



## DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND  
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NAVSEAINST 4850.5B  
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### NAVSEAINST 4850.5B

From: Commander Naval Sea Systems Command

Subj: NAVAL SHIPYARD WORKLOAD AND MANPOWER MANAGEMENT,  
FORECASTING POLICIES AND PROCEDURES

Ref: (a) NAVSEAINST 4700.8A, Subj: Performance of Depot  
Level Naval Ship Availabilities; policy for  
(b) NAVSEAINST. 4710.8A, Subj: Cost and Performance-  
Reporting for all Ship Availabilities of 3000  
Mandays and Larger

Encl: (1) Naval Shipyard Workload Forecasting Procedures  
(2) Preparation of the Naval Shipyard Workload and  
Resource Report (WARR)  
(3) Glossary

1. Purpose. To establish policy that all shipyard work requiring use of manpower resources will be included in Workload and Resource Report (WARR) using the Strategic Planning and Forecast (SPF) System. This process will develop and maintain Naval Shipyard workload and workforce projections. It shall be the primary tool used by shipyards and NAVSEA for projection of workload and workforce requirements for budget preparation and execution projections.

2. Cancellation. This instruction cancels and supersedes NAVSEAINST 4850.5A of 04 Aug 1983.

3. Background. Shipyard workload/workforce planning and management has typically been based on the estimate of work provided by the customers during annual Fleet Scheduling Conferences (FSC). Using these workload estimates for manpower planning can contribute to artificially high staffing levels in the event that actual execution workload or funding is less than budgeted levels.

Due to current employment policies, Naval Shipyards are unable to quickly reduce permanent staffing levels; therefore, it is important to ensure aggressive, performance driven shipyard strategic project planning. Failure to plan for success oriented execution becomes a financial burden to the shipyard when performance improves or work does not materialize as planned.

References (a) and (b) were established to provide corporate policies in preparation of workload forecasting estimates, validation of the work package, and control of new work. These policies are expanded upon in this instruction for Naval Shipyards workload and manpower management. In particular, revised reporting procedures are established focusing on total shipyard direct labor for the shipyards' execution and budget plans (See Enclosure (1), (2), and (3)).

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4. Development of Shipyard Workload Forecasts

The workload/workforce forecasting process using the Strategic Planning and Forecasting (SPF) system is the basis of the Execution and Budget forecasts and will be the primary shipyard and NAVSEA tool for workload/workforce budgeting and planning.

a. Budget WARR- The Budget WARR workload, detailed in the Budget Submission Workload Summary (SP-18 Exhibit), is the baseline used to support development of the Naval Shipyard annual budgets. It is also used by Shipyards and SEA 04 to track variance between the budget and actual revenue recognition.

Estimates and availability durations for use in the Budget WARR will be the customer's budgeted availability package sizes (mandays) and schedules established at the annual FSC, unless otherwise changed by guidance from NAVSEA 04. These manday values will also be used by shipyard customers in the development of their budgets.

b. Execution WARR- The Execution WARR workload is the shipyard's "best estimate" of the actual mandays and duration required to accomplish the anticipated work and should be a more aggressive plan than the Budget WARR. This permits NAVSEA to make the optimum use of available resources to meet fleet maintenance needs and to apprise customers early-on of funding requirements. The Execution WARR is "Business Sensitive". Copies should be provided only to other Naval Shipyards, NAVSEA 04 and NAVSEA 08. Estimates and availability duration's for use in the Execution WARR required by this instruction are three basic types. The type to be used is dependent on the interval with respect to the availability. These types are:

(1) Prior to a project's Work Negotiation Meeting (WNM), workload estimates are to be "success-oriented" based in general on manday constraints established at the annual FSC, unless otherwise changed by guidance from NAVSEA 04. It is not the intent to use FSC mandays for the forecast of future work in the Execution WARR. Historically these manday values are inflated and may contribute to overstating future manpower requirements. Estimates of future work must be aggressively reduced to levels that would approximate a "Bare Bones" Estimate (BBE) if one were developed.

(2) After the WNM, a final review of the Job Summaries is performed to develop the BBE. The BBE should be used as the basis for establishing the manpower levels of each shop or office within the shipyard. Workload reserves (customer or project) may be added as a separate line item for each project in accordance with enclosures (1) and (2), but shall not be used in shop projected manning requirements. This will prevent artificial loading of individual shops and will encourage aggressive project manpower loading while clearly identifying potential increases to the BBE. It is the intent that the workload reserves be used only at the senior management level for

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the determination of the project's predicted end cost (PEC) and for shipyard strategic planning. Workload reserves should not be included in any forecast provided to the individual shop.

(3) During the execution of the availability, the workload projections are to be the Shipyard's "best estimate" of actual mandays and duration required to complete the availability. These estimates are to be based upon the BBE and adjusted for the current shipyard and project performance.

**5. Manpower Resource Management**

Shipyards shall base permanent employment planning on the Execution WARR workload prepared in accordance with this instruction. General employment policy is to be slightly overloaded at all times (i.e., less people onboard than required to execute known workload). In addition, shipyards shall:

a. Develop and maintain department staffing plans that identify staffing and training requirements to support the projected execution workload for the current and two subsequent fiscal years.

b. Develop and maintain, by month, a shipyard employment plan to identify permanent and temporary employees for the current and two subsequent fiscal years.

c. Monitor the actual employment against the current year employment plan to ensure civilian personnel employment plans are met.

6. Effective date. With the exception of programming changes to the Personal Computer Workload Forecasting System (PCWLF), the provisions of this instruction are effective upon receipt.

7. Action. Naval Shipyards shall implement this instruction upon receipt. Actions will include the following:

a. To better understand and visualize the nuclear workload, each nuclear shipyard shall transmit monthly to SEA 04 their Nuclear Production, Nuclear Support and Nuclear Total Yard Execution Workload and Resource Report.

b. Along with each monthly WARR, each shipyard shall transmit current Dry Dock data (WF-350).

8. Nuclear Propulsion Workload. This instruction applies to both nuclear and non-nuclear work. However, as delineated in the NAVSEA Organization Manual, the Deputy Commander for Nuclear Propulsion, NAVSEA 08, is responsible for all technical matters pertaining to nuclear propulsion in U.S. Naval ships and craft, including all aspects of integration of the nuclear plant into the ship system. Nothing in this instruction detracts in any way from these responsibilities, nor does this instruction supersede or

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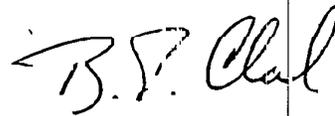
modify existing NAVSEA 08 reporting requirements. NAVSEA 08 shall be kept fully informed of all matters involving the nuclear workloads of Naval Shipyards.

9. Distribution of Reports

Shipyards shall electronically transmit the WARR only to NAVSEA 04. However, shipyard interchange is authorized and copies may be provided to NAVSEA 08 as requested. All pages of the WARR shall be labeled "Business Sensitive".

10. Reports

Report symbol WF-300 is assigned to the WARR.



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Naval Shipyard Workload and Resource Report Procedures

Part A. Shipyard Execution Workload Planning

1. General

a. Workload projections for the Execution WARR must be based on the best planning data available to the shipyards for each availability. The Execution WARR is to contain a more aggressive workload and manpower plan than the Budget WARR. The source of this data may be any of the following:

(1) FSC maintenance schedule and work package size requirements for future work.

(2) Work Negotiation Meeting (WNM) screening agreements reached with the type commanders.

(3) BBE mandays based on approved Job Summary reviews.

2. Workload Definition

a. Prior to the WNM for an availability, shipyards are to use estimates based in general on the direct labor manday constraints determined at the annual FSC or as provided by NAVSEA 04. These projections should be divided into the categories of TYCOM and NAVSEA mandays. This early forecast will be the basis for the Execution WARR and should not be just a reflection of the FSC manday values. Often these values are inflated and therefore overstate future workload and manpower requirements. When, through benchmarking data, actual experience, or otherwise, the shipyard is confident that an alternate (lower) value is more accurate, then the FSC values must be reduced to reflect more accurate values.

b. Upon conclusion of the WNM, the Project Engineering and Planning Manager (PEPM) is to develop a BBE based on the total of the job summaries that identifies predicted final mandays to be issued. These estimates, at the direct labor nuclear and non-nuclear shop level, must further be summarized to identify the mandays by the following categories:

- (1) TYCOM Non-Nuclear Repairs
- (2) TYCOM Nuclear Repairs
- (3) NAVSEA Non-Nuclear Ship Alterations
- (4) NAVSEA Nuclear Ship Alterations
- (5) NAVSEA Ordnance Alterations
- (6) Other (RDT&E, SCN, etc.)

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c. From WNM through completion of the availability, periodic revisions to the BBE will be required as job definition increases, ship condition becomes better known, and project performance determined. These reviews may result in changes to the shipyard Predicted End Cost (PEC) for the availability. The goal is to provide an Execution WARR that represents the shipyard's best estimate of the actual workload and manning requirements for each availability.

d. Workload reserves, both customer and project, are contingencies for work yet to be identified. Forecasting of such work in a specific shop will artificially inflate the workload and manning requirements for that shop if the reserves do not materialize into work, or materialize in another shop. To encourage aggressive project manning and prevent oversizing of shop manpower, only the BBE is to be loaded into the individual shop/code forecast.

## Part B. Shipyard Manpower Planning

### 1. General

Shipyard employment planning is to conform to constraints established by NAVSEA 04 and be based on the direct labor workload forecasts at the shop/code level in the Execution WARR. Where emergent work or other causes require modification of the manpower constraints, shipyards are to obtain concurrence from NAVSEA 04 to exceed the employment constraints as specified below.

### 2. Staffing recommendations

The Workload Forecasting Branch of the Business and Strategic Planning Office (BSPO) will develop workload forecasts for all shops based on the BBE. As a minimum, the BSPO shall provide annual staffing recommendations, by shop, for the current and subsequent two years.

### 3. Departmental ceiling determinations

All shipyard departments, using the staffing recommendations provided by the BSPO and other data, will recommend staffing levels to the Shipyard Commander. Departmental staffing plans are to provide information on personnel actions required, and training needs of the department.

### 4. Manpower planning and control

As a minimum, shipyards will maintain a shipyard employment phasing plan that identifies the average number of permanent and temporary employees (subject to Navy controls) to be on-board each month of the current fiscal year. This plan must consider required conversions of the employee hired under such programs as worker-traine, etc., to permanent status. In addition, a control line, based on permanent employee attrition trends, should be present to serve as an upper limit to ensure that the shipyard can meet the NAVSEA FTP controls.

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Part C. Responsibilities

1. The Business and Strategic Planning Office (BSPO) shall:

a. Develop and maintain statistics on direct labor manday distribution by shop, hull type, class, nuclear/non-nuclear work, and type of availability.

b. Prior to WNM, determine the maximum direct labor mandays of work that can be screened to the shipyard.

c. Develop and maintain direct labor manday statistics on new work by hull type, class and type of availability.

d. During the availability, monitor actual expenditures and performance and recommend revisions to the WARR as necessary in order that the WARR estimate represents the "best estimate" of the final shipyard PEC.

e. Produce the Budget WARR, the Execution WARR and associated reports.

f. Prepare and maintain "execution" workload forecasts for all shops, including support shops/codes.

2. The Comptroller shall:

a. Use the Budget WARR produced by the BSPO as the basis for preparation of the Annual Financial Management Budget (AFMB).

b. Coordinate the issue of Customer Order Acceptance Records (COAR) and work categories to ensure compliance with the Navy Working Capitol Fund (NWCF) Manual.

3. The Human Relations Office shall:

a. Maintain a shipyard employment plan for the current and subsequent two fiscal years.

b. Monitor actual employment against the current year employment plan and ensure that the shipyard employment controls are achieved.

c. Provide the BSPO with permanent and temporary employment plans including attrition data for use in the Execution WARR.

4. The Nuclear and Non-Nuclear Engineering and Planning Departments shall:

a. Prior to WNM, provide preliminary job summaries to the project for final review and approval of summaries.

b. After WNM, and as requested by the Operations Department, provide estimates based on analysis of the authorized work package and/or new work requests.

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5. The Operations Department shall:

a. Based on the job summaries for all direct labor, prepare a BBE to be used by the BSPO for inclusion in the Execution WARR.

b. Determine the amount of Project Reserves to be added to the BBE to arrive at the Project Internal Control Price (ICP). Obtain ICP approvals as necessary and forward ICP to the BSPO.

c. Perform job summary reviews on all new work, develop and forward revised BBE and ICP to the BSPO.

d. On a regular basis during execution phase of an availability, communicate changes in manning, schedule, and cost to BSPO for inclusion in the Execution WARR.

e. Ensure the Budgeted Quantity of Work Scheduled (BQWS) line accurately reflects the Project's manning needs based on accurate schedules and proper progress.

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Preparation of the Shipyard Workload and Resource Report (WARR)

1. Purpose

a. The purpose of this enclosure is to provide instructions to Naval Shipyards relative to the preparation of a 36 month report for monthly reporting of the shipyard workload and resource requirements. This report will be referred to as the Shipyard Workload and Resource Report (WARR). The previously required monthly WARR, Form NAVSEA 4850/4, Report Symbol NAVSEA 4850-4, is hereby superseded. The Workload and Resource Report (WARR) will provide a breakdown of the total shipyard workload and resources into a separate report of the production and support shops and codes over a 36 month period. The following reports are required:

(1) Total Production Workload and Resource Report, Form WF-300.

(2) Total Support Workload and Resource Report, Form WF-300.

(3) Total Shipyard, Workload and Resource Report, Form WF-300, which is a summation of reports (1) and (2) described above.

b. The WARR shall be submitted monthly to NAVSEA (04X2). Except for interchange between shipyards, there is to be no other external distribution.

2. Content of Reports

a. The WARR is separated into three sections: 1) Production, 2) Support, and 3) Total. The Production section contains data relating to the trade skills necessary to execute the actual ship repairs and alterations on the various availabilities.

The Support section identifies the functions necessary to operate the shipyard in support of each project (i.e., Project Management, engineering, quality assurance, etc.).

The Total Section of the WARR is the sum of the Production and Support sections.

PCWLF contains options, which are available to view and print Production, Support, and Total Shipyard sections with or without the reserves included. However, shop manpower requirements are to be based on the shop workload without reserves.

b. To be consistent with the shipyard MIS data, the end of the month is to be considered the last Friday of the month vice the last calendar day except for fiscal year end. The WARR report will provide NAVSEA with the following data for the reporting month and the balance of the 36 months:

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(1) The shipyard's current Production shops (06-99) direct labor workload required to perform all customers' direct workload and the related projected manning by availability.

(2) The shipyard's Support shops and codes direct labor workload required to perform all customers' direct workload and the related projected manning by availability.

(3) The Shipyard's total direct workload which will be the sum of 2.b. (1) and 2.b. (2).

(4) The workload portion of the shipyard's report will include:

(a) Total Production shops and Support shops direct labor shipwork.

(b) Total Production shops and Support shops direct labor non-shipwork apportioned as a minimum to the following categories:

1. Refit and Restoration (R&R)
2. Other Productive Work (OPW)
3. Offyard Borrows (OY BORROWS)
4. Military Support
5. Design Services Allotment (DSA)
6. Design division major product, not related to in-yard ship availabilities

(5) The workforce portion of the shipyard WARR report will, as a minimum, include the following:

- (a) Actual and planned permanent workforce
- (b) Actual and planned oncall workforce
- (c) Actual and planned temporary workforce
- (d) Workforce adjustment (i.e., hires, RIF's)
- (e) Actual and planned total workforce
- (f) Actual and planned total leave
  1. Paid
  2. Non-pay
- (g) Indirect labor
  1. Supervisors
  2. Shop overhead (indirect work charged against the home shop and not specifically identified elsewhere by cost class)

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3. Various overhead (indirect work not specifically identified elsewhere by cost function, including indirect work performed for other shops)

4. Training

5. Apprentice training

6. Nuclear training

(h) Direct labor available force

(i) Overtime

1. Direct

2. Indirect

(j) Excess work

(k) Excess people

Note: Offyard loans and borrows are not to be included in any adjustments to workforce except for future projections. Because of accounting procedures between shipyards, adjustments for the actual return costs of offyard loans and borrows are to be made in the direct labor nonshipwork section, Part II.

### 3. Requirements

a. Shipyards, using the long range workload data provided at the Fleet Scheduling Conference (FSC), and information gained from ShipAlt letters, Work Negotiation Meetings (WNM), etc., will provide the required information under each heading of the subject reports. One copy of the completed WARR file, including the shipyard dry-dock schedule, shall be transmitted to the Commander, Naval Sea Systems Command (SEA 04X2) no later than the 10th day of the month after the actual reporting month. Prior to transmitting the WARR file, the signed cover sheet of the WARR shall be faxed to SEA 04X2. Minimum signature requirement for the signature block on the WARR cover sheet is the Shipyard Commander, Code 100.

b. The following information shall be furnished on the forms in the space labeled "Notes" (or a separate attachment if necessary):

(1) When the work days in a month vary from normal due to planned and unplanned curtailments (i.e., admin leave, holidays, snow days, etc.), the number of workdays are to be shown.

(2) Identification of message traffic proposing date changes labeled "tentative" and annotated with a "T" in column (6) of Part I.

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(3) Explanation of other symbols placed in Column (6) of Part I.

4. Summary of Reports

a. The Total Production WARR and the Total Support WARR both consists of three parts as follows:

(1) Part I is a tabulation of all "shipwork" direct labor workload.

(2) Part II is a summary of the elements which comprise all "non-shipwork" direct labor workload. Nonshipwork will include a separate project labeled "OY BORROWS" to display the actual negative workload in work category 83.

(3) Part III is a summary of the elements which comprise the expenditures and projections of the workforce, leave, indirect workload, overtime, and excess work/people. In addition this part displays a graph plotting direct labor workload versus direct labor workforces.

b. The Total Shipyard WARR provides a summary of the Total Production WARR and Total Support WARR displayed in Parts I, II, and III.

5. Preparation of Reports

a. The Total Production WARR and the Total Support WARR:

(1) Part I - Shipwork Direct Labor Workload and Part II - Non-shipwork Direct Labor Workload:

(a) Columns (1) and (2) - Hull and Project. List the hull number and name of every ship or project of current and future availabilities with direct labor manday estimates exceeding 3000 mandays during the 36 month period covered by the report. Availabilities or projects less than 3000 mandays may be listed at the shipyard's discretion. Availabilities will be grouped in the categories indicated by type of availability. Within the group, availabilities should be listed by starting date. As an option the shipyards may list all availabilities by start date. Each project should be listed on the report for the entire fiscal year in which any actual manning occurred. Aggregate all other unlisted projects or ship availabilities in miscellaneous categories and list in column 1 (i.e., RA/TA, R&R, OPW, etc).

(b) Column (3) - Type. Enter the type of availability for each project. Use the code symbols listed in the "Availability Legend" at the bottom of the form.

(c) Columns (4) and (5) - Start and Comp. For each project, enter the actual or projected start date and the actual or projected completion date. Availability dates should match those shown in the Ship Availability

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Status Reports (official or estimated). No dates are listed for miscellaneous categories.

(d) Column (6) - (Untitled) Note Indicator. Symbols placed in this column must be explained in the "Notes" section located below the legend in Part III of the report. Letter "T" is the standard symbol to indicate "tentative" dates. Annotate with "T" any dates where formal negotiations for changes have been initiated with the customer but have not yet been approved by CNO (or Fleet Commanders as appropriate).

(e) Column (7) Expends. For each project enter the direct labor mandays expended through the current End of Month (EOM) data date. No accumulated mandays are listed for miscellaneous categories.

(f) Column (8) - CRO. The Current Run Out (CRO) is the accumulation of the projected men-per-day per month, beginning with the first forecast month, multiplied by number of workdays in each corresponding month for the duration of the availability.

(g) Column (9) - PEC. Predicted End Cost (PEC), column (9), is calculated from an accumulation of the current run-out (CRO), column (8), added to the expenditures to date, column (7). No PEC is listed for miscellaneous categories.

(h) Column (10) - October Average Mandays Per Day. Column (10) always shows actual average number of mandays per 8 hour day expended for the month of October on each project listed. Overtime is included with the straight time worked. Average mandays per day equates to total mandays (straight time plus overtime) expended in the month divided by the actual number of workdays in the month. Column (10) will always be October of the current fiscal year.

(i) Columns (11) through (45) - Actual and Projected Average Mandays Per Day. In the column for the reporting month, enter the average actual number of mandays per day worked on each ship listed. The remaining columns to the right of the reporting month contain projected mandays per day for each project for the next three (3) fiscal years. The mandays per day entries in these columns are to show the shops projected workload for each project. The CRO, when multiplied by the number of working days in each month, must aggregate to the difference between the PEC, Column (9), and Mandays Expended, Column (7).

Reports for subsequent months of the current Fiscal Year (FY) shall contain the actual expenditures listed under the appropriate monthly column (Columns (10) through (21)). The intent is that as the months progress, the report will include not only the current month's actual expenditures but the past month's actual expenditures as well. To separate months containing actual mandays from months containing projected mandays, a vertical line immediately following the last month containing actual mandays will appear on the WARR.

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(j) Part I - Total Direct Labor Shipwork line:  
Subtotals of the individual Columns (10) through (45).

(k) Part II - Total Direct Labor Workload line:  
Summation of Total Direct Labor Shipwork and non-shipwork of the individual Columns (10) through (45).

(l) Part II - Total Direct FY Mandays: Below the Total Direct Labor Shipwork line and below the Total Direct Labor Workload line, the total accumulated fiscal year mandays are displayed.

(2) Part III - Workforce and Employment Summary

Part III of the shipyard's WARR report will at a minimum include the following:

(a) Graph Block. Plot the monthly data from the Total Direct Labor Workload line of Part II and label this curve as "workload". Plot the monthly data from the "Avail Force" line of Part III and label this curve as "Avail Force".

(b) Line 1 - Perms. Enter in Columns (10) through (45) the actual and projected monthly average number of workers available each month during the 36 month period. Projections should be in accordance with departmental employment plans including attrition.

(c) Line 2 - Oncall. Enter in columns (10) through (45) the actual and projected monthly average number of workers in an oncall status required each month during the 36 month period.

(d) Line 3 - Temp. Enter in Columns (10) through (45) the actual and projected monthly average number of temporary workers required each month during the 36 month period.

(e) Lines 4-7 Workforce Adjustments. These lines may be added as needed to accurately describe the shipyard's total workforce. An increase to the workforce (i.e., hire) shall be displayed as a positive number. A decrease to the workforce (i.e., reduction in force) shall be displayed as a negative number.

(f) Line 8 - Total. Enter in columns (10) through (45) the summation of lines (1) through (7) of Part III.

Below Line (9) in the September columns for each fiscal year (Columns (21), (33) and (45)), display the Fiscal Year Total Plan Workforce in mandays. Fiscal Year Total Plan Workforce is the summation of the corresponding Fiscal Year's monthly actual and projected Total (Line 8) multiplied times the number of working days in each corresponding month.

(g) Line 9 - Leave. Enter in columns (10) through (45) the actual and projected monthly average number of workers per day estimated to be in a paid leave status (i.e., annual, sick) during the 36 month period.

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(h) Line 10. Non-pay. Enter in columns (10) through (45) the actual and projected monthly average number of workers per day estimated to be in a non-pay leave status during the 36 month period.

(i) Line 12. Suprvsrs. Enter in columns (10) through (45) the actual and projected monthly average number of supervisors per day during the 36 month period. Direct supervision charges shall be displayed against the corresponding projects.

(j) Line 13. Var Ovhd. Enter in columns (10) through (45) the actual and projected monthly average number of employees to be charged to various overhead during the 36 month period. Various overhead is defined as all indirect charges not specifically itemized within Part III of the WARR, i.e. supervision, training, excess labor, equipment maintenance, etc.

(k) Line 14. Shop Ovhd. Enter in columns (10) through (45) the actual and projected monthly average number of employees to be charged to shop overhead during the 36 month period. Shop overhead is defined as all indirect charges against the employee's home shop's overhead.

(l) Line 15. Training. Enter in columns (10) through (45) the actual and projected monthly average number of employees to be charged to training during the 36 month period. Training is to include all training other than Apprentice Training and Nuclear Training.

(m) Line 16. Appr Trng. Enter in columns (10) through (45) the actual and projected monthly average number of employees to be charged to Apprentice Training during the 36 month period.

(n) Line 17. Nuc Training. Enter in columns (10) through (45) the actual and projected monthly average number of employees to be charged to Nuclear Training during the 36 month period.

(o) Line 18. Indirect Sub. Enter in columns (10) through (45) the summation of lines (12) through (17). Note: If additional categories of indirect are listed on the shipyard's WARR, this line will be the sum total of all the individual listings.

(p) Line 19. Avail Force. Enter in columns (10) through (45) the actual and projected monthly average number of employees available to perform direct work during the 36 month period. This line is to reflect the effect of leave and indirect charges on the workforce. Below Line (19) in the September columns for each fiscal year (Columns (21), (33) and (45)), display the Fiscal Year Direct Labor Workforce in mandays. Fiscal Year Direct Labor Workforce is the summation of the corresponding Fiscal Year's monthly actual and projected Direct Workforce (Line 19) multiplied times the number of working days in each corresponding month.

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(q) Line 20. OT-Direct. Enter the monthly average number of direct overtime mandays per day expended for the month.

(r) Line 21. OT-Indirect. Enter the monthly average number of indirect overtime mandays per day expended for the month.

(s) Line 22. Workload. Entries for Line 22. Columns (10) through (45) will equal the corresponding entries for Line 8 of Part II.

(t) Line 23. Excess Work. Excess Work is calculated by subtracting the sum of Line 19, Avail Force, and Line 20, OT-Direct, for columns (10) through (45), from Line 22, Workload. Display data only if a positive number.

(u) Line 24. Excess People. Excess People is calculated by summing Line 19, Avail Force, and Line 20, OT-Direct, for columns (10) through (45) and subtracting Line 22, Workload. Display data only if a positive number.

b. Total Shipyard Direct Labor Workload and Resource Report.

(1) Production Department and Support Department will be summed together to develop the Total Shipyard WARR.

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## GLOSSARY

Availability: A package of work assigned to the Shipyard. This includes items such as an overhaul, a Selected Restricted Availability (SRA), Inactivation, off-station work, and miscellaneous work.

Available Force: Number of people available to do direct work.

Bare Bones Estimate (BBE): The minimum number of mandays estimated for accomplishment of authorized work. The Bare Bones Estimate is determined by a Project Planning Team review of Job Summaries. The BBE does NOT include contingencies or Management Reserves. Addition of the Management Reserve to the Bare Bones Estimate yields the ICP.

Budgeted Quantity of Work Scheduled (BQWS): The baseline schedule. At any period of time the BQWS is the goal of work to be performed. Historic BQWS points represent the goals at that time. Therefore comparing the amount of completed work (BQWP) with the schedule (BQWS) determines a schedule variance.

Customer Order Acceptance Record (COAR): An internal control document issued by a Naval Shipyard Comptroller authorizing Funds Administrators to establish job orders and to incur costs in accomplishing work necessary to meet the purpose stated in the customer's order. Each COAR is uniquely identified with a five digit number which identifies the category of work involved (i.e., repair, alteration, nuclear, nonnuclear, etc.) and the project to which it is applicable.

Current Run Out (CRO): The cumulative total of projected mandays distributed over the remaining duration of an availability.

Direct Cost: Those elements of cost, which can be identified to a specific COAR on a consistent and logical basis. Examples of direct costs are direct labor and direct material.

Direct Labor: Labor charges identifiable to and charged directly to a specific COAR.

Expenditure: For WARR, the term expenditure relates to the process of charging labor manhours to a COAR. Labor expenditures occur and are tracked from timekeeping transactions.

Fixed Price: A specific dollar value contract with the customer for the performance of a specific amount of work.

Fleet Scheduling Conference (FSC): An annual event at which key players in the maintenance and modernization programs meet to present and discuss budget, workload and maintenance items for future availabilities. Representatives from CNO, ASN, Fleets, Tycoms, NAVSEA, NAVCOMPT, Naval Shipyards, and Supervisors of Shipbuilding participate in this meeting which becomes the baseline for budget preparations.

Forecast Estimate (FCSTEST): A workload forecast shown on the WARR which is based of the Bare Bones Estimates for the defined work.

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package, the schedule execution strategy, and/or an approved manning plan.

Indirect Cost: See Overhead Cost.

Internal Control Price (ICP): Developed as part of the job summary review process, the ICP is the best estimate of the amount of work required to complete a specific availability based on authorized work only. The ICP is determined by the Project after taking the BBE and adding the Management Reserve. The sum of these two amounts defines the ICP. Approval of the ICP is made through a series of meetings within the Shipyard with final approval by the Shipyard Commander and committed to by the Project.

Job Summary: A document produced by the Nuclear Engineering and Planning Department (NEPD) and/or Engineering and Planning Department (EPD) and normally developed at the Ship's Work Line Item (SWLIN) level for a programmed availability. The Job Summary includes detailed task work sequences, labor estimates and material estimates and contains information such as Component Unit and Phase, trade skill, crew size, duration, job order, KEYOP, SWLIN, etc.

Management Reserve: A reserve of mandays and non-labor resource dollars which is added to the BBE to arrive at the ICP. It is derived at the SWLIN level after a risk assessment by the Project. The Management Reserve is intended to cover cost overruns on authorized work caused by minor delays or execution problems.

Offyard Borrow: Employee temporarily assigned to a shipyard by borrowing from another shipyard.

Offyard Loan: Employee temporarily assigned to another shipyard and used to deliver direct work.

Overhead Cost: Also known as "indirect cost", overhead cost is an item of cost (or the aggregate thereof) to a shipyard which is not readily identifiable to the cost of a specific project.

Predicted End Cost (PEC): The PEC is the shipyard's best estimate or projection of the total mandays required to execute the availability. This estimate includes all known work plus project risk reserves and new work reserves. Mathematically in the WARR, the PEC column equals the expends to date plus the Current Run Out (CRO).

Production Shops: Shops in which the personnel are trade oriented and perform direct production work in lieu of direct support work. Often referred to as the "wrench turners" or the "06 to 99 shops", the production shops do not include "all" numbered shops in the range of numbers from 06 to 99, i.e., shops 22, 24, 30, 75, etc., which are collected in the Support Shops.

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Project: For the purpose of the WARR, a project is a block of work by responsibility. In the case of overhauls and SRA's, the project is the ship. In the case of off-station work, the project is the specified job or group of jobs. Not all projects will be reflected as a separate line item on the WARR. Some smaller projects will be grouped into categories such as RA/TA, OPW, etc. Groupings will be based upon agreement between Code 1200 and the Operations Planning Manager, dependent on the financial constraints of the Shipyard Management Information System.

Support Shops: Shops in which the personnel work in support of the production shops efforts in lieu of actual "wrench turning work". These support shops are generally management, technical, or administrative in nature (e.g., shops 22, 24, 30, 75).

Work Negotiation Meeting: The meeting between the customer, ship, and repair shipyard that reviews and negotiates work. The results of this meeting is the Authorized Work Package. This meeting was previously known as the Work Definition Conference (WDC) for surface ships and the Pre-Arrival Conference (PAC) for submarines.

Work Package: The collection of customer work requirements (including proposed, authorized, and deferred) for an availability. The work package may be provided to the Shipyard by the customer in the form of a Ship Alteration and Repair Package (SARP), an Overhaul Work Package (OWP), a Request for Proposal, a set of individual Work Request, an alteration planning letter, or may be developed and proposed by the Shipyard for subsequent approval and authorization by the customer.

Workload and Resource Report (WARR): A strategic tool that forecasts and compares the workload to the available resources.