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NAVAL WAR COLLEGE
Newport, R.I.

FLEET INTRODUCTION LOGISTICS
AND MAJOR NEW WEAPON SYSTEMS -
ARE THERE OPERATIONAL LEVEL CONCERNS?

by

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**Abstract of
FLEET INTRODUCTION LOGISTICS AND
MAJOR NEW WEAPON SYSTEMS**

The Operational Commander must be cognizant of major new weapon systems in his force, the degree to which they have been introduced to the Fleet and the level of success that Fleet Introduction effort has achieved. Fleet Introduction Logistics is an occasionally unaddressed and often unappreciated aspect of fielding a major, new weapon system, yet it could serve as the determinate element of the tactical and operational success in its employment. This paper examines Fleet Introduction Logistics, the documented requirements for it, and explores the degree to which those requirements are not necessarily translated into reality. The AEGIS Weapon System coupled with the CG47 shipbuilding program is viewed as an example of a successful Fleet Introduction Logistics Program. The conclusion illustrates that a Weapons Program 'passing all the tests' doesn't necessarily equate to a weapon system that can be readily used by the Operational Commander.



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PREFACE

The main thrust of this paper is arguably aimed at an uncommon logistics issue that should be of concern to the Operational Commander. My main purpose, however, is to raise a Fleet Support issue that remains to a large degree, unresolved -- a hit or miss proposition. My motivation for writing the paper is based upon my experiences as the commissioning Supply Officer of an early CG47 Class Cruiser and from three years as a logistics officer in the Fleet Introduction and Lifetime Support Division of the AEGIS Program Office. I utilized existing instructions, directives, guidance papers and personal knowledge in assembling the paper. To reiterate the disclaimer, the views expressed herein are mine and not those of the Naval War College, the AEGIS Program Office or the Department of the Navy.

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**FLEET INTRODUCTION LOGISTICS AND NEW MAJOR
WEAPON SYSTEMS - ARE THERE OPERATIONAL LEVEL CONCERNS?**

CHAPTER I

INTRODUCTION

Thesis. The logistic support of major, new weapons systems remains a hit or miss proposition at the point in time those systems achieve their Initial Operations Capability (IOC) date. A major weapon system is one that has operational level capabilities, i.e. AEGIS Weapon System, therefore the Operational Commander must have insight into what major, new weapons systems are in his force, what they are advertised to do and to what degree he can depend upon them.

Discussion. A major, new weapon system should be of particular concern to the Operational Commander because it is generally an unknown entity, much more so than a major system that has years of Fleet history -- a known entity. He will need to know of any specialized logistic pipelines to support the new system plus be aware of the anticipated operational availability (Ao) of the system, which is largely driven by the logistics pipeline in response to system reliability.

The degree of complexity of the new systems we are producing, the rapidity of change of the technology upon which the systems are based and the administrative methodology of

how we infuse logistic support for a given system into our support structures all contribute to this malady of non-support.

New weapon systems and ships achieving their IOC in the late 1970's and all through the 1980's, met with varying degrees of success when called upon to perform in the Fleet. Some of those less than fully successful experiences were attributable to poor Fleet Introduction Logistic support, for example:

a. The LHD-1 manning plan provided the wrong mix of certain ratings when she was delivered to the Navy and her maintenance documentation was incomplete. She had difficulty feeding her crew, did not have the requisite manpower to accomplish existing scheduled maintenance (day to day) and an incomplete maintenance documentation package threatened her ability to sustain operations. ¹

b. The MK 15 Close In Weapon System (CIWS) experienced significant and occasionally unexpected downtime when material support (spare parts) transitioned from an interim support contractor to full Navy support. The right mix of the right items weren't available as the result of a poor material support transition plan. Operational availability figures went through the floor.

c. The FFG 7 Class was unable to operate as required with the reduced manning philosophy that had been planned for. The manning was ultimately increased by almost twenty five

percent² (from 164 to 206), in part due to modifications/ improvements to the ships military characteristics, but principally to improve effectiveness and quality of life for the crew.³

The acquisition process is subject to the requirements of the Defense Acquisition Regulations (DAR). The DAR provides the vehicle through which logistic policies are manifested by logistics support. I have limited this paper to the those logistic policies and will not address the DAR. Logistic guidance is obtained from policy statements, implementing directives and instructions issued by the various levels of Command (DOD, SECNAV, NAVSEA, etc.) and the review processes and 'wickets' those levels of Command impose. The policy statements at all levels require that logistics be bought and developed. All of this 'stuff', when pulled together, is called Integrated Logistics Support (ILS). Integrated Logistic Support consists of the following elements:⁴

- * ILS Management
- * Maintenance Planning
- * Manpower and Personnel
- * Training and Training Support
- * Computer Resources
- * Facilities
- * Technical Data
- * Support Equipment
- * Design Interfaces
- * Packaging, Handling, Storage and Transportation
- * Supply Support

A review of the accumulated policy and guidance statements shows that if a system is to be properly fielded, all ILS

elements are required. However, those policy and guidance statements don't specifically require that the logistic support products be integrated into the existing support structures (supply system, institutionalized training pipeline, etc.), just that they exist in a useable format for the Fleet when the system achieves its IOC.

Thus the existing guidance and supporting bureaucracy provides for oversight of the process, but judging from the number of new ship classes and major weapon systems fielded that have been unable to achieve their requisite design reference missions and/or their availability targets (read: less than fully successful), suggests that stronger measures are required to ensure the funding and acquisition of the logistic support elements, that the funding is used for ILS and more specifically, for the Fleet Introduction Logistics program. Without such emphasis, the task of making a new system work as touted falls, ultimately, to the Operational Commander. It is interesting to note that the draft Secretary of the Navy instruction ⁵ being circulated may provide the requisite emphasis in the future.

What is Fleet Introduction Logistics? Fleet Introduction Logistics is the subset of acquisition logistics ILS that is directly related to achieving the systems IOC. The next chapter will show that existing requirements mandate all logistic support elements be in place and supported by the

Navy at IOC however the degree of sophistication and the rapid rate of engineering development of the technologies make that requirement unachievable and unenforceable -- as well as undesirable. I say undesirable because you have to start from somewhere, and the 'baseline' of the equipment or system utilized to provide the logistic support would bear no resemblance to the system actually fielded because of the rate of change in technology and the length of the institutional pipeline to provide systemic support. A system continue to receive interim contractor supply support and not receive support from the Supply System until it's design has stabilized. ⁶

The two main categories of Fleet Introduction Logistic Support germane to this paper are Supply Support (characterized usually by contractor furnished interim support), and Training (characterized usually by non-standard training pipelines furnished by a contractor).

CHAPTER II

THE PROGRAM AND GUIDANCE

The Department of Defense (DOD) provides overall policy and procedures guidance for the Services with three documents -- Department of Defense Directive 5000.1, Department of Defense Instruction 5000.2 and Department of Defense 5000.2-M. These apply to the requirements, design, development, acquisition and life-cycle management of ILS for systems and hardware and are applicable across DOD. The Navy currently has two high level instructions that implement those policy's and procedures, SECNAVINST 5000.39A¹ and OPNAVINST 5000.49A². These two documents are somewhat redundant, and are currently being combined into one instruction, SECNAVINST 5000.XX.³ This paper will address the requirements set forth in the draft SECNAVINST 5000.XX since it combines and amplifies the documents it is intended to supersede. The draft is considered excellent and will experience little change prior to being signed.

Secretary of the Navy Guidance. This new, comprehensive document addresses ILS Effectiveness, ILS Technical Management, ILS Business Management, the quality of ILS Personnel and ILS Test, Evaluation and Delivery. It mandates two very important logistics aspects under the tasking of ILS

Technical Management and one under the tasking of ILS Test, Evaluation and Delivery that had been previously lacking:

1. ILS Technical Management now provides that, ⁴

a) a specified minimum number of 'ILS products...' are... 'required for operating and maintaining systems and equipments to their support performance capability thresholds. If these ILS products are not available at planned IOC then the fleet introduction profile of the system shall be modified to ensure that no system is deployed that is not supported to meet operational requirements. Exceptions to this guidance must be approved on an individual basis by the CNO.' and,

b) interim supply support will be provided on an 'exception' basis and use of 'interim contractor support'... will... 'require approval from CNO (OP 04).' It will be provided in 'such a way that nonstandard support procedures and inconvenience to the Fleet are minimized. A transition plan to the permanent support program described in the ILSP' (Integrated Logistic Support Plan) 'must be drawn up by the ILS Manager and agreed to by all involved activities, prior to IOC.'

and,

2. ILS Test, Evaluation, and Delivery ⁵ now provides that,

a) the 'CNO shall certify that support is adequate, based on the results of the independent audit, or shall withhold certification until deficiencies are corrected. Upon certification, a ULSS' (Users Logistic Support Summary) 'shall be issued'.

Naval Sea Systems Command Guidance. The Naval Sea Systems Command (NAVSEA) designs and builds ship systems and equipment (including the logistic support) and provides technical assistance/direction for those things to the operating forces. Specifically, NAVSEA oversees the hull, mechanical and electrical systems and equipment (pumps, engines, motors, circuit breakers, etc), the electronic

systems and equipment (electronic counter measures, sonar, radar, etc) and ordnance (missiles, guns, ammunition). The logistic policy guidance directing specific planning requirements and responsibilities for each life cycle phase of ships, systems and equipment is provided by NAVSEAINST 5000.39A. ⁶

This policy and guidance is carried out by a matrix organization consisting of numerous players, some of which are not connected by line of authority or financially:

- * The Chief Engineer for Logistics (CHENG-L) "interprets and promulgates all ILS policy", ⁷ including requirements for supply support and training.

- * Program Managers (responsible for new construction of a ship or system) are "responsible for total logistic development attendant to their assigned programs." ⁸

- * A Task Group Manager for Logistics, working for CHENG-L, is assigned to each new ship class or major weapon system to ensure "logistics are adequately procured." ⁹

- * An ILS Manager is assigned "for each ship, system and equipment acquisition program." ¹⁰ This person is the accountable individual for logistics performance and for transfer of logistic products to the Fleet or other receiving Command.

This structure is functional at best for administrative purposes but not necessarily effective at achieving results.

The weak links are with the CHENG-L organization setting policy and having oversight responsibility within NAVSEA but having no direct authority nor financial relationship to the Program Logistics Manager. The Task Group Manager, a member of the CHENG-L staff, is so heavily burdened with staff related functions (correspondence, meetings, working groups) that it is safe to say they have no real contact with the program they are responsible for taking care of nor do they have significant insight on the numerous problems within the program. ¹¹ The relationship between the Program ILS Manager and the Task Group Manager could be summed by this scenario: The ILS Manager will give the Task Group Manager a call if he has a problem and the Task Group Manager will return the call to help if he has time. The Program ILS Manager rarely bothers to call. The Program Office, however, remains accountable for the logistics to support the new system regardless of organizational mismatches and snafu's.

As indicated on the previous page, CHENG-L is responsible for developing requirements for the ILS elements pursuant to the DOD and SECNAV policies. The area of Supply Support has many components but the component that provides the initial influx of data for Supply Support is called provisioning. CHENG-L produces, for use by the Program Offices, a series of contract specifications that describe the requirements, Data Item Descriptions (DIDs) used to collect data contractually and issues either a Provisioning Requirements Statement (PRS)

or a Provisioning Requirements Technical Specification (PRTS) for attachment to the contracts -- in theory standardizing the collection of supply/parts data and the format for its delivery to the Technical Support Activity (TSA) that processes the data so it can be utilized by the Navy Supply System to buy material to support the equipments and systems. Most of the Program Offices use these tools. The CHENG-L may also represent the Program Offices in the Training world, interfacing with Chief of Naval Education and Training (CNET) with regard to the data requirements for training programs. Most Program Offices choose to interface directly with the CNET in this regard for clarity purposes.

Naval Supply Systems Command. The Naval Supply Systems Command (NAVSUP) is responsible for the Navy Supply System for equipment and systems support, providing policy and guidance to her supporting chain of command (Naval Supply Centers, Integrated Control Points) for implementation. The primary NAVSUP agent in the supply support world for ships and ship systems is the Naval Ships Parts Control Center (SPCC). The SPCC receives data from the NAVSEA contractors for new systems, processes it and initiates material buys for new items it doesn't have support for or increases the requirements for material it already supports. The SPCC is the Command responsible for procuring Navy Supply System stock in support of the Navy's Weapon Systems.

Technical Support Activities. The Technical Support Activities (TSAs) process the provisioning data provided by contractors or government agencies. The TSA may or may not be SPCC. Recently, CHENG-L designated Navy Ship Systems Engineering Station (NAVSSSES) in Philadelphia as the TSA of choice and it has assumed responsibilities for all new NAVSEA contracts, pending reimbursable funding from the Program Offices.

CHAPTER III

THE PROBLEM

There are several! The Navy Supply System and the Navy Technical Training organization are not inclined to accept new responsibilities. That is not intended as an indictment, it's just inertia. The Navy Supply System and Chief of Navy Technical Training (CNTT) do a great job taking care of today's business -- providing support for those things that exist today -- but they are both very large organizations with tough, structured jobs. Infusing new support elements to the Supply and Training systems is almost a labor of love.

It takes three years, at a minimum, to get a new weapon system or a piece of equipment supported with parts through the existing Navy Supply System¹ (see Table 1 next page). The sample provisioning cycle shows that it takes about 10 months to develop Provisioning Technical Documentation (PTD). That in fact fluctuates depending on the type of equipment, the sophistication of the contractor (has he done it before?) and the sophistication of any subvendors the contractor may have. Technical coding for electronic gear (radar, sonar, etc.) takes at least 10 months, pumps and motors take about four months,² as indicated in the table. It takes at least three years (36 months) from the time a spares buy is

initiated until the spares have been received, distributed to issue points and are available for use.

TABLE I
Sample Provisioning Cycle

Milestone	Elapsed Time in Months	Actual Time in Months
Develop Provisioning Cycle	0	Start
Contract Award	0	4
Long Lead Items List Prepared	4	4
Screen Defense Logistics Agency for duplicate parts	8	4
Provisioning to TSA	10	2
Technical Coding by TSA	14	4
Allowance Computation	19	5
Initiate Buy for System Stock	19	
Administrative Leadtime for Buy	23	5
Spares Production Leadtime	47	24
Spares Positioning	50	3

Table I illustrates why full Navy Supply System support for an unstable system is not desirable -- it isn't worth the investment and effort to lay in stocks of spare parts that may not be utilized three years from now when they are available. It also illustrates why it is necessary to streamline the procurement system.

Training and Manpower have a similar horror story. The Navy Educational System does not possess the expertise to develop training courses and systems for major, new systems. They are, after all, new. The Program ILS Manager buys those things with his ILS program utilizing MIL-STD 1379C³. The

Manpower and Training programs go pretty much hand in hand. First you have to know what kind of manpower it will take to run the system, the level of skill necessary (do you need an E1 or and E8) to do the maintenance. Secondly, you have to determine what kind of training is required to do those things. The schedules for Training⁴ and Manpower⁵ are both tied to IOC, and should be deliverable two years prior to that time (see Tables 2 and 3).

TABLE II

NAVY TRAINING PLAN (NTP) DEVELOPMENT SCHEDULE

Milestone	Time to Execute	Elapse Time
Develop Draft NTP	26 weeks	26 weeks
Deputy CNO Review	2 weeks	28 weeks
Distribute Draft for Review to TYCOMS and Others	8 weeks	36 weeks
Review Comments and Agenda Due		40 weeks
Convene Navy Training Plan Conference	3 days	41 weeks
Prepare Revised NTP	8 weeks	49 weeks
DCNO/Sponsor Review	4 weeks	53 weeks
DCNO Approves Plan	4 weeks	57 weeks
Promulgate NTP		60 weeks
Update NTP		Annually
Deliver Training Program to CNTT		IOC

The promulgated NTP should be on the street two years prior to the systems IOC and must be updated at least yearly to accommodate technical change to the system. It again becomes clear why a major, new weapon system that isn't yet stable in design may best be fielded while under a contractors training plan even past the IOC.

TABLE III
PRELIMINARY SHIP MANPOWER DOCUMENT (PSMD)
DEVELOPMENT SCHEDULE

Milestone	Time Frame
Draft PSMD to OP-01	One year prior to Navy Training Plan Conference
Review by Program Manager, Fleet, DCNO, Program Sponsor	No time constraint
Conduct Navy Training Plan Conference	See Table 2
Prepare proposed PSMD	8 weeks after NTPC
DCNO Review	4 weeks
DCNO Approve	4 weeks
Promulgate PSMD	Two years prior to IOC
Update	Annually

The manpower trail is linked directly to the training pipeline and vice versa. Although this schedule can not be kept from the Navy Manpower system because of the detailing process, it is best to keep its maintenance under the Program Office's control until such time as the design for the system stabilizes.

Navy Supply Support. The preceding discussion illustrates fairly well what the problem is. Technical stability is the prerequisite for good systemic support. That obviously isn't going to happen with a major, new system that is presumably on the cutting edge of technology. Putting it another way, there are not any surprises or real unknowns when talking about spare parts for the MK45, Mod 10, 5"/54 Gun. Everything a logistician would need (data) exists -- fleet demand exists, an in-service engineering activity exists with

expertise on the technical problems, a logistic support engineering activity exists, training classes are documented and held on a routine basis with 'X' throughput per year, maintenance requirements are known, etc. When you start to talk about the spares for the AN/SPY-1D Radar, vacant stares are generally received unless the audience is a very exclusive group of Program Office personnel and employees of the Prime Contractor. The knowledge, experience and capability of that exclusive audience is what must be transferred to the existing support structure to achieve Full Navy Support of an item.

Navy Training. Training is always a sore spot and change to existing training programs or curricula are known to take time -- and lots of it. The problem is traceable to funding lines and manpower shortfalls impacting the ability to manage the workload of change. As with Supply Support, technical stability is a prerequisite for a good training program.

Interim Contractor Supply Support. The supply support problem of major, new weapon systems is solved with interim contractor supply support (ICSS). The draft SECNAVINST 5000.XX⁶ and its predecessors allows for interim support as an exception to the rule and stipulates that it must be 'transparent' to the Fleet, i.e. the Fleet (individual users) must not be burdened with layers of different interim support requirements that differ from the routine processing channel.

The NAVSEA uses NAVSEAINST 4105.2⁷ and NAVSUP uses SPCCINST 4105.4⁸ -- both of which highlight that ICSS must be transparent to the user but differ on how to get there. The NAVSUP has been trying since March of 1988 to coordinate a joint NAVSEA/NAVSUP⁹ instruction to serve as a single reference for the two hardware systems commands but that effort has been unsuccessful so far.

CHAPTER IV

AEGIS CASE STUDY

The AEGIS Weapon System and Shipbuilding Program combined to place a revolutionary, integrated surface ship weapon system on a new ship class. Not only was the weapon system revolutionary, but the methodology of the Project was too. Led by a future Admiral, Wayne E. Meyer, the AEGIS Program pioneered many concepts being used or at least advocated today, in particular Interim Contractor Supply Support and non-standard training programs.

Interim Supply Support. In 1979, as the AEGIS Project was finalizing plans for the introduction of the MK7 MOD 3 AEGIS Weapon System, centered around the AN/SPY-1A radar onboard the new CG47 TICONDEROGA Class Cruiser in 1982, it was realized that the weapon system and the radar were not only revolutionary but highly evolutionary and that system design would not be stable for years. The CNO approved interim support for the non-standard components of the system.

Utilizing RCA (now GE) in Moorestown, New Jersey, the prime contractor, as an interim support contractor, the AEGIS Program established a centralized depot through which all requisitions from the Fleet and the Engineering Development sites would be processed. A tentative interim support plan lasting eight years, measured from the time CG47 first put to

sea, was laid out and approved by NAVSEA, NAVSUP, SPCC and CNO.

An Operational Logistics Support Guide¹⁰ was produced by the Navy Ship Weapon Systems Engineering Station (NAVSSSES) breaking each equipment within the system down into its components, listing every interim supported part and points of contact for problems. Sample message traffic for requisitioning, utilizing the NAVSUP non-standard requisitioning procedure was illustrated. All requisitions were to be sent via SPCC for demand recording, SPCC would then pass the requirements via special computer line to the AEGIS Depot in Moorestown to be filled. The AEGIS Depot provided engineering expertise to help clarify requisitions that didn't make sense and utilized the data to improve reliability of the piece parts. The Depot provided on-call supply support 24 hours a day, seven days a week. It wasn't uncommon for material to be shipped out Federal Express, Overnight Mail or even via special Lear jet, as in the case for CG47's first deployment to the Mediterranean and Lebanon in 1983.

Training Support. The AEGIS Program Office decided early on that they would not transition AEGIS training to CNTT because of the equipment costs and the continuing development of the system. A temporary training location was established in Moorestown at the Combat Systems Engineering Development Site (CSEDS). Due to the lack of training equipment readily available, the CSEDS hardware was utilized 24 hours a day for

both development and training of ships crews. Plans were made and funding obtained to construct an AEGIS Schoolhouse at Dahlgren, Virginia through which future crews would be trained and replacement crews could be brought up to speed.

Training was conducted at CSEDS until 1989 and is now held in Dahlgren where training suites of the four Engineering Development Models AEGIS has fielded are resident for use by ships crews for recertification, fleet work up ashore or replacement crew training.

The CG47 returned from her first deployment and a flood of requests for Staff training on how to use and to learn its capabilities came in from both Atlantic and Pacific Commands. The Program Office was able to schedule staff training and familiarization into the 24 hour schedule maintained at CSEDS, wedged between crew training and engineering development requirements.

CHAPTER V

CONCLUSIONS

The draft Secretary of the Navy instruction 5000.XX will drive required changes down through the organization to provide a high level of attention to acquisition logistics and Fleet Introduction Logistics in particular. Oversight will remain a problem as the defense budget continues to erode but a philosophy of 'if it's worth doing, it's worth doing right' must apply. As long as the overseer is either the dispenser of dollars (OPNAV sponsor) or is closely aligned to that sponsor and can stop the Program cold in its tracks for logistic shortfalls, ILS will get funded, be developed and implemented. I predict, however, that when the dollars start to fall off the money tree and get scarce, that the Program Sponsor will arrange for a waiver of logistics support if it comes down to a matter of fielding the system or not. To quote a NAVSEA Logistics Director, 'it is unfortunate, but logistics never built a ship nor shot down an airplane so it is hard to get attention. But wait until the damn thing doesn't work...'¹

We have seen that the Navy Supply System and the Training establishment are not easily geared to assume support of major, new systems -- particularly those whose design isn't

stable due to developing technologies. Interim Support and Contractor training support properly fill those needs.

The Operational Commander should be aware of any major, new weapon systems within his force, with an idea of what the system can do for his force, its operation availability and reliability as well as its support posture -- are there special depots from which non-Navy material (contractor supported/provided) will have to get to his force? What is the adequacy of the training for the new system? If he needs to qualify additional staff in its tactical utilization, is that available?

As budgets continue to fall, additional emphasis upon training and supporting what we have gain importance. Streamlined procurement methods to bring support onto the shelf in a more timely fashion and additional resources for training are critical towards these ends.

GLOSSARY

AO - Operational Availability of an equipment or a system. A measure of effectiveness.

CNET - Chief, Navy Education and Training, Pensacola FL

CNO - Chief of Naval Operations

CNTT - Chief, Navy Technical Training, Memphis TN

DAR - Defense Acquisition Regulations

DID - Data Item Description. A series of standardized contractual statements for use in procurements upon which to base requests for data. Used by the government to get data, used by the contractor to base his bid.

DSMC - Defense Services Management College. As used here, the Program Managers Course (PMC) is the specific object.

ICSS - Interim Contractor Supply Support

ILS - Integrated Logistic Support. The fusing of all aspects of logistic support for systems and equipments, under the philosophy that if one logistic elements changes, others may be affected.

ILSP - Integrated Logistics Support Plan. A structured and formatted plan providing management review of the ILS elements, schedules and milestones.

IOC - Initial Operating Capability. When a new system or equipment is first fielded for Fleet use.

NAVSEA - Naval Sea Systems Command

NAVSUP - Naval Supply Systems Command

NTP - Navy Training Plan

NTPC - Navy Training Plan Conference. The key event about which a system or equipments training plan is built and around which the PSMD is geared.

OLSG - Operational Logistics Support Guide.

PRS - Provisioning Requirements Statement issued by CHENG-L for use in organizing data collection via contractually vehicles. Issued as a guide, not serially controlled nor formally published.

PRTS - Provisioning Requirements Technical Specifications. Intended to replace the PRS. Still not issued as a formal publication.

PSMD - Preliminary Ship Manpower Document. A document utilized to guide the detailing process for a new system or equipment or ship.

PTD - Provisioning Technical Documentation.

SMD - Ships Manning Document. The follow on document to the PSMD, used after a ship or equipment is commissioned or fielded.

SPCC - Ships Parts Control Center. Navy Integrated Control Point in support of shipboard systems and equipment.

TSA - Technical Support Activity. Processes provisioning data to be utilized by the SPCC to determine repair part allowances and upon which to base procurements for system stock.

NOTES

CHAPTER I

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