

SHIP PRODUCTION COMMITTEE
FACILITIES AND ENVIRONMENTAL EFFECTS
SURFACE PREPARATION AND COATINGS
DESIGN/PRODUCTION INTEGRATION
HUMAN RESOURCE INNOVATION
MARINE INDUSTRY STANDARDS
WELDING
INDUSTRIAL ENGINEERING
EDUCATION AND TRAINING

September 1979
NSRP 0006

THE NATIONAL SHIPBUILDING RESEARCH PROGRAM

Proceedings of the REAPS Technical Symposium

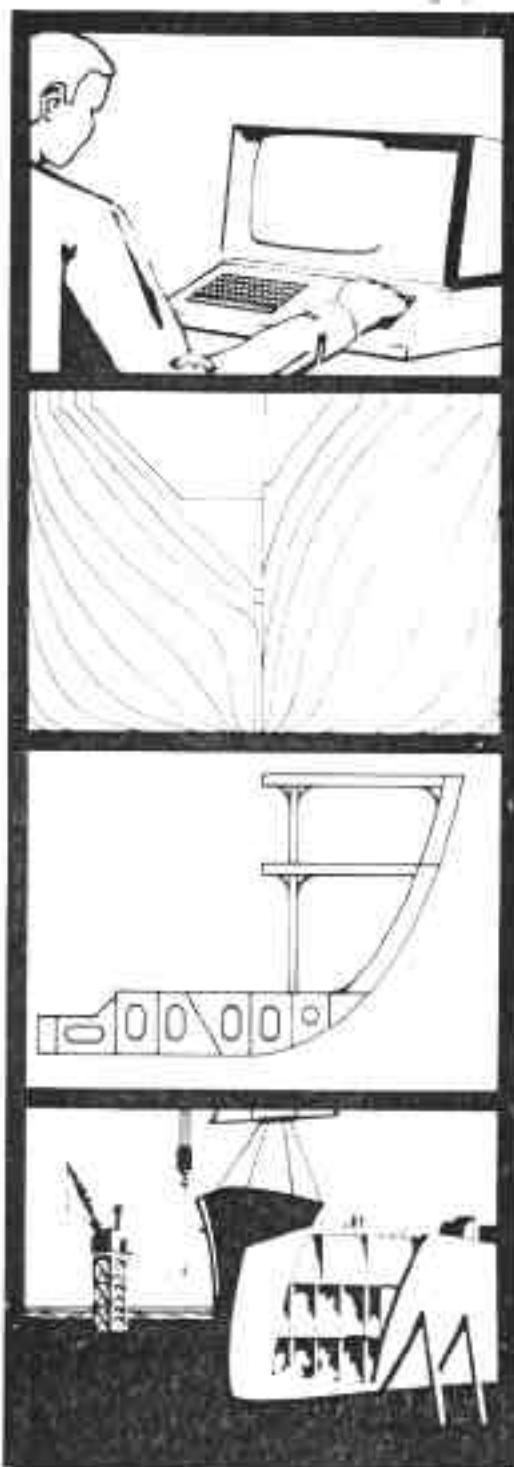
Paper No. 13: Planning and Ship Outfitting Production Control at Newport News

U.S. DEPARTMENT OF THE NAVY
CARDEROCK DIVISION,
NAVAL SURFACE WARFARE CENTER

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE SEP 1979		2. REPORT TYPE N/A		3. DATES COVERED -	
4. TITLE AND SUBTITLE The National Shipbuilding Research Program Proceedings of the REAPS Technical Symposium Paper No. 13: Planning and Ship Outfitting Production Control at Newport News				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Surface Warfare Center CD Code 2230 - Design Integration Tools Building 192 Room 128 9500 MacArthur Blvd Bethesda, MD 20817-5700				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT SAR	18. NUMBER OF PAGES 24	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

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R RESEARCH
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 IN
 HIGHBUILDING

Proceedings of the
REAPS Technical Symposium
 September 11-13, 1979
 San Diego, California

**PLANNING AND SHIP OUTFITTING PRODUCTION CONTROL
AT NEWPORT NEWS**

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PLANNING AND SHIP OUTFITTING PRODUCTION CONTROL AT NEWPORT NEWS

I. INTRODUCTION

This report provides a general overview of the techniques used in developing the Product Plan at Newport News, and covers in more detail the implementation and control of the plan, with emphasis on ship outfitting.

The intent is to inform interested parties about the Outfit, Planning, and Control Methods used at Newport News. However, at this writing we are making extensive improvements to our material and production control systems. These improvements in time will alter some of the methods used in Outfit Planning and Control; and it is felt that these improvements may be of interest.

1.1 Material and Production Control Improvement(s)

The development and implementation of these improvements is complex, and involves almost all of the operating divisions. A committee has been established to coordinate and steer improvements. The committee is called "IMPCO Committee," and draws its name from improved material and production control. The tasks either completed or in-process by the IMPCO Committee are:

- . Develop Synchronized Schedules
- . Standardization of Key Company Numbers
- . Converting *to* and Cataloging Part Numbers
- . Simplify and Improve Accuracy of Material Selection
- . Improve Material Requirements Planning
- . Improve Record Accuracy
- . Simplify Shop/Ship Material Requisitioning
- . Improve Shop Planning, Control, and Performance Measurement
- . Develop a Product Structure for Outfitting Similar to Structural

This list is not inclusive of all the on-going improvements but only cites the major tasks.

2. DEVELOPING THE PRODUCT PLAN

Although our approach to developing a product plan is basic, and probably does not differ from techniques used by other shipbuilders, it is subject to change due to the aforementioned IMPCO Projects.

In developing a product plan there are three segments of the plan; 1) Structural, 2) Outfitting and 3) Manufacturing. As stated earlier, this report is slanted toward the outfitting segment of the plan. However, you cannot explain the outfitting plan without briefly covering the other two segments.

2.1 Planning and Scheduling

Planning and scheduling begin during the proposal evaluation before award of a contract. Availability of facilities, manpower, and long lead time materials are reviewed. Working from the proposed delivery date, established by the "Invitation to Bid," tentative award, keel, launch, and delivery dates are determined. The ship's size, its type and the company's past performance on similar ships are considered.

There are six basic documents or schedules that are paramount to the development of the product plan. Each document is an integral part of the plan and in most instances each is dependent on the other in terms of its development. These six documents are:

- . Structural Erection Diagram (SED)
- . Space Control Diagram (SCD)
- . Ships Group Index and Schedule (SGIS)
- . Ships Drawing Schedule (SDS)
- . Material Ordering Schedule (MOS)
- . Manufacturing Group Index and Schedule (MGIS)

Group Definition - A group is a definite quantity of material to be installed or manufactured as a unit or units. The quantity of material included in a group is intended to be such as to allow maximum efficiency in handling, storing and installation, with minimum interference to adjacent work.

The following is a brief explanation of these documents:

2.2 Structural Erection Diagram (SED) (See enclosure (1))

The Structural Erection Diagram is a drawing of the inboard profile of the ship with one or more cross sectional views and shows the sequence in which the ship will be erected.

Using the contract drawings and other available information, the ship is divided into sections usually along major structural boundaries, such as decks and water tight bulkheads. These sections are further sub-divided into erection units with their size largely determined from handling considerations. Each erection unit is identified by a four digit number, with the first two digits indicating, the section number, and the last two indicating the planned sequence of unit erection within the section, for example

2 0 0 8
└─┬─┘ Indicates Unit Erection Sequence
└──┘ Indicates Section Number

Also shown on the Structural Erection Diagram is a breakdown of the major events for each structural section, such as:

- Drawings and Groups Complete
- . Material Available
- . Molds Complete
- . Fabrication Complete,
- . Sub-Assembly Complete,
- . Erect on shipway

2.3 Spaces Control Diagram (SCD) (See enclosure (2))

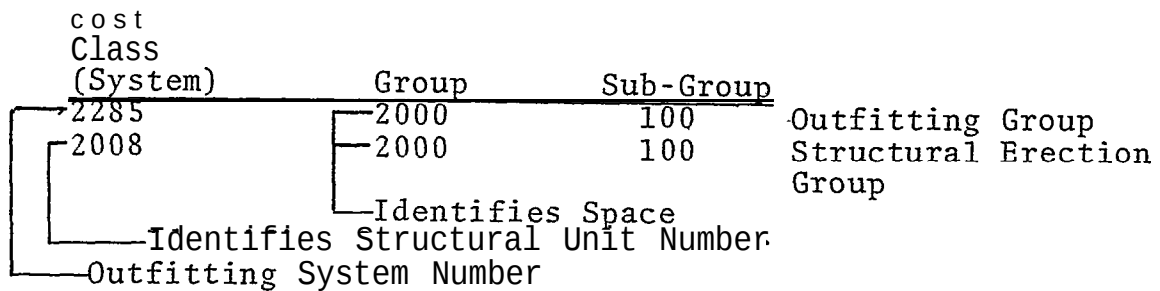
The Space Control Diagram is developed for use in control of outfitting and aids in the development of the "Ships Group Index and Schedule" (see 2.4). This diagram divides the ship into space control divisions, each of which is identified by a space control number. Normally the rule for defining space control divisions is one deck level extending the width of the ship bounded fore and aft by main transverse bulkheads.

Unlike the Structural Erection Diagram the space control divisions are not numbered in sequence of erection, but are structured for the control of outfitting groups assigned to a given space.

2.4 Ships Group Index and Schedule (SGIS) (See enclosure (3))

The SGIS is the system that schedules the completion of outfitting groups both in the shops and on the ship. Using the "Erect on Shipway" date for structural sections; established in the Structural Erection Diagram, as the scheduling date for start of outfitting, the Ships Group Index and Schedule is prepared. The nature of the SGIS is structure, system, and space oriented. Each group number is either combination of a structural erection units number and space control number, or a

combination of an outfitting cost class number (system) and the space control number; for example



Schedule dates are applied to these groups by establishing an installation start date (based upon the Structural Erection complete date on the Structural Erection Diagram) and working back through the following scheduled events (from latest to earliest);

- . Installation Start
- . Electrical Shop Complete
- . Pipe Shop Complete
- . Sheet Metal Shop Complete
- . Machine Shops Complete
- . Foundry Complete
- . Material Available
- . Groups and Drawing Issued
- . Drawings Complete

Once developed the SGIS provides the scheduling framework for all other derivative schedules; Ships Drawing Schedule, Material Ordering Schedule, Manufacturing Group Index and Schedule, etc.

2.5 Ships Drawing Schedule (SDS) (See enclosure (4))

The Ships Drawing System (SDS) schedules the required drawings through the different design sections, and the applicable owner, for approval in time to meet the drawing need of the SGIS.

Design develops the SDS using the "Drawing Complete Date" established in the Ships Group Index and Schedule. Although some drawings may cover more than one group, the drawing is scheduled for completion to suit the earliest group shown in the SGIS. The SDS is inclusive of all the drawings required to construct the product, e.g. Structural, Piping, Electrical, Machinery, Ventilation, and Manufacturing drawings.

2.6 Material Ordering Schedules (MOS) (See enclosure (5))

The Material Ordering Schedule is the document that

schedules the in-yards date of the required purchased material to suit the Ships Group Index and Schedule.

The MOS is developed by Design in a manner similar to that used for the preparation of the Ships Drawing Schedule. Using- the SGIS, "Contract Guidance Plans" and historical data, estimates are made of the gross material- requirements to be ordered from vendors.

These estimates are scheduled according to need and are further refined and the schedule updated as the drawings are developed.

2.7 Manufacturing Group Index and Schedules (MGIS) (See enclosure (6))

A manufacturing group is in effect a purchase order to ourselves requiring the manufacture of an item(s) to support the timely construction of the ship.

The Manufacturing Group 'Index and Schedule is developed by the applicable Design divisions and the construction projects. It schedules the manufacturing groups through the various shops to suit the material requirements of the Ships Group Index and Schedule.

3. IMPLEMENTING THE PLAN

The Ships Group Index and Schedule, Ships Drawing Schedule, Material Ordering Schedule and the Manufacturing Group Index and Schedule-provide the major building blocks for the Product Plan. These schedules are computerized and along with other computer systems (to be explained later) provide management with the tools to implement and control the Product Plan. The Plan is implemented as these' schedules and the applicable drawings are issued to Production Engineering and the construction trades.

3.1 Production Engineering (Outfitting)

Production Engineering is responsible for producing:

- .Group Sheets (Material List)
- .Shop Work Packages'

to suit the Ships Group Index and Schedule and the Manufacturing : Group Index and Schedule by using the drawings- issued by Design: Upon review of the drawings and schedules it may be determined that a group has not been provided in the schedule(s) or a group in the schedule(s)is not required. When this is determined appropriate action is taken to revise the schedules (MGIS or' SGIS).

3.2 Group Sheet Preparation

A Group Sheet is a listing of the required material keyed to a specific group (system and space) on the ship. The list authorizes work and provides quantities, description, sources, and routing of the material.

At present there are two methods of physically preparing group sheets; one is the conventional manual method and the other is a computer assisted method, referred to as AGS (Automated Grouping System). The AGS system closely audits all data and produces a more legible, standardized computer printed group sheet (See enclosure (7)).

It also interfaces with the "Inventory Management System" (IMS) to aid in the Material Requirements Planning (MRP). Also group sheets are structured to aid in the preparation of material requisitions.

3.3 Pipe Detail Grouping Section

The Pipe Detail Grouping section is responsible for specifying the boundaries for Pipe Shop Assemblies (called details), which will be input to the CAPDAMS system (see section 3.4). This section also groups non-CAPDAMS material and prepares the preliminary piping arrangement drawing for use by the CAPDAMS section.

3.4 CAPDAMS Drawing Preparation Section (see enclosures (9) and (10))

CAPDAMS is the acronym for Computer Aided Piping Design and Manufacturing System which permits data entry and audit of pipe detail material and geometry data.

Using the prepared Preliminary Piping Arrangement Drawings, data is extracted and input to the CAPDAMS system. The system provides centerline check prints, individual Piping Detail Drawings and printed manufacturing instructions. In addition material requirements summed to the pipe detail level interface with the IMS system to aid MRP. The CAPDAMS output is issued to the Shop Work Package Planning Section.

3.5 Shop Work Package Planning Section

Upon receipt of group sheets and drawings, the Planning Section prepares and schedules work packages for the various shop(s) - Machine Shops, Steel Fabrication, Sheet Metal, Electrical and Pipe Shops, in accordance

with the SGIS or MGIS. A work package consists of a brief description of the item(s) to be made, the source for the required material, a schedule for completion, the target hours required to complete the work and the material requisitions.

The work package information is input to the "Production Scheduling Control System (PSC) (see section 4), and in the case of Pipe Shop Planning, input is made to the Pipe Package Ordering System which draws the material requirements from the CAPDAMS system by pipe detail and interfaces with the IMS system to check the availability and location of the material and, in addition; generates material requisitions and packing lists for the Material Support Division (see enclosure (8)).

4. CONTROLLING THE PRODUCT PLAN

The Ships Group Index and Schedule, being the ship schedule that all derivative schedules must support, provides adequate management controls at the group level. However, because of the number of items subordinate to the group requiring manufacturing, the system does not provide sufficient information required to most effectively manage a manufacturing shop.

A computerized shop scheduling and control system is used to provide feedback to the Ships Group Index and Schedule and provides the shops a tool to measure the day to day production performance. This system is known as the "Production Scheduling and Control System" (PSC).

4.1 Production Scheduling and Control System (PSC)

PSC provides

- On-Line Detailed Work Status
- Daily/Weekly Work Sequence Lists
- Target Hours for Foremen
- Work Performance
 - Completed versus Delinquent Work
 - Actual versus Target Labor
- Data for:
 - Make or Buy Decisions
 - Capacity Planning
- Schedule for Material Requisitioning

Requirements:

- Work Breakdown According to Predefined Work Centers
- Realistic Schedule Dates
- Realistic Target Hours
- Accurate Feedback

The PSC system used in our Shops provides the framework for a total yard work management system.

4.2 Yard Production Scheduling and Control

Our objective is to have a total mechanized yard production scheduling and control system, capable of providing many levels of management information. Our progress to date includes the linking of the individual shop PSC systems to the SGIS thereby creating the basis for such a system. As a result, we can make inquiries by a given contract and group number, and the system will access the applicable shop PSC data bases to determine detailed production status (see enclosures (11) through (14)).

CONCLUSION:

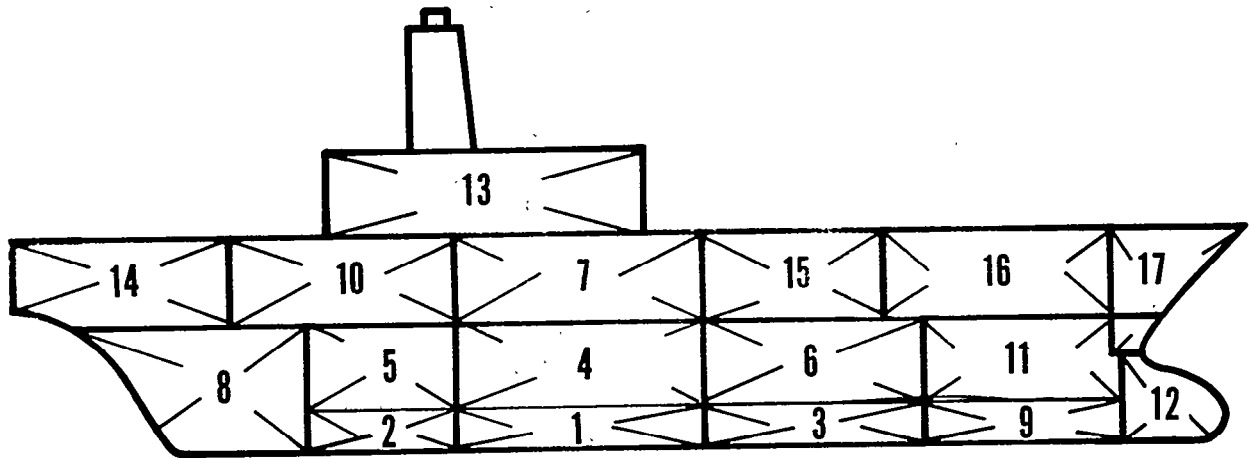
This report has provided a brief overview of the techniques and systems used at Newport News in developing, implementing, and controlling the Product Plan, and was prepared in the spirit that the information may be of interest to other concerns.

ACKNOWLEDGEMENT:

This author wishes to thank Mr. D. F. Carneal and Mr. E. C. Kizer of the Newport News Shipbuilding and Dry Dock Company for their assistance in the preparation of the data for this report.

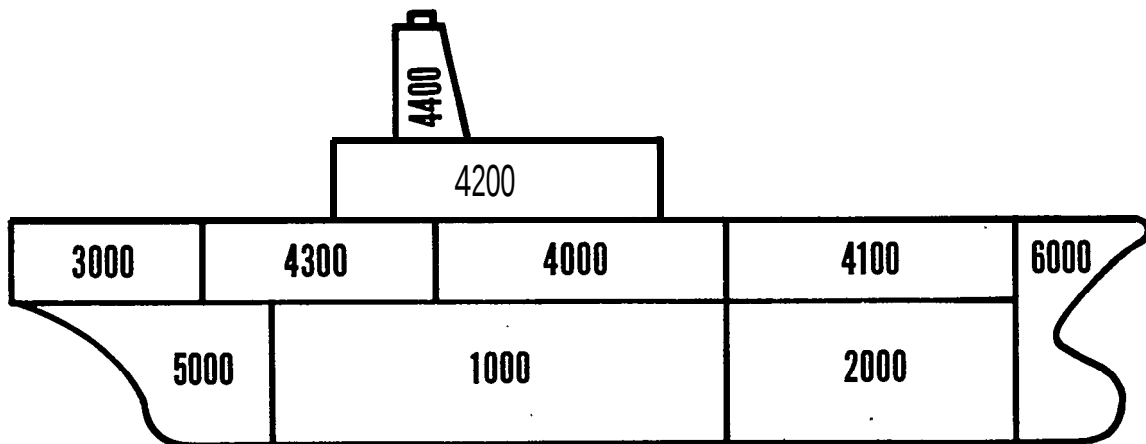
REFERENCES:

- (a) Report of Task Group for Improved Production Scheduling and Control," chaired by Mr. C. C. Coon, dated June 29, 1979.
- (b) "An Introduction to Grouping," Machinery Design Department, Newport News Shipbuilding and Dry Dock Company.
- (c) "Production Control System," Newport News Shipbuilding and Dry Dock Company.



STRUCTURAL ERECTION DIAGRAM

Enclosure (1)



SPACE CONTROL DIAGRAM

Enclosure (2)

Enclosure (3)

SHIP'S GROUP INDEX & SCHEDULE

MATERIAL CONTROL - GROUP INDEX AND SCHEDULE - OUTFITTING JOB T006CJ-10 TOTAL

CLASS				GROUP NO.				SUBGROUP				ISSUE				DESCRIPTION																D	C	PREL DWG	DWG & LIST ISSUED	"A" MATL RECD	"C" MATL RECD	X 10 COMPL	FO COMPL	MSS COMPL	QA COMPL	PIPE SHOPS COMPL	EL SHOPS COMPL	EREC START	EREC COMPL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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Enclosure (4)

SHIP'S DRAWING SCHEDULE

DRAWING SCHEDULE
N 54-1 (REV. J)

DRAWING SCHEDULE N 58-1 (REV. J)			DEPARTMENT PLAN LIST				JOB TO 15CF				061AD				JUN 26 1978				77					
N. N. DRAWING NO. (03)		DT WV GE AC PT (45)	SUPV. (08)		TITLE (11)	FOR SPECIAL JOB ORDERS ---		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	CODED NC (44)
BUSHIP/M.A. DRAWING NO. (06)			DEPT (09)			INFO DWG (69)		ETD & HTO TECH REVIEW		APD TECH REVIEW		WEIGHT INFO		TO DEPT HEAD (14)		TO OWNER (18)		TO GROUP (23)		TO RT (29)		YARD ISSUE (33)		NOTES (40)
REF. DRAWING NO. (07)			HULL SECT (10)			GROUP NUMBERS (01)		IN (12)		OUT (13)		IN (73)		OUT (78)		IN (82)		OUT (86)						APPLICABLE - (56)
23002444X2 518-5007480		12	6 P		DEKSS HYDR SYS FW PLN NORM MODE JOIN T MAP										168 08218							171 173 0911809258		67890
					2300 4000 500																			
23002446X1 516-5007481		2	6 P		DEKSS HYDR SYS PP ARR AMR STBD L/M & BM										141 02138 02088					142 144 146 3P 022080306803208 0208802088			67890	
					2300 41005409																			
23002446X2 516-5007481		2	6 P		DEKSHIP SERVICE HYDR SYS PP ARR-AMR STBD-PLAN EL & SECT										141 02138 02088					144 146 3P 0306803208 02088			67890	
					2300 41005409																			
23002446X3		12			DEKSS HYDR SYS PP ARR AMR STBD JOINT										141						144 146 3P			
23002448X2 516-5007482		2	6 P		DEKSS HYDR SYS PP ARR 1&3 TT SRVS STBD HDR PLAN & ELEV 1										139 01308 08317					142 144 0220803068 08317083170926767890				
					2300 42035529																			
23002448X3 516-5007482		12	6 P		DEKSS HYDR SYS PP ARR 13 TT SVCE STBD JT MAP										139 01308 08307					142 144 0220803068 083070926767890				
					2300 42035529																			

241

MATERIAL ORDERING SCHEDULE

Enclosure (6)

MANUFACTURING GROUP INDEX & SCHEDULE

INTERAL CONTROL - GROUP INDEX AND SCHEDULE - OUTFITTING JOB T006CJ-10 TOTAL

[illegible]

242

Enclosure (7)

Figure F.2

006530

PROJECT LINE*TS*DRAWING AND ITEM NO.
STRUCTURE HF*SC*SOURCE(MATERIAL IDENT NO.)

GROUP LIST---MACHINERY OUTFITTING GROUP
QUANTITIES LISTED FOR 1 SHIP(S)
*QTY UM*DESCRIPTION
TOT 4TL UM MCLV SSDR*SPECIFICATIONS OR NOTES

DATE 09/22/77

* MATERIAL*ROUTING
* *CHG*

2	L81	6002-95#31	* 4PC COVER-MBT VENT VALVE 4 A&B & 5 A&B	*ALUMINUM X10-MS
	HF PD 6100-4059-H206#2		* 195.00051 (IN PORT COVER)	
2	A9 L82	6002-95#33	* 4PC GASKET-13 UD X 10.125 ID X .125 THK	*BUNA-N MS
	HF PN 9779591		* 196.00051 FOR PC 31	
2	L83	6002-95#34	* 4PC SET SCREW #10-24 X .375 LG FL PT	*NI-CU ST-MS
	PN 9752805			
2	L84	6002-95#40	* 40PC SCREW-SCH CAP .500 X 1.125 LG SELF LOCKING	*NI-CU ST-MS
	PN 9782929			
2	L85	6002-95#41	* 32PC SET SCREW .500 X .500 LG	*TEFLON SM-MS
	HF PN 9756424		* 24.0001M	
2	L86	6002-95#42	* 4PC PIPE PLUG .500 RAISED SQ HD	*CARBON STEEL ST-MS
	PN 9714170			
2	L87	6002-98#51	* 4PC SPRING RETAINER HF 4.500 DIA BAR	*NI-AL-BRZ SM-MS
	HF PN 9737051		* 24.0001M	
2	L88	6002-98#52	* 4PC SPRING	*BE-CU ST-MS
	PN 5901212			
2	L89	6002-98#53	* 2PC GROOVED BUSHING HF 4.500 DIA BAR	*NI-AL-BRZ SM-MS
	HF PN 9737051		* 10.0001M	
2	L90	6002-98#54	* 2PC PLAIN BUSHING HF 4.500 DIA BAR	*NI-AL-BRZ SM-MS
	HF PN 9737051		* 10.0001M	

QAG 1-A 1-C X10 MLD FD QA HSS FAB PF EL SA GH PH E-S GRPSTA TRADE ISSD IYGP*CMIRACT *CHARGE *GRJUP TRANS-ITL
 COM 081 MG *6160-7-8-9-00002 *6002-3000-100-0
 5032-3000-100-0 HBT 4 & 5 VENT VALVES & INTER COM AFT BY FIELDS J E EX! 884460 *SHEET 50
 SOS
 30 P4 FJ BL IM MS RM HSS PN PF PS GH PC QA JB EL RD WH MG EG PG MH AH X10 ML APD RJ VI ST 330 PTU Ld SNO APR LINE ITEMS
 1TU107

Enclosure (8)

MATERIAL REQUEST

REQUEST LEVEL 99442PRO		MATERIAL DESTINATION 100		RECIPIENT'S NAME NA		CONTROL LEVEL STD		IF ALL MATERIAL IS NOT AVAILABLE ☒ FILL WHAT IS AVAILABLE AND SHIP BAL. LATER ☐ FILL WHAT IS AVAILABLE AND CANCEL BALANCE ☐	
DATE ORDERED		REQUESTER'S SIGNATURE TILMAN		DEPT 061		PHONE 80-5216		REQUESTER'S SOC SEC NO 231-70-0938	
DATE RECEIVED BY WAREHOUSE		CHARGE TO 618		ACCT HULL 618		JOB ORD D		SUB DIV 2355	
				AUTHORIZED FOR (Group Only)		HULL 618		COST CLASS 2355	
						GROUP 1.000		SUB GROUP 400	
								S.S. GRP	
QUANTITY WANTED 1.000		U M PC		MATERIAL IDENTIFICATION NUMBER 9717086		DESCRIPTION CPLNG 1.250 X 1.000 BRZ REDUCIN FE		PIECE NO	
ISSUE PC	LOC. 40959	2 31D6G11	3 31P124	4	5	6	TRACE CODE	SHEET	LINE
ISS. QTY.							DRAWING	SHEET	REV. ITEM
QUANTITY WANTED 1.000		U M PC		MATERIAL IDENTIFICATION NUMBER 9713458		DESCRIPTION FLANGE 1.000-150 LB BRZ SILVER BRA		PIECE NO	
ISSUE PC	LOC. 31E5C26	2	3	4	5	6	TRACE CODE	SHEET	LINE
ISS. QTY.							DRAWING	SHEET	REV. ITEM
QUANTITY WANTED 4.000		U M FT		MATERIAL IDENTIFICATION NUMBER 9821032		DESCRIPTION TUBING 1.660 NOM OD X 0.065 MIN CU		PIECE NO	
ISSUE FT	LOC. 23RAC188	2 23RAC293	3 23RACK79	4	5	6	TRACE CODE	SHEET	LINE
ISS. QTY.							DRAWING	SHEET	REV. ITEM
QUANTITY WANTED 1.000		U M FT		MATERIAL IDENTIFICATION NUMBER 9821028		DESCRIPTION TUBING 1.315 NOM OD X 0.065 MIN CU		PIECE NO	
ISSUE FT	LOC. 23RAC333	2 23RAC161	3 23CARD	4	5	6	TRACE CODE	SHEET	LINE
ISS. QTY.							DRAWING	SHEET	REV. ITEM
QUANTITY WANTED		U M		MATERIAL IDENTIFICATION NUMBER		DESCRIPTION		PIECE NO	
ISSUE U/M	LOC.	2	3	4	5	6	TRACE CODE	SHEET	LINE
ISS. QTY.							DRAWING	SHEET	REV. ITEM
QUANTITY WANTED		U M		MATERIAL IDENTIFICATION NUMBER		DESCRIPTION		PIECE NO	
ISSUE U/M	LOC.	2	3	4	5	6	TRACE CODE	SHEET	LINE
ISS. QTY.							DRAWING	SHEET	REV. ITEM
LINE	DEPT.	ESTAB. BY	DATE	C.P.	REL. BY	DATE	JOB NUMBER 618C02559	PACKAGE	STAGING LOCATION
033	COMMENT 99163207			EDD				Sheet of DATE FILLED MO. DAY YR	REQUEST NO 99642PRO

ORIGINAL

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

Use SAFETY SENSE Every Day

244

PRINTED BY THE STANDARD REGISTER COMPANY, U.S.A. 193102

PIPE DETAIL MANUFACTURING RECORD

BEND PIPE IN STEEL SHOP - MACH. 4																																																																																																														
NOMINAL SIZE 5.00 THICKNESS 0.220																																																																																																														
BEND		DIST		BEND		CLOCKWISE		BEND		COORDINATES (TEMP NOT INCLUDED)																																																																																																				
PTS	NOS.	C.B.C.	1 TANG	O.B.T.	RAD	ROTATION	ANGLE	END PREP	TEMP	CUT	X	Y	Z																																																																																																	
1											42.170	6.000	0.																																																																																																	
2	1	14.11	12.00	12.00	3.00	0.	16.0		3.00	6.85	37.920	6.250	0.																																																																																																	
3	2	28.61	29.03	24.85	3.00	180.8	12.6				10.000	0.	0.																																																																																																	
N		13.66	15.30	12.00				PN-1B	0.	7.53	3.875	0.	0.																																																																																																	
DISTANCE FROM POINT 1 TO CENTER OF FIRST BEND										4.26																																																																																																				
DISTANCE FROM CENTER OF LAST BEND TO POINT N										6.13																																																																																																				
GROUP 2285-4200-5502-																																																																																																														
ORDER # 042182																																																																																																														
<table border="1"> <thead> <tr> <th>H</th> <th>DEPT</th> <th>STOP</th> <th>NAME</th> <th>DATE</th> <th>CHARGE</th> </tr> </thead> <tbody> <tr> <td>U 6 6 6 6 6</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>L 1 1 1 1 2</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>L 6 7 8-9 0</td> <td>MIC</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>															H	DEPT	STOP	NAME	DATE	CHARGE	U 6 6 6 6 6						L 1 1 1 1 2						L 6 7 8-9 0	MIC																																																																												
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X X X X X MC-I	PR9713612	1	PC	5 FLANGE GROOVED	CU-NI 70/30 +FL1		A																																																																																																							
NOTES CLEANING=NN PROC=M83 WELD INDEX TABULATION DWG 2285-810 THIS DETAIL REQUIRES STAVE DAMPENING THIS DETAIL IS PART OF ARRANGEMENT SUB-ASSEMBLY 4200-2 ALLOWANCE ON END OF PIPE AS INDICATED IS FOR TEMPL ABOARD SHIP + INDICATES NON-DEVIATIONAL MATERIAL, NO SUBSTITUTIONS ALLOWED CONFIGURATION IS NON-DEVIATIONAL, NO VARIATIONS ALLOWED WELDING = NN DWG 0600-26, CL P1 BENDING AND FORMING = NN PROCEDURE M84																																																																																																														
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CAPDAMS ISSUED BY: HULL APPL. GROUP NO. 2285-4200-5502- 05/04/79 MACH DES 616-617-618-619-620 TAG P171-1 DETAIL A PAGE 1 OF 2 ARRG DWG. 2285-808X1 DETAIL DWG. A2285-318 REV. B																																																																																																														

CAPDAMS - COMPLIT

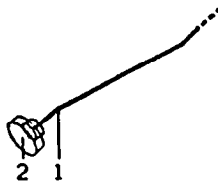
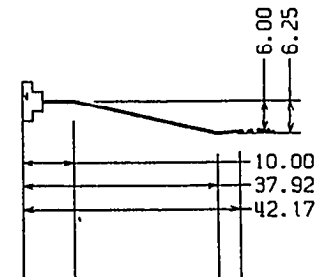
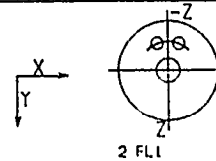
ID PIECE NO
1 P171-1
2 FL1

LOCATION
MAIN PIECE
A ENON

ORIENT
25-Z

JT TY JOINT NO.
PN-18 TD-20542

NOT
RT



DATE-
SIGNATURE-
LOCATION-

P171-1

DETAIL	A	PAGE	2	OF	2
ARR. DWG. NO.	2285- 80841				
DET. DWG. NO.	A2285 -318				

CAPDAMS HULL APPL. GROUP NO.
05/04/79 616 617 618 619 620 2285- 4200-5502-

Enclosure (11)

PSC - GROUP INQUIRY

HULL	P/L	CLASS	GROUP	SUBGRP	SSGRP	CD	ECD	DC
617	D	2300	4102	5408	1	PS	P	

DESIGN	GRPNG	A-MAT	C-MAT	X10	FO	MSS	DA	PIPE	EL	ES	EC
132	136	140						155		156	159
11138	12118	04239						08069		08139	09039
02028	06128	01129						X42A			

CHECKPOINT? ALL
DO YOU WANT MATERIAL DUE STATUS? Y
x42 DIV

JOB NO=617C003401 DWG= ASSEMBLY M41-9 WAIT MATERIAL RESP DEPT=X42
CODE S

JOB NO=617C003402 DWG=A2300-732 COMPLETE RESP DEPT=X42
ASSEMBLY S41-9
DET A

JOB NO=617C003403 DWO=A2300-732 COMPLETE RESP DEPT=X42
ASSEMBLY S41-9
DET C

JOB NO=617C003404 DWC=A2300-732 COMPLETE RESP DEPT=X42
ASSEMBLY S41-9
DET D

JOB NO=617C003405 DWG=A2300-732 COMPLETE RESP DEPT=X42
ASSEMBLY S41-9
DET F

Enclosure (12)

PSC - JOB STATUS BY WORK CENTER

JOB
AREA? PS
ARE YOU ON A HARD COPY TERMINAL? Y
WHICH WORK CENTER? 42C-MD40
START DATE? (MMDDYY) 031279
END DATE? (MMDDYY) 062879

DOCUMENT	WORK ORDER	OP	\$	START	NORMAL	ACCUM	STATUS	PRIOR
618 D6200 7000 100	618C016013	005	052179	.0	.0	LATE	.0	
618 D6200 7000 100	618C016012	005	052179	.0	.0	LATE	.0	
617 D2300 4203 5530	617C005639	005	062579	.0	.0	LATE	.0	
617 D2300 4203 5530	617C005637	005	062579	.0	.0	LATE	.0	
617 D2300 4203 5530	617C005636	005	062579	.0	.0	LATE	.0	
617 D2300 4203 5530	617C005634	005	052579	.0	.0	LATE	.0	
617 D2300 4203 5530	617C005632	005	062579	.0	.0	LATE	.0	
617 D2300 4203 5530	617C005631	005	062579	.0	.0	LATE	.0	
617 D2300 4203 5530	617C005629	005	062579	.0	.0	LATE	.0	
618 D6200 7000 100	618C016031	005	052179	.0	.0	LATE	.0	
618 D6200 7000 100	618C016030	005	052179	.0	.0	LATE	.0	
618 D6200 7000 100	618C016029	005	052179	.0	.0	LATE	.0	
618 D6200 7000 100	618_C016028	005	052179	.0	.0	LATE	.0	

Enclosure (13)

PSC - WORK CENTER INFORMATION

*CTR
AREA? PS
ARE YOU ON A HARD COPY TERMINAL? Y
WHICH WORK CENTER? 43C-MO40

WORK CENTER=42C-MO40 TEXT=MATL ORDERED

MACHINES= 0 MEN= 0 MOVE TIME= 0 OTIME= 0 DAY LEN= 8 OVRHD RATE= 0

MACHINE RATE= .00 LOAD CODE=1 LOAD PERCENT=085 BASIC CAPACITY= 8

WORK CTR SETUP LOSS= 0 WORK CTR LOSS FACTOR= .00 SU/PROC RATIO= 0

Enclosure (14)

PSC - ORDER STATUS DATA

*STA
AREA? PS
ARE YOU ON A HARD COPY TERMINAL? Y
*TYPE G
CONTRACT OR JO 617
PRODUCT LETTER D
COST CLASS 2300
GROUP 4102
SUBGROUP 5408
SUBSUB

ORDER=617C003401 DESC- L000002 M41-9 RESP-42 DEL, WORKING
ORDER=617C003402 DESC- L000000 S41-9 RESP-42 COMPLETED
ORDER=617C003403 DESC- L000000 S41-9 RESP-42 COMPLETED
ORDER=617C003404 DESC- L000000 S41-9 RESP-42 COMPLETED
ORDER=617C003405 DESC- L000000 S41-9 RESP-42 COMPLETED

WHICH WORK ORDER? 617C003401

WORK	START	NORMAL	ACCUM	COMP	CONTROL
OP0 CENTER	DATE	HOURS	HOURS	LOCATION	TICKET #
005 42C-MD40	080679	.0	0.0	* *070279	150-31254-14213
010 42C-MR40	083079	.0	0.0	* 070279 *	150-31255-14210
022 42C-4022	090379	.0	0.0	*	150-31256-14217
032 42C-4032	091079	.0	0.0	*	150-31257-14214
037 42C-4037	091779	.0	0.0	*	150-31258-14211
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