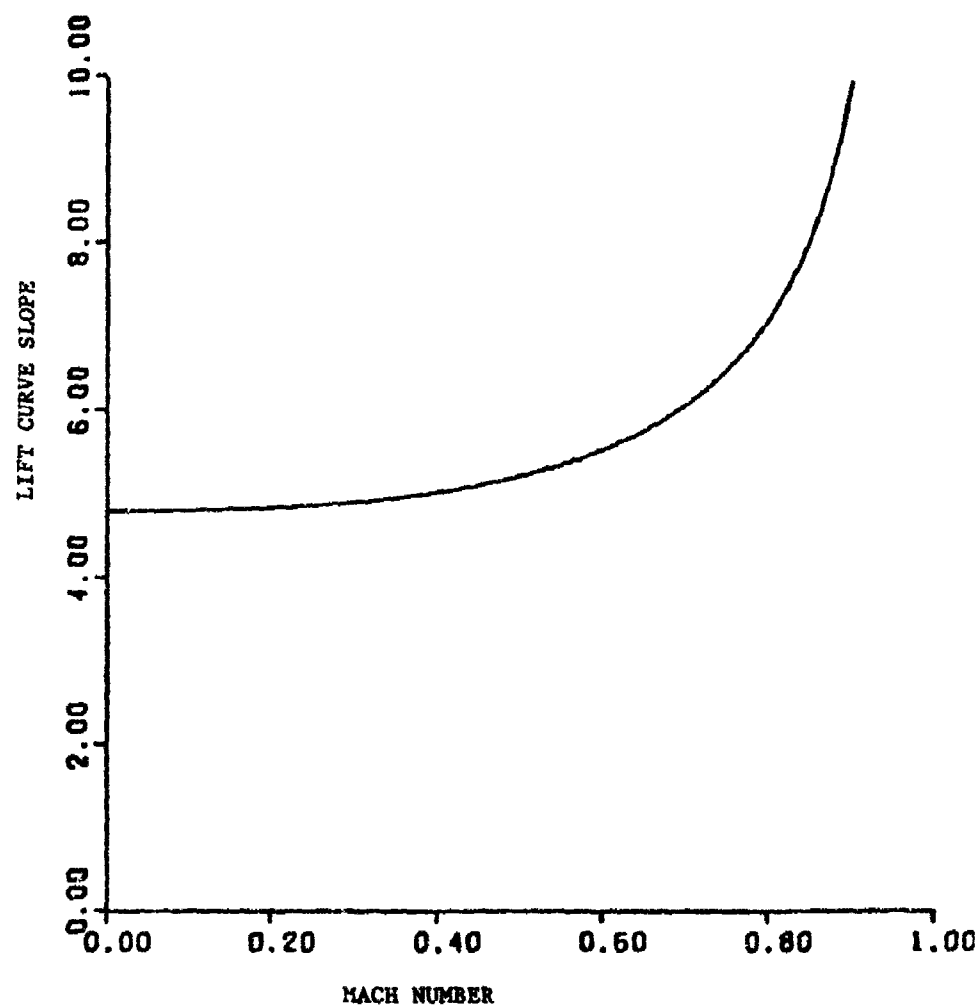


Figure 22. C-9 Lift Curve Slope Vs Mach Number from Empirical Equation

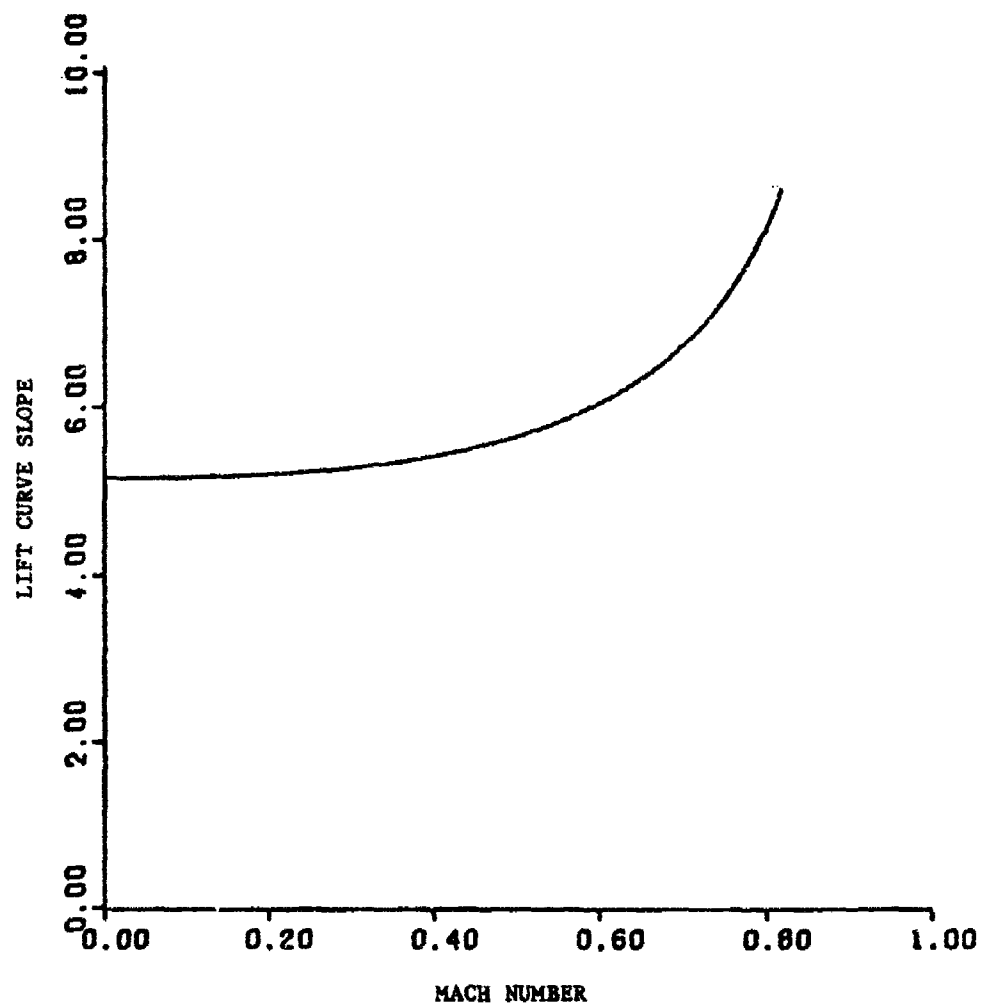


Figure 23. C-130 Lift Curve Slope Vs Mach Number from Empirical Equation

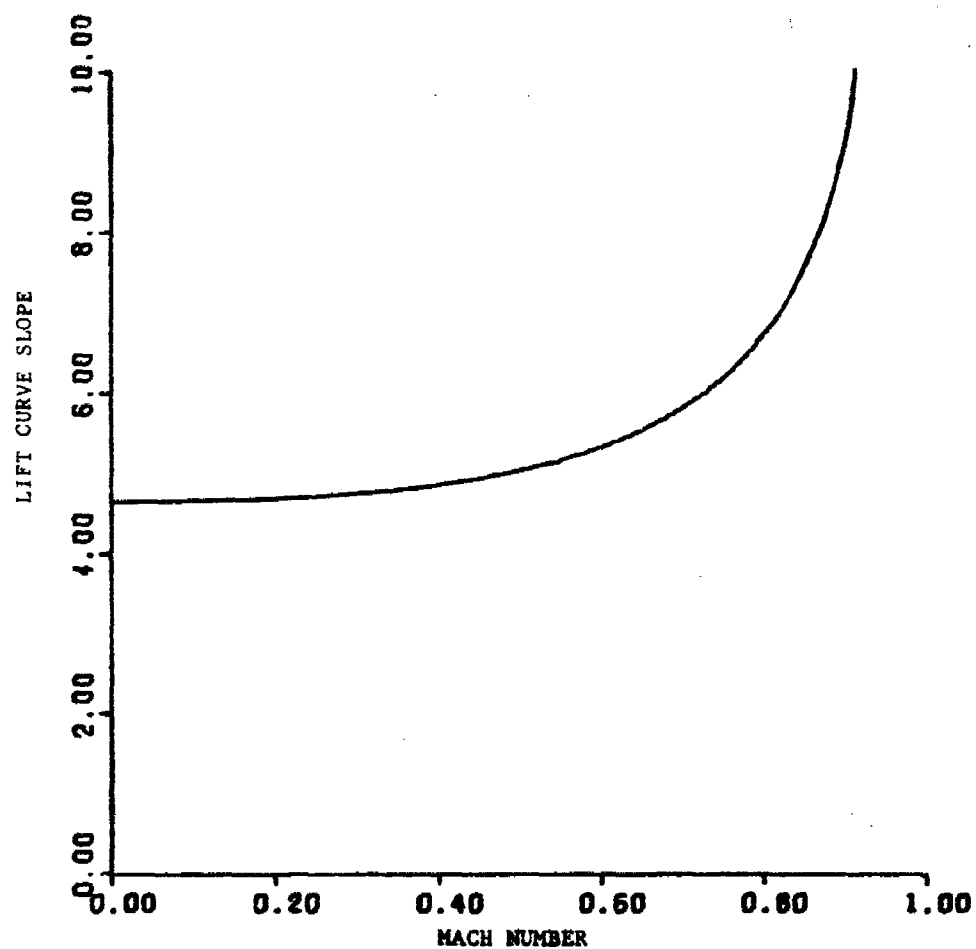


Figure 24. C-141 Lift Curve Slope Vs Mach Number from Empirical Equation

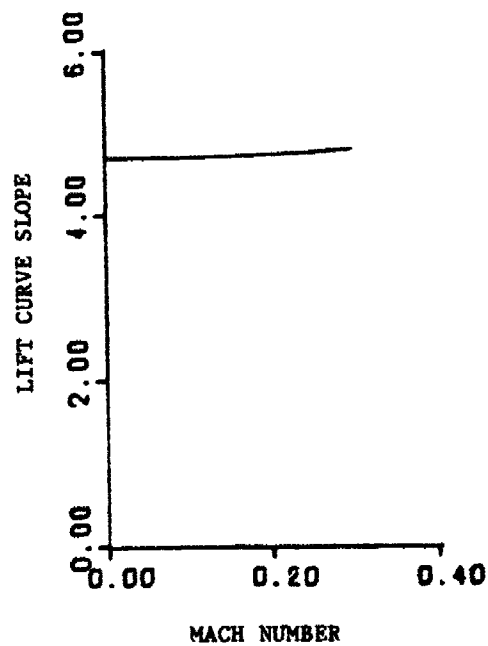


Figure 25. Cessna 150 Lift Curve Slope Vs Mach Number from Empirical Equation

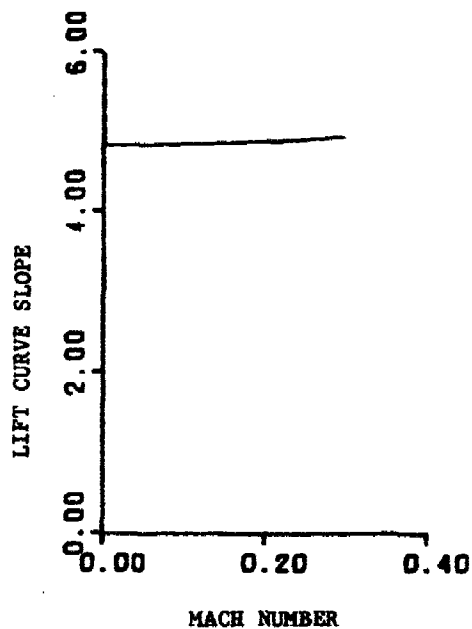


Figure 26. Cessna 172 Lift Curve Slope Vs Mach Number from Empirical Equation

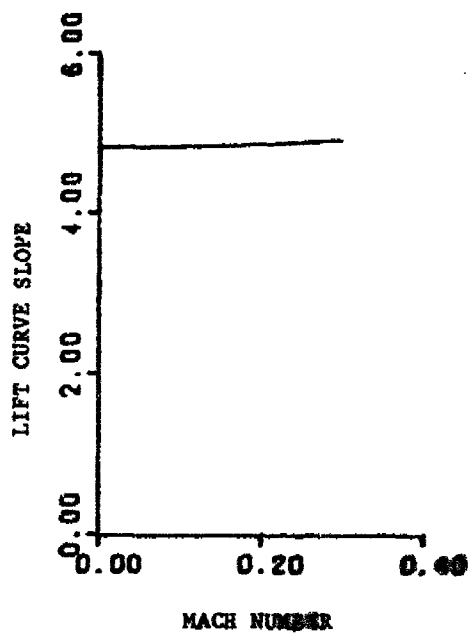


Figure 27. Cessna 175 Lift Curve Slope Vs Mach Number from Empirical Equation

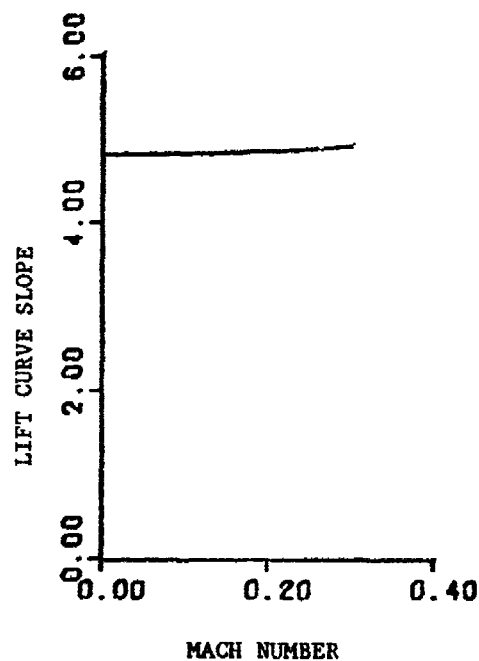


Figure 28. Cessna 180 Lift Curve Slope Vs Mach Number from Empirical Equation

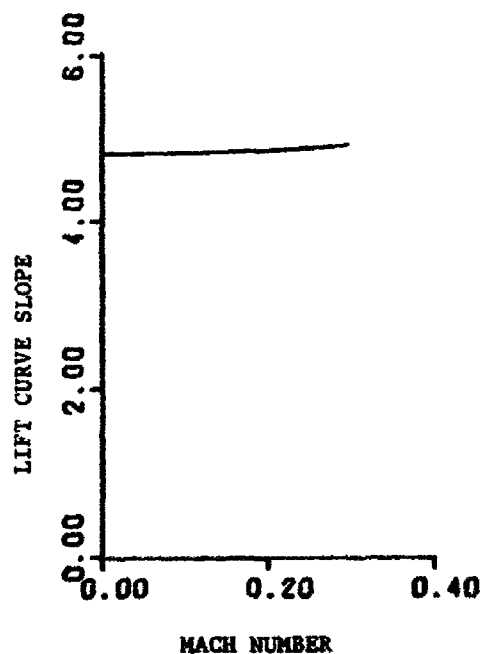


Figure 29. Cessna 182 Lift Curve Slope Vs Mach Number from Empirical Equation

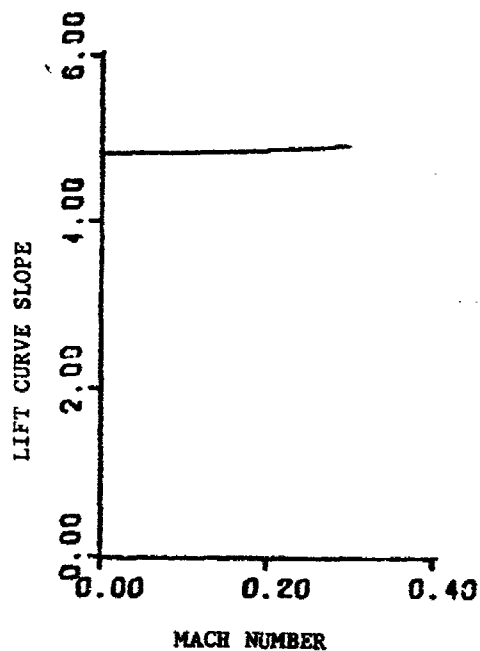


Figure 30. Cessna 205 Lift Curve Slope Vs Mach Number from Empirical Equation

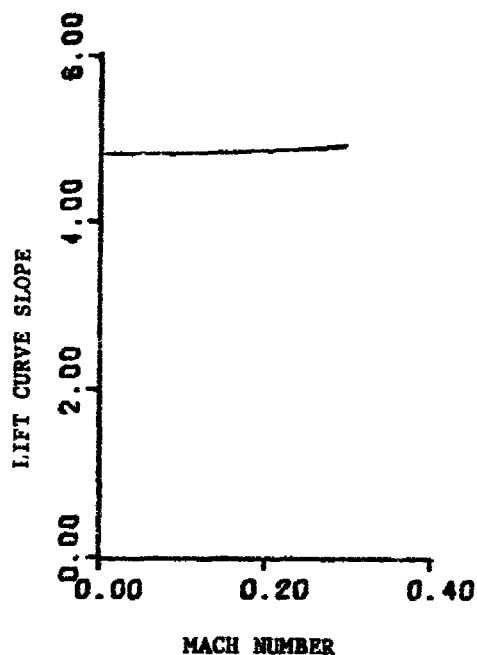


Figure 31. Cessna 210 Lift Curve Slope Vs Mach Number from Empirical Equation

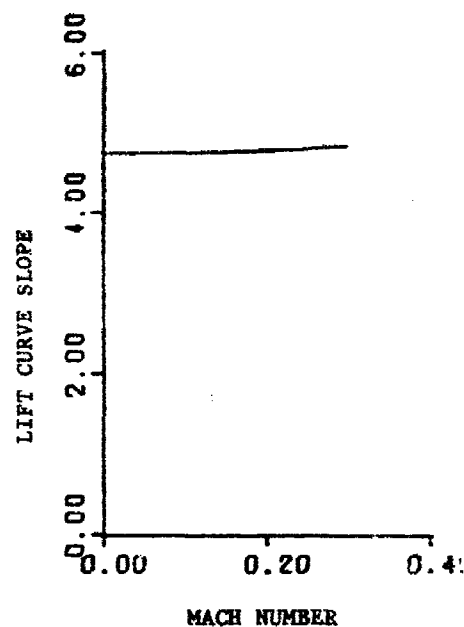


Figure 32. Cessna 310 Lift Curve Slope Vs Mach Number from Empirical Equation

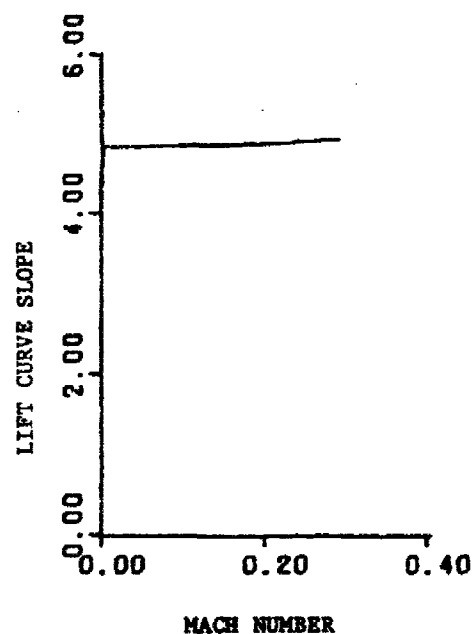


Figure 33. Cessna 401, 402 Lift Curve Slope Vs Mach Number from Empirical Equation

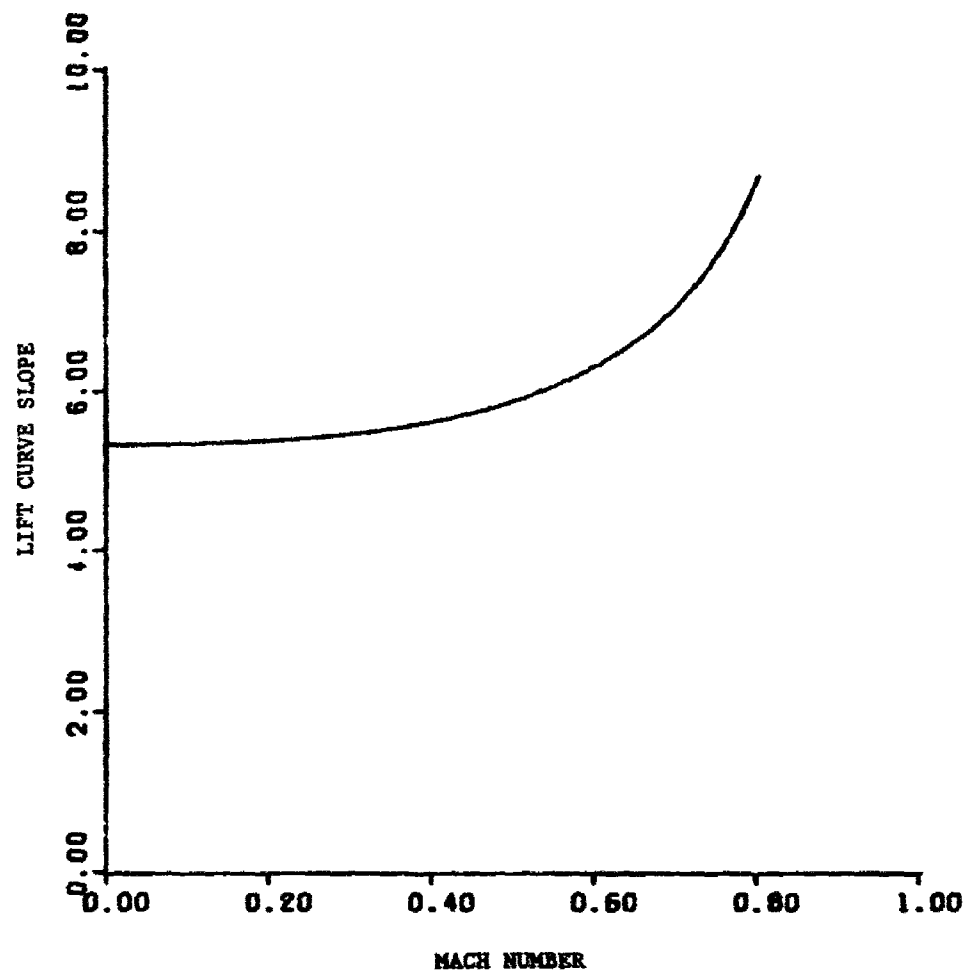


Figure 34. Convair 440, 330 Lift Curve Slope Vs Mach Number from Empirical Equation

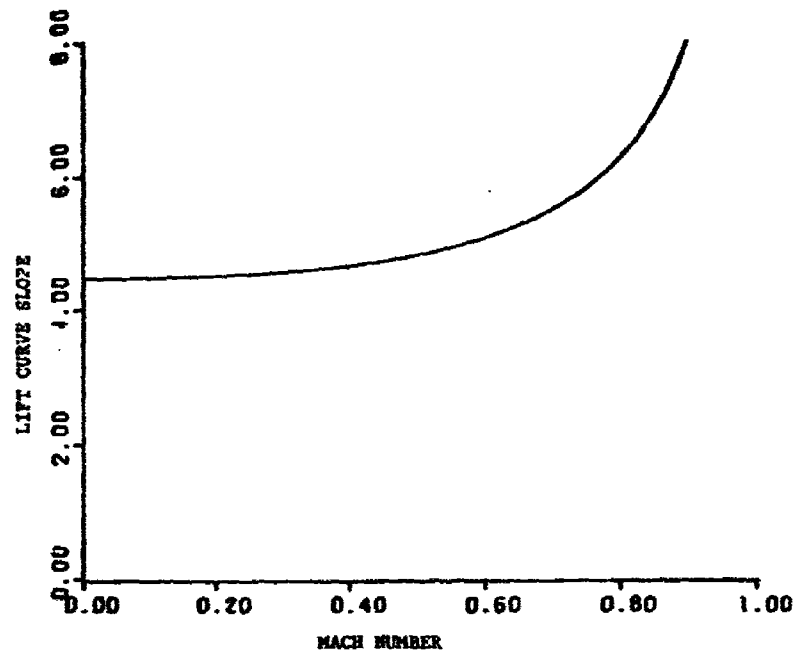


Figure 35. DC-8-50, 61 Lift Curve Slope Vs Mach Number from Empirical Equation

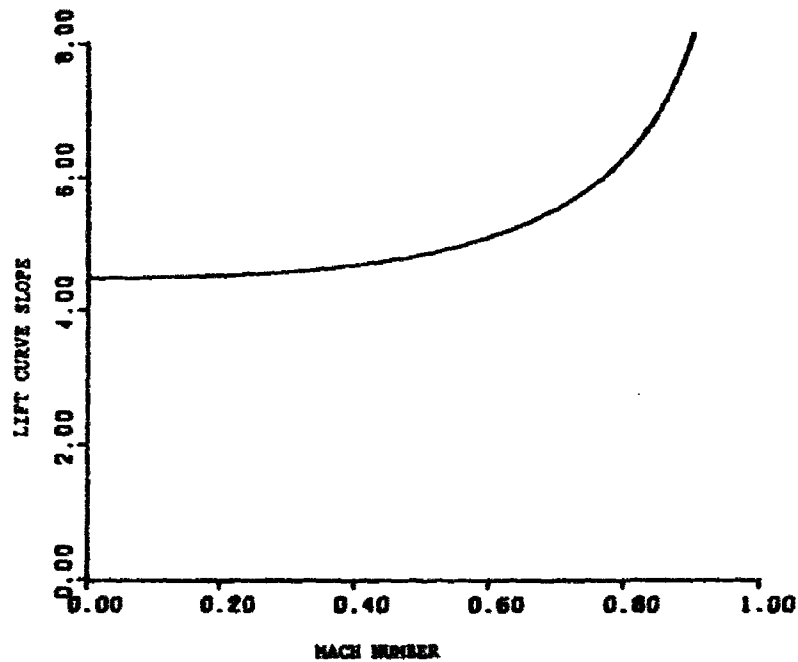


Figure 36. DC-8-62, 63 Lift Curve Slope Vs Mach Number from Empirical Equation

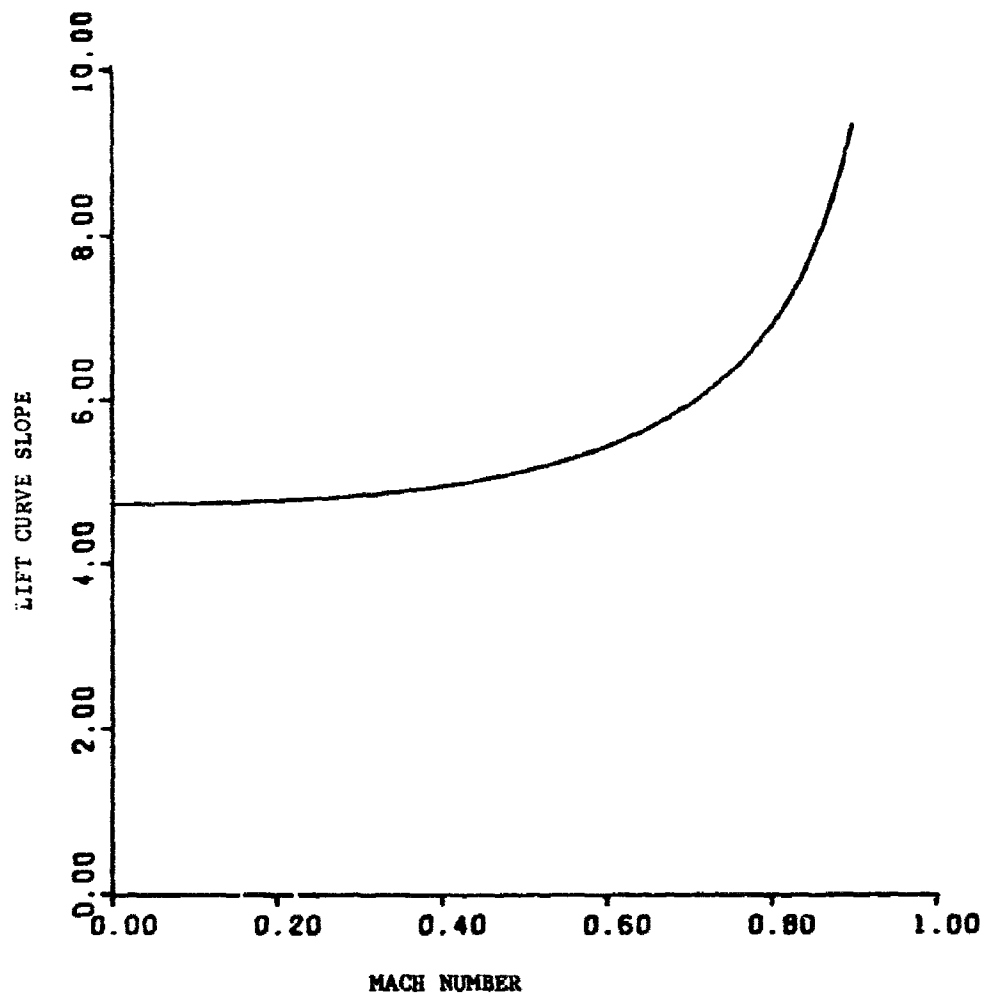


Figure 37. DC-9-10 Lift Curve Slope Vs Mach Number from Empirical Equation

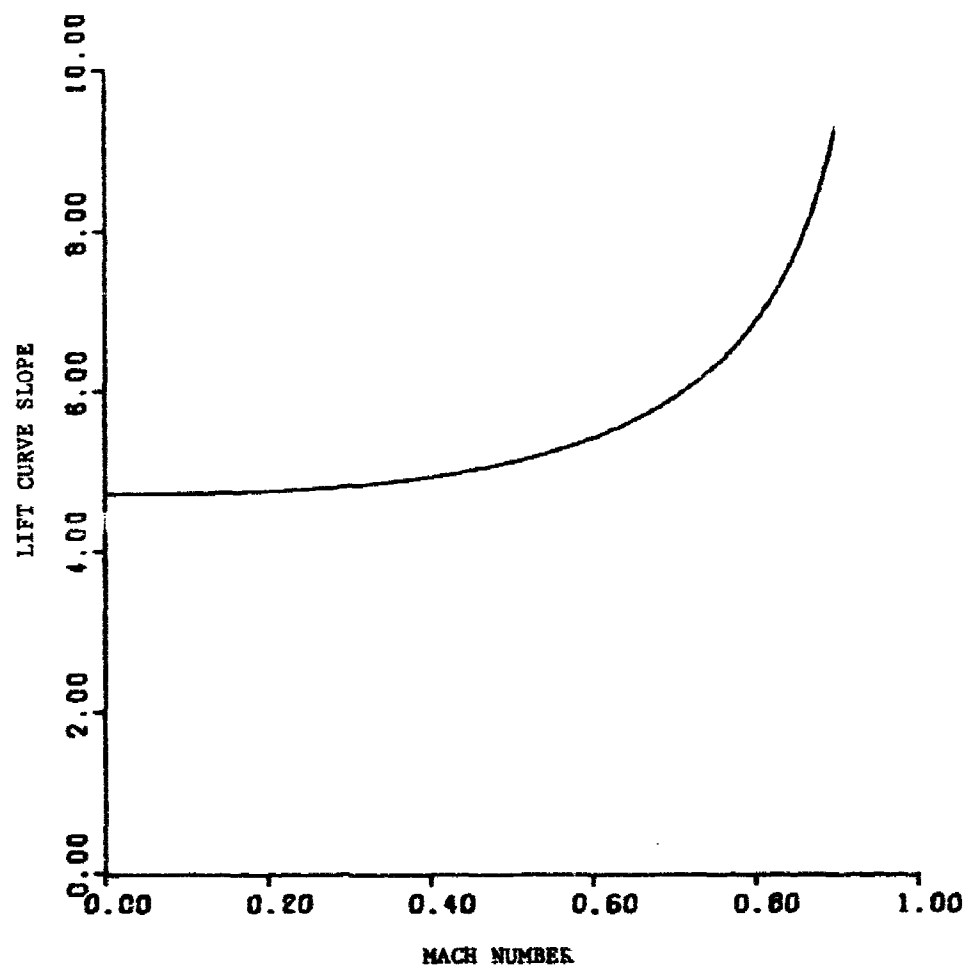


Figure 38. DC-9-30, 40, 50 Lift Curve Slope Vs Mach Number from Empirical Equation

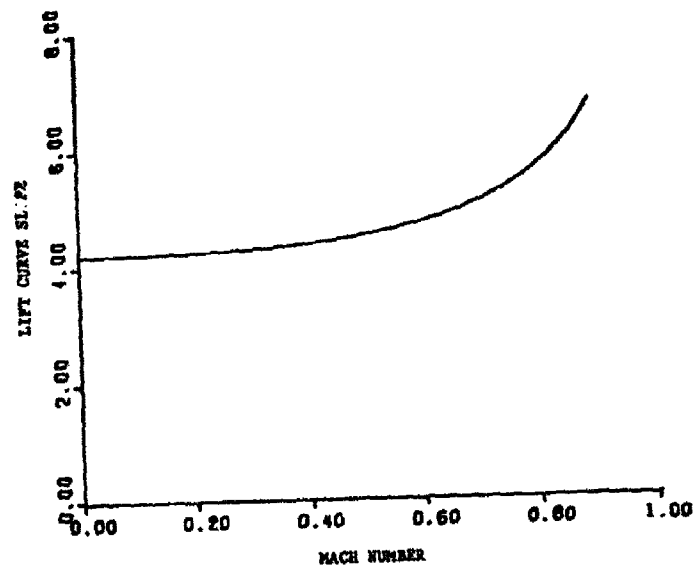


Figure 39. DC-10-10 Lift Curve Slope Vs Mach Number from Empirical Equation

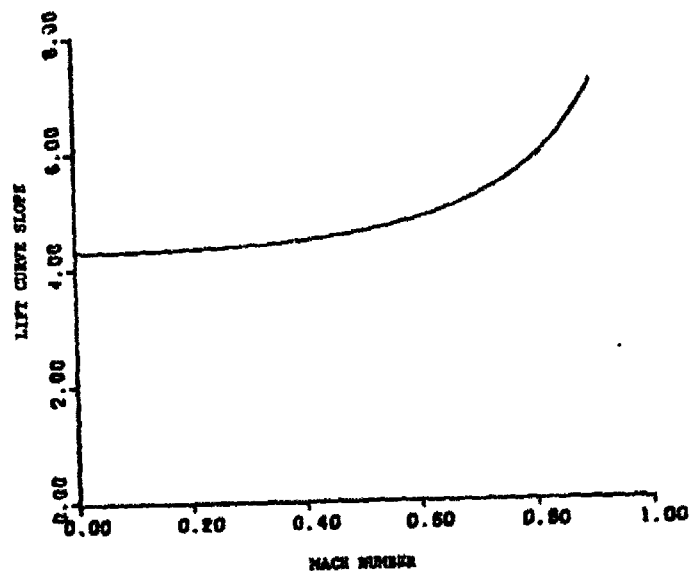


Figure 40. DC-10-20 Lift Curve Slope Vs Mach Number from Empirical Equation

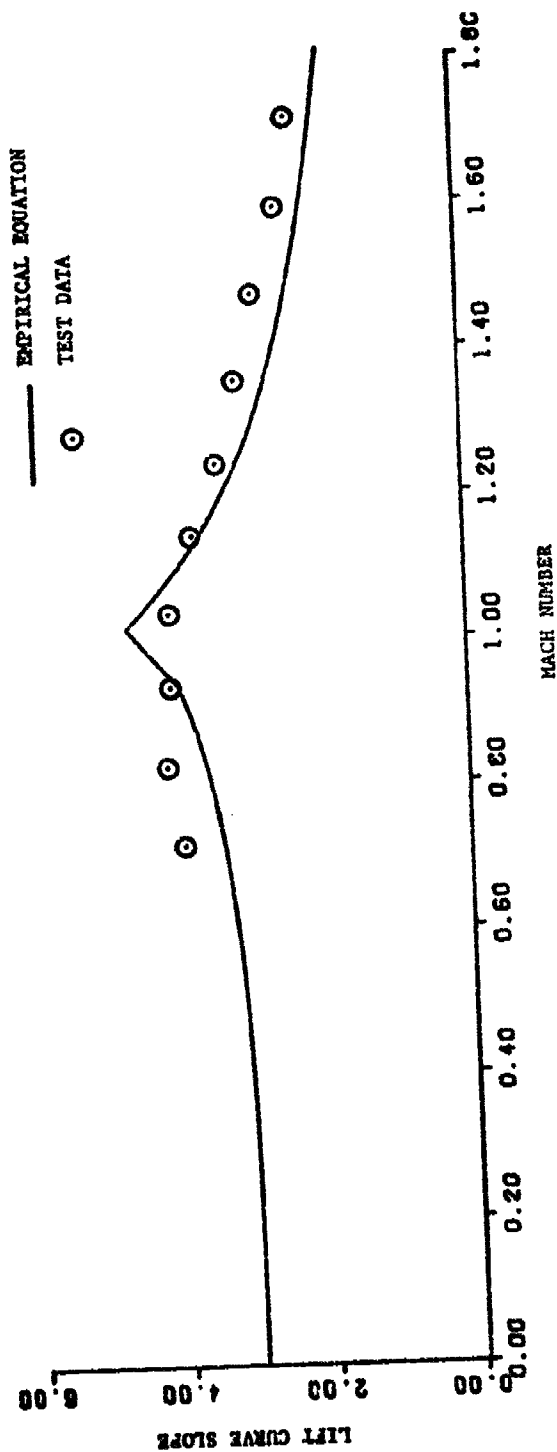


Figure 41. F-4 Lift Curve Slope Vs Mach Number from Empirical Equation Compared with Test Data

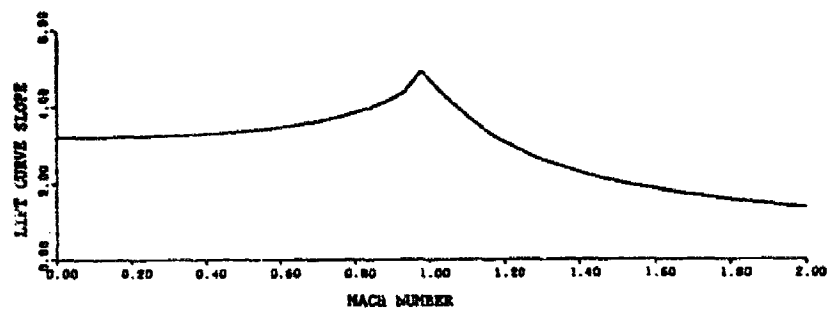


Figure 42. F-15 Lift Curve Slope Vs Mach Number from Empirical Equation

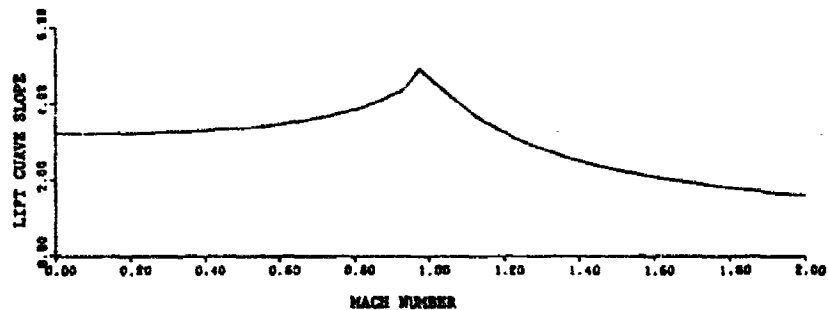


Figure 43. F-16 Lift Curve Slope Vs Mach Number from Empirical Equation

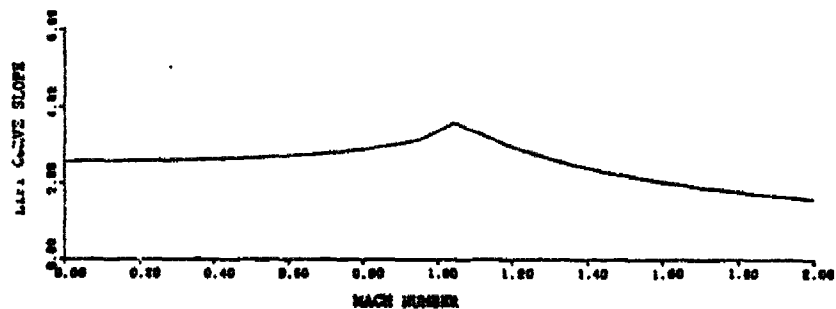


Figure 44. F-106 Lift Curve Slope Vs Mach Number from Empirical Equation

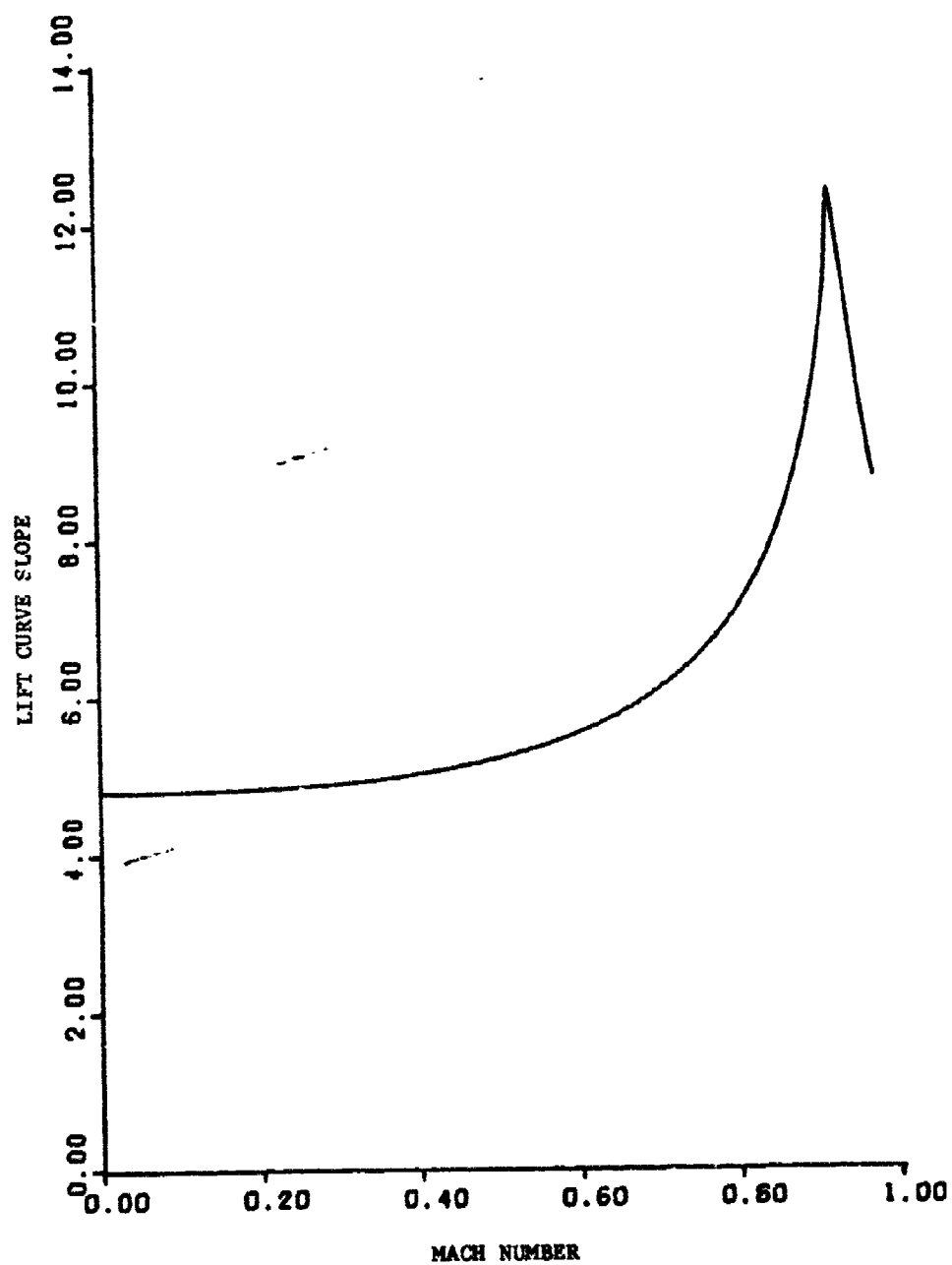


Figure 45. F-111 @ 16° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation

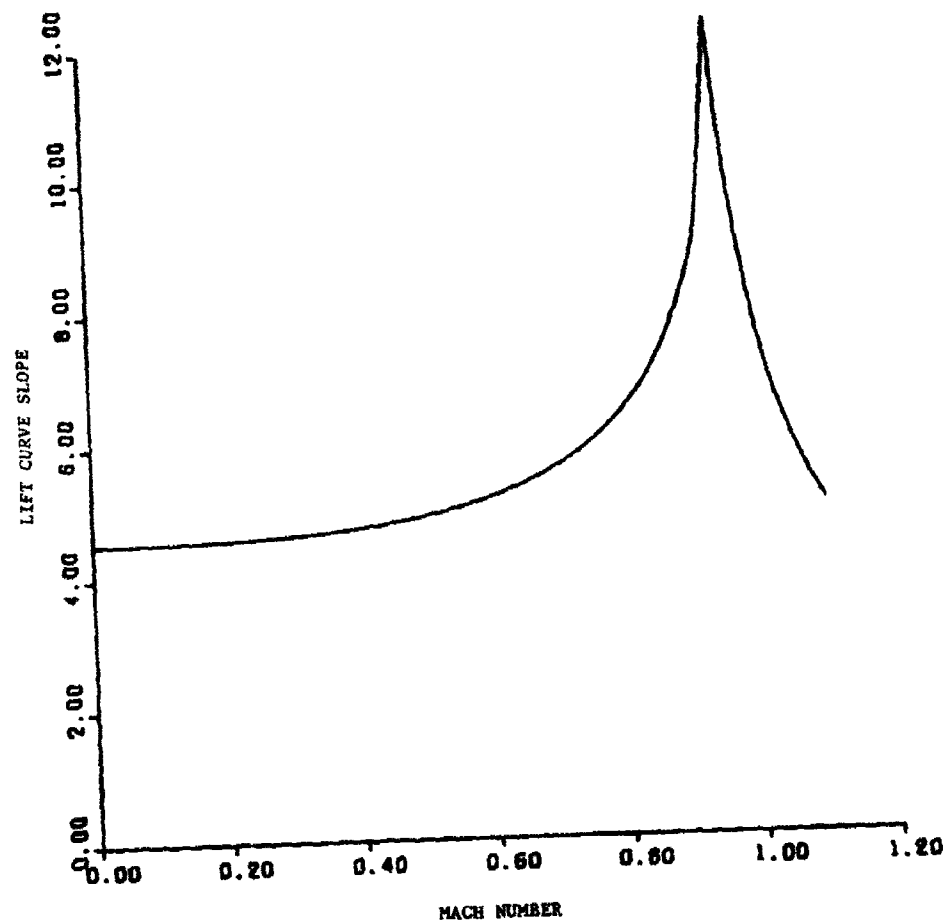


Figure 45. F-111 @ 26° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation

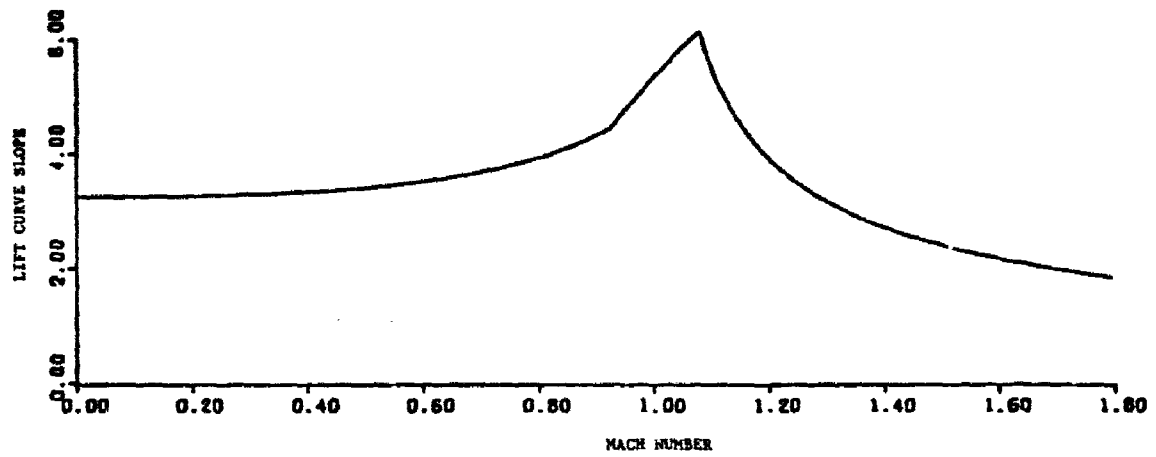


Figure 47. F-111 @ 50° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation

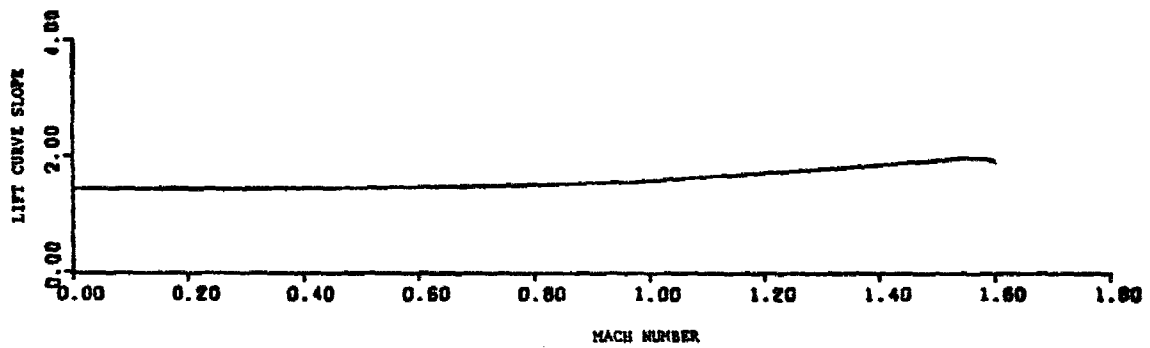


Figure 48. F-111 @ 72° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation

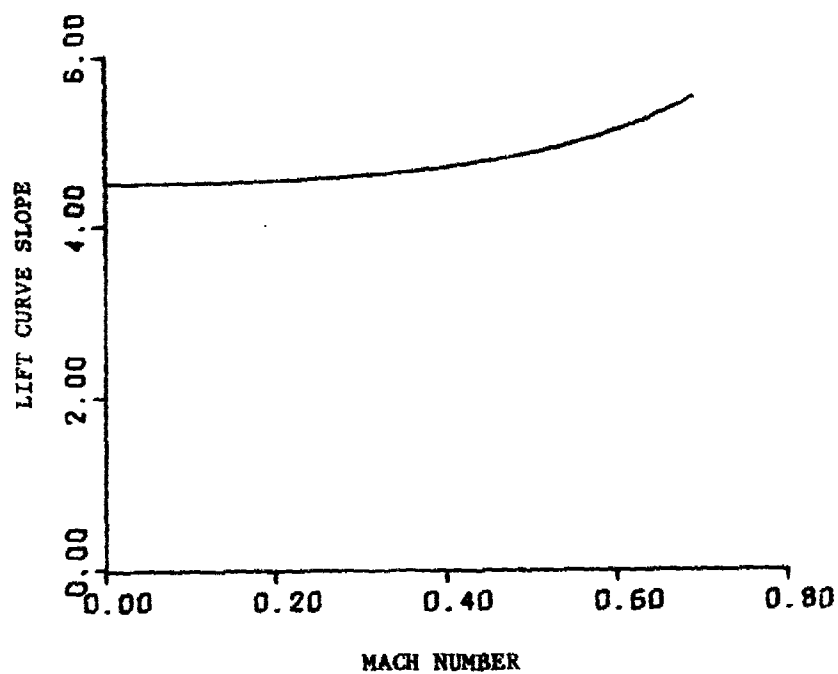


Figure 49. Falcon 10 Lift Curve Slope Vs Mach Number from Empirical Equation

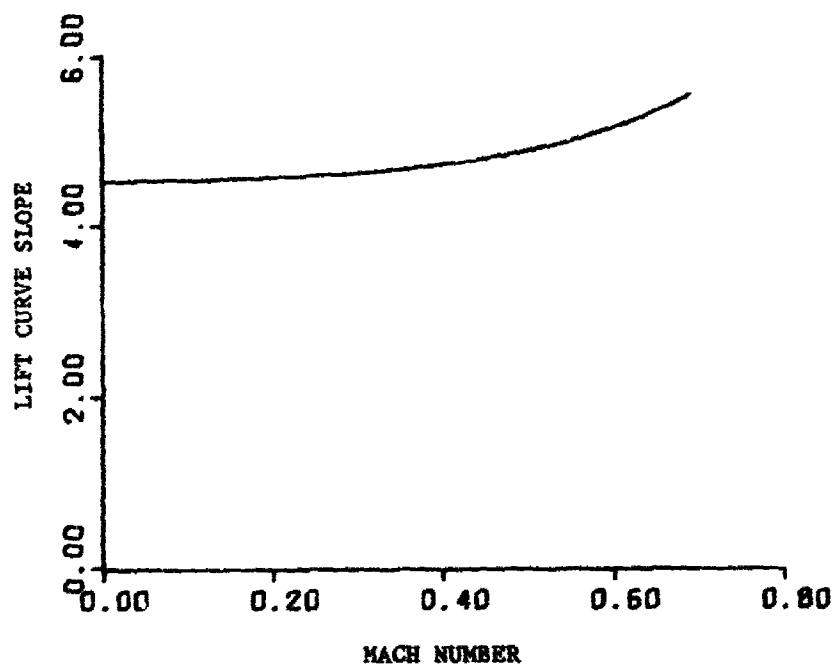


Figure 50. Falcon 50 Lift Curve Slope Vs Mach Number from Empirical Equation

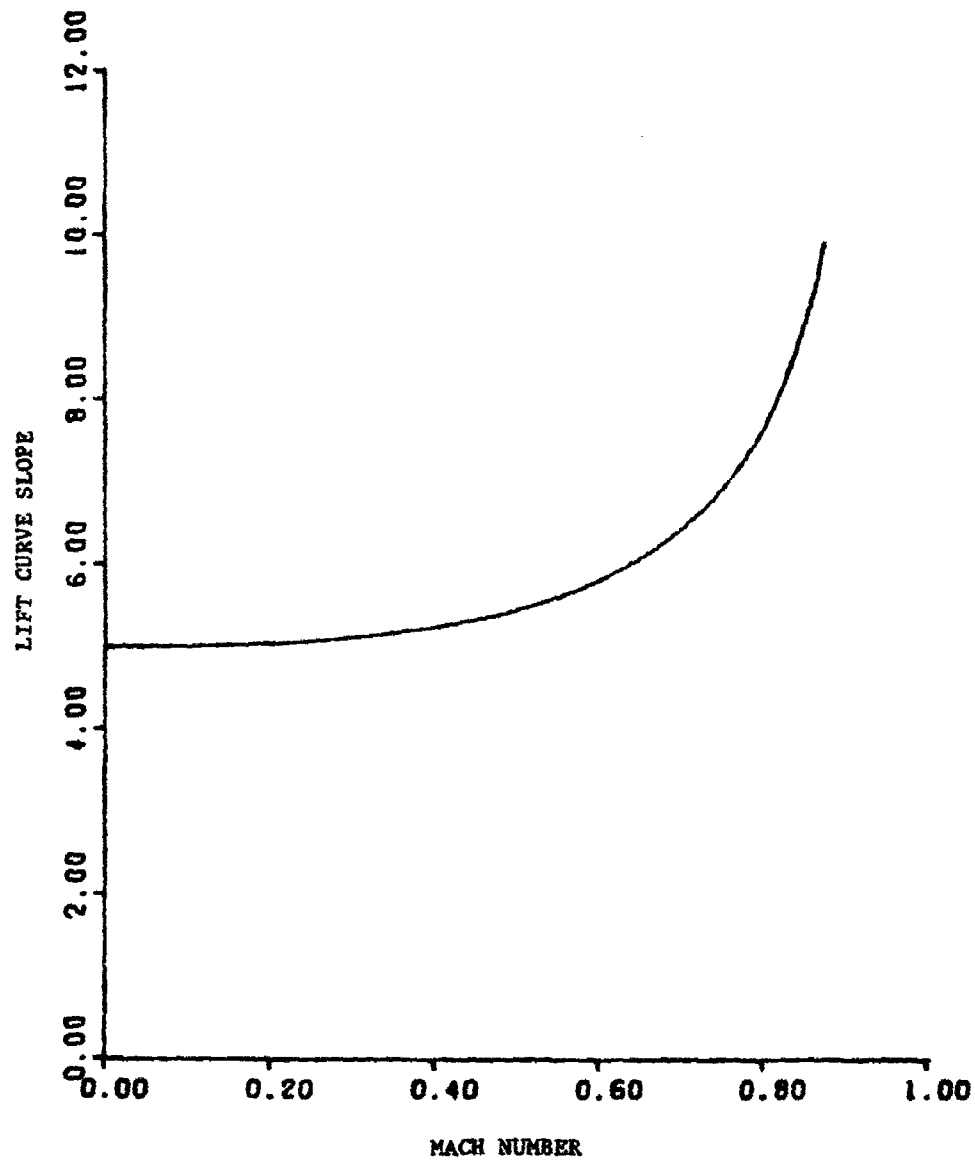


Figure 51. FB-111 @ 16° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation

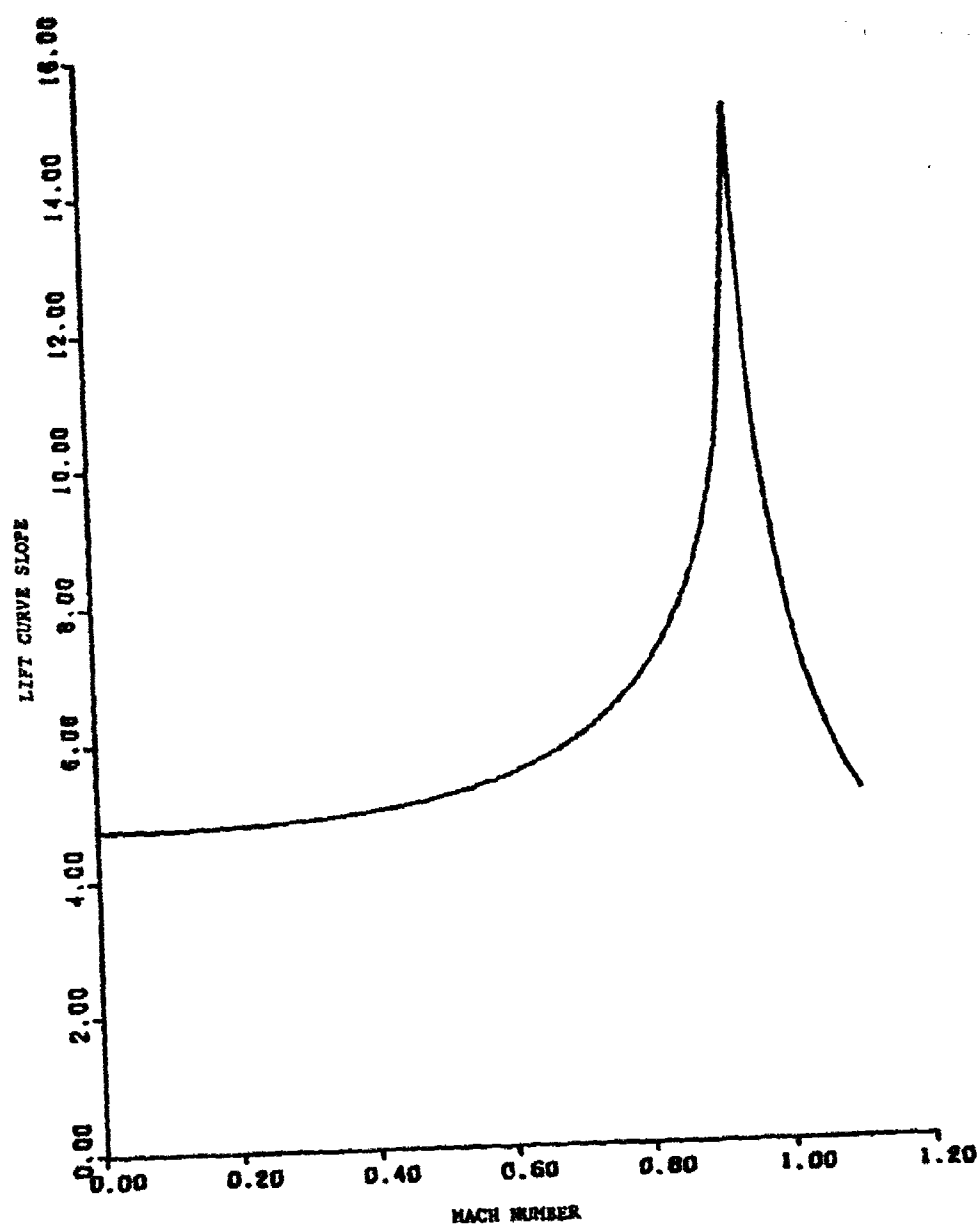


Figure 52. FB-111 @ 26° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation

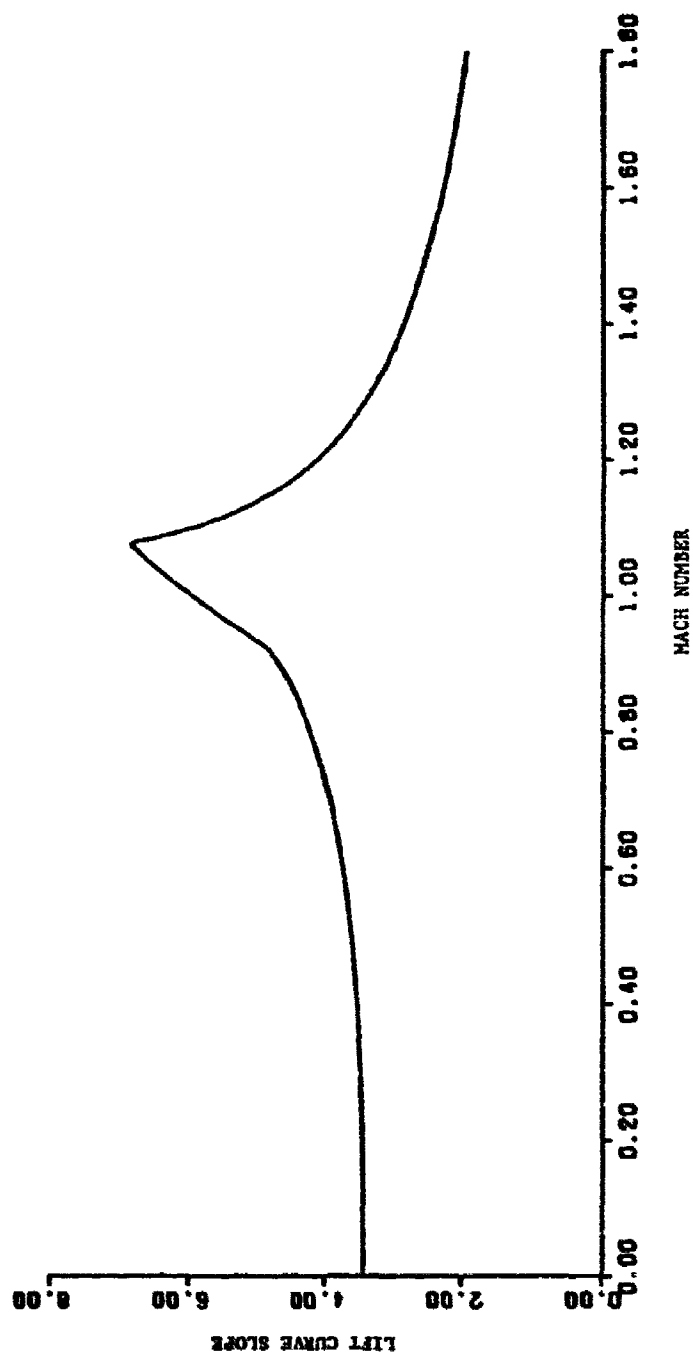


Figure 53. FB-111 @ 50° Sweep Lift Curve Slope Vs Mach Number
from Empirical Equation

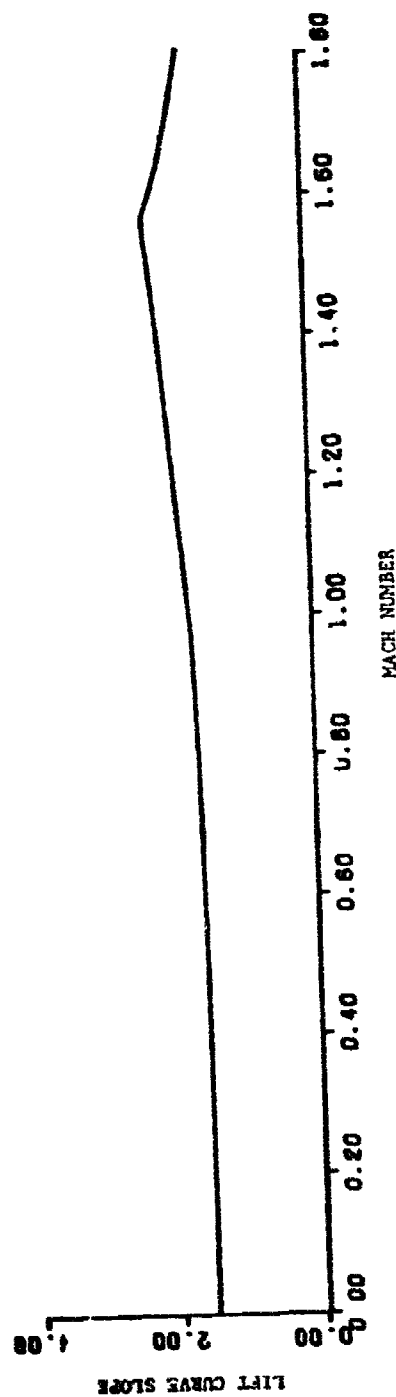


Figure 54. FB-111 @ 72° Sweep Lift Curve Slope Vs Mach Number
from Empirical Equation

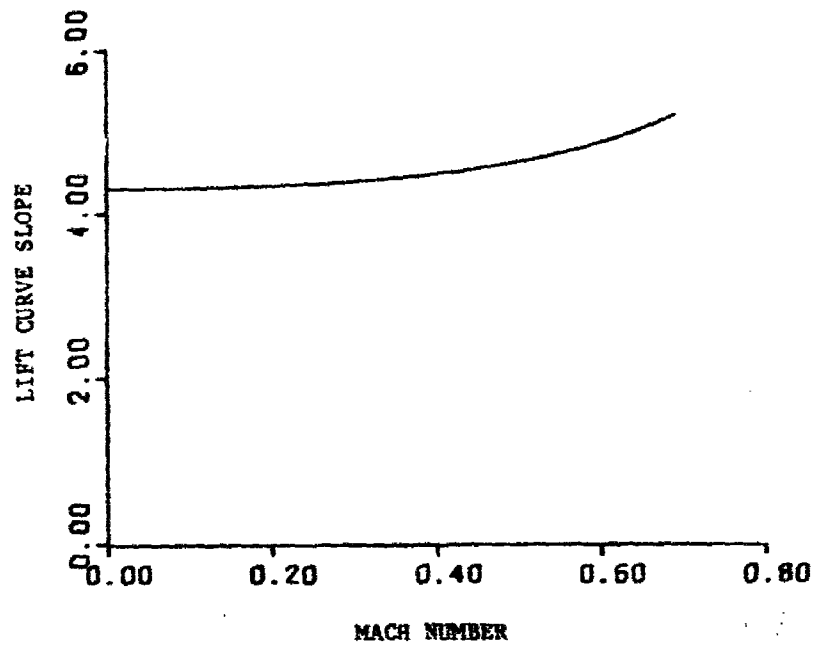


Figure 55. Fan Jet Falcon (FJF) 20 C, D, E Lift Curve Slope Vs Mach Number from Empirical Equation

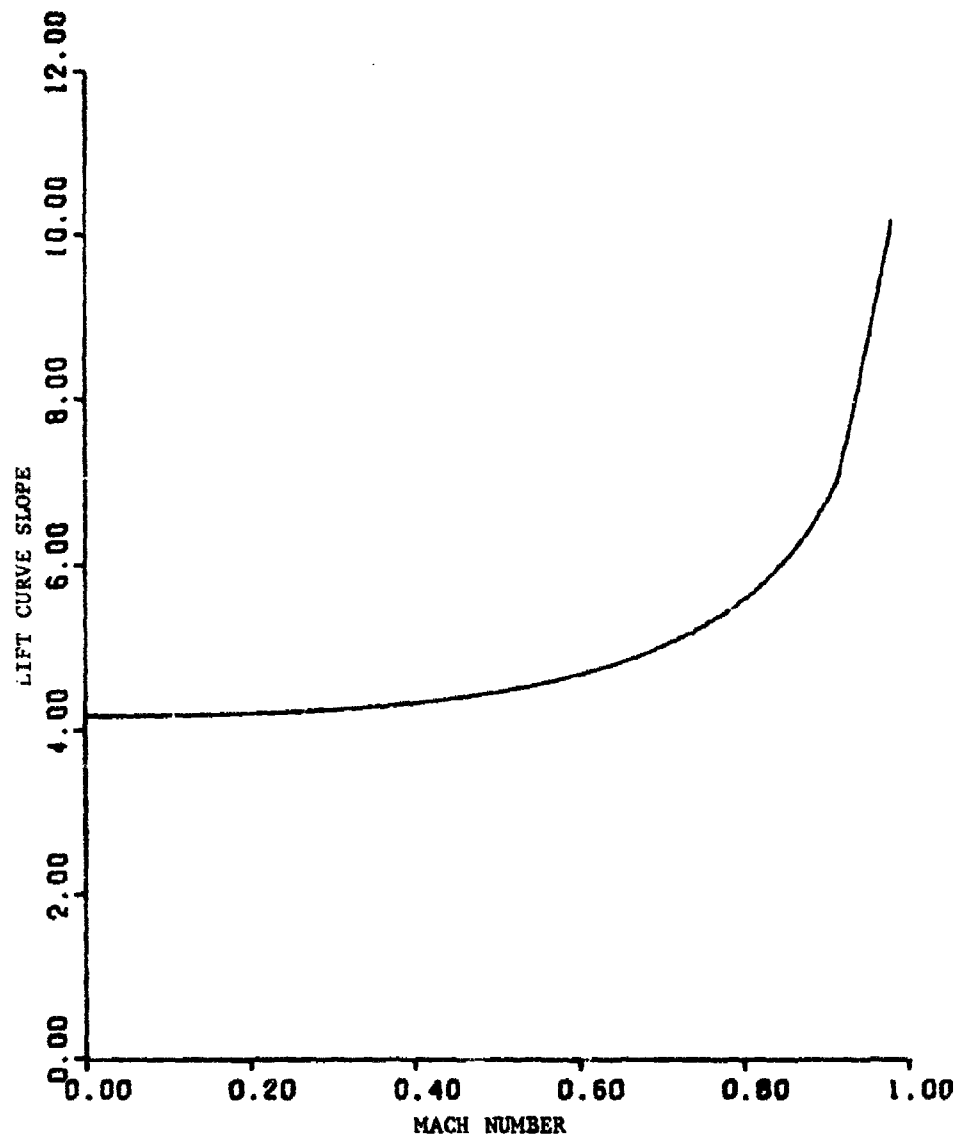


Figure 56. KC-135 Lift Curve Slope Vs Mach Number from Empirical Equation

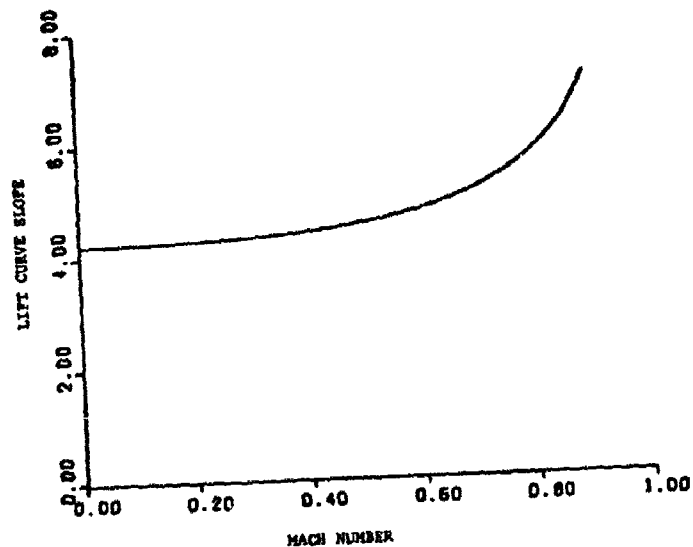


Figure 57. Lear Jet 23, 24, 25 Lift Curve Slope Vs Mach Number from Empirical Equation

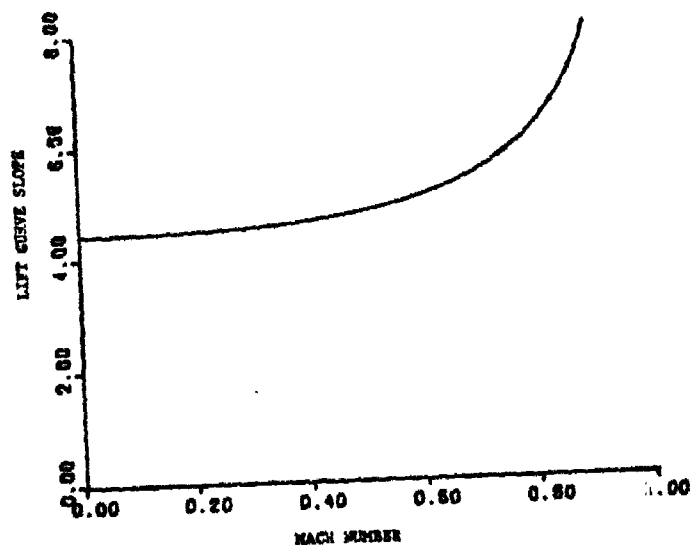


Figure 58. Lear Jet 36 Lift Curve Slope Vs Mach Number from Empirical Equation

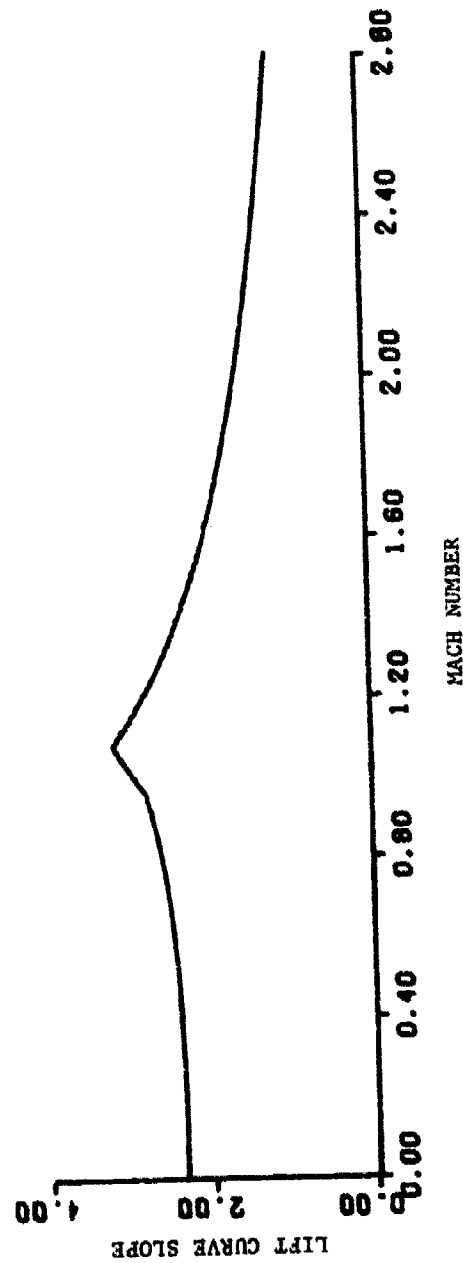


Figure 59. SR-71 Lift Curve Slope Vs Mach Number from Empirical Equation

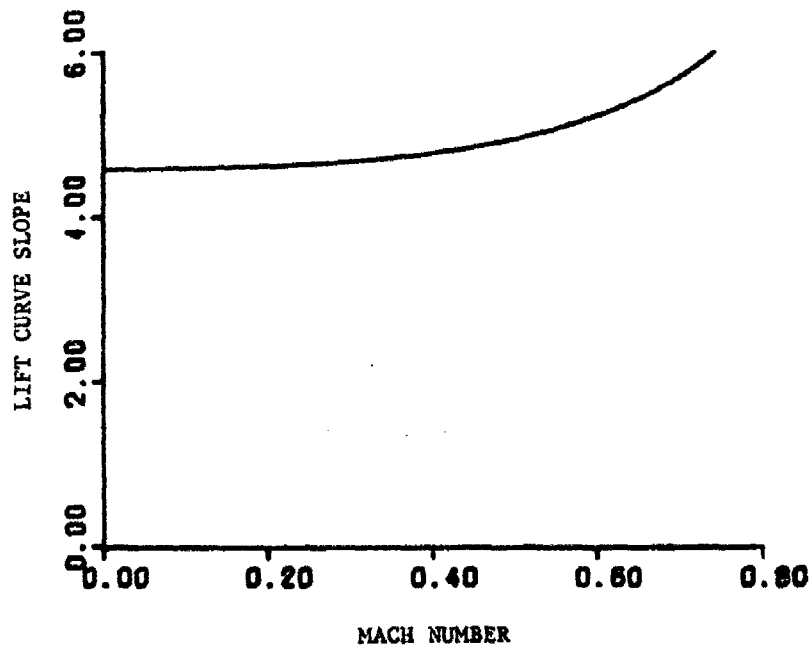


Figure 60. T-34 Lift Curve Slope Vs Mach Number from Empirical Equation

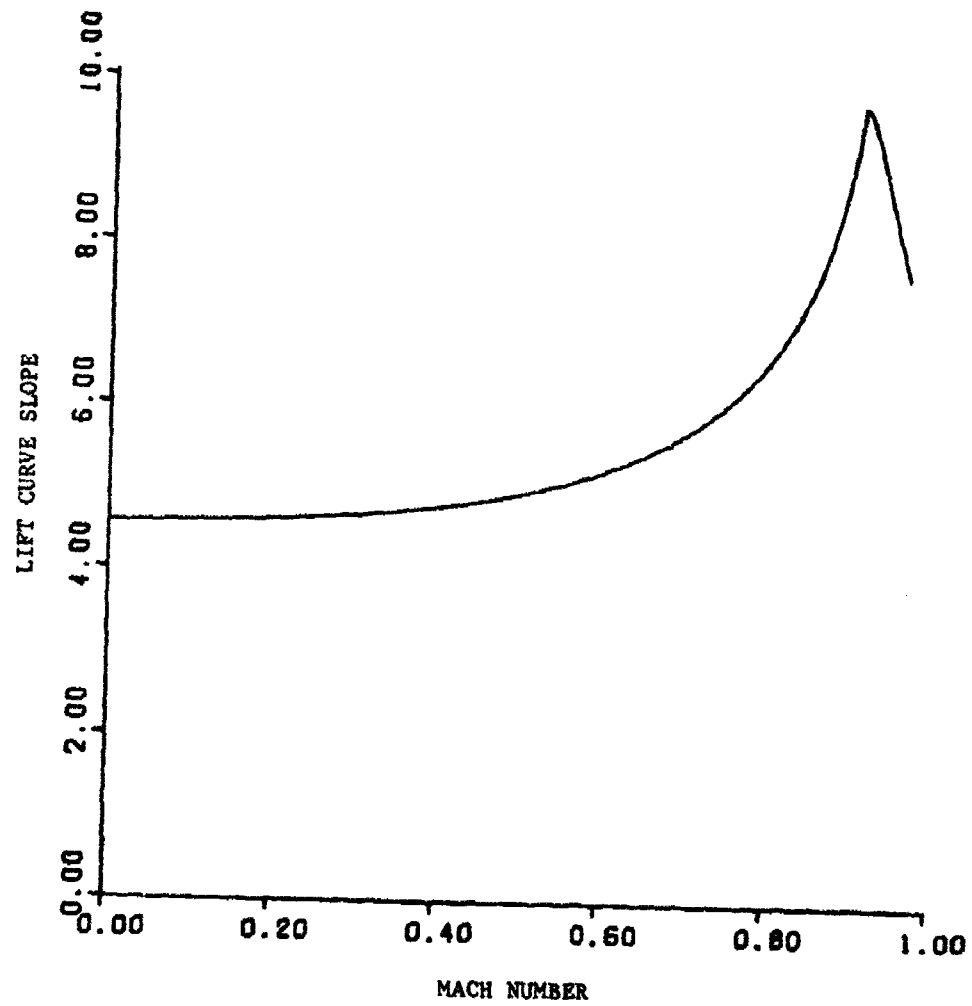


Figure 61. T-37 Lift Curve Slope Vs Mach Number from Empirical Equation

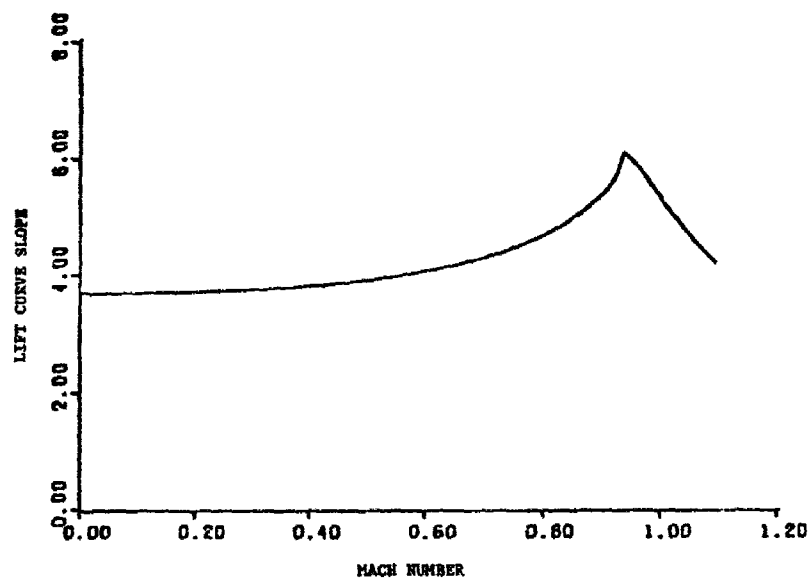


Figure 62. T-38 Lift Curve Slope Vs Mach Number from Empirical Equation

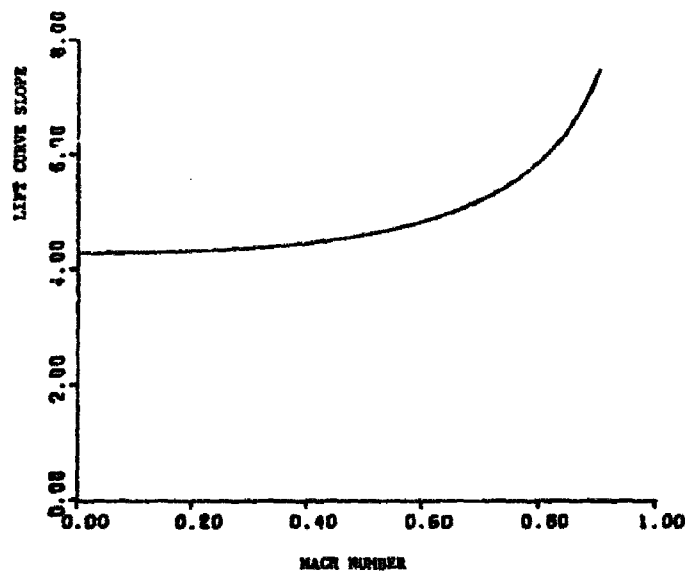


Figure 63. T-39A Lift Curve Slope Vs Mach Number from Empirical Equation

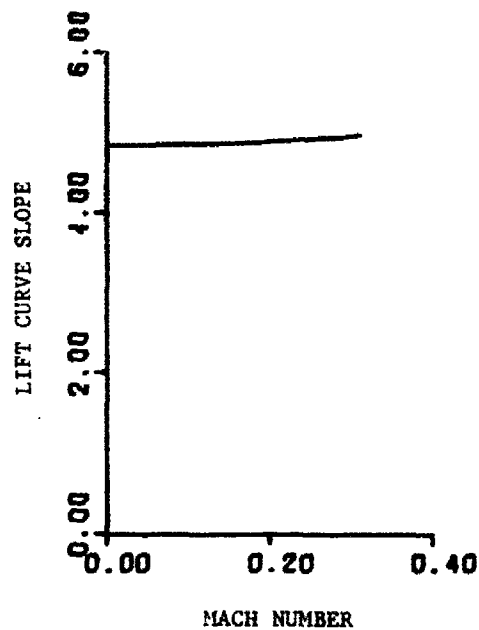


Figure 64. T-41 Lift Curve Slope Vs Mach Number from Empirical Equation

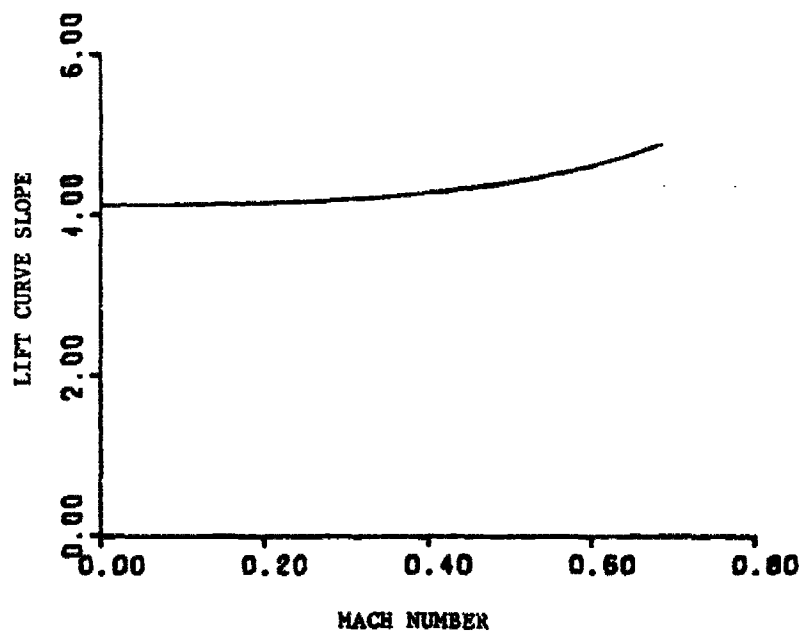


Figure 65. VC-140 Lift Curve Slope Vs Mach Number from Empirical Equation

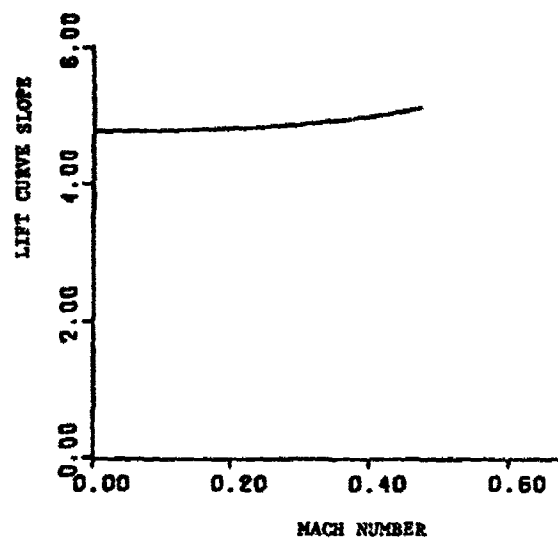


Figure 66. O-2 Lift Curve Slope Vs Mach Number from Empirical Equation

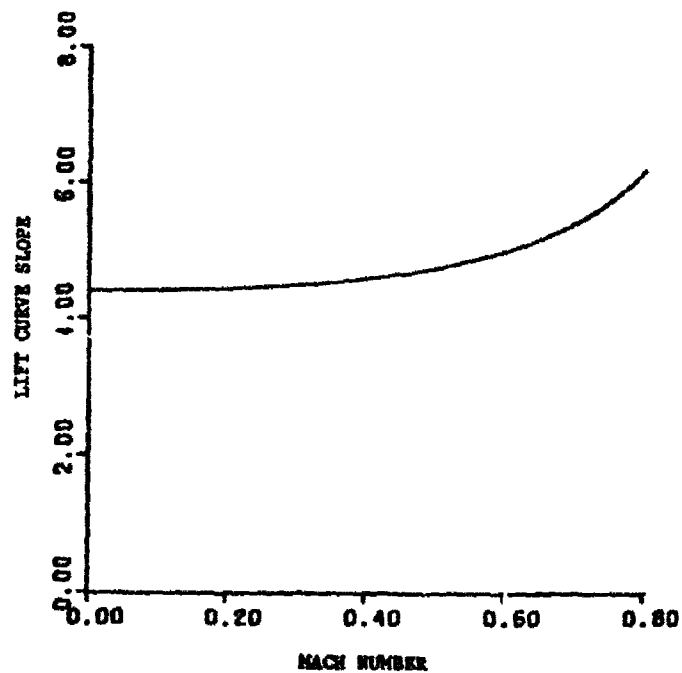


Figure 67. OV-10 Lift Curve Slope Vs Mach Number from Empirical Equation

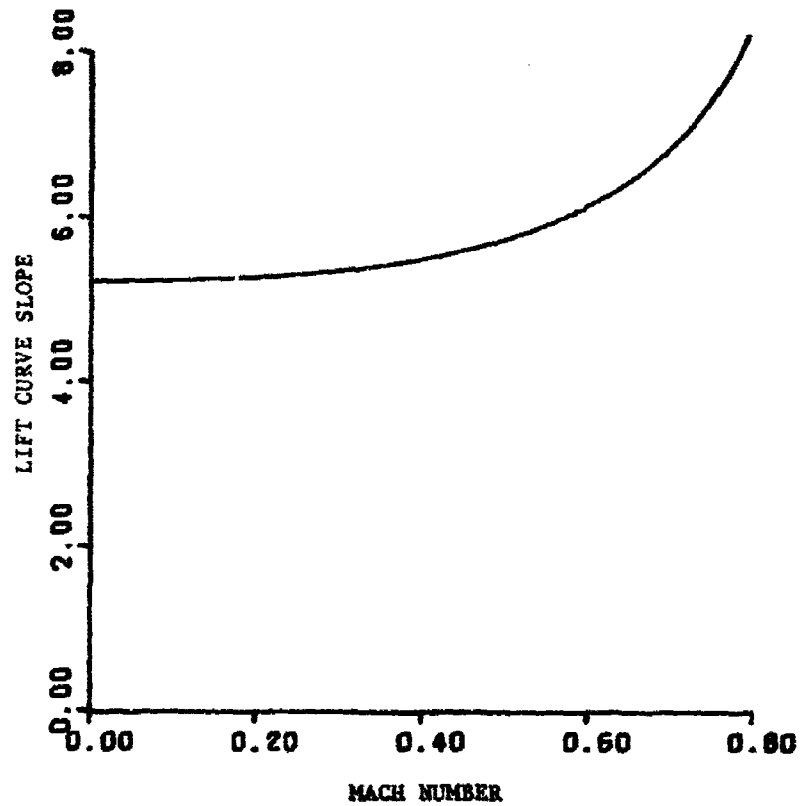


Figure 68. U-2 Lift Curve Slope Vs Mach Number from Empirical Equation

APPENDIX B

PLOTS OF GUST SENSITIVITY VERSUS
CALIBRATED AIRSPEED FOR VARIOUS
AIRCRAFT

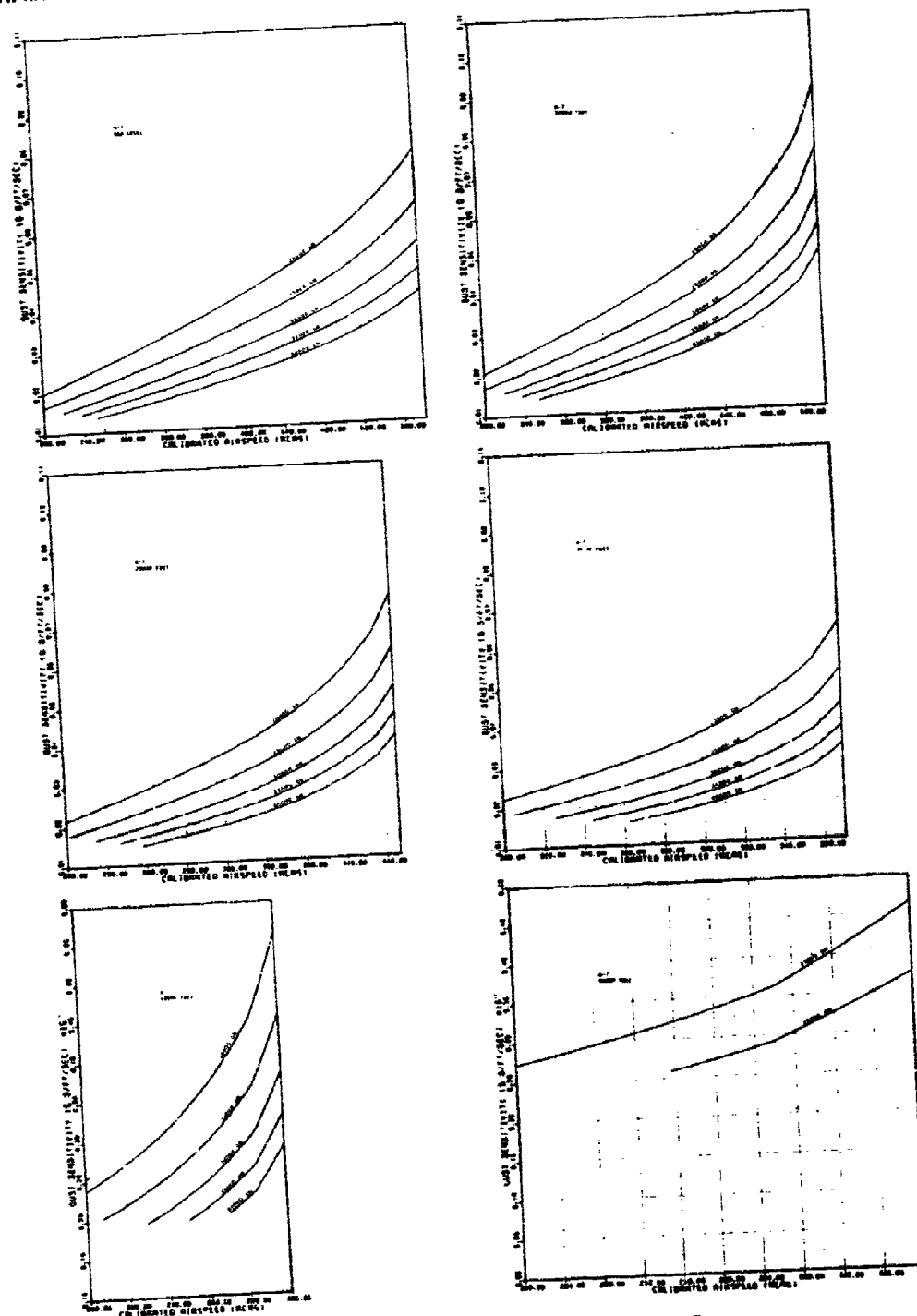


Figure 69. Gust Sensitivity of A-7

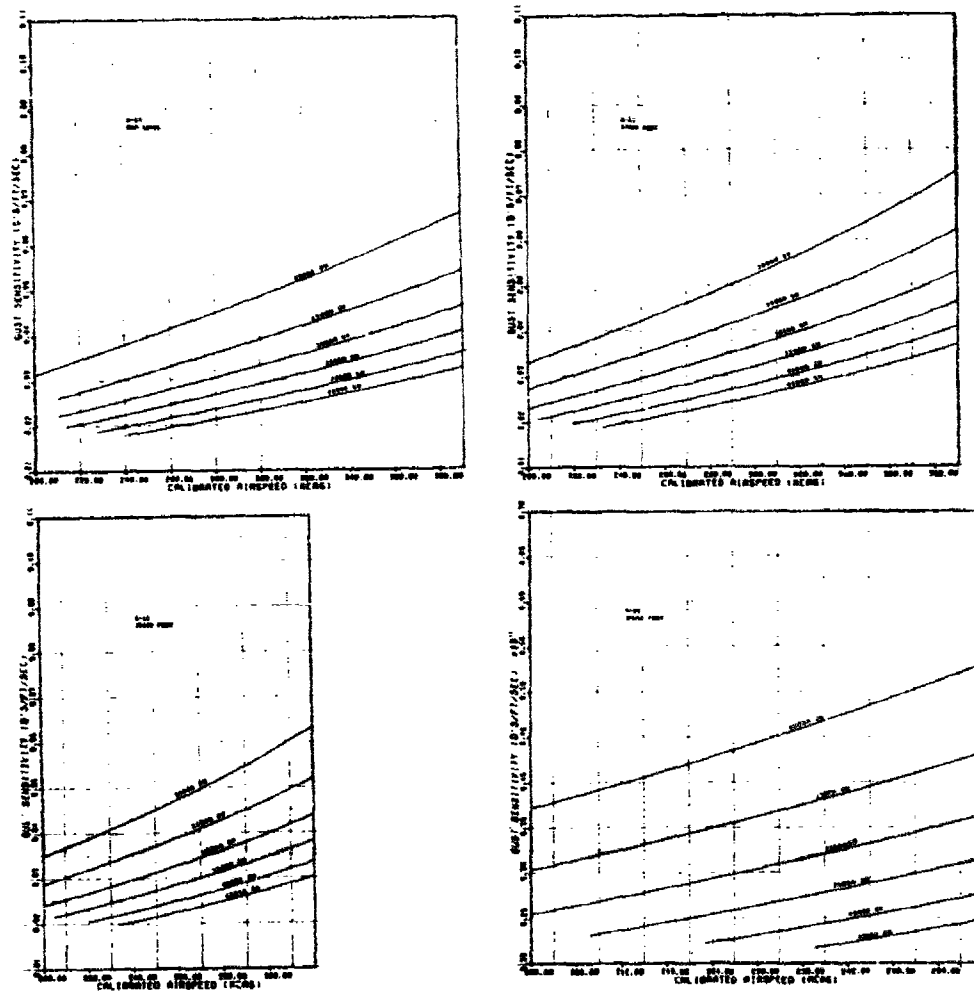


Figure 70. Gust Sensitivity of A-10

105

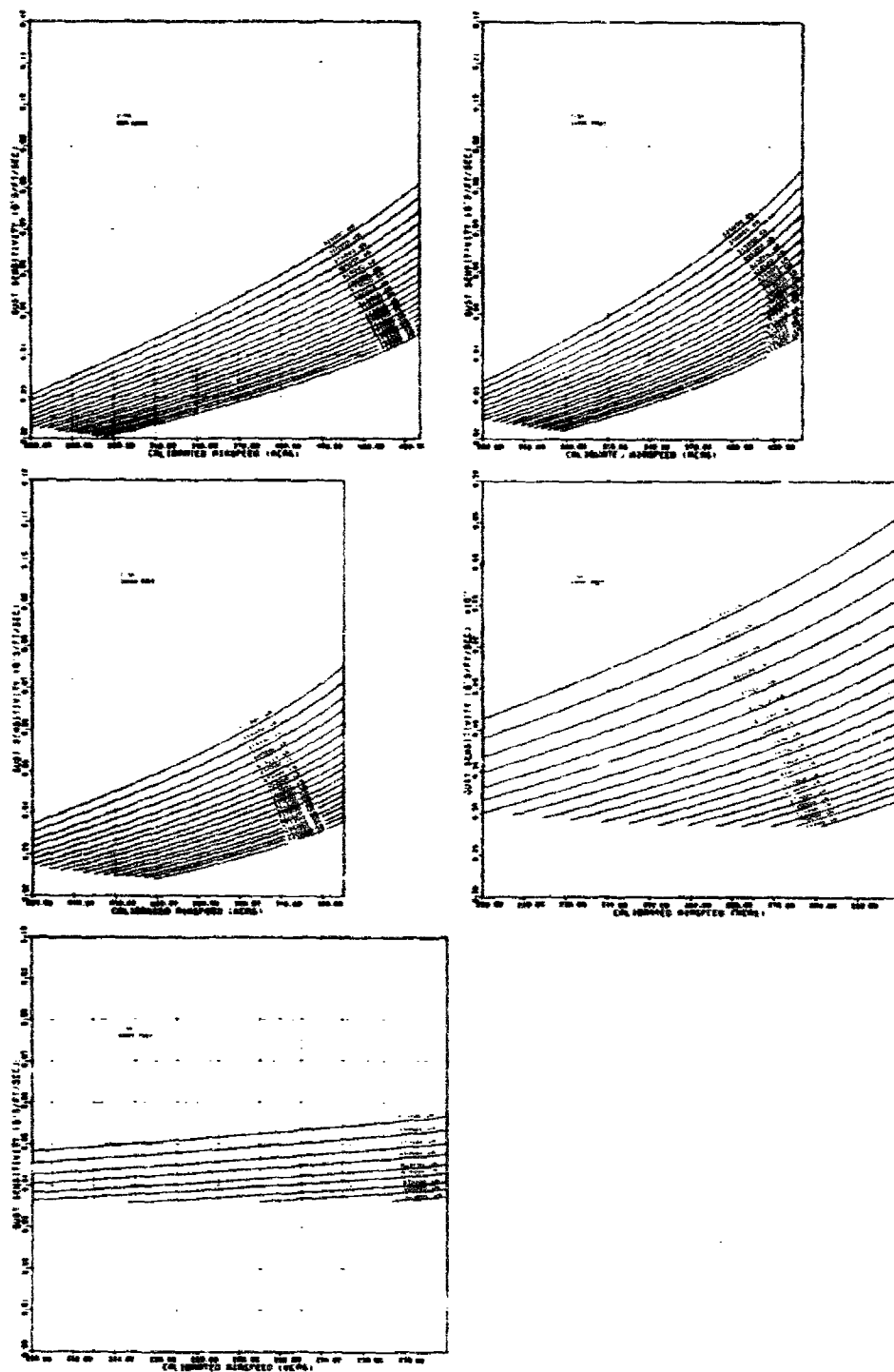


Figure 72. Gust Sensitivity of C-5A

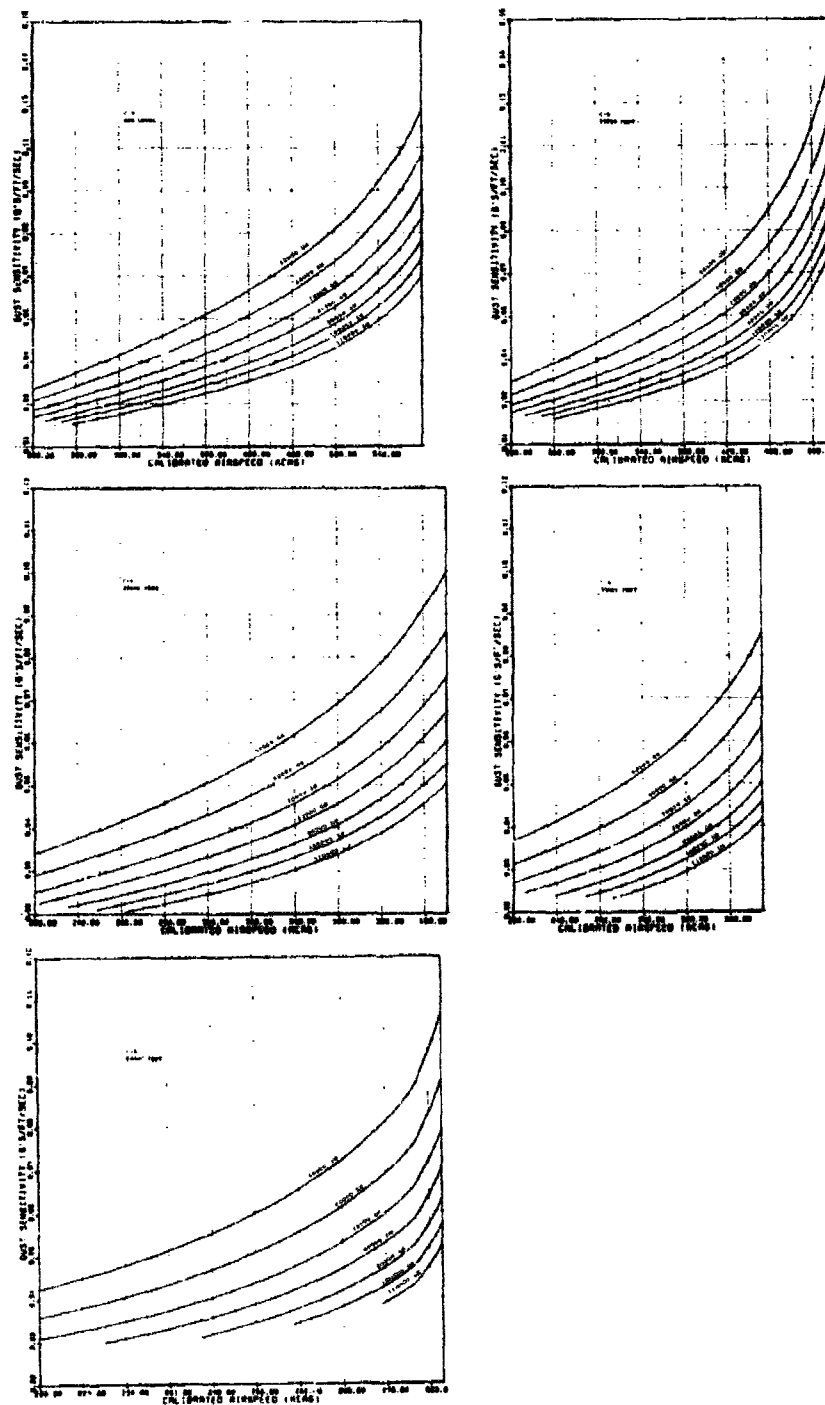


Figure 73. Gust Sensitivity of C-9

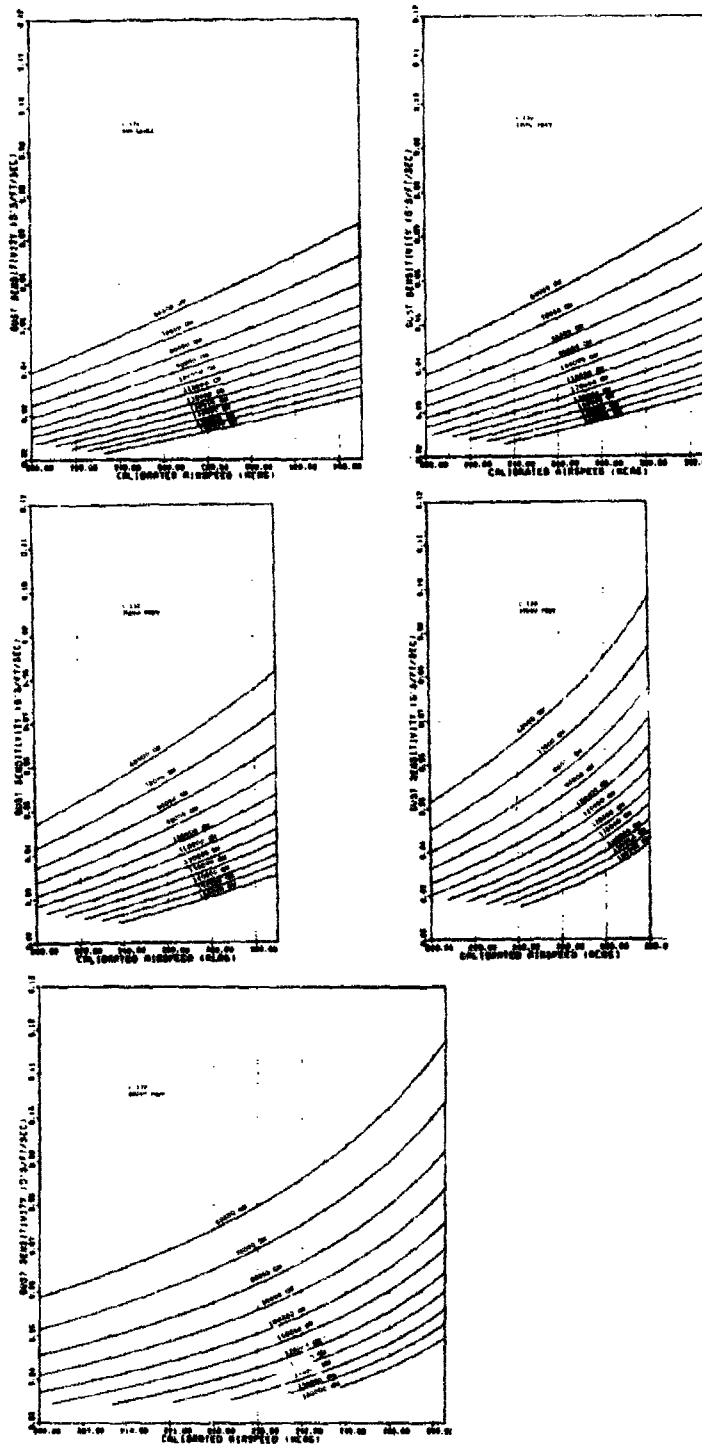


Figure 74. Gust Sensitivity of C-130

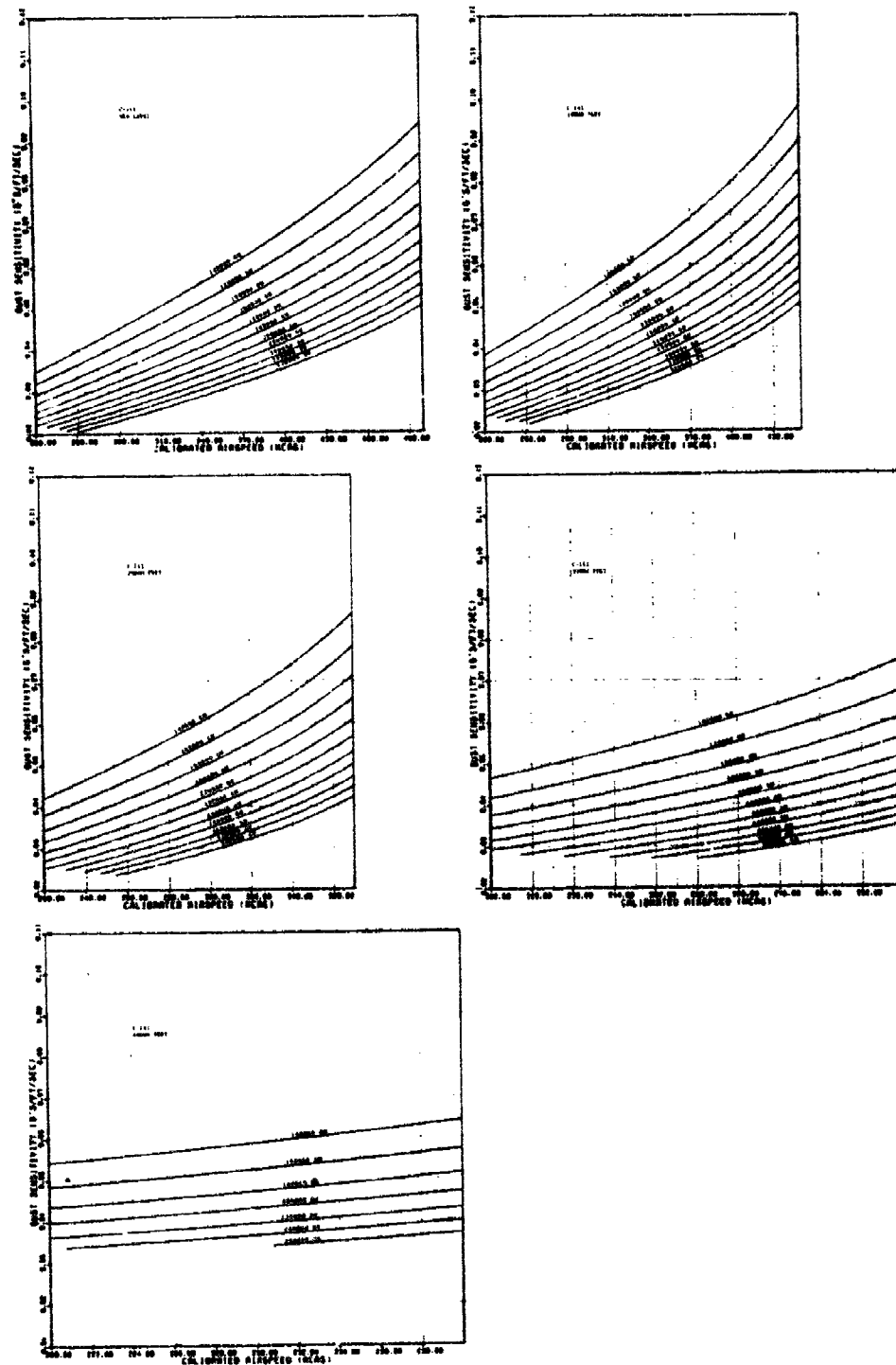


Figure 75. Gust Sensitivity of C-141

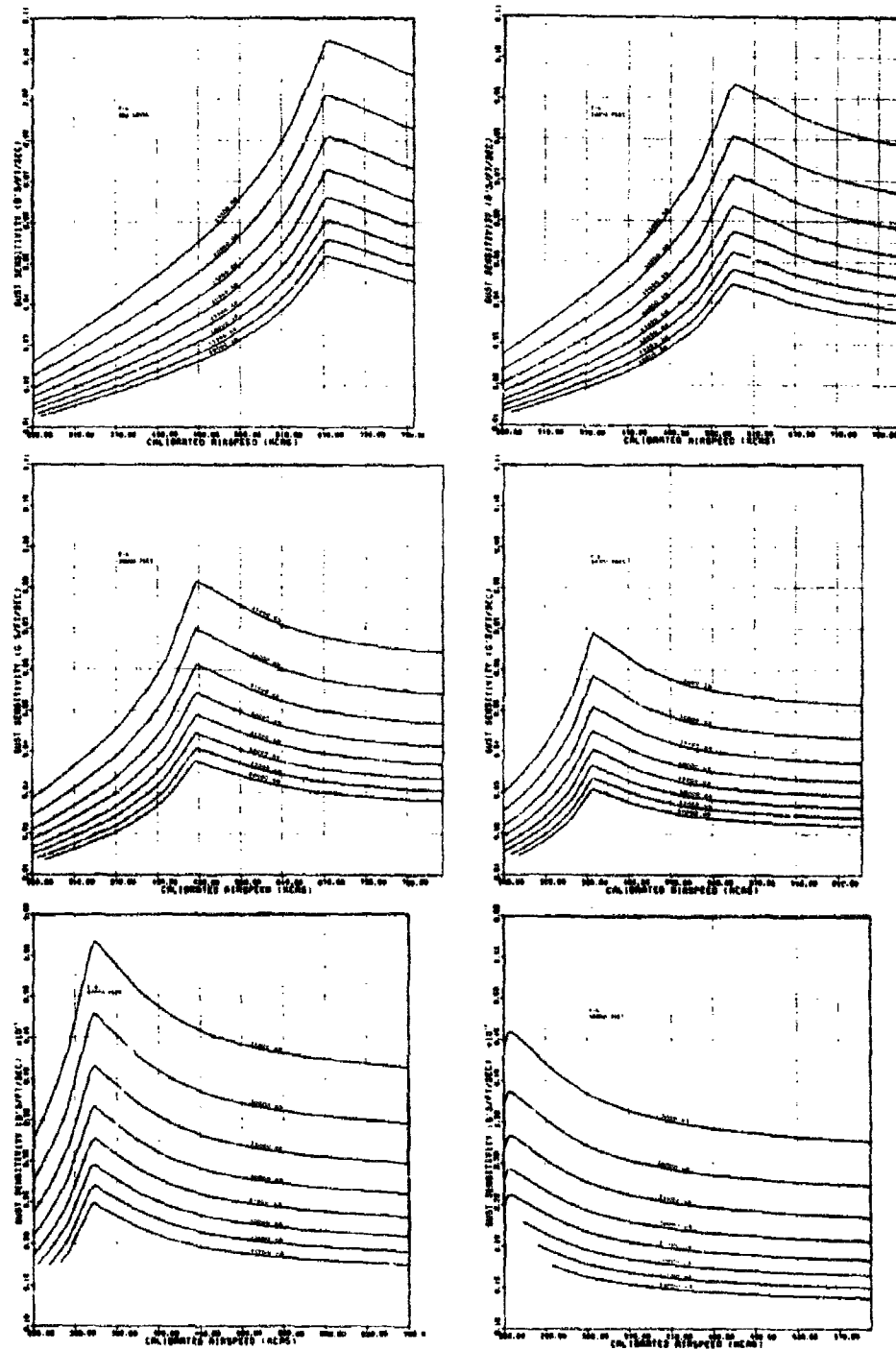


Figure 76. Gust Sensitivity of F-4

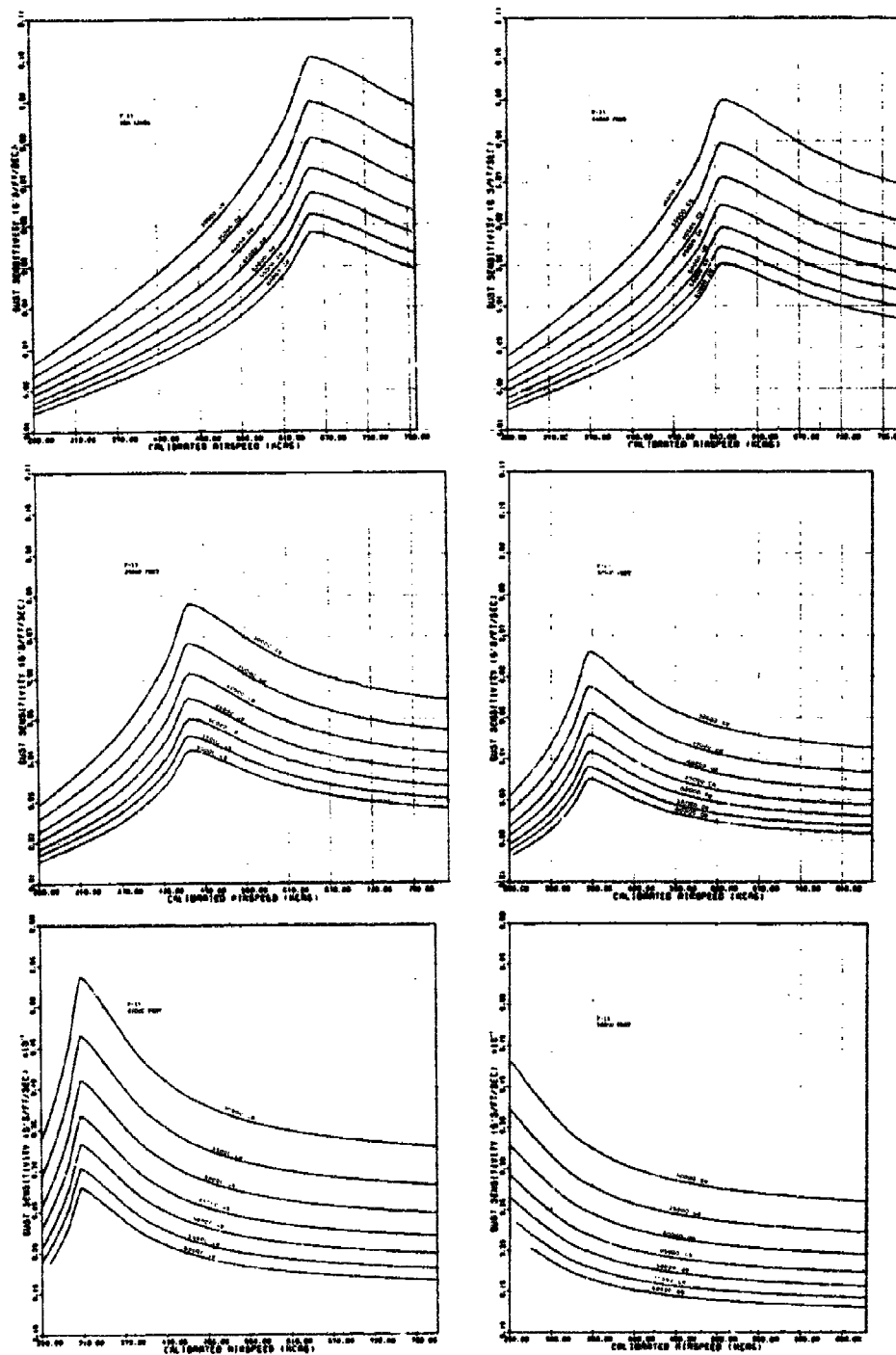


Figure 77. Gust Sensitivity of F-15

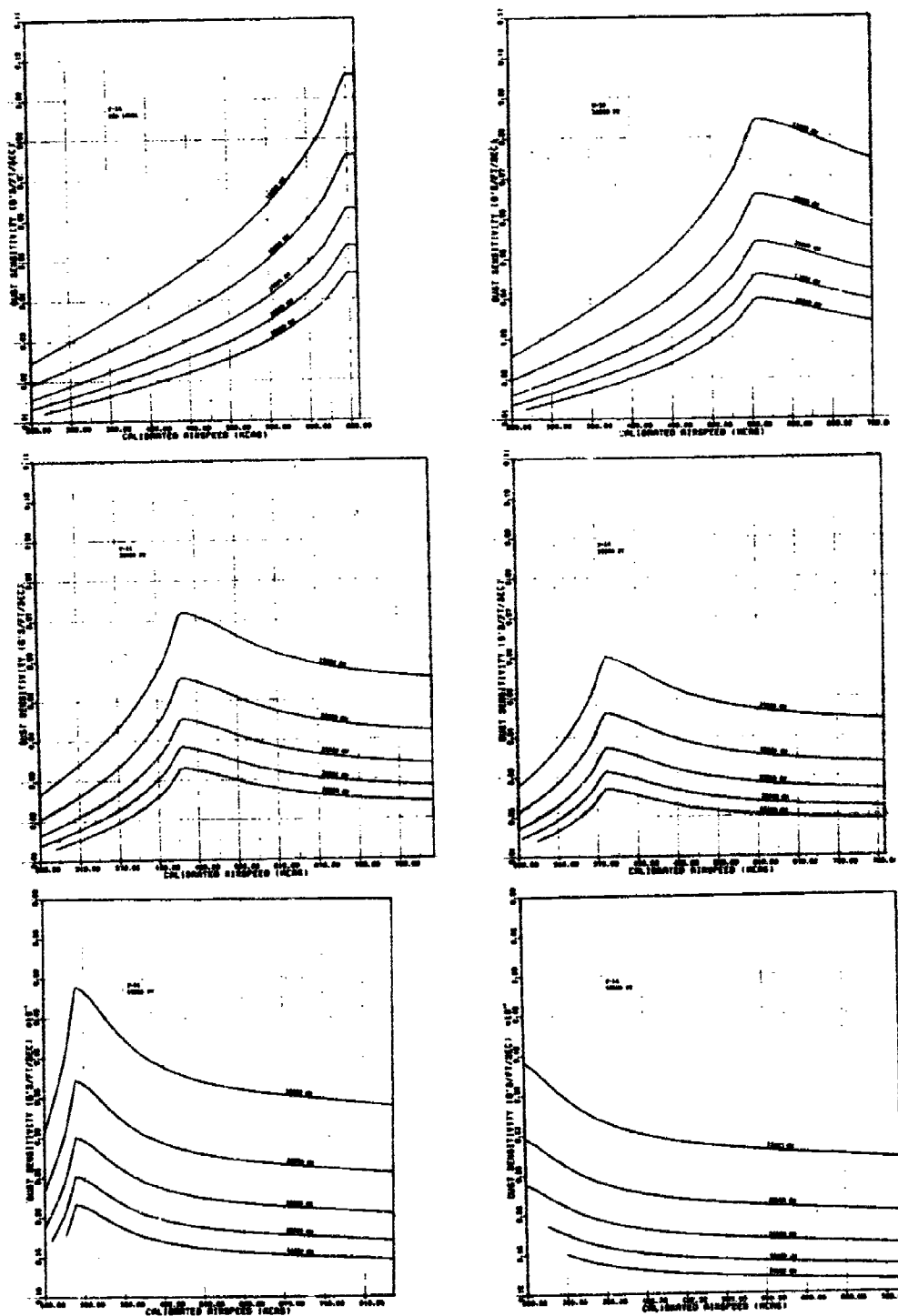


Figure 78. Gust Sensitivity of F-16

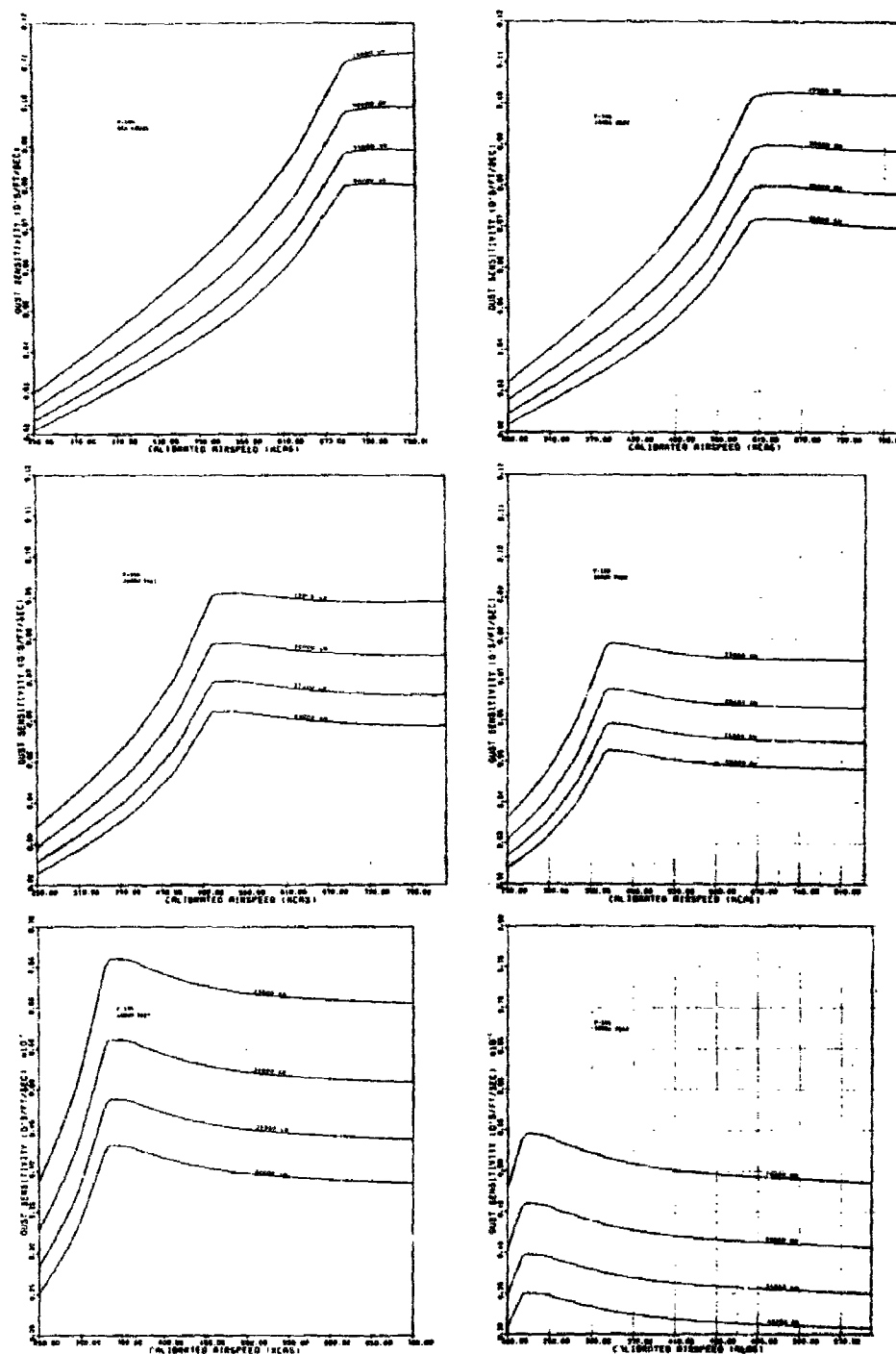


Figure 79. Gust Sensitivity of F-106

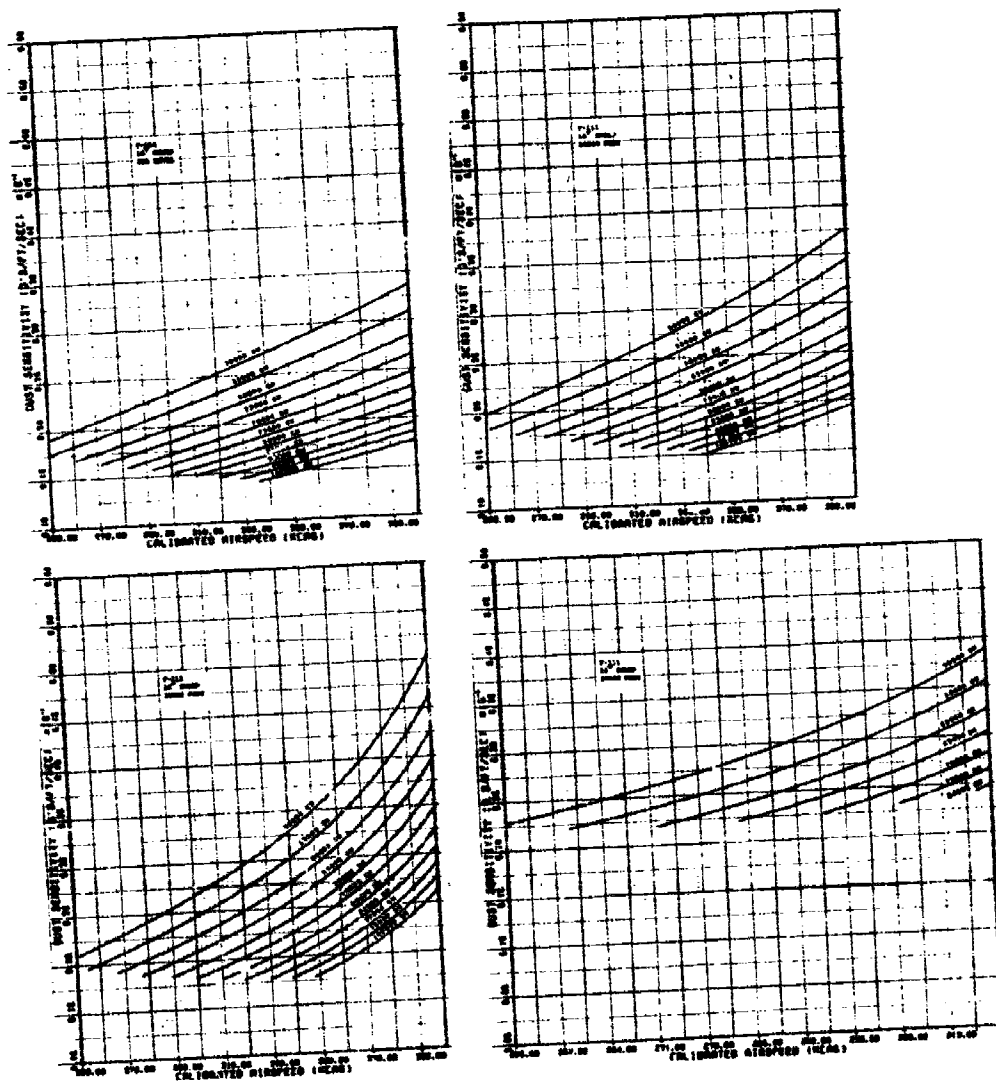


Figure 80. Gust Sensitivity of F-111 @ 16° Sweep

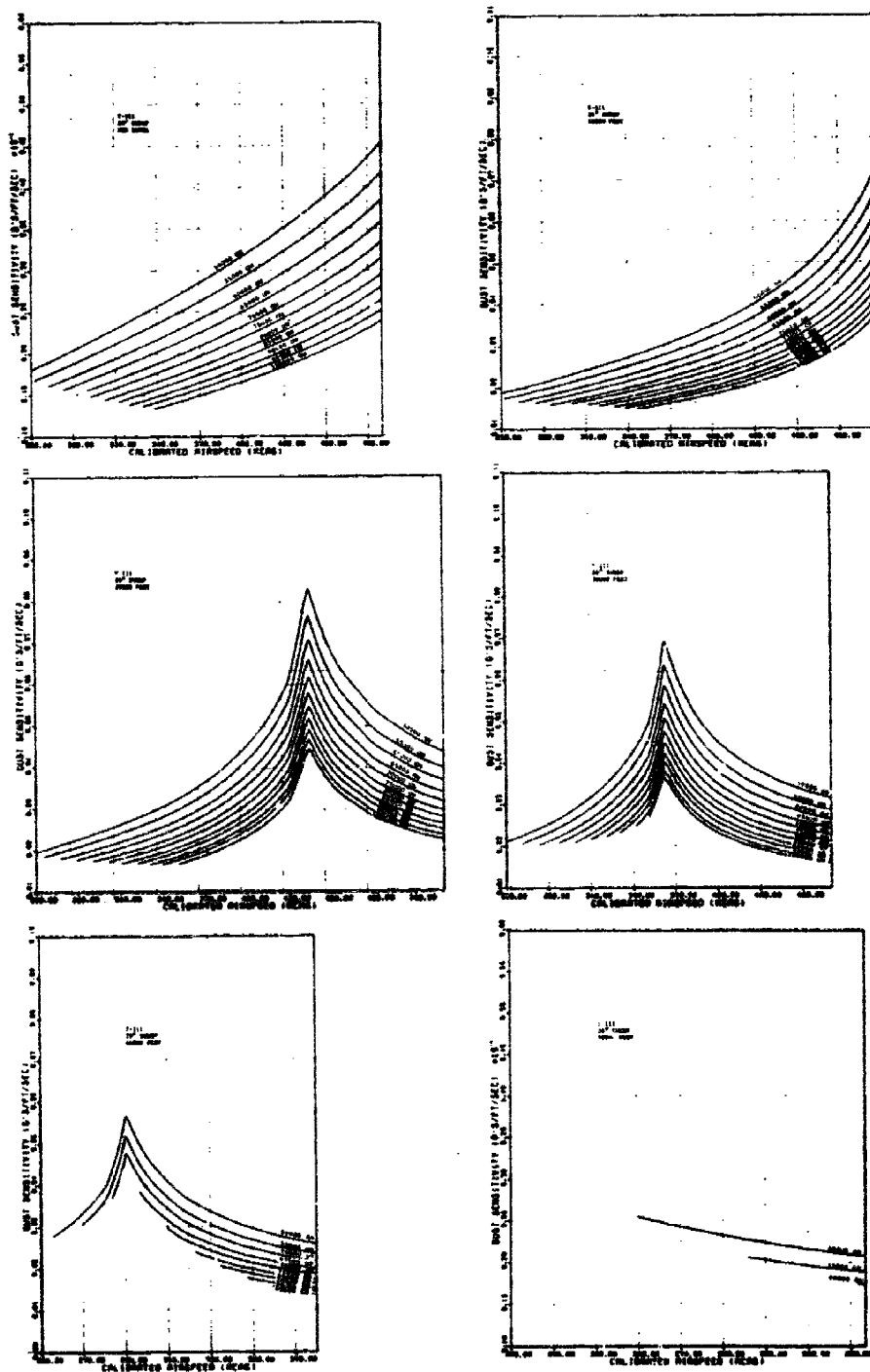


Figure 81. Gust Sensitivity of F-111 @ 26° Sweep

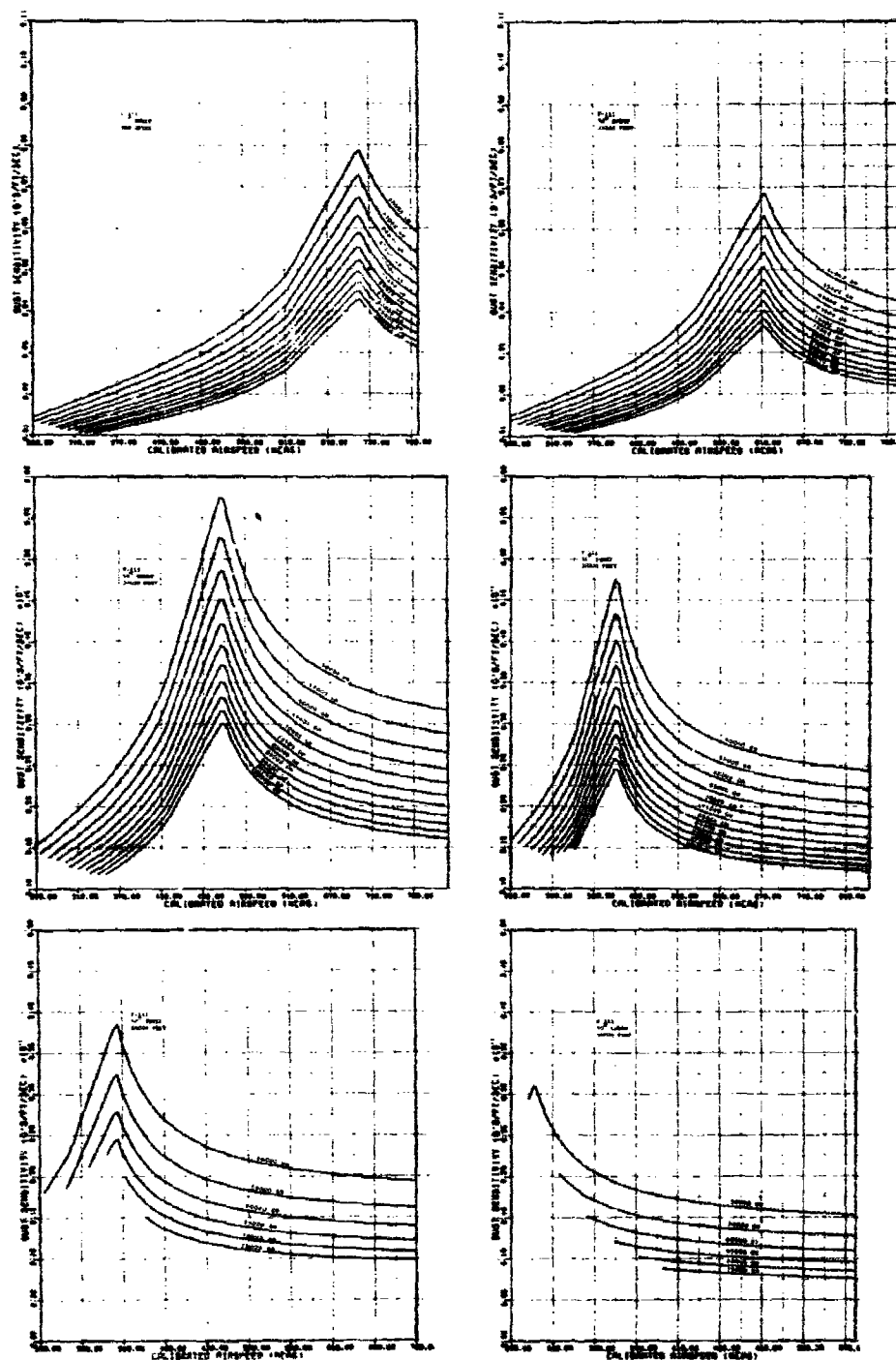


Figure 82. Gust Sensitivity of F-111 @ 50° Sweep

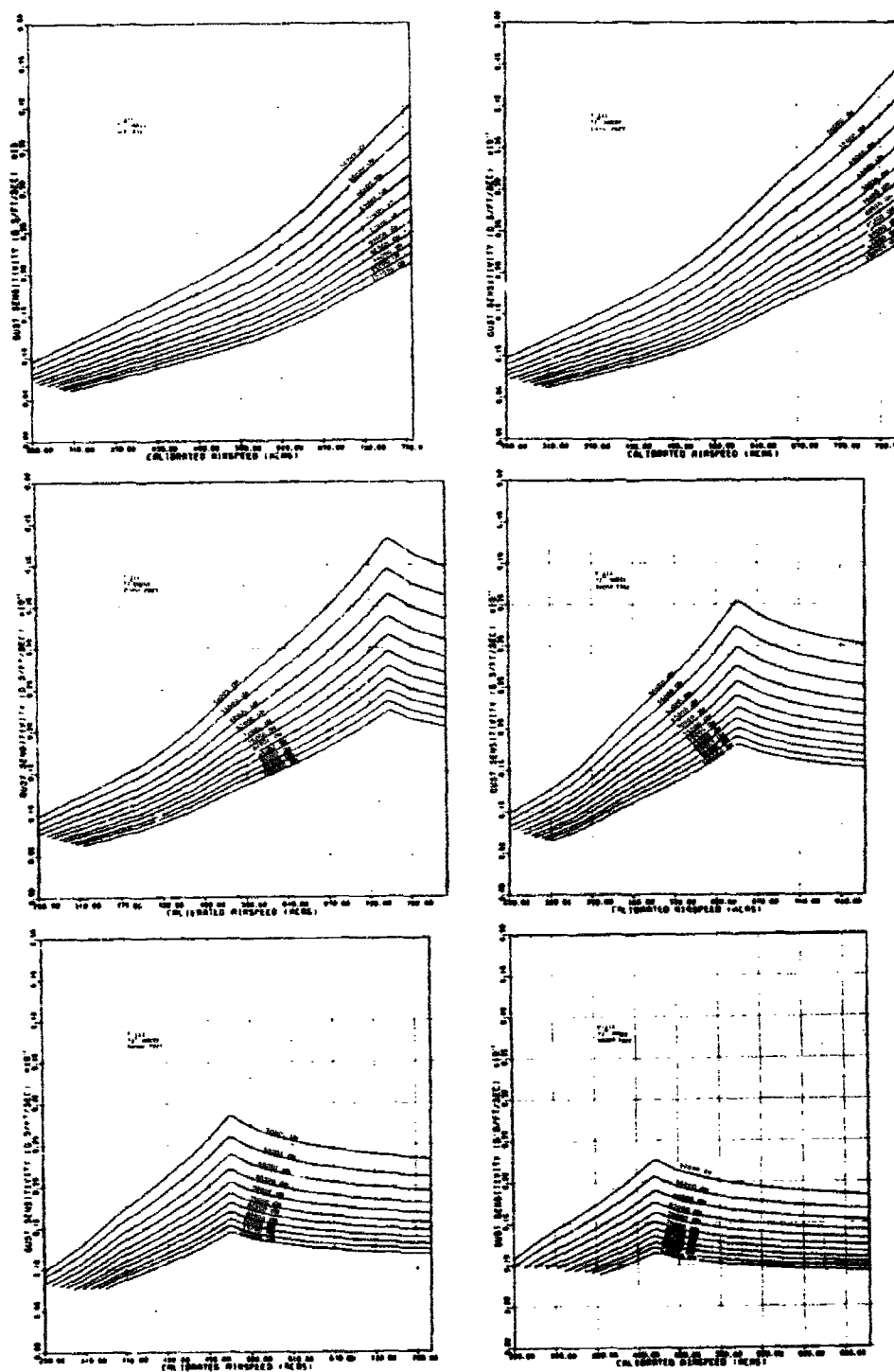


Figure 83. Gust Sensitivity of F-111 @ 72° Sweep

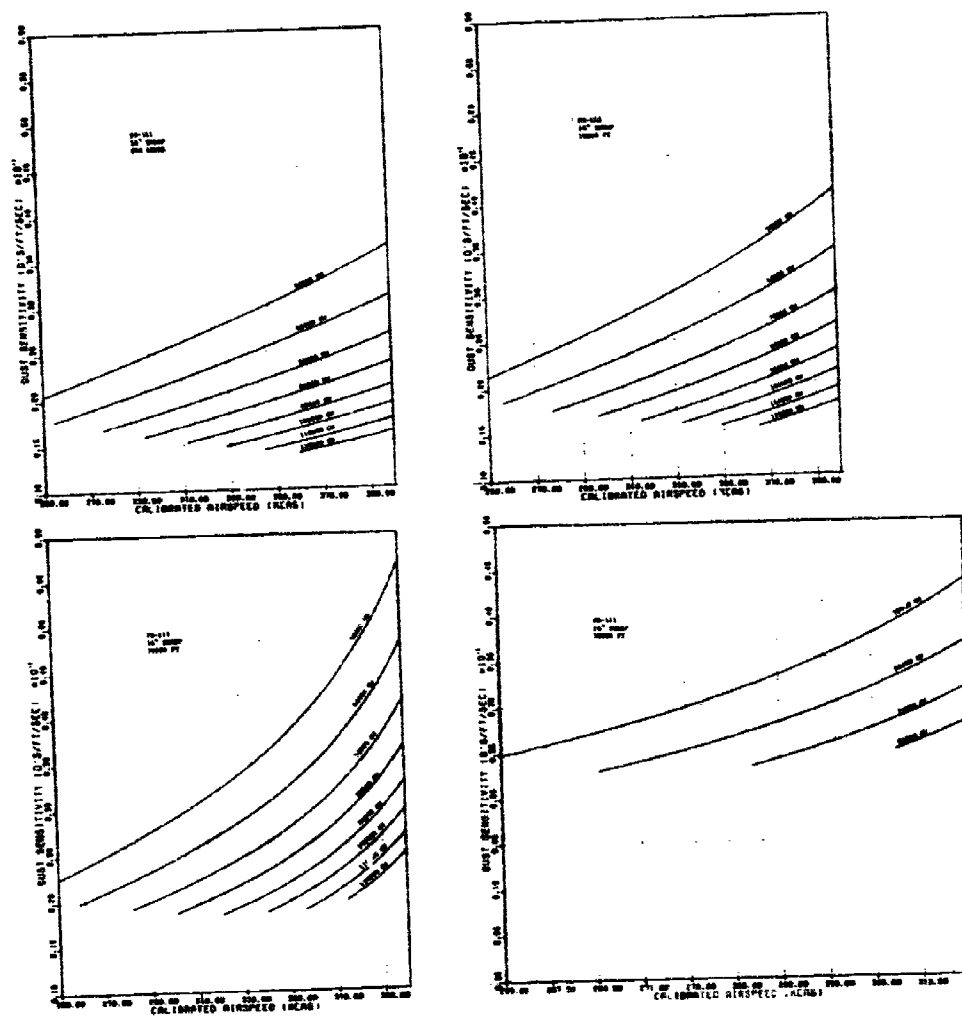


Figure 84. Gust Sensitivity of FB-111 @ 16° Sweep

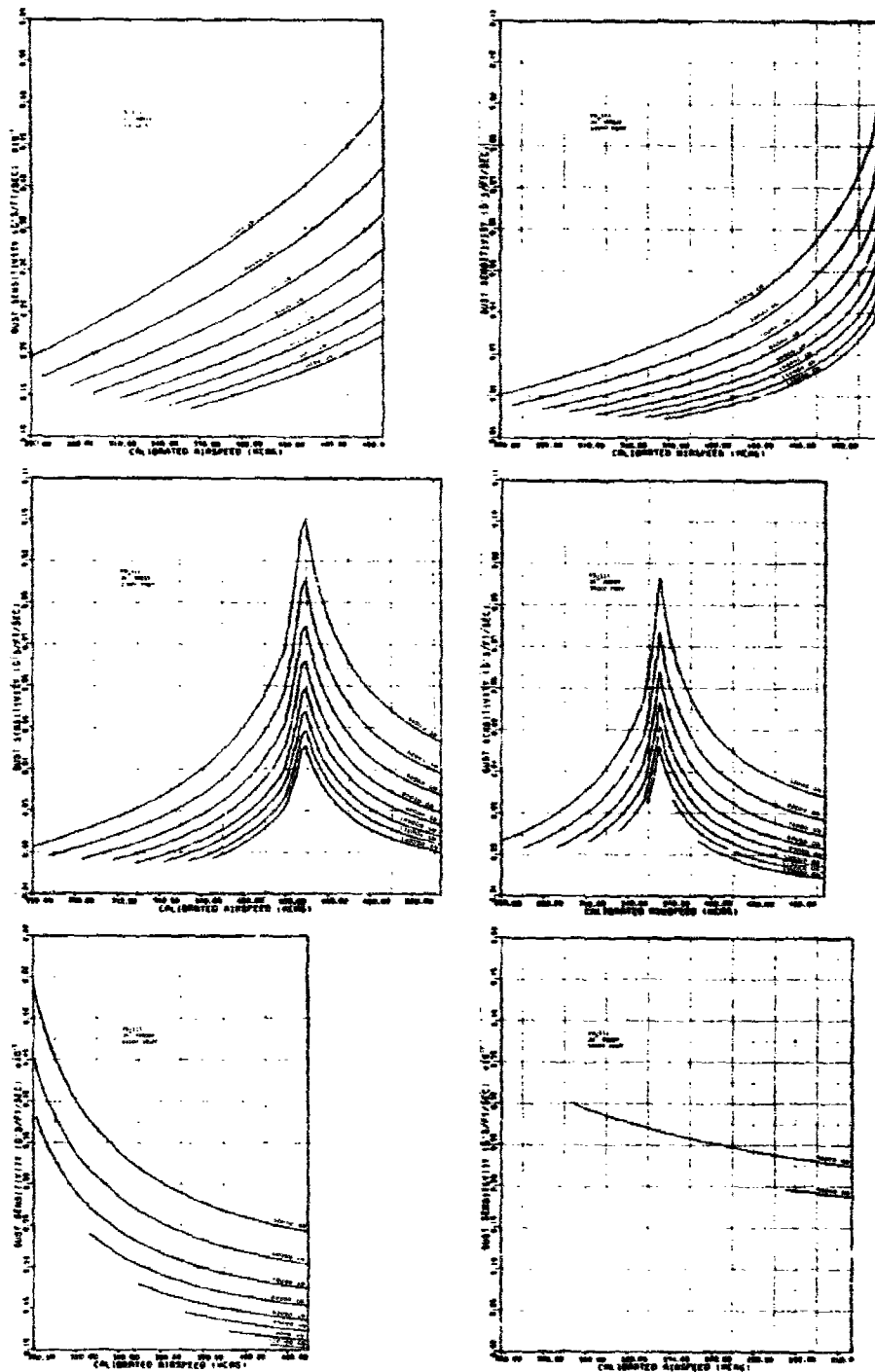


Figure 85. Gust Sensitivity of FB-111 @ 26° Sweep

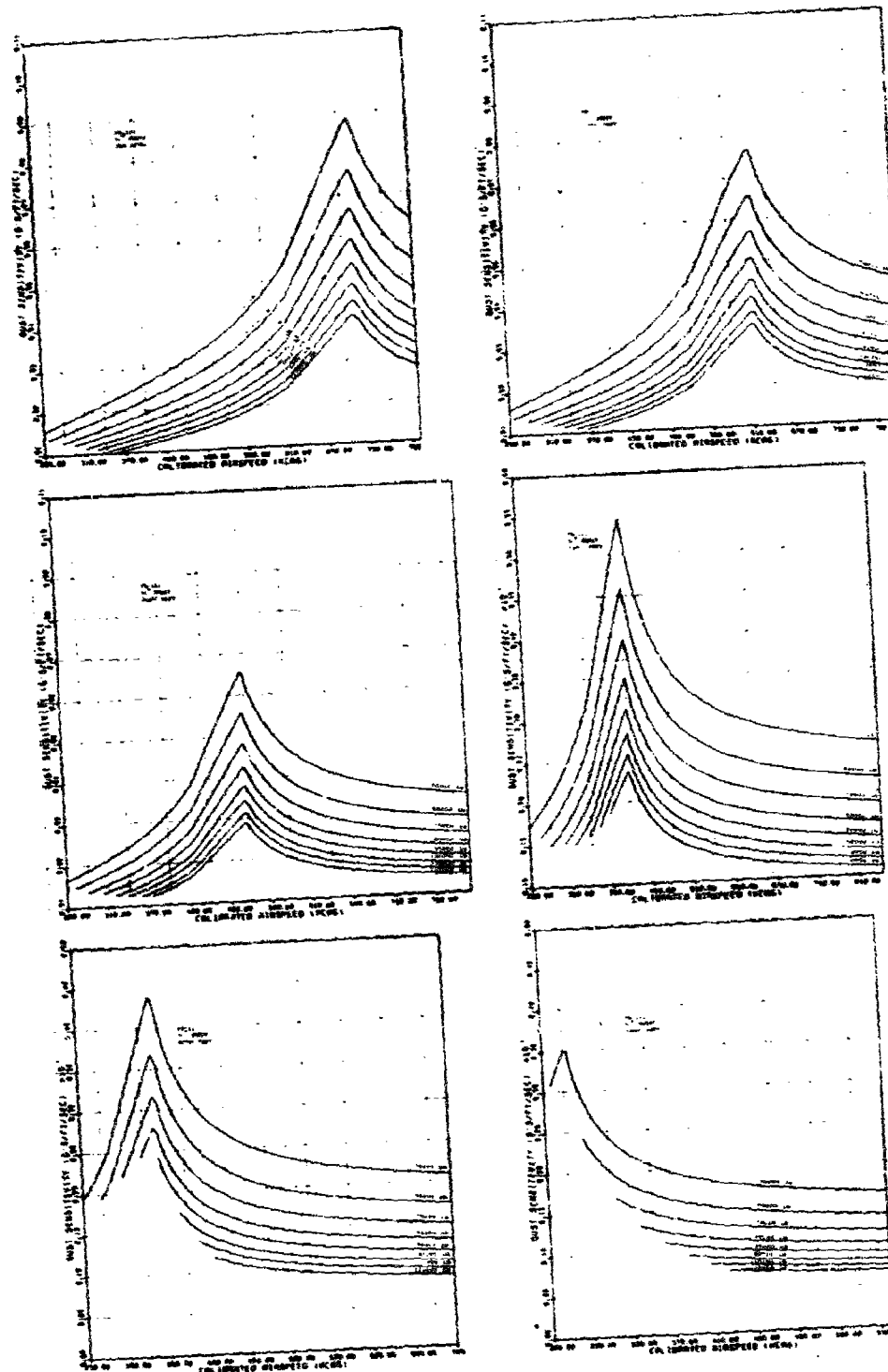


Figure 86. Gust Sensitivity of FB-111 @ 50° Sweep

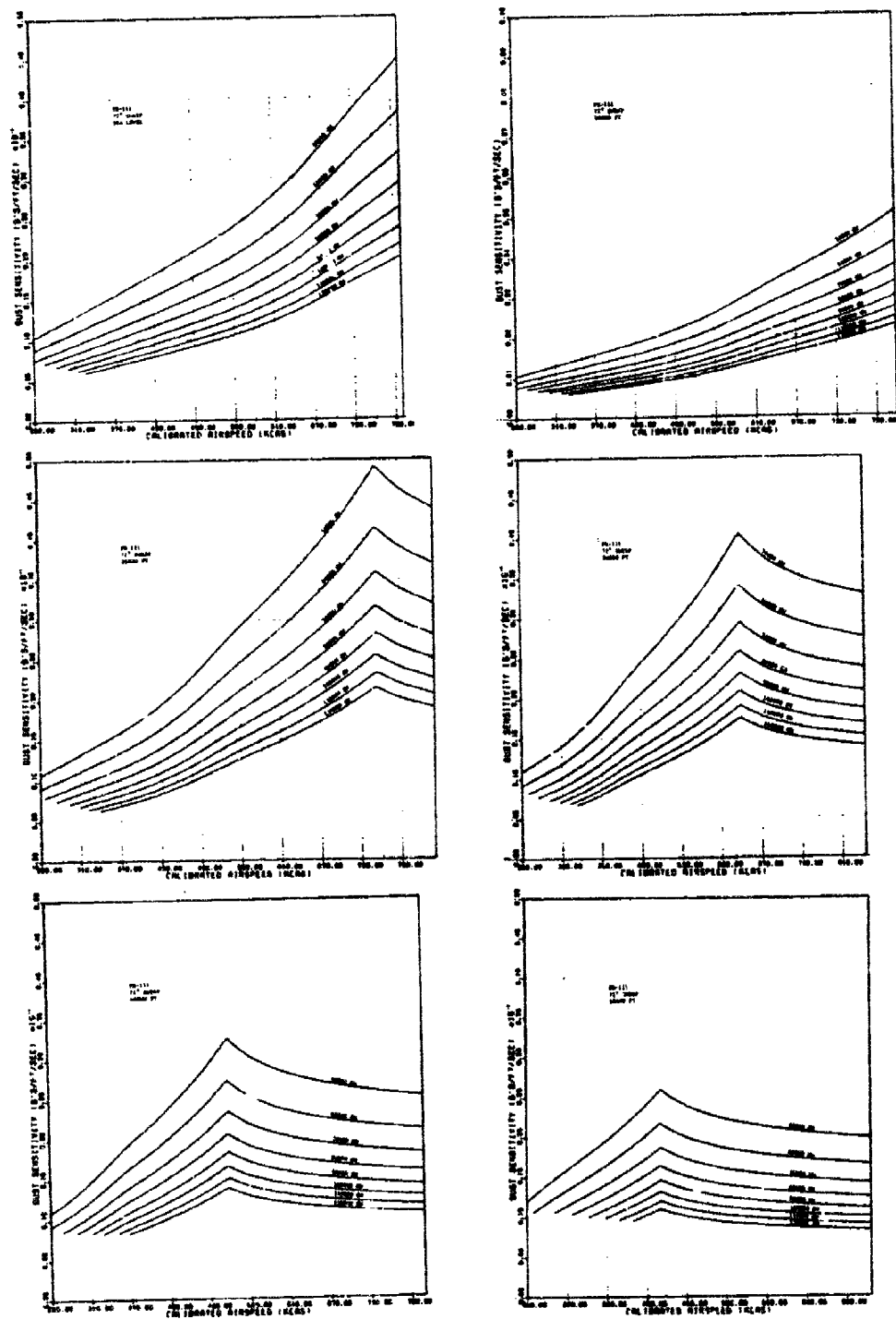


Figure 87. Gust Sensitivity of FB-111 @ 72° Sweep

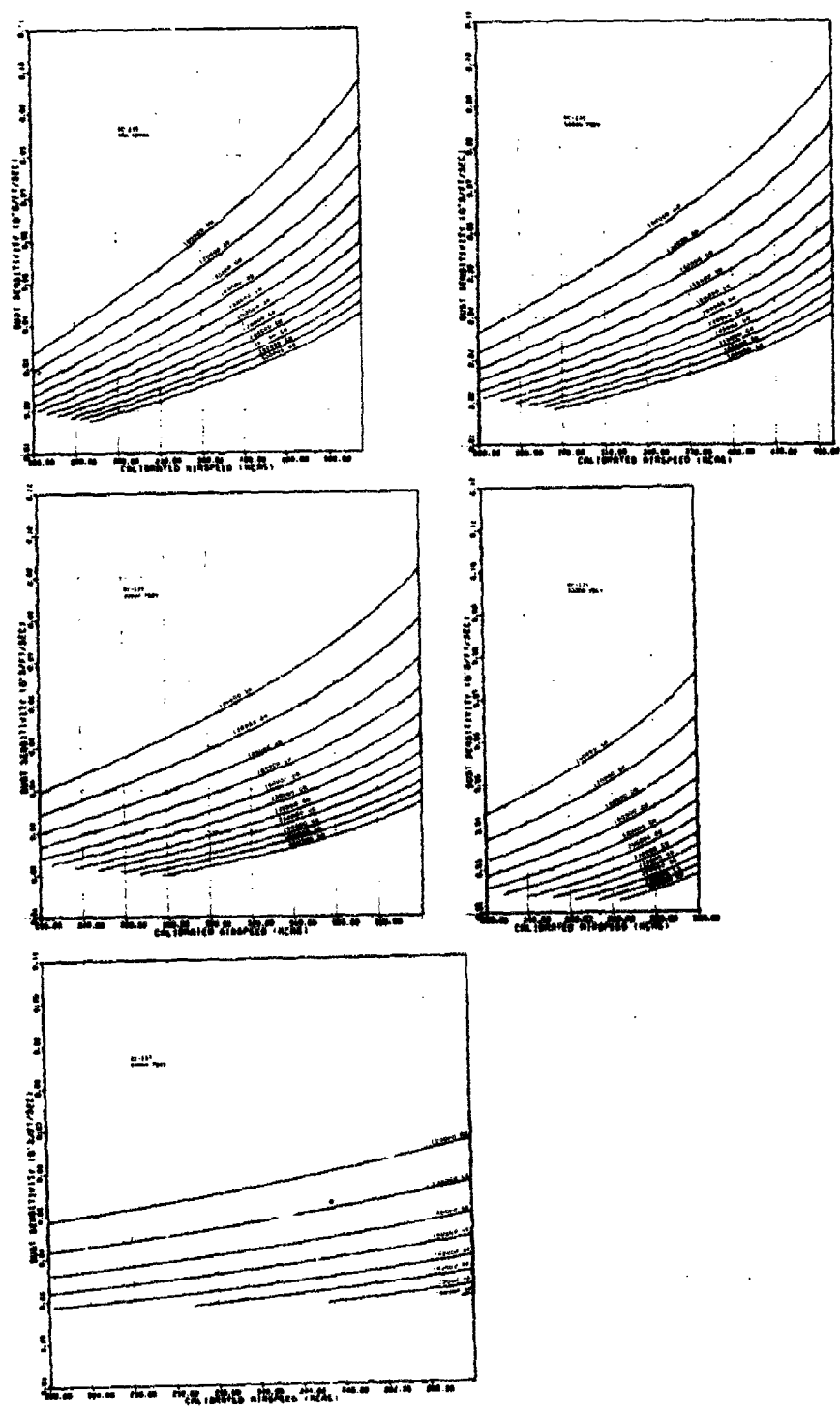


Figure 88. Gust Sensitivity of KC-135

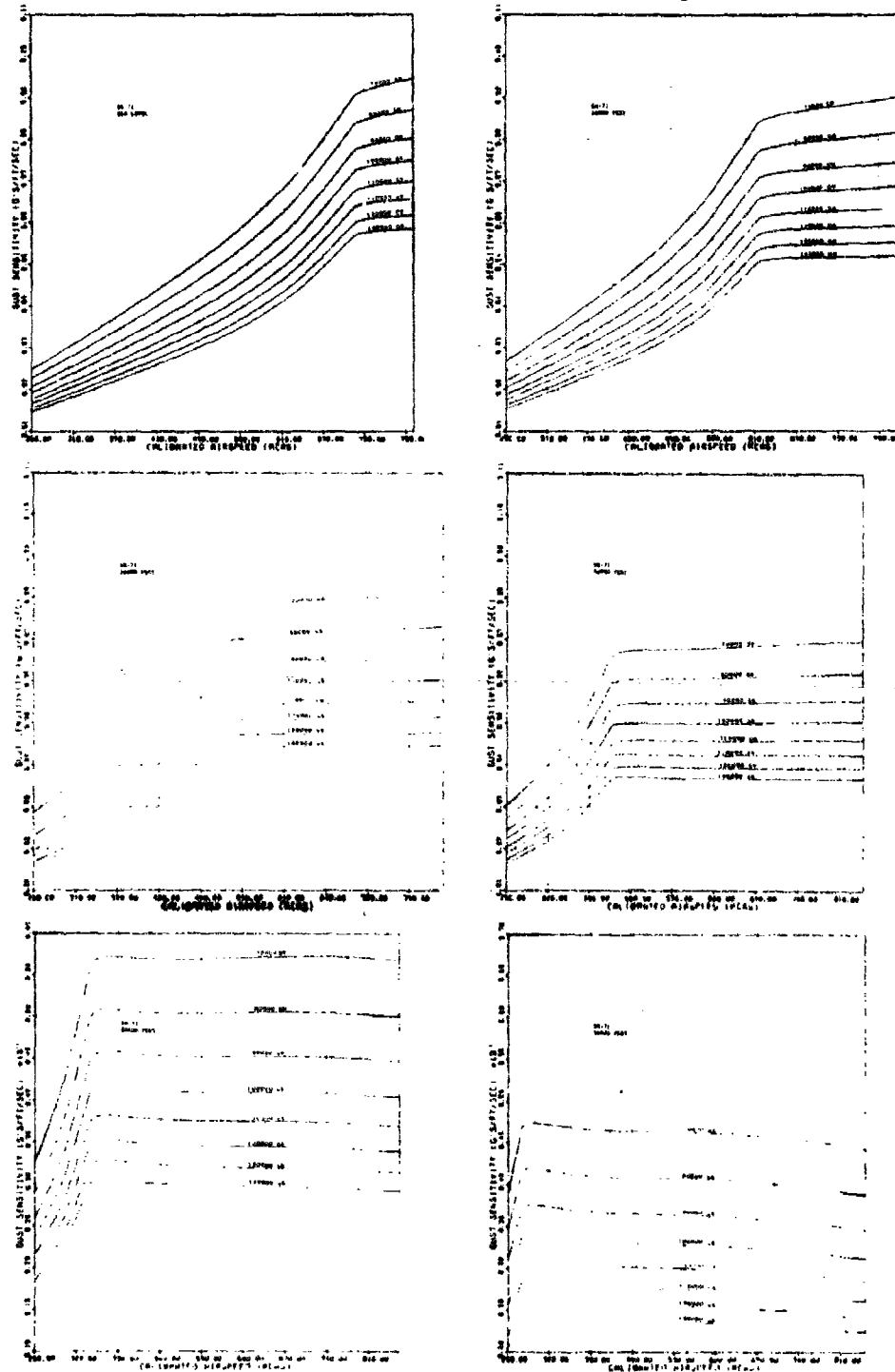


Figure 89. Gust Sensitivity of SR-71

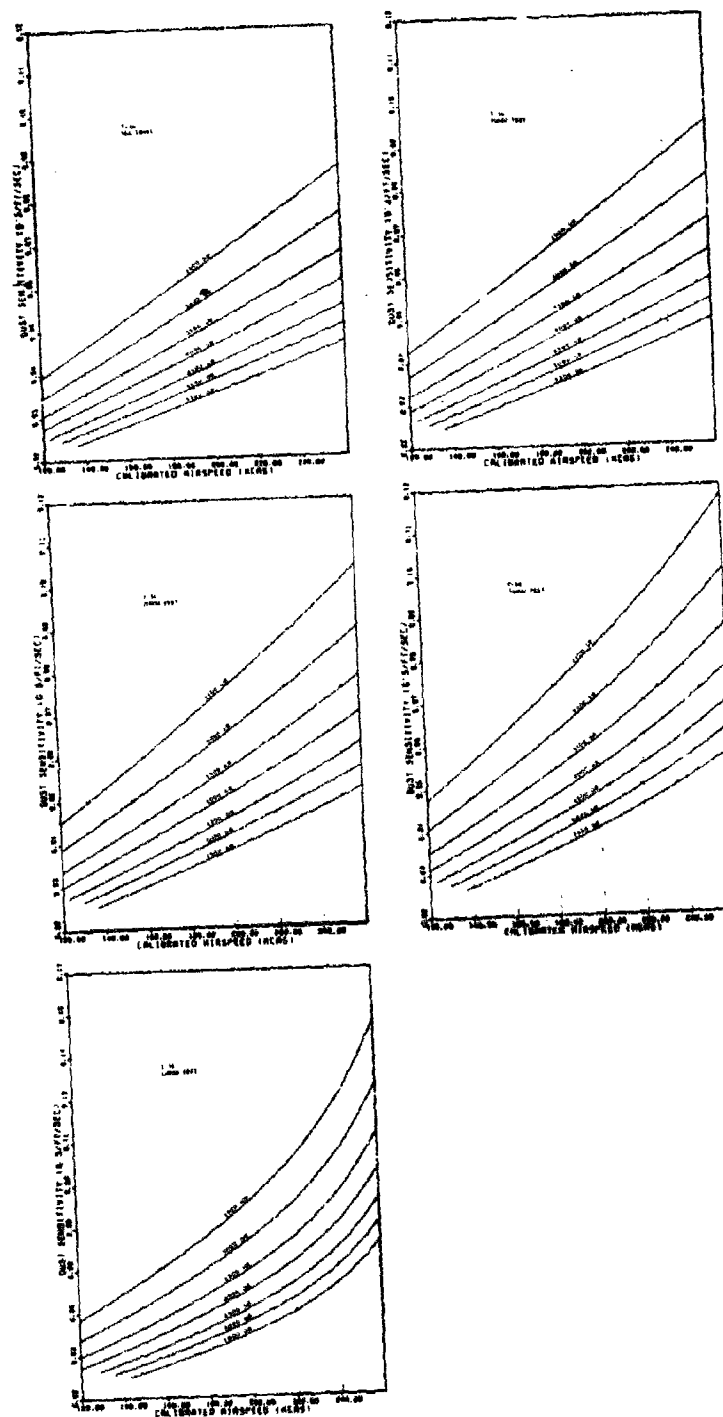


Figure 90. Gust Sensitivity of T-34

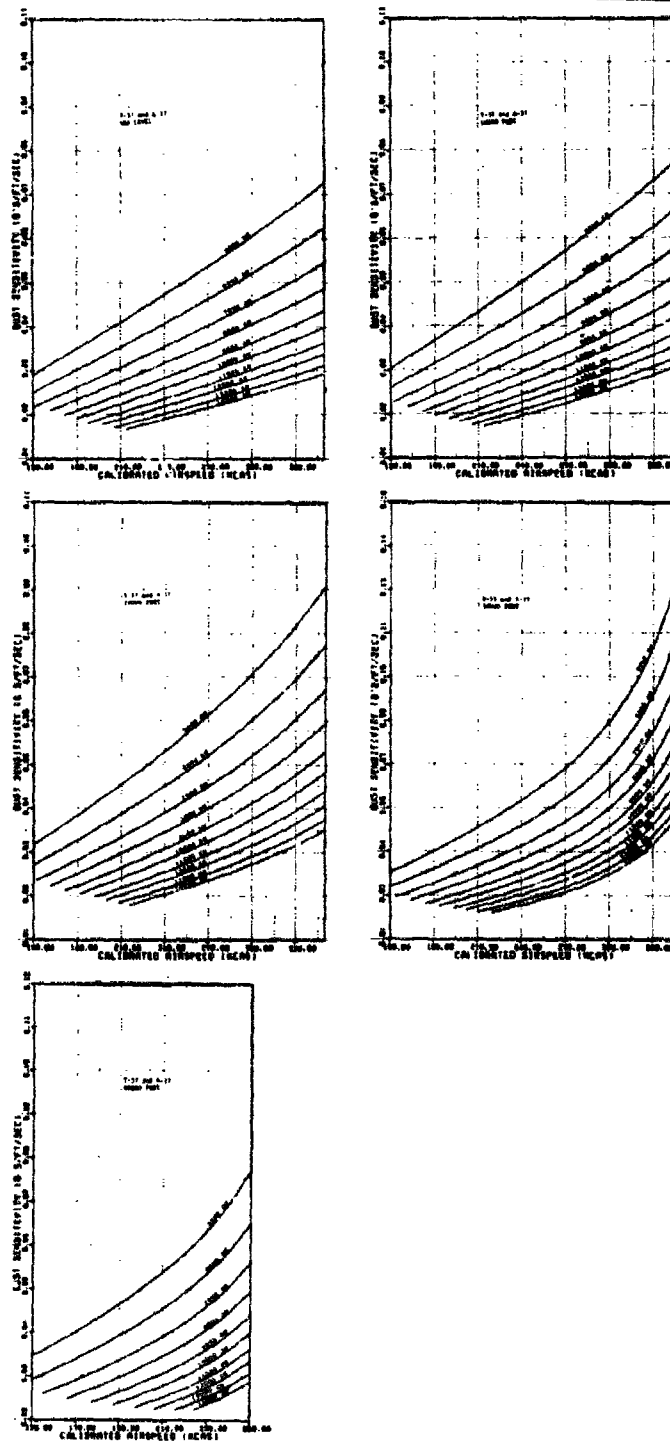


Figure 91. Gust Sensitivity of T-37 and A-37

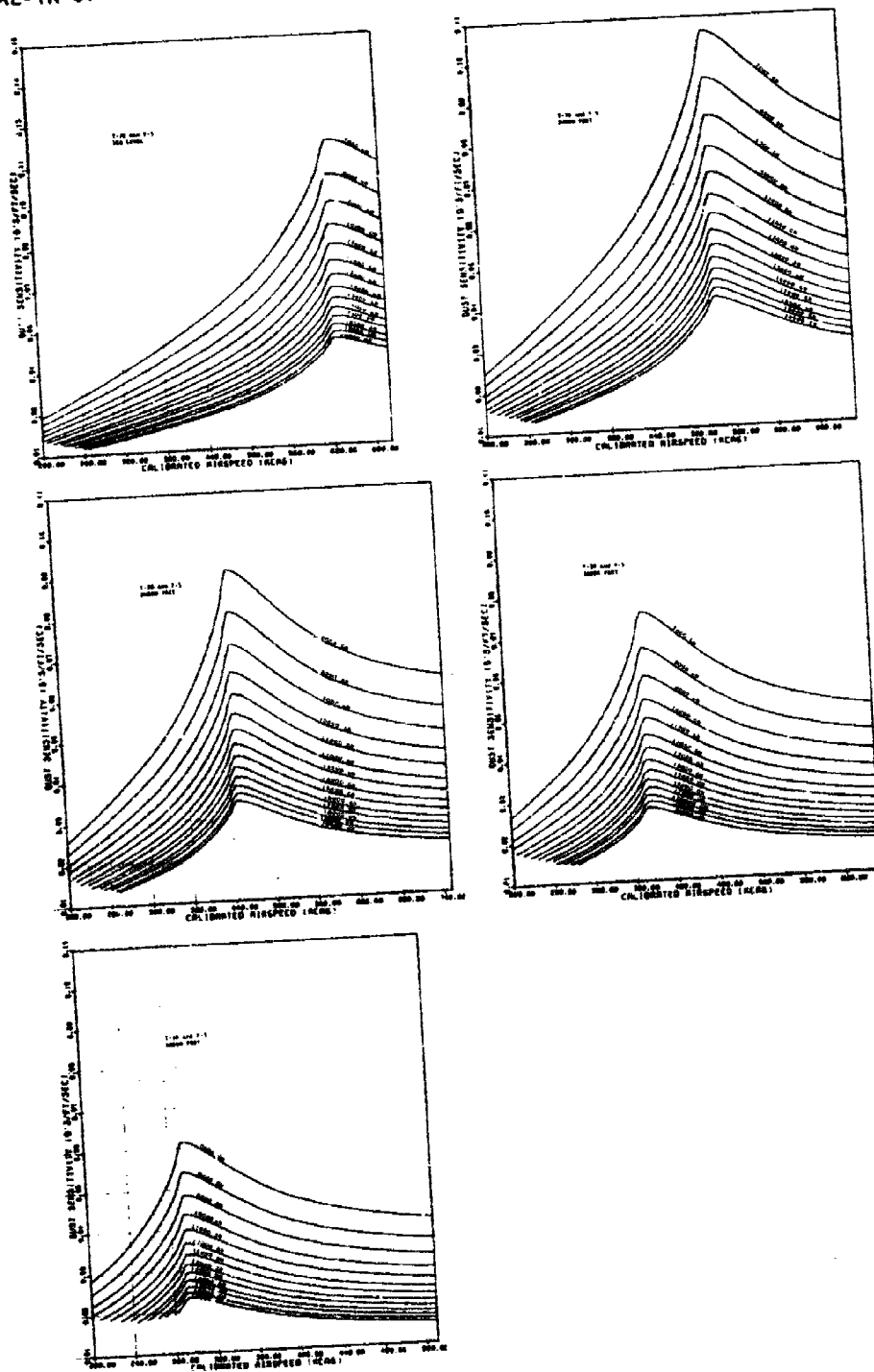


Figure 92. Gust Sensitivity of T-38 and F-5

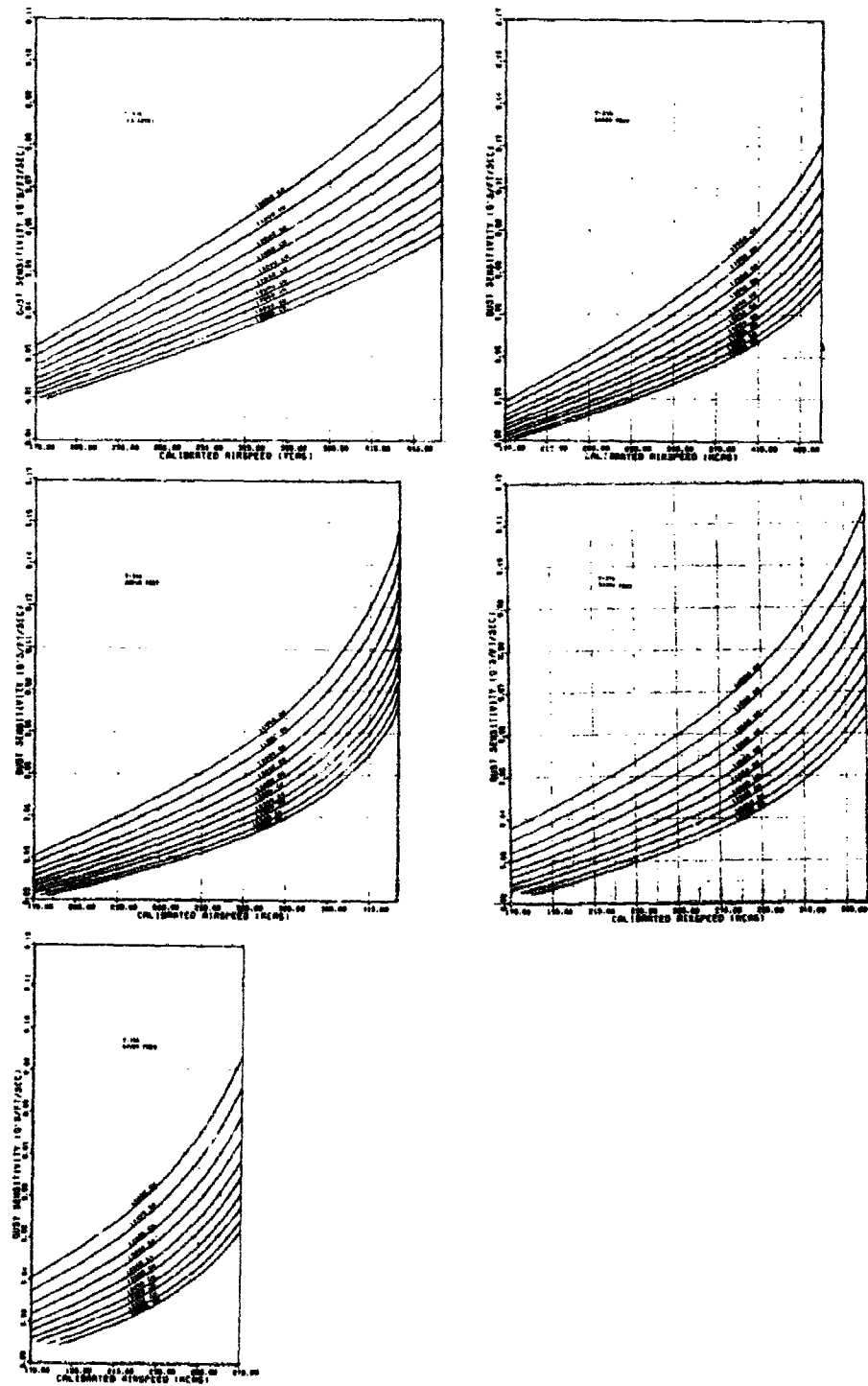


Figure 93. Gust Sensitivity of T-39A

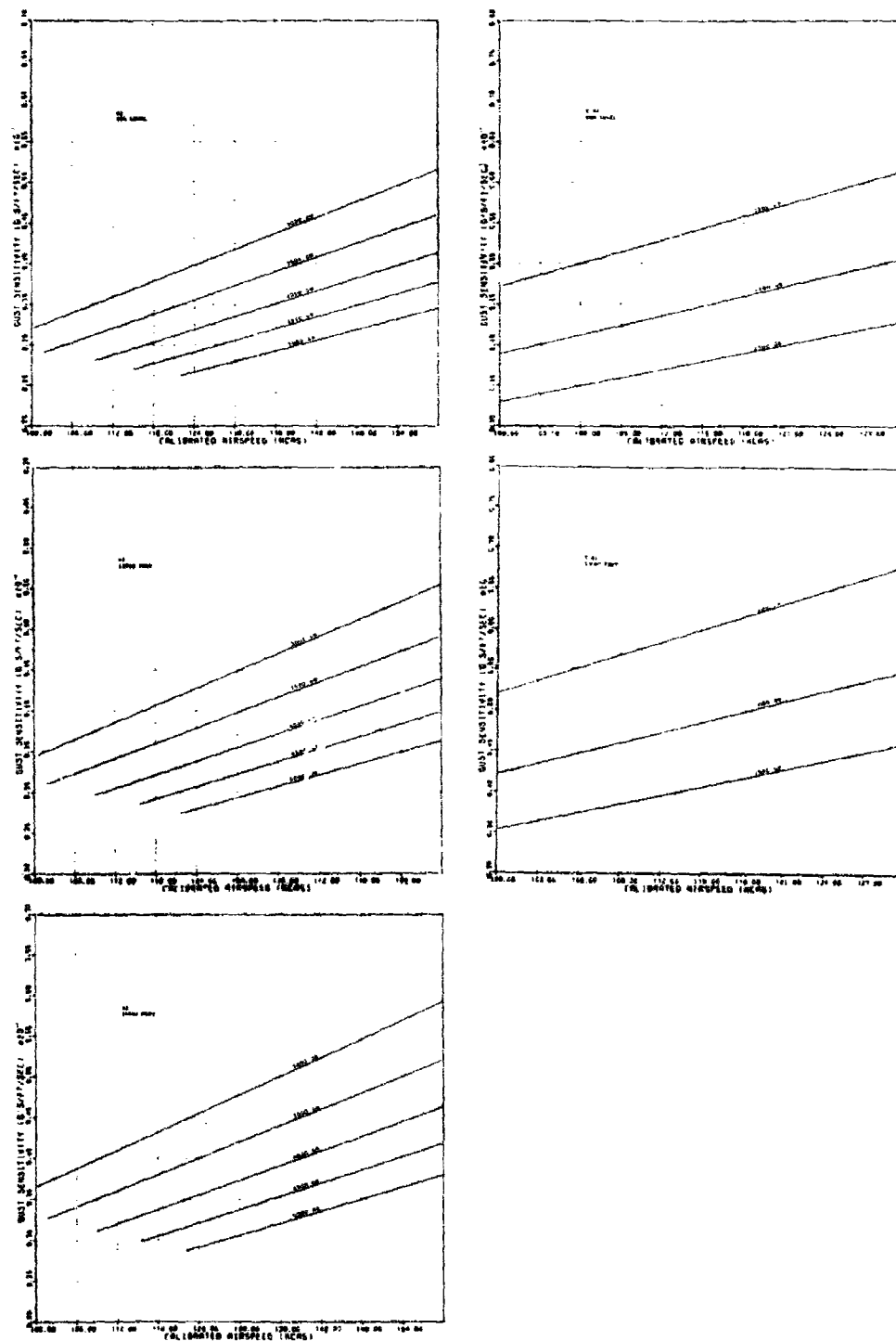


Figure 94. Gust Sensitivity of O-2 and T-41

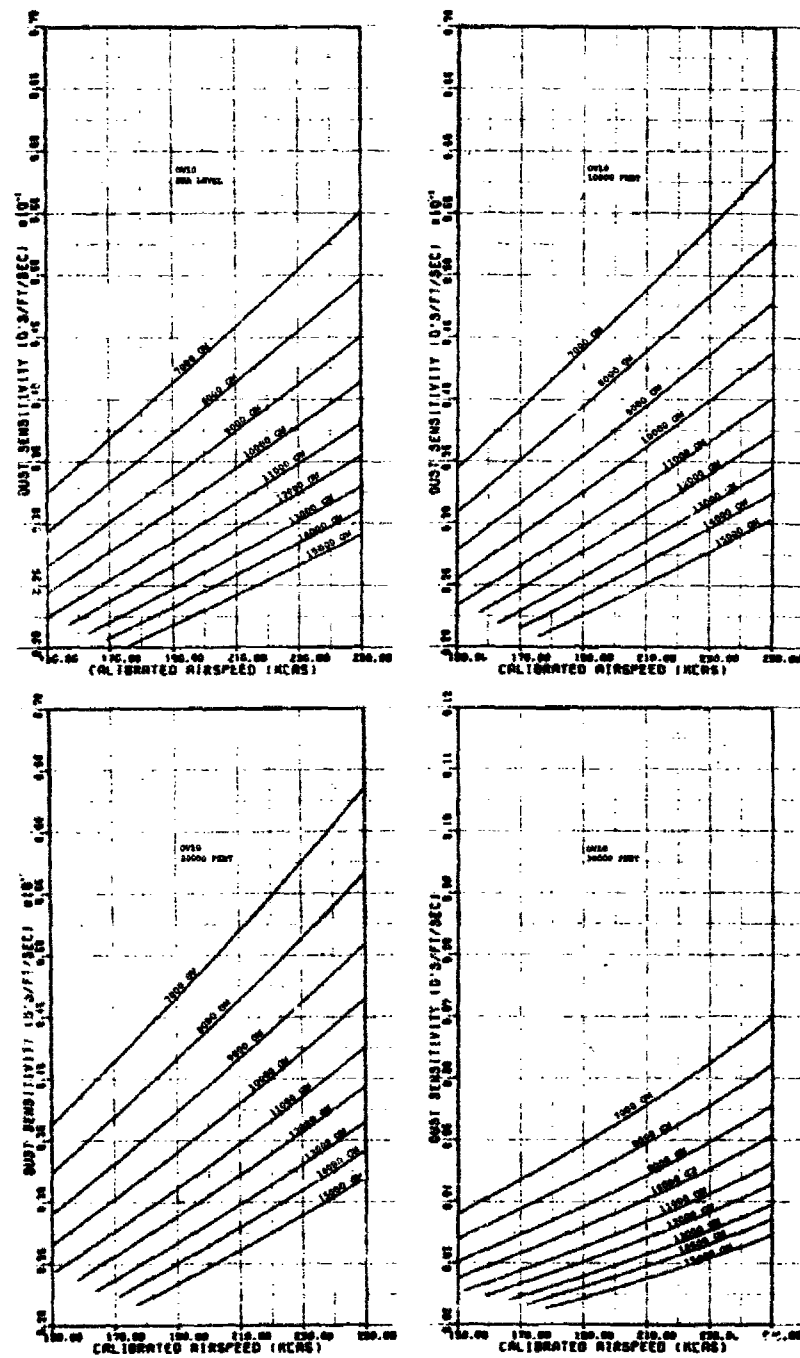


Figure 95. Gust Sensitivity of OV-10

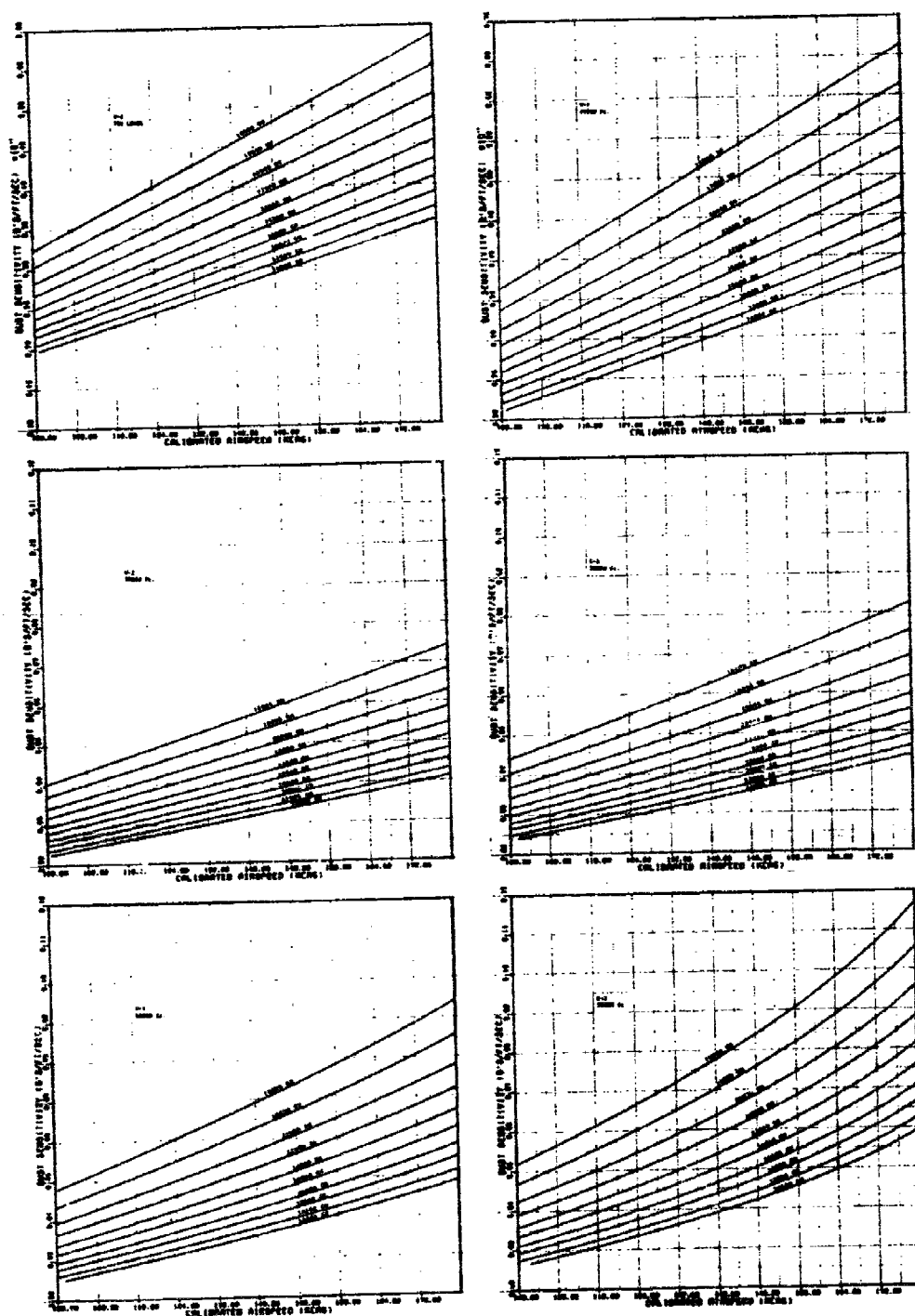


Figure 96. Gust Sensitivity of U-2