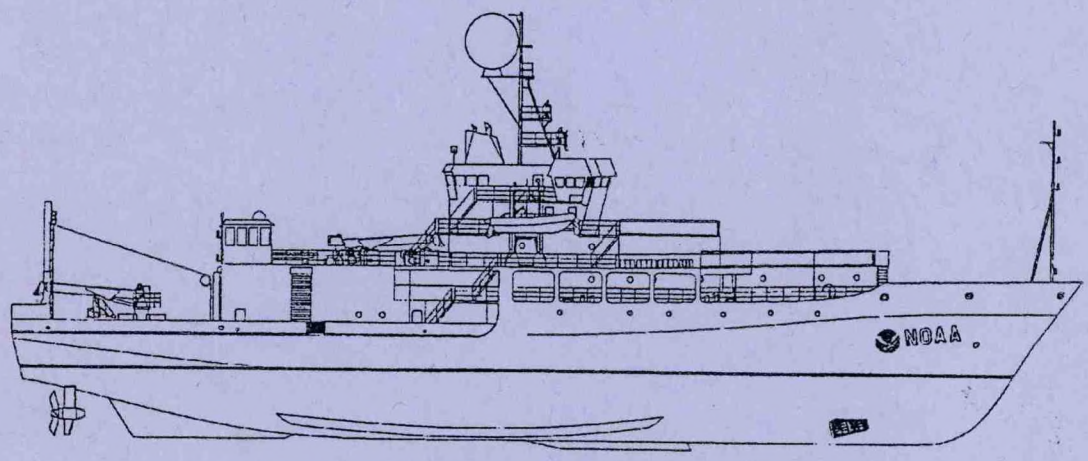
FLEET INTRODUCTION PLAN



NOAA SHIP RONALD H. BROWN

August 9, 1996

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List of Acronyms

AP	Acquisition Plan
ARP	Antenna Radiation Patterns
AT	Acceptance Trials - Test and Trials witnessed by INSURV to verify that the vessel is acceptable to be transferred from the builder to the Navy. Trials conducted approximately 90 days before delivery
BDT	Builder's Dock Trials - Test and trials that the Builder conducts at the pier to verify the vessel is ready to get underway. Trials conducted approximately 150 days before delivery.
BST	Builder's Sea Trials - Follow BDT, ship is tested at sea to determine
CME	Chief Marine Engineer
DPS	Dynamic Positioning System
ECP	Engineering Change Proposal
EMC	Electromagnetic Compatibility Survey
EMI	Electromagnetic Interference
FCT	Final Contract Trials - Tests and Trials witnessed by INSURV after the vessel has been operating for several months
FOA	Fitting Out Availability - A period of availability after PDA and before vessel departs for its first operational cruise, 60 to 90 days period.
FRAM	NOAA's Fleet Replacement and Modernization Project Office
HMI	Halter Marine, Incorporated - Shipbuilder
INSURV	Navy Board of Inspection and Survey
IOL	Initial Outfitting List
ISO	International Standards Organization
MOC	Marine Operation Center
MSC	Military Sealift Command
NAVSEA	Naval Sea Systems Command
NC	Office of NOAA Corps Operations
NOAA	National Oceanic and Atmospheric Administration
NSWC	Naval Surface Warfare Center
PAT&E	Production Acceptance Test and Evaluation
PDA	Post-Delivery Availability - A 30-calender day period immediately after delivery at Halter Marine during which the ship is prepared for its first voyage and minor modifications can be made with Halter Marine support.
PDT&T	Post-Delivery Tests and Trials
PMS 325	Naval Sea Systems Command that has project management responsibilities.

PSA	Post-Delivery Shipyard Availability - A shipyard period approximately eight to nine months after delivery to correct warranty items and allow for owner modifications after the vessel has been operated for several months.
RADHAZ	Radiation Hazard
RFE	Request For Equivalency
RFP	Request For Proposal
SAO	NOAA's System Acquisition Office
SCS	Scientific Computer System
SIO	Scripps Institute Of Oceanography
SNAME	Society Of Naval Architects and Marine Engineers
SOR	Statement Of Requirements
SUPSHIP	Supervisor of Shipbuilding, Conversion and Repairs
T-AGS	U.S. Navy Ship Classification
TBP	Technical Bid Package
TLR	Top Level Requirements
WHOI	Woods Hole Oceanographic Institution

1.0 Introduction

This Fleet Introduction Plan provides an overview of the activities for bringing RONALD H. BROWN into active service in the NOAA fleet. It provides a general background of the contract and Statement of Requirements (SOR) against which the ship was designed and built. It details the interaction between NOAA and the U.S. Navy and within NOAA to bring this ship into active NOAA service.

A Phased Acceptance of the vessel is planned. Halter Marine, Incorporated (HMI) will conduct tests and trials in the Pre-delivery phase of the vessel to demonstrate that the vessel meets the contract requirements and is ready for acceptance by the Government. In the Post-delivery phase, NOAA will operate the vessel, additional tests and trials will be done to verify the conclusions of HMI and to discover any defects or problems in the ship. Part of the Phased Acceptance will be formal presentations of the vessel at Builder's Trials, Acceptance Trials, and Final Contract Trials (FCT). Additional support may be provided by HMI during the Post-delivery in the form of manufacturers' representatives or HMI engineers being aboard the vessel to assist with tests and trials.

A schedule of Pre and Post-Delivery events are contained in Appendix C of this plan to provide a general knowledge of events to be accomplished in the introduction of the RONALD H. BROWN into NOAA service. The schedule starts at the initial construction efforts at the shipyard and progresses through the construction, crew arrival, test and trials, delivery, Post-Delivery Availability (PDA) at Halter's facility in Mississippi, transit to BROWN's Charleston, South Carolina homeport, Fitting Out Availability (FOA) at homeport or designated NOAA site, mission voyages, Final Contract Trials and contract closeout. The level of detail is expanded for the manning, delivery, PDA and FOA to bring those involved with the project to a common level of understanding. The schedule is a guide and should be considered dynamic; events may shift in time and additional details may need to be added, but it serves as a common starting point.

Background on tests and trials policies, procedures, and an overview of tests and trials requirements and agency responsibilities for RONALD H. BROWN are provided. Contract tests and trials are designated in the contract and specifications invoked on the Shipbuilder and include performance standards within the shipyard test program, as well as Builder's

Trials (BT), Acceptance Trial (AT), Special Trials (Mission Demonstrations), and Final Contract Trials (FCT). There is a requirement for a Production Acceptance Test and Evaluation (PAT&E) program. The first part of the PAT&E requirements, Ship Construction Tests and Trials, are specified in the AGOR 24 Technical Bid Package (TBP) and is the responsibility of the Shipbuilder. The Post-delivery Test and Trials (PDT&T) program fulfills the second part of the PAT&E requirements of verifying the ship's material readiness in an at-sea environment. PDT&T are conducted aboard the vessel with NOAA being responsible for the operation of the vessel.

In addition, the Appendices contain the projected crew familiarization schedule and Initial Outfitting List.

2.0 Background

The U.S. Navy's Operational Requirement (OR) for the AGOR 23 (THOMPSON), dated March 1986, served as the basic requirements document for the AGOR 24 Class until the AGOR 24 Class Top Level Requirements (TLR) were promulgated on 3 November 1989. (The TLR was later revised and reissued 3 August 1993 to differentiate AGOR 24 requirements from those of the Military Sealift Command (MSC) operated T-AGS 60.) The Deputy Commander for Amphibious, Auxiliary, Mine and Sealift Ship Directorate (SEA93) signed the Acquisition Plan (AP) on 25 September 1990 and the program endorsement was granted on approval of the AP. The AP was updated to reflect the addition of the NOAA AGOR ship and approved on 7 August 1991. The final revision (Rev 2) to the AP was approved on 28 October 1992.

NAVSEA developed a Technical Bid Package (TBP) for the AGOR 24, based on the AGOR 23 detail design. The Request for Proposal (RFP) was released to industry on 2 August 1991. A contract for one ship with options for additional ships was awarded to Halter Marine, Incorporated (HMI) of Moss Point, Mississippi on 11 January 1992 for the detail design and construction of the AGOR 24 Class ships.

A Memorandum of Agreement (MOA) between NOAA and the Naval Sea Systems Command was signed August 1991 formalizing the cooperative relationship between parties for the procurement of a vessel for NOAA. This MOA will expire 11 months after the completion of fitting out of NOAA's vessel. A Copy of the MOA and its modifications are attached as Appendix A.

At the conclusion of the contract, the following three vessels will have been delivered, in addition to the earlier AGOR-23 (THOMPSON) operated by the University of Washington:

AGOR 24	ROGER REVELLE	SIO
AGOR 25	ATLANTIS	WHOI
AGOR NOAA	RONALD H. BROWN	NOAA

2.1 Vessel Description

The NOAA Ship RONALD H. BROWN is a multipurpose oceanographic research vessel designed to operate in coastal and deep ocean areas to conduct physical, chemical and biological oceanography; multi-disciplinary environmental investigations; atmospheric research; ocean engineering; marine acoustics; marine geology and geophysics; and survey tasks.

The vessel meets NOAA's requirements for a medium endurance oceanographic research ship as defined by the Office of NOAA Corps Operations (NC) and the Office of Oceanic and Atmospheric Research (OAR). The vessel's principal characteristics are:

Ship Characteristics

- Length overall 274 ft
- Breadth 52.5 ft
- Depth to Main Deck 26.5 ft
- Draft 17.0 ft
- Full Load Displacement (Endurance) 3,323 T
- Lightship Displacement 2,100 T
- Machinery Plant Split Bus Diesel Electric

  Main

  3 - Caterpillar 3516 with Kato A248440000 1,500 KW (ea)

  3 - Caterpillar 3508 with Kato A248410000 715 KW (ea)

  Emergency

  1 - Caterpillar 3406B with Kato A231870014 250 KW
- Motors

  Propulsors 2@ 3,000 HP Fixed Pitch Z-Drive

  Bow Thruster 1@ 1,180 HP Azimuthing Jet Type
- Speed, Sustained 15 Kts
- Endurance 11,300 nm @ 12 Kts (plus 30 days at station)
- Total Accommodations
  - Single Stateroom 9
  - Double Staterooms 25

  Total Berths 59
- Hospital with 4 berths 1
- Certifications
  - ABS, Maltese Cross A1 Circle E, Maltese Cross AMS, ACCU and Ice Class C certification
  - USCG Subchapter U - Oceanographic Research Vessel (via ABS Statement of Fact)

Mission Electronics

- Multibeam Echo Sounding System - SEABEAM 2112
- Deep/Shallow Bottom Profiler - ODEC 12/33 kHz
- Sub-bottom profiler - ODEC
- Acoustic Doppler Current Profiler - RDI VM-150-18HP
- Doppler Speed Log - ODEC DSN 450
- Depth Finding (Fathometer) System - Raytheon RD-500
- Acoustic Positioning System - Nautronix RS906
- Conductivity, Temperature, Depth (CTD) System
- Gyrocompass Systems - Sperry MK 37 and Sperry MK 39

Mission Systems

- Two Telescopic Boom Cranes with lift capacity of 42,000 lbs
- Two Portable Foldable Boom Cranes with fully extended lift capacity of 2,205 lbs
- Two hydrographic winches (Markey Type DESH-5)
- Dual Traction/Stowage Winch System
- A Frame
- Hydrographic Boom

Mission Support

- 3500 sq. ft. of Main Deck area for mission support
- 1730 sq. ft. of Main Lab area
- 700 sq. ft. of Hydro Lab area

2.2 Statement of Requirements (SOR)

The SOR provides requirements which the shipbuilder must be met in construction of the vessel. Sections that are pertinent to the introduction of the ship into the NOAA Fleet are:

- Section 088, FAMILIARIZATION,
- Section 092, TESTS,
- Section 094, TRIALS, and
- Section 095, TEST REQUIREMENTS.

These sections are reproduced in Appendix B.

3.0 Organizational Relationships

NAVSEA is the AGOR 24 Class ship acquisition activity and PMS 325 is the Project Manager. The Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP) administers the contract and is responsible for determining the ship's readiness for inspection and trials. SUPSHIP will accept delivery from the shipyard and then transfer the vessel to NOAA. NOAA maintains close liaison with NAVSEA in the planning, design phases, and construction of the ship. Close coordination and communication will become more important as delivery approaches, through FCT and the end of the Warranty Period. Figure 3-1 provides the organizational relationship for the AGOR 24 Class program.

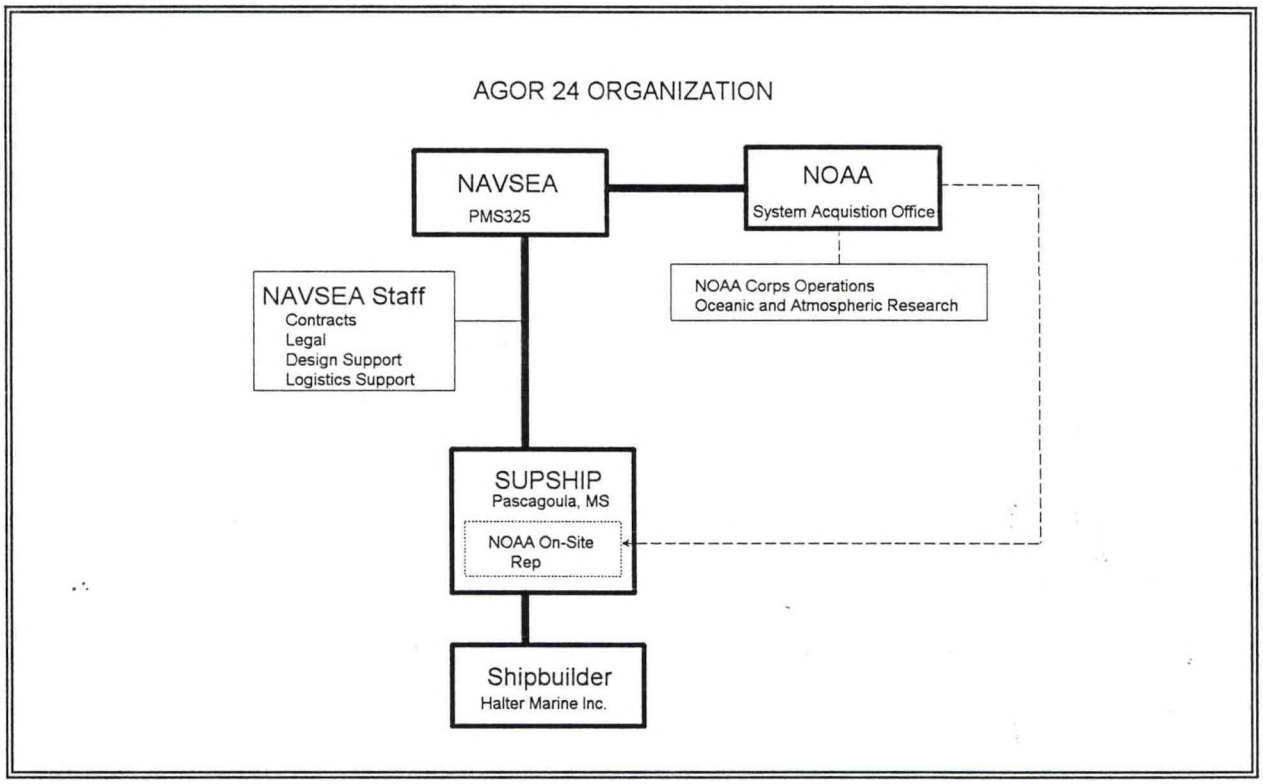


Figure 3-1

3.1 Naval Sea Systems Command - PMS 325

PMS 325, as the Project Manager for the AGOR 24 Class program, has overall responsibility for program planning, program execution, and ensuring the ship is built in accordance with requirements of the contract. Responsibilities include:

a. Planning, programming, budgeting, and executing the overall program.

b. Providing for Integrated Logistics Support.

c. Configuration Management - Provide NOAA all available information on post-delivery changes/modification to AGOR 24 and AGOR 25 which may be needed on RONALD H. BROWN.

d. Planning for tests and trials.

e. Reviewing and approving ship systems' tests, results, and adjudicating responsibilities for sea trial deficiencies.

3.2 Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP)

SUPSHIP is responsible for construction contract administration for NAVSEA. A Ship Project Office is established at the shipyard to ensure close liaison between the Shipbuilder, the Navy, and User institutions throughout the construction period. The Ship Project Office is augmented by representatives provided by Scripps Institute of Oceanography (SIO), Woods Hole Oceanographic Institute (WHOI), and NOAA. SUPSHIP remains involved with each ship throughout the post-delivery phase to administer the warranty program and to monitor correction of Shipbuilder-responsible deficiencies.

As the Navy's on-site contract administrator and agent for quality assurance, SUPSHIP ensures that the shipyard satisfactorily completes tests and trials by:

- Approving schedules for tests, trials, and delivery.
- Reviewing trial agendas and test procedures
- Monitoring tests and verifying results
- Recording trial deficiencies
- Monitoring and approving deficiency resolutions

The shipbuilder is responsible for preparing and presenting the ship for ATs. The Supervisor will notify NAVSEA and NOAA that the ship is certified ready for trials. Sections 088,

FAMILIARIZATION, Section 092, TESTS, Section 094, TRIALS, and Section 095, TEST REQUIREMENTS outline the requirements of the contractor. These sections of the Statement of Requirements (SOR) are reproduced in Appendix B.

3.3 Board of Inspection and Survey (INSURV), U.S. Navy.

NAVSEA will contract/coordinate with INSURV for an independent inspection and verification of readiness prior to acceptance. INSURV will be contracted for both AT and FCT. As part of the FCT process, INSURV will inspect and verify test reports of systems not tested during BT or formally demonstrated during AT.

3.4 National Oceanic and Atmospheric Administration (NOAA)

A technical working group with members from the Systems Acquisition Office(SAO), Office of NOAA Corps Operations (NC), and Office of Oceanic and Atmospheric Research (OAR) worked on initial NOAA requirements for this ship. The group also reviews and approves Engineering Change Proposals and other technical problems that develop during the contract. The team's input was provided to NAVSEA PMS 325 by the SAO.

Following transfer of the vessel from the Navy, NOAA will own RONALD H. BROWN, and will operate and maintain the ship and its mission-related systems.

NOAA personnel will attend trials, coordinate the arrival of the crew, coordinate FCT, prepare FCT documentation, and manage and contract for the Fitting Out Availability (FOA) and Post Shakedown Availability (PSA). NOAA will manage, provide support for, and implement the mission demonstrations.

NOAA will provide specific crew members and support personnel for orientation and operations outfitting of the ship prior to delivery by HMI. NOAA will provide a full crew at ship delivery. This crew will be on the ship during the 30-day Post-Delivery Availability (PDA) and will deliver the ship to its homeport for completion of scientific outfitting (FOA). Testing of scientific equipment will be conducted during the transit to homeport. NOAA will refurbish and install "cross-decked" or other equipment at NOAA's expense.

NOAA's SAO On-Site Representative assists SUPSHIP in the enforcement of contract requirements, inspection of construction, review of Engineering Change Proposals and other documentation,

selection of recommended spares, unique tools, and special test and support equipment, coordinates NOAA visits, and acts as the NOAA interface with SUPSHIP.

The On-Site Representative will attend all tests and trials; coordinate with SUPSHIP, HMI, and NOAA for familiarization required for the Crew; assist in planning and coordinating post-delivery scientific outfitting, warranty item documentation and/or correction, planning for availabilities; assist in preparing for the installation of "cross-decked" materials and equipment, and assist SUPSHIP in accepting delivery of two ISO vans prior to ship delivery.

3.4.1 NOAA's System Acquisition Office (SAO)

SAO is NOAA's direct link to NAVSEA. SAO resolves with NAVSEA issues that arise during the vessel's construction and delivery.

SAO provides a technical team to review Engineering Change Proposals, Request For Deviations and other related shipyard issues, along with logistics management. SAO provides the NOAA On-Site representative at the shipyard during construction.

3.4.2 Office Of NOAA Corps Operations (NC)

NC supports the ship and provides commissioned officers and crew to man the vessel. NC is responsible for NOAA's administration of the vessel. Support for the vessel comes from the components under NC's supervision.

The Fleet Replacement and Modernization (FRAM) Project Office coordinates various mission-related decisions among NC, OAR, and SAO, and has initiated the overall fleet introduction activities. It budgets for support needs outside of the construction contract, carries out logistics planning responsibilities, and coordinates the resolution of engineering change proposals, deviation requests, etc.

NC's Software Engineering Group is managing the installation of the Scientific Computer System (SCS) aboard RONALD H. BROWN. This Group has the lead in planning and procuring or crossdecking the SCS's related hardware and software, upgrading and installing the SCS to meet the needs of the program office.

The MOC will provide the crew, manpower support for SCS installation, and support and funding for operation after

delivery. The MOC will also manage cross-decking activities. Members of the MOC's Engineering and Electronics staff attend HMI's Crew Familiarization. The MOC's medical section will procure required medical equipment and supplies for initial outfitting of the vessel. Storage facilities for shorebased spares will be provided by the MOC once the ship arrives at its homeport.

The MOC will coordinate the commissioning ceremony, with the ship hosting the ceremony.

The MOC will manage the Fitting Out Availability (days 30 through 90 after delivery) and Post Shakedown Availability (8-9 months after delivery), including shipyard availability if required.

The NOAA ship captain will ensure that the ship and systems are ready for mission demonstration events after delivery.

4.0 Pre-Delivery Events

HMI is required to accomplish pre-delivery tests and trials to demonstrate compliance with TBP requirements and the requirements of regulatory bodies prior to delivery. Standard ship testing and trials, in accordance with American Bureau of Shipping (ABS) rules, United States Coast Guard (USCG) requirements, and Society of Naval Architects and Marine Engineers (SNAME) codes will be performed to verify proper operation of ship systems and the ship as a whole. Additional mission system at-sea testing will be performed by NOAA during the post-delivery phase. Crew familiarization will be conducted prior to delivery. The following is a description of the individual events of the tests and trials which conclude at ship delivery.

4.1 Shipbuilder Equipment Testing

HMI will provide a comprehensive test plan and schedule. SUPSHIP and NOAA's On-site Representative will witness all tests unless SUPSHIP authorizes the shipbuilder to perform, report, and certify the results of tests in SUPSHIP's absence. HMI must also establish a Ship Acceptance Program which demonstrates compliance with ship, systems, and equipment performance requirements. Tests are to be performed in accordance with SNAME Technical and Research Bulletins No. 3-39 and No. 3-47.

4.2 Pre-Delivery Trials

HMI is required to perform trials in accordance with SNAME Technical and Research Code 3-47 and other requirements of the contract and TBP to verify that the ship is in compliance.

4.2.1 Builder's Dock Trials (BDT)

BDT demonstrates compliance with the contract, USCG requirements, and ABS rules with respect to performance tests of the ship and its equipment and systems.

BDTs will consist of ship equipment, hull, hull machinery, and systems tests which can be conducted dockside to demonstrate readiness of the ship for BST and AT. HMI is required to certify that the ship is ready for sea trials and to document any incomplete work as part of the certification.

4.2.2 Builder's Sea Trials (BST)

BST includes those tests which could not be accomplished during BDT. An airborne noise survey, vibration survey, sonar platform noise survey, and dynamic positioning system calibration and test will be performed by HMI during BST. Successful completions of BDT and BST are prerequisites to conducting AT.

Tests that cannot be performed with the ship moored are accomplished during BST. As part of BST, a simulated INSURV inspection is conducted. Halter Marine Incorporated (HMI) functions as the presenting authority and the Supervisor functions as INSURV. The Supervisor provides HMI a copy of each trial card. The Supervisor and HMI representatives bilaterally determine responsibility for each deficiency. Differences of opinion regarding deficiency correction responsibility are referred to NAVSEA (PMS 325) for resolution.

4.2.3 Acceptance Trials (AT)

AT will consist of pre-underway inspections, dockside demonstrations, and at-sea demonstrations witnessed by INSURV to determine the suitability of the ship for acceptance. AT also will include inspection of corrected deficiencies documented during BDT and BST. Documentation of completed test data and analyses from BDT and BST will be made available to the INSURV team during AT.

After completion of the at-sea AT demonstrations, the ship will be returned to HMI's facility, at which time selected equipment and machinery will be opened for inspection as directed by the INSURV team.

All pre-delivery trial deficiencies not corrected or waived will be documented and provided to the INSURV team by SUPSHIP prior to FCT.

4.2.4 Related Tests and Trials

In accordance with the AGOR 24 Statement of Requirements (SOR), the following tests and trials are required prior to delivery:

a. Standardization Trials - Determine the ship's speed, RPM, and horsepower characteristics.

b. Tactical Trials - Determine the turning characteristics of the ship.

c. Electromagnetic Compatibility (EMC) Survey - Determine the source of EMI-related problems and identify a possible solution. Individual equipment may operate satisfactorily in a given environment. However, when required to operate concurrently with other equipment or systems, the mutual effects may cause a degradation in the level of performance. EMI tests are conducted at dockside (Phase I) and operationally at-sea (Phase II) prior to delivery by HMI.

d. Radiation Hazards (RADHAZ) Survey - Radio frequency electromagnetic fields aboard the ship may be of sufficient intensity to produce harmful biological effects in humans, to cause spark ignition of fuels, or to actuate electro-explosive devices. RADHAZ surveys of manned topside and fuel handling areas will be conducted to identify field intensities and/or radio frequency power levels that are hazardous. The surveys will include the area of Radio Frequency Burn Hazard Reduction and Hazards of Electromagnetic Radiation to Fuel. Refer to NSWC EMI/RADHAZ Survey Test Plan for detailed information and schedules. This survey should be performed prior to delivery by HMI and the SUPSHIP.

4.3 Ship's Crew Arrival

Crew arrival, prior to delivery, allows the crew to become familiar with the ship, to conduct operational readiness inspections, and to assist with final loadout. The SUPSHIP Project Officer and the NOAA On-Site representative will provide all the documentation required for proper indoctrination of the crew and for outfitting, provisioning, operating, and maintaining the ship.

A crew of approximately 30 people will arrive at the shipyard in accordance with the following schedule:

a. The Chief Marine Engineer (CME) will arrive in early October 1996. He will report to the NOAA On-Site representative at the shipyard. The CME will assist the NOAA On-Site representative in activities related to the hull, mechanical, and electrical systems of the vessel and gain knowledge of the systems by observing HMI's tests of the engineering plant. He will share office space with the NOAA representative until the remaining crew arrives and office space is provided.

b. Approximately seven people will arrive within 90 working days of delivery of the vessel. These people

will consist of the following: Captain or Executive Officer, Operations Officer, 1st Assistant Engineer, 2nd Assistant Engineer, 3rd Assistant Engineer, Chief Boatswain, and a Marine Tech/Rotating Electronic Tech.

c. Approximately 20 additional people will arrive no more than thirty working days prior to the delivery of the vessel.

d. The remaining crew members will arrive after delivery.

4.3.1 Crew Facilities At The Shipyard

Crew facilities will be provided by HMI as follows:

Office Space - A minimum of 900 square feet of office space shall be provided for the crew from three months before builders trials through one month after delivery. These spaces will be furnished, lighted, heated and air conditioned. Cleaning service and toilet facilities with soap, towels and other supplies will be provided. The following furnishing items will be provided:

Item	Quantity
Drafting Board	1
Five Drawer File Cabinet, Legal Size	2
Conference Tables (3'x5') with chairs	2
White Board	1
Clothes Locker	1
Side Chairs	6
Book Cases	2

Telephone Service - In-office service will consist of one telephone line through the shipyard switchboard and three private telephone lines. After ship delivery, for a thirty day period, there will be a switchboard, single line telephone at the ship's gangway. NOAA is responsible for all long distance charges.

Parking Spaces - Six parking spaces will be provided in a lighted, secure parking area adjacent to the office. Three parking spaces will be provided adjacent to the

ship.

Other - Copy machine, facsimile, PCs, and printers will be available on site in the NOAA representative's office for the crew when needed.

4.3.2 Lodging, Meals, and Ground Transportation

The contract with HMI does not provide for lodging, meals, and ground transportation for the ship's crew.

A pickup or stake body truck is available from the National Marine Fisheries Laboratory in Pascagoula. Arrangements to borrow vehicles from the Fisheries Lab can be made through the NOAA Port Captain, 601-769-0307. The Port Captain also has two Suburbans and a mini van that can be utilized on a limited basis.

Crew members should be discouraged from bringing POVs and family members to Mississippi as they will be responsible for sailing the ship from the shipyard to its homeport.

4.4 Crew Responsibilities

During the pre-delivery period, the crew will report to the SUPSHIP Project Office via the NOAA representative at the shipyard. The crews will accomplish the following:

a. Familiarization will be provided by HMI to acquaint the crew with the operation and maintenance required of the ship's machinery and equipment. Familiarization will be in accordance with SOR section 088 and contract clause C7, "CREW FAMILIARIZATION," and include the following topics:

1. Introduction to ship.
2. Propulsion system introduction.
3. Dynamic positioning system.
4. Main control console, ship control console, and auxiliary consoles; operation and maintenance.
5. Propulsion plant maintenance.
6. Auxiliary equipment; operation and maintenance.
7. Collision avoidance system; vendor technical representative orientation/operation.
8. Wheelhouse navigation equipment.
9. Stability.
10. Lifesaving and damage control (onboard).

11. Operation in a seaway.
12. Fueling and ballasting.
13. Firefighting.
14. Multibeam sonar operation.
15. Additional topics as proposed by HMI or Government.

HMI's familiarization is scheduled over a period of five weeks.

b. As requested by the NOAA On-Site representative, the crew will assist the NOAA On-Site representative and SUPSHIP Project Office by providing additional inspection capability on behalf of the Government.

c. HMI is required to load and stow equipment, spare parts, and items listed in the Initial Outfitting List. This load out will occur between Acceptance Trials and Delivery. As requested by the NOAA representative, the crew will assist the NOAA representative and SUPSHIP Project Office with inspection of load out items.

4.5 Office of NOAA Corps Operations (NC) Responsibilities

NC will:

- provide an authorized complement to the Marine Center (MOC).
- procure and install the Scientific Computer System with installation assistance from the MOC.
- cover travel and per diem cost until the ship is delivered.
- provide refresher training to the ship's commissioned officers prior to their arrival at the shipyard.
- establish a homeport for the vessel.
- determine what equipment must be installed during Post-Delivery Availability and what equipment can wait until the ship arrives at its home port.
- arrange for ABS training.
- establish a plan for procurement and installation of new scientific sensors with assistance from the Systems Acquisition Office.

All NC employees are reminded that this is a NAVSEA contract. As such, NC employees should avoid any impression of providing directions, suggestions, wishes, etc. to the contractor. All comments or requests should be directed to the

NOAA On-Site representative at the shipyard so they can be properly considered and processed.

4.5.1 Marine Center Responsibilities

The MOC will:

- provide a crew to man the vessel in accordance with NC's authorized complement.
- provide firefighting training to crew members prior to arrival at the shipyard, if required.
- provide an inventory of equipment available from the deactivated vessels with recommendations as to the cross decking of this equipment to RONALD H. BROWN or other NC platforms.
- remove, refurbish as necessary, ship, and install cross-decked equipment.
- be responsible for installation of NOAA procured equipment aboard the ship.

4.6 System Acquisition Office, Fleet Replacement and Modernization Branch

SAO will continue to act as NOAA's link to NAVSEA. SAO will procure selected scientific equipment for installation aboard the ship. SAO will continue to provide the NOAA On-Site representative in the shipyard.

SAO's On-Site representative will be the principal point of contact with SUPSHIP or HMI for all NOAA employees visiting or assigned as ship's complement when they are in the shipyard.

5.0 Ship Delivery

All outfitting material including repair parts and spares, Initial Outfitting List (IOL), special tools, and test equipment will be received, inspected, identified, stored, pre-binned, and loaded onboard by HMI prior to delivery. Outfitting material received by HMI after ship delivery will be loaded onboard by the ship's crew. At delivery, all ship equipment will have completed Factory Acceptance Tests, been inspected by the regulatory bodies as required, completed post installation checkouts, BDT, BST, and AT. Verifications of these systems will have been conducted during the pre-delivery at-sea testing phase. At delivery, the crew will move aboard, man the ship, and be ready to sail when required. Any outstanding final documentation required by the regulatory bodies will be provided to enable the ship to go to sea.

HMI will account for the fuel onboard the vessel at delivery. A bill for this fuel should be provided to:

NOAA, Atlantic Marine Center
439 West York St.
Norfolk, VA 23510-1114

Attn: Resource Management Staff

5.2 Warranty Period

The Warranty Period will begin at ship delivery and last nine (9) months, in accordance with the contract E-02, Guaranty Period.

6.0 Post-Delivery Events

The ship's post-delivery phase is a critical transition period for completing the Phased Acceptance of the ship and mission systems and for transitioning the ship for service with the fleet. During the nine months following delivery of the ship, NAVSEA and NOAA must complete the Post-Delivery Availability (PDA) at HMI, and ship certification requirements, conduct mission demonstrations and Fitting Out Availability (FOA), present the ship for FCT and accomplish the Post Shakedown Availability (PSA). Ship management support is transferred from NAVSEA to NOAA at the completion of ship acquisition.

6.1 Detailed Planning of Post-Delivery Activities

At delivery, the RONALD H. BROWN will be a capable research vessel that meets the contractual requirements. However, it will require additional effort to place it in service fully capable of supporting NOAA programs. To ensure a smooth and rapid transition to that status, many individual actions must occur. Examples include providing NOAA-specific outfit items; installing new scientific equipment; crossdecking existing equipment from other ships; and making subtle modifications to improve the vessel's utility. The types of effort required may include design work, procurement, fabrication, calibration, etc., depending on the item.

Identifying and successfully completing these actions will require foresight, coordination, and attention to detail. Appendix G, Task Summary, includes an initial list of such activities and a worksheet to aid in scoping out the effort for each. Each item identified will be assigned to an interested NOAA component for planning and execution.

NC/SAO coordination with PMS 325 will be necessary when the planned post-delivery work could be affected by pre-delivery shipyard activity.

6.2 Post-Delivery Objectives

The post-delivery phase consists of the PDA, additional crew familiarization (if required), PDT&T, Mission Demonstrations, FOA, FCT, and PSA. This phase is planned and coordinated to achieve the following objectives:

(1) To develop the proficiency of the ship's force, scientists, and technicians in the operation of

the ship and mission support systems aboard the ship.

(2) To demonstrate the ship's operational capabilities, characteristics, and mission functional capabilities and thereby complete the Phased Acceptance of the ship.

(3) To verify the ship's material readiness in an at-sea environment.

NAVSEA will delegates authority to NOAA for post-delivery ship systems test and trials events and tests and trials of mission systems and mission demonstrations.

By the end of the post-delivery phase, all known design deficiencies and defects related to ship and mission systems will be resolved or have a planned correction for accomplishment during the PSA and prior to the completion of ship acquisition. Those deficiencies that fall outside the scope of the contract will be NOAA responsibility to correct.

6.3 Post-Delivery Availability (PDA)

Immediately following ship delivery, a PDA will commence at HMI's facility. Although a 30-day period is allowed by the contract, current plans are to shorten this to 15 days to allow additional time for FOA. During this period, NOAA will install operator-furnished equipment, conduct product acceptance tests of equipment not already accepted, load ship stores and provisions, embark on short day trips for crew training and product testing, and install and test the Scientific Computer System (SCS). The crew will move aboard and the ship will generally be made ready for sea. This availability also allocates a specified number of labor hours which are available to the Government to task HMI to accomplish specific needed work items. Additional work items will be developed based on identified discrepancies resulting from pre-delivery tests and trials. NOAA is responsible for initial loadout of the ship beyond what is provided in the contract and IOL.

During PDA, HMI will provide:

(1) Berthing space pier-side for the ship with utilities from shore connections (electricity, fresh water, sewage disposal, telephone connections, and steam), daily garbage removal, and material handling

services;

(2) Messing facilities for the ship's crew;

(3) At least five convenient parking spaces for ship's vehicles;

(4) Fire protection, including maintenance of the ship's firemain pressure at 150 psig in the event of a ship's system failure or interruption for repair purposes;

(5) Access through the shipyard to the ship for authorized Government personnel, ship's force and their authorized visitors.

During PDA, the ship will be accessible to NOAA personnel for installation, checkout, and testing of government furnished mission systems.

NOAA will provide all outfit items other than those included in the Initial Outfit List.

Additional personnel beyond the crew, as needed and as determined by NC, but not to exceed 20, can be accommodated during PDA to outfit and prepare the ship for departure.

6.4 Shakedown

After completion of the PDA, RONALD H. BROWN will begin a shakedown period. The initial cruise will be from HMI to the ship's homeport. If required and feasible, additional installation work of Government provided equipment will be continued during the voyage. During this cruise, if feasible, any standardization trials not yet completed will be carried out by the crew. Sonar noise testing will be conducted en route, if possible. PDT&T will continue and additional short cruises may be conducted to test the multibeam system, dynamic positioning system, winches, cranes, and handling gear, the Scientific Computer System (SCS) and other science systems.

6.5 Fitting Out Availability (FOA)

During the initial shakedown period, a FOA will be conducted at the ship's homeport to complete fitting out of scientific mission systems, including cross decking of remaining equipment. The time window for FOA is roughly 60 days, current plans have

the RONALD H. BROWN operational in early June

6.6 AGOR 24 Class (PDT&T) Scope

In general, mission demonstrations will be performed during the post-delivery phase. Additional ship tests and trials which will be conducted during the post-delivery phase are listed below. Note however, that no radiated noise requirements are specified in the TLR; therefore, post-delivery acoustic range noise trials are neither planned nor funded.

a. Antenna Radiation Patterns (ARP)

b. Dynamic Positioning System Trials.

c. Mission Demonstrations.

d. Sonar Self Noise Tests.

Test procedures and reporting forms will be compiled by Halter and reviewed by NOAA for these equipment items. The ship's force will conduct the tests and complete the forms. Appropriate manufacturers' representatives may be required. This information and any noted deficiencies of mission equipment will be provided at the Final Contract Trials to demonstrate that the mission equipment has been tested.

6.6.1 Antenna Radiation Patterns (ARP) Measurements

ARP measurements are obtained to provide an assurance check that radar and communications equipment function properly, provide a calibrated measure of the zero degree elevation angle gain, and determine patterns of all antennas showing the effects of the ship's topside structure. This test is to be performed on AGOR 25 and data provided to NOAA.

6.6.2 Dynamic Positioning System (DPS) Trials

DPS trials will be conducted by HMI as part of BST to verify compliance with contract requirements. Post-delivery DPS usage will be conducted to verify the ability of the DPS system to perform in a range of environments. This usage should be documented and any problems noted. The documentation will be provided to the INSURV Board at FCT.

6.7 Mission Equipment Demonstration Tasks

The following mission equipment will undergo sufficient operating use by NOAA, with adjustment as necessary, to confirm that each item performs to program and NC requirements. It will also be used for familiarization purposes to assure that the operators are fully conversant with each system. Manufacturers' representatives will be aboard as necessary.

a. **Mission Electronics.**

Multibeam Echo Sounding System - SEABEAM 2112
Deep/Shallow Bottom Profiler - ODEC 12/33kHz
Subbottom Profiler - ODEC
Doppler Current Profiler - RDI VM-150-18HP
Doppler Speed Log - ODEC DSN 450
Fathometers - Raytheon RD-500
Acoustic Positioning System - Nautronix RS 906
CTD System (IOL item)
GPS System - Leica MX-1107 GPS
Scientific Information System

b. **Mission Systems.**

Telescopic Boom Cranes - 2 Alaska Crane MCS 1565 - NO
Portable Foldable Boom Cranes - 2 Morgan Marine 18000
Hydrographic Winches - 2 Markey DESH-5
Dual Traction Stowage Winch System - Markey DUTW-9-11
A-Frame - Fritz Culver FCDB-2-1337
Hydrographic Boom - Allied Systems FTB-15-42
Vans

6.8 Sonar Self-Noise Trials

A sonar self-noise trials may be conducted to determine the level and source(s) of noise at the multibeam receiver arrays. Either Carderock Division, NSWC or a private noise consultant company will be hired by NAVSEA or the Users to conduct this trial.

Currently, NOAA is waiting on the results of AGOR 25's Self-Noise Trials to determine if this trial will be conducted on RONALD H. BROWN. AGOR 25 and BROWN have the same under hull sonar dome configuration.

6.9 Final Contract Trials (FCT)

FCT is the basis for final acceptance of the ship for unrestricted service and it has two principal objectives:

(1) To determine whether there are any remaining HMI responsible defects, failures, or deteriorations, other than due to normal wear and tear, which has not been corrected or has not had positive action initiated for correction or compensation.

(2) To determine if there are any Government responsible deficiencies, based on the TLR.

FCT should be conducted before the end of the nine-month warranty period. Given an early March delivery and the current projected FY 1998 Ship Operating Schedule, FCT should be scheduled for early November.

INSURV will conduct final contract trials. NAVSEA, SUPSHIP, and HMI will have representatives present. The INSURV team will be provided with reports of Mission Demonstrations.

The FCT is conducted prior to the end of the nine (9) month guaranty period. At FCT, the ship will be under the control of the NOAA Commanding Officer and operated by an NOAA crew. The FCT is conducted in four parts: (1) dockside safety and pre-underway inspections; (2) an underway portion during which the ship's crew will exercise and demonstrate all ship systems, including a full power run; (3) an "open and inspect" portion at dockside to examine designated equipment; and (4) "Screening" of deficiency cards by NAVSEA, along with a determination of how and when deficiencies are to be corrected.

Any HMI or Government-responsible deficiencies which are noted at this time will be corrected or otherwise resolved of prior to the completion of the PSA. Trial deficiency cards will be prepared which identify deficiencies which affect the ship's capability to perform its mission or the efficiency of the ship and its crew. The completed deficiency cards will be provided to NAVSEA. NAVSEA is the trial deficiency card screening authority.

6.10 Post Shakedown Availability (PSA)

A final availability, the PSA, will be scheduled prior to the expiration of the warranty period. All work which is identifiable to the shipbuilding effort and is incomplete or has resulted from the tests, inspections and trials, will be

completed with construction contract funds. NOAA-funded items not contract-related may also be accomplished. The ship will submit job lists 60 days prior to PSA. The PSA will be managed by the MOC, who will prepare the specifications and contract with a commercial shipyard for the industrial efforts required.

6.11 Final Work Item Disposition Conference

Subsequent to PSA, a final work item disposition conference will be held to insure that all deficiencies noted during tests and trials have been resolved, and all work items completed or otherwise resolved. The participants shall include NAVSEA (PMS 325), SUPSHIP, and NOAA.

6.12 Transfer Book

NAVSEA (PMS 325) will prepare a transfer book and present it to NOAA reflecting the status/condition of the ship at the end of the warranty period.

APPENDIX A

NAVSEA-NOAA MOA

MEMORANDUM OF AGREEMENT
BETWEEN THE
DEPARTMENT OF THE NAVY
AND THE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
FOR THE
PROCUREMENT OF AN OCEANOGRAPHIC RESEARCH SHIP (AGOR 23 CLASS)

1. PURPOSE

The purpose of this Memorandum of Agreement (MOA) is to formalize the cooperative relationship which exists between the Department of the Navy (DON) and the National Oceanic and Atmospheric Administration (NOAA) to acquire an Oceanographic Research Ship (AGOR 23 Class). The acquisition of an AGOR 23 Class ship for NOAA is under the authority of the Economy Act, 31 U.S.C. 1535, and the Federal Acquisition Regulation, FAR 17.5. It is essential to obtain a commitment between both parties to exercise and maintain strict controls over the change authorization/growth process and other factors necessary to ensure that the procurement is completed on time and within the budgeted cost. This MOA may be modified by mutual agreement of both parties. This MOA expires 11 months after completion of fitting out (CFO) of the NOAA ship.

2. BACKGROUND

NOAA, as a component of the Department of Commerce, operates a fleet of 22 oceanographic, fisheries research, and survey ships. The fleet was built in the 1960's and presently has an average ship age of 25 years. Due to the age, material condition, and rapidly decreasing ability of the fleet to carry out its scientific and charting missions, a study was completed in early 1991 to determine NOAA's ship requirements and define a future fleet to meet those requirements. As a result of subsequent planning, an AGOR 23 Class vessel was determined to meet the requirements of NOAA's Medium Endurance Oceanographic Class needs. NOAA has prepared a detailed plan that identifies funding necessary for the Agency's Fleet Replacement and Modernization Project, including the funding necessary for acquisition of medium endurance oceanographic survey ships. This agreement provides for the procurement of one AGOR 23 Class ship, for which the Navy would include the NOAA requirement, as an option to their existing AGOR 23 Class Ship Construction Program. Upon receipt of a request from NOAA to exercise the option, the Navy would be tasked to manage the construction of the vessel under the direction of Naval Sea Systems Command (NAVSEA), Combat Support, Ocean Research and Surveillance Program Office (PMS383).

3. PARTIES TO THE AGREEMENT

Deputy Commander, Surface Ship Directorate (SEA 91) and the Director, Office of NOAA Corps Operations (NOAA) are parties to the agreement. The Program Manager, PMS383, is the primary point of contact for SEA 91, telephone (703) 602-3507. The primary point of contact in NOAA is the NOAA Fleet Modernization Project Manager, telephone (301) 443-8013.

4. FUNDING

a. NOAA will provide all funding for the procurement, construction, technical and contract management, special studies, provisioning, and delivery of the NOAA AGOR.

b. NOAA will provide to NAVSEA the appropriated funds necessary and available to meet the requirements of the ship construction contract for the NOAA AGOR and funds necessary for NAVSEA engineering, contracting activities, outfitting, logistic support, all mission equipment over and above that specified in the Statement of Requirements, and post-delivery availabilities of the NOAA AGOR.

c. NOAA will provide funds for special studies and analyses, design changes, and contract design modifications that are outside the scope of the construction contract. In addition, NOAA will provide funds for salaries, long-term travel, or permanent change of station cost for NOAA personnel.

5. PARTICIPATION

The following terms, conditions, and limitations have been established for the procurement:

a. NOAA agrees to the following:

(1) To provide a NOAA person who will serve as the NOAA liaison to NAVSEA and who will be located on-site at NAVSEA. The NOAA person will be on-site at NAVSEA during pre-contract award activities and at the start of the NOAA AGOR construction. All costs associated with the NOAA liaison function will be funded by NOAA.

(2) To determine, jointly with NAVSEA, the required on-site representation to assist the Supervisor of Shipbuilding in administering the construction contract during the production phase. NOAA will provide at least one person, who may be the same person that performs the functions listed in 5a(1) above, on-site at the shipyard who will serve as the NOAA AGOR Project Officer and will be integrated into the SUPSHIP organization. All costs associated with the NOAA person on-site at the shipyard will be funded by NOAA.

(3) To receive the NOAA AGOR, following Navy acceptance.

(4) To provide a qualified, trained pre-commissioning crew to the NOAA AGOR on a timeline consistent with NAVSEA's delivery schedule. Crew training will be provided by NOAA, with the exception of contractor furnished onboard familiarization. Travel and per diem costs for crew members will be funded by NOAA.

(5) [redacted] logistically the NOAA AGOR. NOAA will perform provisioning functions utilizing the NOAA Logistics Support Plan and data provided by the contractor via NAVSEA. Provisioning functions include, but are not limited to: receiving/reviewing vendor recommended spares and repair parts, developing allowances, selecting Onboard Repair Parts (OBRP), and cataloging/documenting all items.

b. NAVSEA agrees to the following:

(1) To execute the program in accordance with the requirements set forth below, including procuring, inspecting, and accepting the NOAA AGOR and administering all guaranty work.

(2) To acquire the NOAA AGOR and deliver it to NOAA at a designated point jointly agreed to by NAVSEA and NOAA;

(3) To procure OBRP, as determined by NOAA, sufficient to support the ship for one year in accordance with existing NOAA policy and the vessel's logistics support plan;

(4) To ensure that all work required for successful completion of the program is identified and authorized;

(5) To acquire the data rights to which the government is entitled pursuant to law and regulation and provide provisioning data and resources for production and support to enable NOAA to logistically support the ship.

(6) To provide contractor-furnished onboard familiarization to the initial NOAA crew.

6. ACQUISITION STRATEGY

NOAA hereby certifies that the AGOR 23 design meets the requirements of the Medium Endurance Multidiscipline Oceanographic Research Vessel Scientific Requirements Document. In view of this, the NAVSEA effort will be directed toward ensuring the AGOR 24 design package is biddable and producible in executing the procurement. The NOAA AGOR will be competitively procured as an option to the AGOR 24 contract in FY 95.

7. PROGRAM EXECUTION

a. A program execution timeline will be developed jointly between NAVSEA and NOAA, with a goal of issuing the RFP in mid-1991 and awarding the ship design and construction contract early in FY 92. NAVSEA will obtain NOAA concurrence at major decision points during the acquisition process if the decision affects the NOAA AGOR.

b. In the event of disagreements that may arise during the construction of the ship, the NAVSEA Program Manager (PMS383) and the NOAA Corps Operation Project Manager shall mutually agree to resolve such issues among both parties. The final decision authority for those areas that affect the administration of the contract will lie with the NAVSEA Program Manager (PMS383).

8. CONFIGURATION CONTROL

NAVSEA will be responsible for configuration control of the NOAA AGOR while under construction and through the guaranty period. NAVSEA shall consult with and obtain NOAA's concurrence prior to authorizing the contractor to proceed with any significant alterations or changes. The Navy and NOAA will have representation on the PMS383 Configuration Control Board. The Chairman will be the Deputy Program Manager. The PMS383 Configuration control Board will maintain complete control and final approval authority for all Configuration Management elements including all Value Engineering Change Proposals (VECPs), Value Engineering Proposals (VEPs), Engineering Change Proposals (ECPs), and deviations and waivers from AGOR 24 requirements during construction and Allowance Changes throughout the period during which the ship remains under guaranty. The purpose of this provision is to preserve the Government's guaranty rights by avoiding modification to the NOAA AGOR's equipment, systems, or components during the guaranty period which might compromise guaranty provisions of the construction contract. After expiration of the guaranty period, responsibility for configuration control will pass solely to NOAA.

9. SOURCE SELECTION

Source Selection Authority will be the Commander Naval Sea Systems Command. The Source Selection Evaluation Board (SSEB) will be comprised of representatives from the Navy and one NOAA member. The Source Selection Advisory Council (SSAC) will be comprised of representatives from the Navy with one NOAA advisor. The Chairman of the SSEB will be the AGOR 24 Assistant Project Manager (APM). The Chairman of the SSAC will be the Executive Director, Surface Ship Directorate (SEA 91B).

Commander
Naval Sea Systems Command

Date: 8/17/91

Under Secretary for
Oceans and Atmosphere

Date: August 1, 1991

DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND

WASHINGTON D.C. 20362-5101

9000
OPR: PMS383A2
Ser 383A2/4109
25 March 92

From: Commander, Naval Sea Systems Command
To: National Oceanic and Atmospheric Administration (NOAA)
Fleet Replacement and Modernization (FRAM) Program Office

Subj: MEMORANDUM OF AGREEMENT (MOA) FOR THE PROCUREMENT OF AN OCEANOGRAPHIC RESEARCH SHIP (AGOR 23 CLASS), CHANGES TO

Ref: (a) PMS383/NOAA FRAM MEETING of 17 March 1992

Encl: (1) Modification 1 to the MOA between DoN and NOAA for the Procurement of an Oceanographic Research Ship (AGOR 23 Class)

1. Changes to the MOA between DoN and NOAA were agreed to during reference (a) to reflect the establishment of the NOAA Fleet Replacement and Modernization (FRAM) Program Office. The changes indicate that the FRAM office will execute NOAA's responsibilities in procuring the NOAA AGOR.

2. Please indicate acceptance of the modification of the MOA by signing and returning enclosure (1) to PMS383A2. A copy of the enclosure should be retained for your records. If you have any questions, please feel free to call me at 602-3510/1/4/5.

Subj: MEMORANDUM OF AGREEMENT (MOA) FOR THE PROCUREMENT OF AN OCEANOGRAPHIC RESEARCH SHIP (AGOR 23 CLASS), CHANGES TO

Blind copy to:
PMS383A2A
PMS383A2S
PMS383A2M

MODIFICATION 1
to the
MOA between DoN and NOAA
for the Procurement of an
Oceanographic Research Ship
(AGOR 23 Class)

page 2 paragraph 3. PARTIES TO THE AGREEMENT Replace "Fleet Modernization Project Manager, telephone (301) 443-8013." with "Fleet Replacement and Modernization (FRAM) Program Manager, telephone (703) 602-8250.

pages 2 and 3 paragraph 5. PARTICIPATION delete paragraph 5.a.(1) in its entirety. Renumber paragraphs 5.a.(2)-(5) as paragraphs 5.a.(1)-(4).

page 4 paragraph 7. PROGRAM EXECUTION in paragraph b. replace "Corps Operation Project Manager" with "FRAM Program Manager".

D. C. Robertson date
Program Manager,
Oceanographic and
Survey Ships

W. R. Boyd date
NOAA FRAM
Program Manager

Enclosure (1)

APPENDIX B

Selected sections of the
Statement Of Requirements

SECTION 088
FAMILIARIZATION

The Contractor shall provide engineering and technical services to orient and assist the crew in ship, systems and equipment familiarization during testing of major machinery and control systems.

The Contractor shall prepare three day familiarization program for the ship's crew to be provided at the Contractor's facility and onboard the ship. The familiarization shall provide a general understanding of the operation of major ship systems and familiarization with general arrangement of the ship. A familiarization program outline and schedule shall be prepared.

SECTION 092
TESTS

092a. GENERAL

Material, fuel, labor, power, equipment, and instruments necessary to perform tests shall be furnished by the Contractor. Instruments used in performing tests shall be calibrated prior to the tests by a certified testing laboratory.

092b. TEST SCHEDULE AND PERFORMANCE

The Contractor shall prepare a comprehensive test plan and schedule. Each test shall be performed in the presence of the Supervisor, except when the Supervisor authorizes the Contractor to perform, report, and certify the results of the test in his absence.

SECTION 094
TRIALS

094a. GENERAL

Trials shall be performed in accordance with SNAME Technical and Research Bulletin No. 3-47, and the requirements specified herein, to determine if the ship and its equipment are in compliance with the Contract and this SOR. Trials shall include all First of Class and All Ship items, as well as thruster, low speed controllability and other auxiliary tests. Torsionmeters shall be used.

The trials to be performed shall include the following:

a. Builder's Trials (BT) including:
   1. Builder's Dockside Trials (BDT)
   2. Builder's Sea Trials (BST)
b. Acceptance Trials (AT)
c. Final Contract Trials (FCT)

Except as otherwise specified herein, the Contractor shall perform and bear the expense associated with BDT, BST and AT.

During trials performed by the Contractor, representatives of the Government will exercise no actual control over the navigation or operation of the ship, its machinery plant, or its equipment. However, such representatives may bring to the Contractor's attention any method of operation that appears to conflict with the requirements of the Contract.

The Contract shall establish an organization for the administration, supervision, and performance of trials, including service and dockside personnel, and other services as necessary to dock and undock the ship. A competent trial crew shall be provided by the Contractor, and shall include an appropriately licensed master and licensed chief engineer. Operation of the ship and its machinery, equipment, and systems shall be in a safe manner and in accordance with operating instructions. The trials crew shall record data and compute trial performance and results. Trial data shall be readily available to Government observers, and trial results shall be posted in the vicinity of the data collection and computation center. A complete trial report for BT and AT shall be prepared by the Contractor.

BDT and BST will be witnessed by the Supervisor and other Government observers. The AT will be witnessed by INSURV and other Government observers. Subject to the Supervisor's approval, representatives of manufacturers who have furnished ship components may be invited by the Contractor to witness trials. The Contractor shall furnish subsistence for Government representatives and observers while the ship is at sea. When the ship is out overnight, berthing accommodations shall be provided. Where transportation between ship and shore is required, and where transportation between points

of debarkation and the shipyard is required, the Contractor shall furnish such transportation.

Instrumentation and equipment required for trials shall be furnished and operated by the Contractor. The Contractor shall provide, calibrate and install temporary instrumentation to obtain the required data. The Contractor shall calibrate all permanently installed instruments priors to trials. The Contractor shall furnish all fittings necessary and modify all systems as required to install trial instrumentation. After satisfactory completion of the trials, the trial instrumentation shall be removed and all systems restored to their normal operating condition.

Satisfactory operation of the machinery plant components and controls shall be demonstrated dockside and during underway trials. The propulsor shall be operated under partial load at the dock before sea trials, in accordance with SNAME Technical and Research Bulletin No. 3-39.

The underway trials shall be performed with the ship in the full load condition. The longitudinal center of gravity shall be determined by comparison of the draft marks and the Curves of Form.

During propulsion and endurance trials, the ship shall be operated in waters of a depth of not less than ten times the draft. During AT, the Contractor shall perform an endurance trial. The propulsion diesel engines shall be operated at maximum achievable continuous r/min, subject to manufacturer's restrictions. During this endurance trial, the ship shall be run through a certified measured course, once in each direction, at the maximum throttle settings to determine the maximum speed obtained.

After completion of the quick-reversal tests, the propulsion system shall be checked for loose items, oil leaks, fuel leaks, water leaks, hydraulic leaks, exhaust leaks and structural defects. Engine mounts and foundations shall also be checked for structural defects.

Fuel economy trials shall be performed at the sustained speed.

The ship shall be operated to demonstrate the maneuvering, speed and towing capability.

The satisfactory operation of the ship's systems and equipment shall be demonstrated.

The DPS shall be fully demonstrated at sea before AT for a sufficient time by appropriate representatives in order to adjust the system parameters and demonstrate system capability to the Government and to the Contractor. The demonstration may be performed concurrently with BST. This demonstration is considered a part of BT. All BT requirements and associated documentation are applicable to the demonstration. Successful completion of the DPS demonstration is a prerequisite to AT.

Airborne Noise Survey. - An airborne noise survey shall be performed in accordance with Section 073.

Vibration Survey. - An underway vibration survey shall be performed following the procedures of SNAME Code C-1 and C-4. Single amplitude displacement (in mils) shall be measured for the hull girders, superstructure and mast with the ship underway in water with a minimum depth of five times the draft of the ship. A steady acceleration run of 5 to 10 r/min shall be conducted to determine critical operating frequencies. Steady speed runs shall be performed in 5 r/min increments from 1/2 full power r/min to full power r/min. Additional runs of smaller r/min increments shall be taken to determine the maximum amplitude at critical shafting resonance frequencies. The vibration survey at the propulsion machinery shall be performed in accordance with SNAME Code C-5.

Sonar Platform Noise. - Sonar platform noise measurements shall be performed underway in greater than 300 fathoms of water. Accelerometers shall be located outboard of the transducer arrays. Two omnidirectional test hydrophones (port and starboard) shall be provided flush with the hull in a sea chest in the center of the array location for measuring platform noise. The sonar platform noise measurements shall be performed under background noise conditions equivalent to Sea State 1 or less, and wind speed not to exceed 10 knots. If conditions of Sea State 1 or less do not exist during BST or AT, sonar platform noise measurements shall be performed in existing conditions. Noise measurements shall be made under steady state ship operating conditions, and at speeds from zero knots to maximum speed, in two knot increments, in all propulsion modes. Measurements shall be made with and without bow thruster, up to a speed of six knots.

094b TRIAL SCHEDULE AND PERFORMANCE

The Contractor shall confirm the dates for AT at least 14 days prior to each scheduled date. The trial agenda for BT and AT shall include the required trials and tests, and shall indicate, in detail, the proposed procedure and data to be recorded.

094c. BUILDER'S TRIALS (BT)

BDT shall be performed by the Contractor to demonstrate to the Supervisor the readiness of the ship for sea trials.

BST shall be performed as soon after BDT as practicable, and are required to

demonstrate that the ship is seaworthy, and all machinery and equipment are ready for AT. Tests that cannot be performed with the ship moored shall be accomplished during BST.

Successful completion of these trials and tests is a prerequisite to AT. The Contractor, prior to BST, shall certify to the Supervisor that the ship is ready for sea trials. The certification shall identify and schedule for completion all Contract-responsible items that will be incomplete at BST.

Simulated INSURV Inspection. - The Supervisor will perform a simulated INSURV inspection during BST. The simulated inspection will be performed in accordance with the guidelines contained in INSURVINST 9080.2. The Contractor shall function as the presenting authority, and the Supervisor will function as INSURV.

The Supervisor will designate representatives to act as INSURV inspectors and inspect the ship in the categories listed in Table 094-1.

The Contractor shall appoint persons knowledgeable in the areas listed in Table 094-1 to accompany the Supervisor's representatives in the inspection. Cards will be prepared by the Supervisor's representatives describing each deficiency found and the required corrective action.

Within 24 hours after BST completion, the Supervisor will provide to the Contractor one copy of each deficiency card written during BST. Within the following 48 hours, the Supervisor and Contractor representatives shall, in joint meeting, bilaterally determine whether responsibility is the Contractor's or the Government's for each deficiency.

094d. ACCEPTANCE TRIALS (AT)

Acceptance Trials are trials and material inspection performed underway by INSURV.

These Trials shall be performed at sea utilizing INSURV instructions to demonstrate to INSURV the compliance with Contractual requirements. Any tests specified under BT which are requested by INSURV, shall be repeated during AT. Successful completion of these trials, as specified herein, is prerequisite to acceptance of the ship by the Government.

Documentation of the results of AT shall be prepared by the Contractor.

Compartments shall be complete, including lagging, insulation, deck covering, labeling, and painting.

Deficiencies shall be reported to INSURV upon arrival for trials. A system shall be established to ensure timely resolution and correction of the waived items. Data recorded during earlier tests and trials, together with analysis of this data, shall be made available to INSURV at AT.

Table 094-1

SHIP INSPECTION CATEGORIES

Department	Symbol
Auxiliaries	AX
Damage Control	DC
Deck	DK
Electrical	EL
Environmental Protection	EP
Habitability	HB
Main Propulsion	MP
Mission Systems	CS
Navigation	NV
Occupational Health	OH
Operations	OP
Supply	SP

The Contractor shall notify the Supervisor in writing of the date he desires to perform the trials, provide trial agenda, and identify the special Government services to be provided for the trial. The trial date and trial agenda are subject to the approval of INSURV.

The Supervisor will make arrangements with other Government activities, as requested by the Contractor, for services necessary to demonstrate satisfactory operation of installed ship equipment and systems.

Copies of each complete test procedure shall be available for use by Government representatives. A tabulated list of tests not completed shall be provided. After completion of AT, and before official delivery of the ship, Contractor-responsible work shall be completed or resolved to the satisfaction of the Supervisor.

Technical manuals shall be made available to INSURV during trials. Before the trials, the Contractor shall arrange to have onboard electronic technicians and data recorders, as necessary, to perform conclusive performance tests of electronics systems during trials. Electronic systems (such as communications, radar, and such other systems) whose performance is affected by restricted environment of the ship, shall be scheduled in the trial agenda for testing during the underway portion of the trials. Other electronic systems shall be tested at an appropriate time during the trials.

SECTION 095
TEST REQUIREMENTS

General. - The Contractor shall establish a Ship Acceptance Program which demonstrate compliance with ship, systems and equipment performance requirements. Shipboard tests shall be performed in accordance with SNAME Technical and Research Bulletin No. 3-39, to demonstrate acceptable performance.

A test numbering systems shall be used which assigns identifying numbers to test documentation and test data. NAVSEA publication No. 0900-LP-095-2010 may be used as a guide for test numbering. The numbering system shall enable traceability to the SOR section for which the test is conducted.

The SOR sections are dated 31 July 1991 with RFE 3 and 4 included.

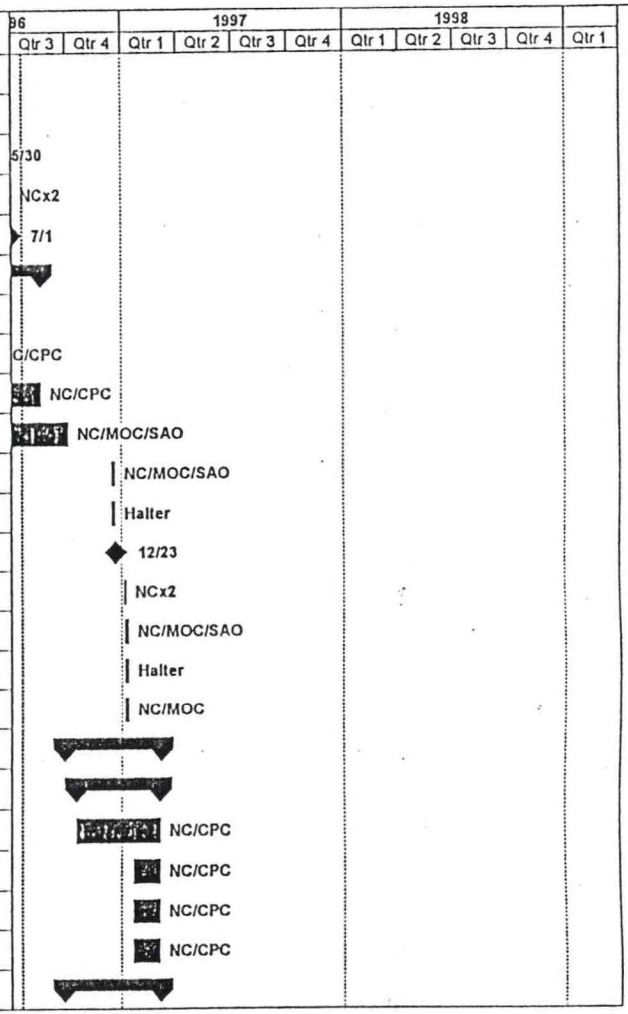
Appendix C

Pre- and Post- Delivery Schedule

NOAA Ship RONALD H. BROWN
Pre and Post delivery activities

7/19/96

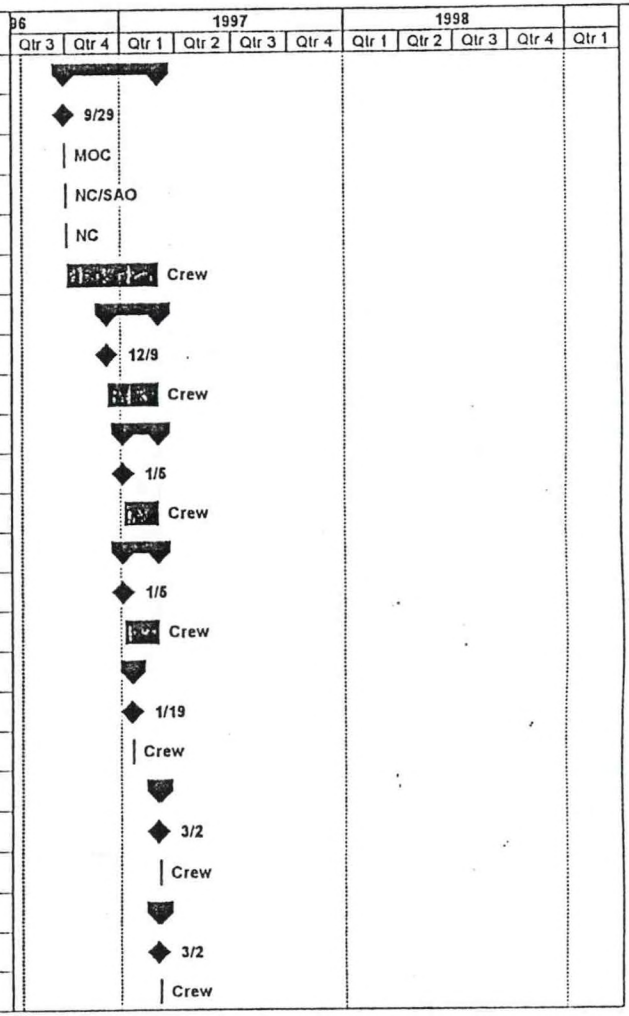
ID	Task Name	Duration	Start	Finish	Resource Names
1	Start construction	0d	9/12/94	9/12/94	Halter
2	Keel laid	0d	2/21/95	2/21/95	Halter
3	Launch vessel	0d	5/30/96	5/30/96	Halter
4	Contract for stability program (based on REVELLE data)	1d	6/30/96	7/1/96	NCx2
5	Identify homeport	0d	7/1/96	7/1/96	NC
6	**Identify officers and crew**	**122d**	**3/4/96**	**8/20/96**	**NC/MOC**
7	Final ship's complement	0d	4/1/96	4/1/96	NC
8	Identify Corps Officers	64d	3/4/96	5/30/96	NC/CPC
9	Assign officers	67d	5/20/96	8/20/96	NC/CPC
10	Identify Trials and Acceptance Team (T&A Team)	70d	7/1/96	10/4/96	NC/MOC/SAO
11	CO/XO, CME, 1st Eng, CB, ETs available for Builder's Trials	5d	12/16/96	12/20/96	NC/MOC/SAO
12	Builder's Dock Trials	5d	12/16/96	12/20/96	Halter
13	Conduct inclining experiment	0d	12/23/96	12/23/96	Halter
14	Update stability software	1d	1/6/97	1/6/97	NCx2
15	T&A team available for Builder's Sea Trials	5d	1/6/97	1/10/97	NC/MOC/SAO
16	Builder's Sea Trials	5d	1/6/97	1/10/97	Halter
17	CO/XO, CME, 1st, CB & ETs for Sea Trials	5d	1/6/97	1/10/97	NC/MOC
18	**Crew Recruitment and Arrival**	**113d**	**9/29/96**	**3/5/97**	**NC/MOC/SAO**
19	Officers	97d	10/18/96	3/3/97	NC/CPC
20	CO or XO	97d	10/18/96	3/3/97	NC/CPC
21	XO or CO	31d	1/20/97	3/3/97	NC/CPC
22	OPS	31d	1/20/97	3/3/97	NC/CPC
23	Junior Officer	31d	1/20/97	3/3/97	NC/CPC
24	Engineers	113d	9/29/96	3/5/97	



NOAA Ship RONALD H. BROWN
Pre and Post delivery activities

7/19/96

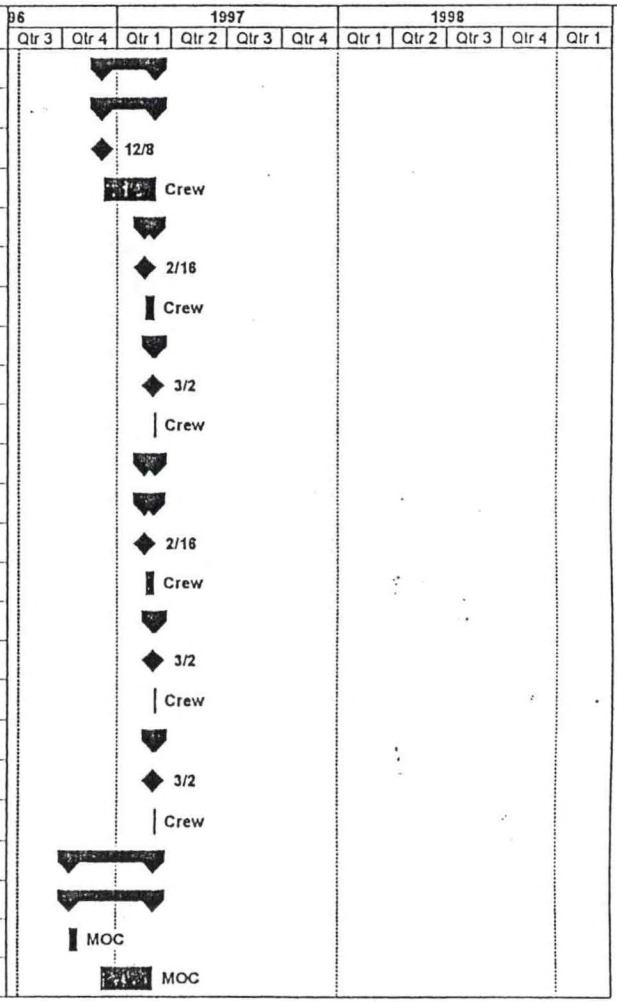
ID	Task Name	Duration	Start	Finish	Resource Names
25	CME	111d	9/29/96	3/3/97	
26	Recruit by	0d	9/29/96	9/29/96	MOC
27	AMC orientation	1d	9/30/96	9/30/96	MOC
28	HQ orientation	1.5d	10/2/96	10/3/96	NC/SAO
29	Fly to shipyard	1d	10/3/96	10/3/96	NC
30	At shipyard	107d	10/4/96	3/3/97	Crew
31	1st	61d	12/9/96	3/3/97	
32	Recruit by	0d	12/9/96	12/9/96	MOC
33	At shipyard	60d	12/10/96	3/3/97	Crew
34	2nd	41d	1/5/97	3/3/97	
35	Recruit by	0d	1/5/97	1/5/97	MOC
36	At shipyard	40d	1/7/97	3/3/97	Crew
37	3rd	41d	1/5/97	3/3/97	
38	Recruit by	0d	1/5/97	1/5/97	MOC
39	At Shipyard	40d	1/7/97	3/3/97	Crew
40	Jr Eng	1d	1/19/97	1/20/97	
41	Recruit by	0d	1/19/97	1/19/97	MOC
42	At Shipyard	1d	1/20/97	1/20/97	Crew
43	Oiler	3d	3/2/97	3/5/97	
44	Recruit by	0d	3/2/97	3/2/97	MOC
45	At Shipyard	1d	3/5/97	3/5/97	Crew
46	Wiper	3d	3/2/97	3/5/97	NC/MOC
47	Recruit by	0d	3/2/97	3/2/97	MOC
48	At Shipyard	1d	3/5/97	3/5/97	Crew



NOAA Ship RONALD H. BROWN
Pre and Post delivery activities

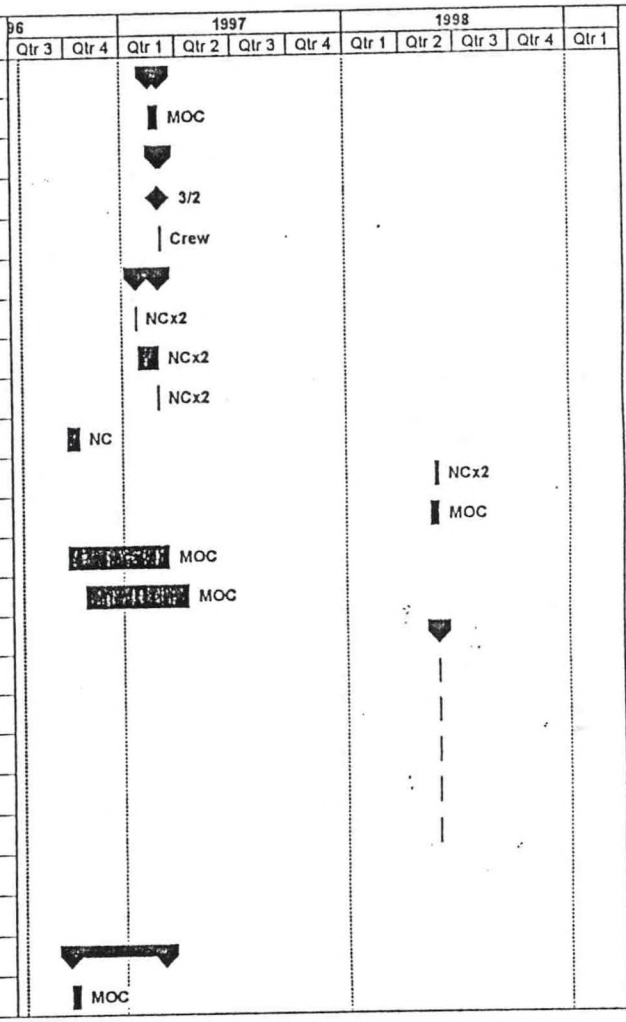
7/19/96

ID	Task Name	Duration	Start	Finish	Resource Names
49	Deck	63d	12/8/96	3/5/97	
50	Chief Bosun	63d	12/8/96	3/5/97	
51	Recruit by	0d	12/8/96	12/8/96	MOC
52	At Shipyard	62d	12/10/96	3/5/97	Crew
53	3 ABs	11d	2/16/97	3/3/97	
54	Recruit by	0d	2/16/97	2/16/97	MOC
55	At Shipyard	11d	2/17/97	3/3/97	Crew
56	2 Ordinary	3d	3/2/97	3/5/97	
57	Recruit by	0d	3/2/97	3/2/97	MOC
58	At Shipyard	1d	3/5/97	3/5/97	Crew
59	Stewards	13d	2/16/97	3/5/97	
60	Chief Cook	11d	2/16/97	3/3/97	
61	Recruit by	0d	2/16/97	2/16/97	MOC
62	At Shipyard	10d	2/18/97	3/3/97	Crew
63	2nd Cook	3d	3/2/97	3/5/97	
64	Recruit by	0d	3/2/97	3/2/97	MOC
65	At Shipyard	1d	3/5/97	3/5/97	Crew
66	Messman	3d	3/2/97	3/5/97	
67	Recruit by	0d	3/2/97	3/2/97	MOC
68	At Shipyard	1d	3/5/97	3/5/97	Crew
69	ETs	99d	10/16/96	3/3/97	
70	Lead ET/Marine Tech	99d	10/16/96	3/3/97	
71	At Shipyard for SIS Installation Prep	10d	10/16/96	10/29/96	MOC
72	At Shipyard	61d	12/9/96	3/3/97	MOC



NOAA Ship RONALD H. BROWN
Pre and Post delivery activities

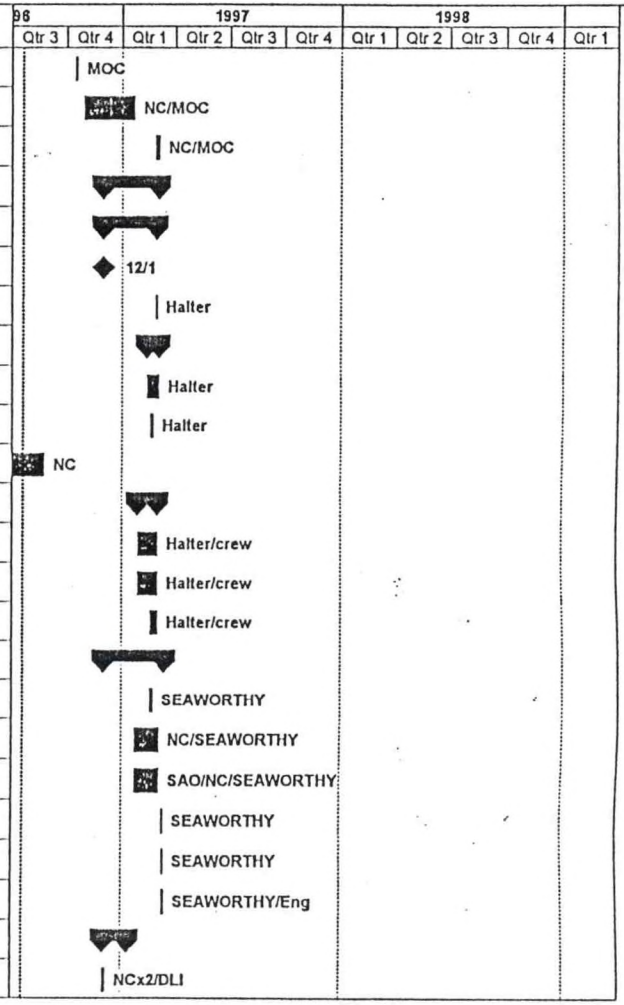
ID	Task Name	Duration	Start	Finish	Resource Names
73	ET/Marine Tech	11d	2/17/97	3/3/97	
74	At Shipyard	11d	2/17/97	3/3/97	MOC
75	GVA	3d	3/2/97	3/5/97	
76	Recruit by	0d	3/2/97	3/2/97	MOC
77	At Shipyard	1d	3/5/97	3/5/97	Crew
78	Port Engineers (Stricker & Burks)	26d	1/24/97	2/28/97	
79	Travel to shipyard	1d	1/24/97	1/24/97	NCx2
80	At shipyard for familiarization	25d	1/27/97	2/28/97	NCx2
81	Return travel to Norfolk	1d	2/28/97	2/28/97	NCx2
82	Officers' refresher training	15d	10/1/96	10/21/96	NC
83	ABS training	5d	5/26/98	6/1/98	NCx2
84	GMDSS training	10d	5/19/98	6/1/98	MOC
85	Establish weight estimating/reporting procedures for post-delivery activities	119d	10/1/96	3/14/97	MOC
86	Establish Charleston/Norfolk support contract	120d	10/30/96	4/15/97	MOC
87	Administrative tasks	1d	6/1/98	6/1/98	
88	Establish UIC	1d	6/1/98	6/1/98	
89	Establish Imprest Fund	1d	6/1/98	6/1/98	
90	Establish credit card accounts	1d	6/1/98	6/1/98	
91	Determine radio call sign	1d	6/1/98	6/1/98	
92	Commssion INMARSAT	1d	6/1/98	6/1/98	
93					
94					
95	Medical Equipment and Supplies	111d	10/1/96	3/4/97	
96	Identify drugs, supplies and medical equipment that can be transferred from MB	10d	10/1/96	10/14/96	MOC



NOAA Ship RONALD H. BROWN
Pre and Post delivery activities

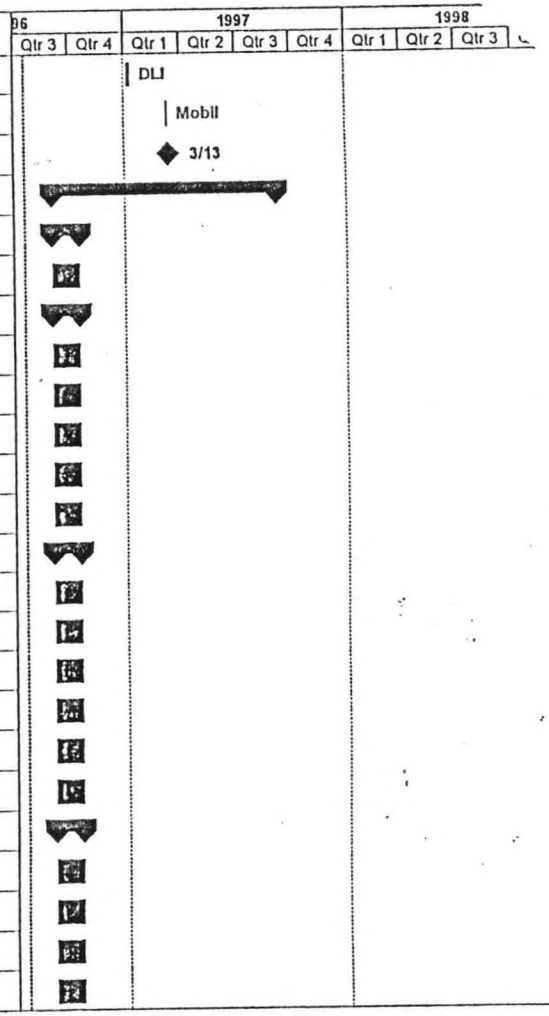
7/19/96

ID	Task Name	Duration	Start	Finish	Resource Names
97	Identify medical items that need to be procured	3d	10/15/96	10/17/96	MOC
98	Procure medical supplies	60d	10/29/96	1/20/97	NC/MOC
99	Ship medical items to the ship	6d	2/25/97	3/4/97	NC/MOC
100	**Spares**	**66d**	**12/1/96**	**3/3/97**	
101	**Shore based spares**	**64d**	**12/1/96**	**2/27/97**	
102	Identify storage location	0d	12/1/96	12/1/96	NC/MOC
103	Load SOR shore base spares	1d	2/27/97	2/27/97	Halter
104	**VRS (Vendor Recommended Spares)**	**16d**	**2/11/97**	**3/3/97**	NC/MOC
105	Load shipboard spares	15d	2/11/97	3/3/97	Halter
106	Inventory shipboard spares	5d	2/17/97	2/21/97	Halter
107	Identify additional NOAA training requirements	40d	7/1/96	8/23/96	NC
108	**Crew Familiarization (Contract)**	**25d**	**1/27/97**	**2/28/97**	
109	Deck Officer Familiarization	25d	1/27/97	2/28/97	Halter/crew
110	Engineering Familiarization	25d	1/27/97	2/28/97	Halter/crew
111	Deck Crew Familiarization	10d	2/17/97	2/28/97	Halter/crew
112	**SAMM Development**	**74d**	**12/2/96**	**3/13/97**	
113	Develop Name Plate Data	5d	2/17/97	2/21/97	SEAWORTHY
114	Draft SAMM for vessel	6w	1/22/97	3/4/97	NC/SEAWORTHY
115	Load spare parts module	6w	1/22/97	3/4/97	SAO/NC/SEAWORTHY
116	Install aboard	1d	3/10/97	3/10/97	SEAWORTHY
117	Test	1d	3/11/97	3/11/97	SEAWORTHY
118	Training	3d	3/11/97	3/13/97	SEAWORTHY/Eng
119	**Establish vibration analysis procedures**	**30d**	**12/2/96**	**1/10/97**	
120	Install vibration sensor pads	4d	12/2/96	12/5/96	NCx2/DLI



NOAA Ship RONALD H. BROWN
Pre and Post delivery activities

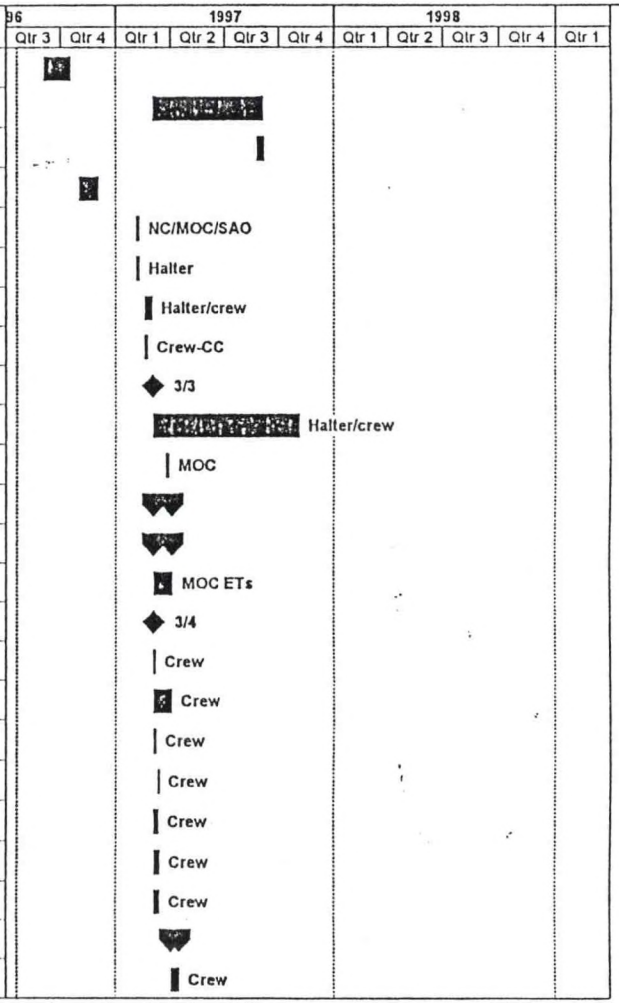
ID	Task Name	Duration	Start	Finish	Resource Names
121	take initial sensor readings	5d	1/6/97	1/10/97	DLI
122	Establish oil analysis procedures	1d	3/10/97	3/10/97	Mobil
123	Accept SAMM system	0d	3/13/97	3/13/97	NC/Crew
124	**Post-delivery tests and trials**	**264d**	**9/3/96**	**9/5/97**	
125	**Develop test and trials procedures**	**33d**	**9/3/96**	**10/17/96**	
126	Deck equipment	33d	9/3/96	10/17/96	
127	**Navigation**	**33d**	**9/3/96**	**10/17/96**	
128	Dynamic positioning system	33d	9/3/96	10/17/96	
129	LORAN C	33d	9/3/96	10/17/96	
130	GPS - MX 1107	33d	9/3/96	10/17/96	
131	Automatic Radio Direction Finder	33d	9/3/96	10/17/96	
132	Depth finding system	33d	9/3/96	10/17/96	
133	**Electronic Equipment**	**33d**	**9/3/96**	**10/17/96**	
134	INMARSAT	33d	9/3/96	10/17/96	
135	GMDSS	33d	9/3/96	10/17/96	
136	Doppler Speed log	33d	9/3/96	10/17/96	
137	Young wind birds	33d	9/3/96	10/17/96	
138	Entertainment system	33d	9/3/96	10/17/96	
139	Weather fax	33d	9/3/96	10/17/96	
140	**Mission equipment**	**33d**	**9/3/96**	**10/17/96**	
141	SEABEAM	33d	9/3/96	10/17/96	
142	ADCP	33d	9/3/96	10/17/96	
143	CTD	33d	9/3/96	10/17/96	
144	Sub-bottom profiler	33d	9/3/96	10/17/96	



NOAA Ship RONALD H. BROWN
Pre and Post delivery activities

7/19/96

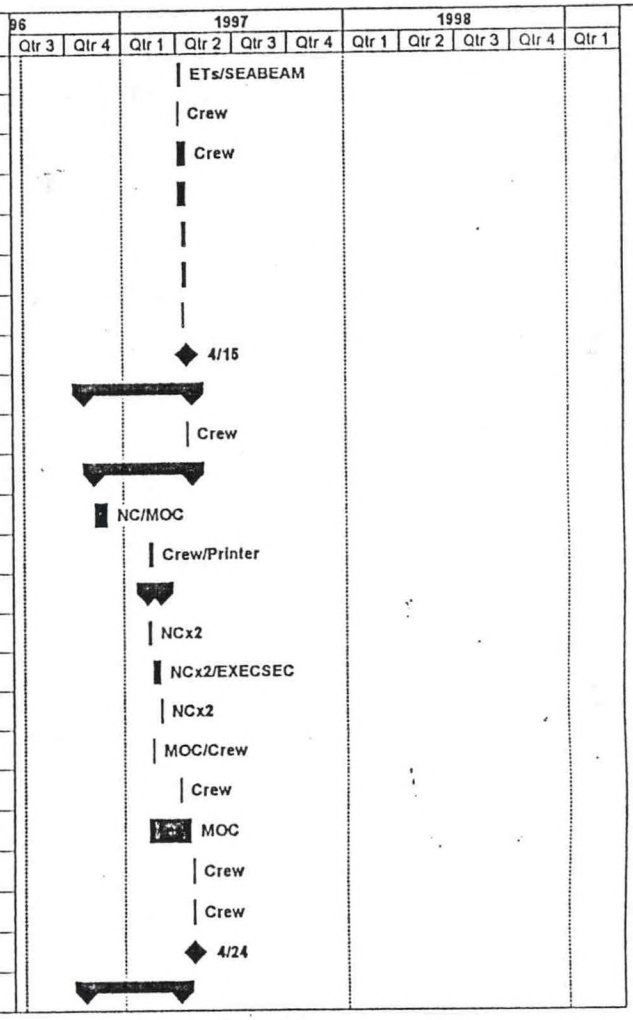
ID	Task Name	Duration	Start	Finish	Resource Names
145	Acoustic position system	33d	9/3/96	10/17/96	
146	Conduct post-delivery tests and trials	134d	3/3/97	9/4/97	
147	Document post delivery tests and trials	10d	8/25/97	9/5/97	
148	Provide NAVSEA and Halter with post-delivery tests and trials plan.	23d	11/1/96	12/3/96	
149	T&A team available for Acceptance Trials	5d	2/3/97	2/7/97	NC/MOC/SAO
150	Acceptance Trials	5d	2/3/97	2/7/97	Halter
151	Pre-delivery loadout (contract items)	10d	2/17/97	2/28/97	Halter/crew
152	Order Food	5d	2/17/97	2/21/97	Crew-CC
153	Shipyard Delivery of ship to NOAA (Week of)	0d	3/3/97	3/3/97	Halter
154	Warranty Period (9 months from date of delivery)	176d	3/3/97	11/3/97	Halter/crew
155	Homeport prep for arrival	5d	3/24/97	3/28/97	MOC
156	**Post delivery availability (PDA) - 30 calendar days at Halter w/support**	**23d**	**3/4/97**	**4/3/97**	NC/MOC/Crew
157	**Installation, checkout and testing of NOAA furnished mission systems**	**23d**	**3/4/97**	**4/3/97**	
158	SCS Installation	23d	3/4/97	4/3/97	MOC ETs
159	Crew moves aboard	0d	3/4/97	3/4/97	Crew
160	Chill reefer and freezer for food arrival	2d	3/4/97	3/5/97	Crew
161	Install furnished equipment	22d	3/4/97	4/2/97	Crew
162	Load Food Order	3d	3/5/97	3/7/97	Crew
163	Fuel ship	1d	3/12/97	3/12/97	Crew
164	Load medical supplies	5d	3/4/97	3/10/97	Crew
165	Load cross deck items designated for Pascagoula	7d	3/5/97	3/13/97	Crew
166	Load other outfitting items	7d	3/5/97	3/13/97	Crew
167	**Transit to homeport (dependent on departure date)**	**10d**	**4/2/97**	**4/15/97**	
168	Transit	10d	4/2/97	4/15/97	Crew



NOAA Ship RONALD H. BROWN
Pre and Post delivery activities

7/19/96

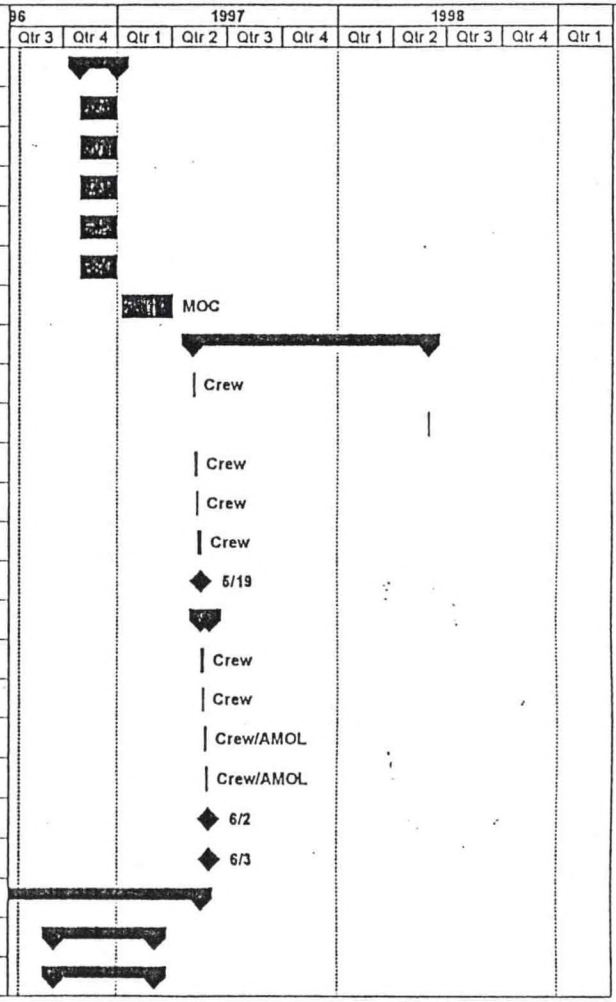
ID	Task Name	Duration	Start	Finish	Resource Names
169	SEABEAM Test	3d	4/4/97	4/8/97	ETs/SEABEAM
170	CTD cast	1d	4/4/97	4/4/97	Crew
171	ADCP tested	10d	4/2/97	4/15/97	Crew
172	winches, cranes, handling gear tests	10d	4/2/97	4/15/97	
173	SCS test	4d	4/10/97	4/15/97	
174	Other scientific systems	4d	4/10/97	4/15/97	
175	Sonar self noise test (TBD)	1d	4/10/97	4/10/97	
176	Arrival at Charleston	0d	4/15/97	4/15/97	MOC/Crew
177	**Charleston Activities**	**128d**	**10/30/96**	**4/24/97**	
178	Offload SOR shore based spares	1d	4/16/97	4/16/97	Crew
179	**Commissioning ceremony**	**114d**	**11/15/96**	**4/24/97**	MOC/Crew
180	Compile invitation list	15d	11/15/96	12/5/96	NC/MOC
181	Print invitations	5d	2/11/97	2/17/97	Crew/Printer
182	**Prepare Commissioning Certificate**	**16d**	**2/10/97**	**3/3/97**	
183	Prepare Certificate	5d	2/10/97	2/14/97	NCx2
184	Forward to DOC for Secretary' signature	10d	2/17/97	2/28/97	NCx2/EXECSEC
185	Send to MOC	1d	3/3/97	3/3/97	NCx2
186	Mail Invitations	1d	2/17/97	2/17/97	MOC/Crew
187	Talley RSVPs	1d	4/2/97	4/2/97	Crew
188	Arrange Reception	50d	2/10/97	4/18/97	MOC
189	Site Set up	1d	4/23/97	4/23/97	Crew
190	Practice ceremony	1d	4/23/97	4/23/97	Crew
191	Commissioning ceremony	0d	4/24/97	4/24/97	NC/MOC/Crew
192	**Fitting Out Availability support contract**	**110d**	**10/30/96**	**4/1/97**	NC/MOC/Crew



NOAA Ship RONALD H. BROWN
Pre and Post delivery activities

7/19/96

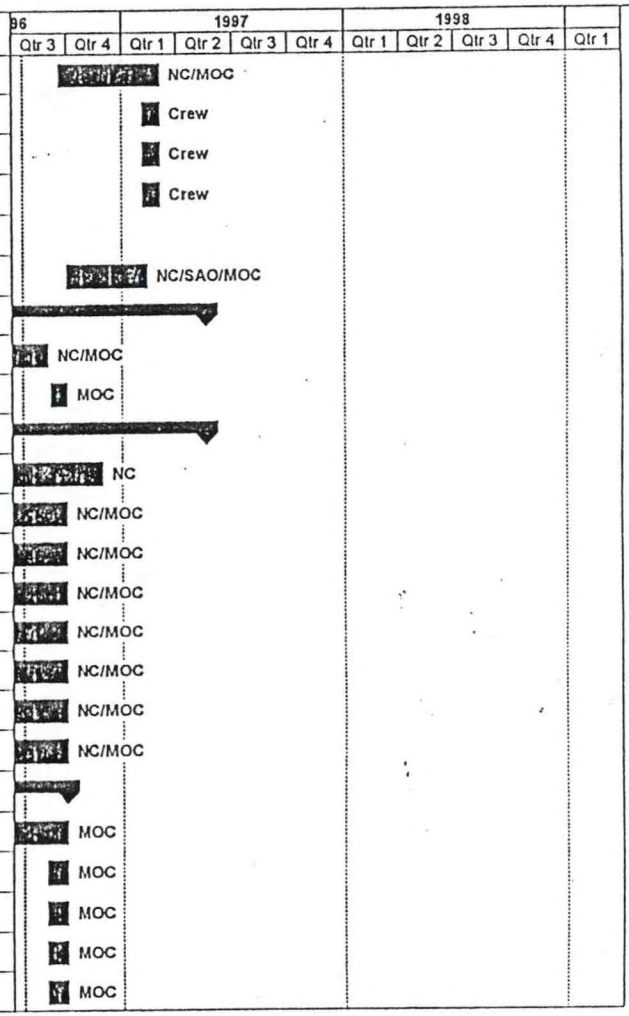
ID	Task Name	Duration	Start	Finish	Resource Names
193	Design and engineer work for mods	45d	10/30/96	12/31/96	NC/MOC
194	Bow tower foundation	45d	10/30/96	12/31/96	
195	Bow tower mods (if required)	45d	10/30/96	12/31/96	
196	Services to forward van sites (if not done by Halter)	45d	10/30/96	12/31/96	
197	5 cm Doppler Radar Installation	45d	10/30/96	12/31/96	
198	Other minor mods	45d	10/30/96	12/31/96	
199	Award task	60d	1/8/97	4/1/97	MOC
200	Possible test and trials cruise to Norfolk/Washington, D.C. w/ open house	279d	5/7/97	6/1/98	
201	Transit to Norfolk	2d	5/7/97	5/8/97	Crew
202	Possible test off Ft Story	1d	6/1/98	6/1/98	
203	Norfolk stopover	2d	5/9/97	5/12/97	Crew
204	Transit to Washington D.C.	2d	5/12/97	5/13/97	Crew
205	D.C. stopover	5d	5/13/97	5/19/97	Crew
206	Depart D.C.	0d	5/19/97	5/19/97	Crew
207	Possible test and trials cruise to Miami w/ open house at AOML	11d	6/19/97	6/3/97	
208	Underway trials	5d	5/19/97	5/23/97	Crew
209	Miami Arrival	1d	5/23/97	5/23/97	Crew
210	AOML loadout	3d	5/26/97	5/28/97	Crew/AMOL
211	Open House	2d	5/29/97	5/30/97	Crew/AMOL
212	Miami Departure	0d	6/2/97	6/2/97	Crew
213	End of FOA (NAVSEA MOA expires 11 months from this date)	0d	6/3/97	6/3/97	
214	Outfitting	382d	12/1/96	6/19/97	
215	Develop NOAA Outfitting list	120d	9/18/96	3/4/97	NC/OAR/MOC
216	Procurement Items	120d	9/18/96	3/4/97	



NOAA Ship RONALD H. BROWN
Pre and Post delivery activities

7/19/96

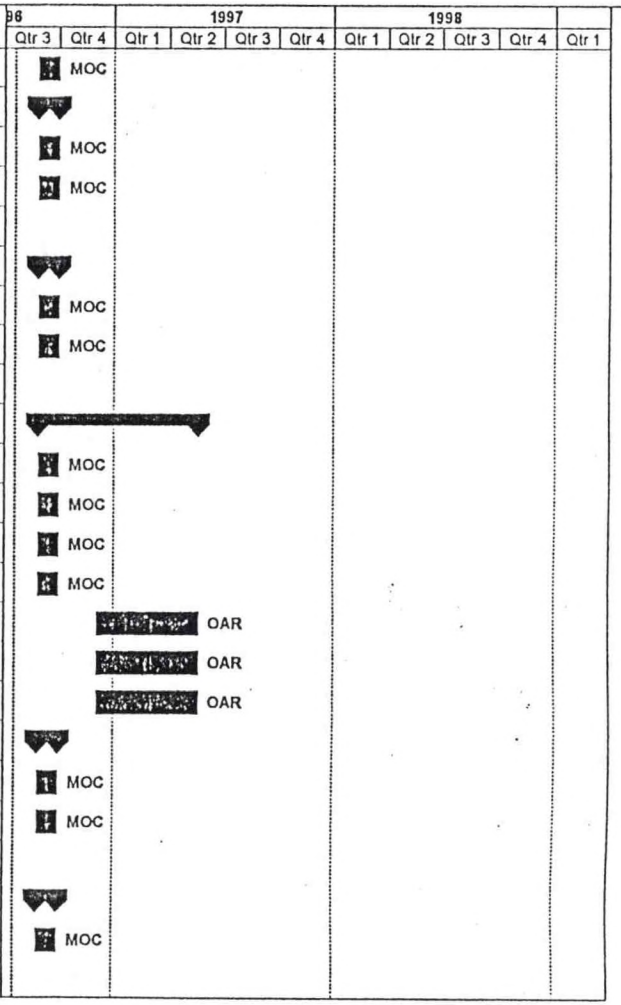
ID	Task Name	Duration	Start	Finish	Resource Names
217	Line throwing apparatus (Same unit as KA'IMIMOANA)	120d	9/18/96	3/4/97	NC/MOC
218	Tide and Current Tables or Computer Program	22d	2/3/97	3/4/97	Crew
219	Coast Pilot	22d	2/3/97	3/4/97	Crew
220	Light List	22d	2/3/97	3/4/97	Crew
221					
222	Purchase outfitting	95d	10/1/96	2/10/97	NC/SAO/MOC
223	**Identify Crossdeck equipment (CDE)**	**382d**	**12/1/95**	**5/19/97**	
224	Identify items available and sources for crossdecking	60d	6/10/96	8/30/96	NC/MOC
225	Select items and sources	20d	9/4/96	10/1/96	MOC
226	**Items for PDA Installation**	**382d**	**12/1/95**	**5/19/97**	
227	Computers, Printers, etc	261d	12/1/95	11/29/96	NC
228	Thermosalinograph	81d	6/10/96	9/30/96	NC/MOC
229	Autosal	81d	6/10/96	9/30/96	NC/MOC
230	Rosette	81d	6/10/96	9/30/96	NC/MOC
231	Niskin Bottles	81d	6/10/96	9/30/96	NC/MOC
232	Rosette deck Unit	81d	6/10/96	9/30/96	NC/MOC
233	SEAS System	81d	6/10/96	9/30/96	NC/MOC
234	XBT launcher	81d	6/10/96	9/30/96	NC/MOC
235	**Navigational equipment**	**81d**	**6/10/96**	**9/30/96**	
236	Charts	81d	6/10/96	9/30/96	MOC
237	Sight Reduction Tables	24d	8/28/96	9/30/96	MOC
238	MX200	24d	8/28/96	9/30/96	MOC
239	Misc Books	24d	8/28/96	9/30/96	MOC
240	Weems Plotters	24d	8/28/96	9/30/96	MOC



NOAA Ship RONALD H. BROWN
Pre and Post delivery activities

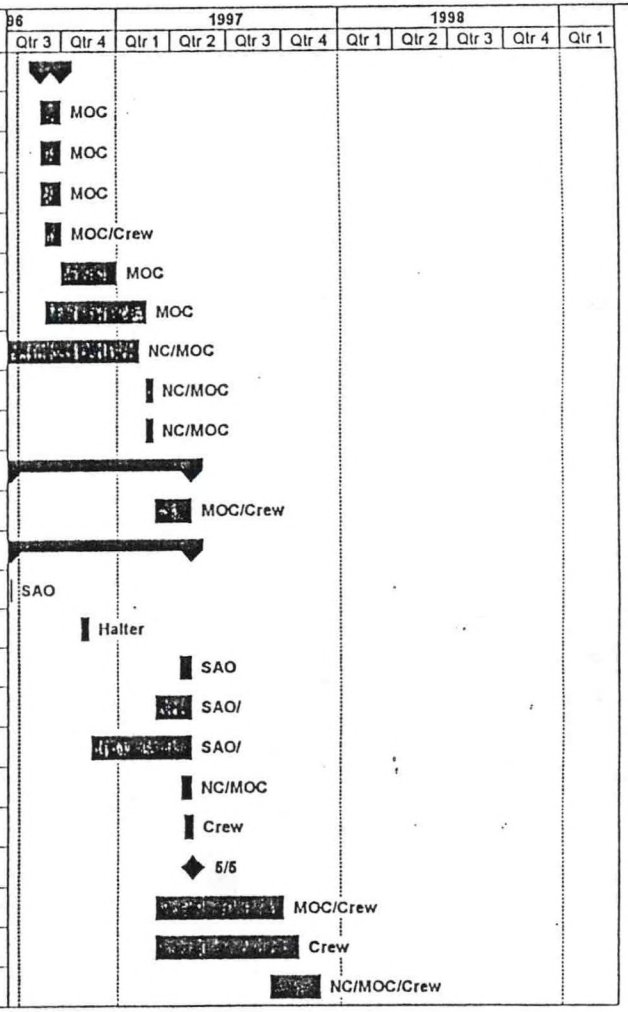
7/19/96

ID	Task Name	Duration	Start	Finish	Resource Names
241	Deck Log	24d	8/28/96	9/30/96	MOC
242	**Damage Control Equipment**	**24d**	**8/28/96**	**9/30/96**	
243	Thermo Imaging Camera	24d	8/28/96	9/30/96	MOC
244	Class B EPIRBs?	24d	8/28/96	9/30/96	MOC
245					
246	**Deck**	**24d**	**8/28/96**	**9/30/96**	
247	Securing Gear	24d	8/28/96	9/30/96	MOC
248	Cargo Nets, Straps, Slings	24d	8/28/96	9/30/96	MOC
249					
250	**Survey/Scientific**	**189d**	**8/28/96**	**5/19/97**	
251	PTR Paper	24d	8/28/96	9/30/96	MOC
252	Water Sample bottles	24d	8/28/96	9/30/96	MOC
253	Standard Seawater For Autosal	24d	8/28/96	9/30/96	MOC
254	XBTs	24d	8/28/96	9/30/96	MOC
255	Weather ballons	120d	12/3/96	5/19/97	OAR
256	Radio sondes	120d	12/3/96	5/19/97	OAR
257	Helium	120d	12/3/96	5/19/97	OAR
258	**Yeoman**	**24d**	**8/28/96**	**9/30/96**	
259	Forms, Travel Vouchers	24d	8/28/96	9/30/96	MOC
260	Regulations, Directives	24d	8/28/96	9/30/96	MOC
261					
262	**Engineering**	**24d**	**8/28/96**	**9/30/96**	
263	Engineering Log	24d	8/28/96	9/30/96	MOC
264					



NOAA Ship RONALD H. BROWN
Pre and Post delivery activities

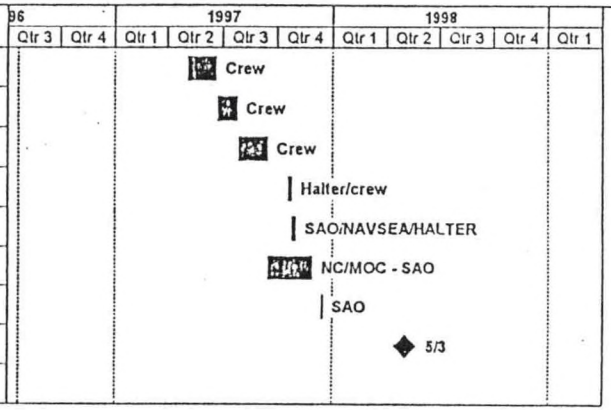
ID	Task Name	Duration	Start	Finish	Resource Names
265	Electronics	24d	8/28/96	9/30/96	
266	Work Bench Items	24d	8/28/96	9/30/96	MOC
267	Hand-held radios, VHF and NOAA	24d	8/28/96	9/30/96	MOC
268	Radios	24d	8/28/96	9/30/96	MOC
269	Remove CDE from decommissioned ships	20d	9/3/96	9/30/96	MOC/Crew
270	Refurbish CDE (if required)	66d	9/30/96	12/30/96	MOC
271	Store CDE	120d	9/3/96	2/17/97	MOC
272	Identify CBE for PDA/FOA installation	173d	6/10/96	2/5/97	NC/MOC
273	Ship PDA CDE to Pascagoula	10d	2/17/97	2/28/97	NC/MOC
274	Ship FOA CDE to Pascagoula/Charleston/Norfolk	10d	2/17/97	2/28/97	NC/MOC
275	Install/load outfitting	215d	7/8/96	5/2/97	NC
276	Cross deck equipment	44d	3/4/97	5/2/97	MOC/Crew
277	5 cm Doppler Radar	215d	7/8/96	5/2/97	SAO/NAVSEA/HALTER
278	ECP to Halter	1d	7/8/96	7/8/96	SAO
279	Halter mods to Ship	10d	11/1/96	11/14/96	Halter
280	NOAA installation during FOA	15d	4/14/97	5/2/97	SAO
281	Upper air sounder ?? (Currently stored in Charleston) to be upgraded - ONEG-A going away	44d	3/4/97	5/2/97	SAO/
282	Wind profiler ?? Still outstand.[illegible]	24w	11/18/96	5/2/97	SAO/
283	Complete SCS Installation	13d	4/16/97	5/2/97	NC/MOC
284	Load for first cruise	11d	4/21/97	5/5/97	Crew
285	Depart for first cruise	0d	5/5/97	5/5/97	Crew
286	Prepare work order items for Post Shakedown Availability	151d	3/4/97	9/30/97	MOC/Crew
287	Prepare warranty work items	169d	3/4/97	10/24/97	Crew
288	Provide warranty items to NAVSEA/Halter	60d	9/8/97	11/28/97	NC/MOC/Crew



NOAA Ship RONALD H. BROWN
Pre and Post delivery activities

7/19/96

ID	Task Name	Duration	Start	Finish	Resource Names
289	Cruise - North Atlantic (TBD)	35d	5/5/97	6/20/97	Crew
290	Cruise - East Pacific (TBD)	25d	6/23/97	7/25/97	Crew
291	Cruise - North Pacific (TBD)	35d	7/28/97	9/14/97	Crew
292	Final Contract Trials (FCT)	5d	10/20/97	10/24/97	Halter/crew
293	Resolution of deficiencies noted during post-delivery tests and trials and FCT	5d	10/25/97	10/31/97	SAO/NAVSEA/HALTER
294	Post Shakedown Availability	55d	9/15/97	11/28/97	NC/MOC - SAO
295	Final negotiations with NAVSEA	1d	12/15/97	12/15/97	SAO
296	NAVSEA-NOAA MOA expires	0d	5/3/98	5/3/98	
297	Final contract close-out	0d	11/3/99	11/3/99	



Appendix D

AGOR NOAA Training Schedule

AGOR NOAA Teaching Schedule	WEEK 1				Instructor Mr. Upson
PERIOD	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1	Chapter 1 Introduction Section 1.0 Course	Chapter 2 cont. Section 2.0 Emergency Diesel Generator (EDG)	Chapter 2 cont. Electrical Distribution cont.	Chapter 2 cont. Section 5.0 Transformers	Chapter 2 cont. Section 7.0 Uninterruptable Power Supply (UPS)
2	Chapter 1 cont. Section 2.0 Ship Familiarization	Chapter 2 cont. EDG cont.	Chapter 2 cont. Tour Electrical Generation Plant	Chapter 2 cont. Section 6.0 SCR Drives	Chapter 2 cont. Tour Motor Generators, Transformers, UPS & SCRs
3	Chapter 1 cont. Section 2.0 Ship Familiarization cont.	Chapter 2 cont. EDG cont.	Chapter 2 cont. Tour Electrical Generation Plant	Chapter 2 cont. SCR Drives cont.	Chapter 2 cont. Tour Motor Generators, Transformers, UPS & SCRs
4	Chapter 1 cont. Ship Tour	Chapter 2 cont. EDG cont.	Chapter 2 cont. Tour Electrical Generation Plant	Chapter 2 cont. SCR Drives cont.	Chapter 2 cont. Tour Motor Generators, Transformers, UPS & SCRs
5	Chapter 2 Section 1.0 Electric Plant Ship's Service Diesel Generators (SSDG)	Chapter 2 cont. Section 3.0 Electrical Distribution	Chapter 2 cont. Tour Electrical Generation Plant	Chapter 2 cont. SCR Drives cont.	Chapter 2 cont. Tour Motor Generators, Transformers, UPS & SCRs
6	Chapter 2 cont. SSDGs cont.	Chapter 2 cont. Electrical Distribution cont.	Chapter 2 cont. Section 4.0 Motor Generators	Chapter 2 cont. SCR Drives cont.	Chapter 2 cont. Tour Motor Generators, Transformers, UPS & SCRs
7	Chapter 2 cont. SSDGs cont.	Chapter 2 cont. Electrical Distribution cont.	Chapter 2 cont. Motor Generators cont.	Chapter 2 cont. SCR Drives cont.	Chapter 2 cont. Tour Motor Generators, Transformers, UPS & SCRs
8	Chapter 2 cont. SSDGs cont.	Chapter 2 cont. Electrical Distribution cont.	Chapter 2 cont. Motor Generators cont.	Chapter 2 cont. SCR Drives cont.	Review Questions and Answers Weekly Critique

AGOR NOAA Teaching Schedule		WEEK 2			Instructor Mr. Upson
PERIOD	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1	Chapter 3 Propulsion System Section 1.0 Propulsion Diesel Generators	Chapter 3 cont. Z-Drive Propulsors cont.	Chapter 3 cont. Tour Propulsion System	Chapter 4 Machinery Control System Section 1.0 System Introduction	Chapter 4 cont. Logicmaster 6 Programming Software cont.
2	Chapter 3 cont. Propulsion Diesel Generators cont.	Chapter 3 cont. Z-Drive Propulsors cont.	Chapter 3 cont. Tour Propulsion System	Chapter 4 cont. System Introduction cont.	Chapter 4 cont. Logicmaster 6 Programming Software cont.
3	Chapter 3 cont. Propulsion Diesel Generators cont.	Chapter 3 cont. Z-Drive Propulsors cont.	Chapter 3 cont. Tour Propulsion System	Chapter 4 cont. System Introduction cont.	Chapter 4 cont. Logicmaster 6 Programming Software cont.
4	Chapter 3 cont. Propulsion Diesel Generators cont.	Chapter 3 cont. Section 4.0 Bow Thruster	Chapter 3 cont. Tour Propulsion System	Chapter 4 cont. Section 2.0 Series Six Plus Programmable Controller	Chapter 4 cont. Section 4.0 Workmaster II PLC Programming Unit
5	Chapter 3 cont. Propulsion Diesel Generators cont.	Chapter 3 cont. Bow Thruster cont.	Chapter 3 cont. Tour Propulsion System	Chapter 4 cont. Series Six Plus Programmable Controller cont.	Chapter 4 cont. Workmaster II PLC Programming Unit cont.
6	Chapter 3 cont. Section 2.0 DC Motors	Chapter 3 cont. Bow Thruster cont.	Chapter 3 cont. Tour Propulsion System	Chapter 4 cont. Series Six Plus Programmable Controller cont.	Chapter 4 cont. Workmaster II PLC Programming Unit cont.
7	Chapter 3 cont. Section 3.0 Z-Drive Propulsors	Chapter 3 cont. Bow Thruster cont.	Chapter 3 cont. Tour Propulsion System	Chapter 4 cont. Series Six Plus Programmable Controller cont.	Chapter 4 cont. Workmaster II PLC Programming Unit cont.
8	Chapter 3 cont. Z-Drive Propulsors cont.	Chapter 3 cont. Bow Thruster cont.	Chapter 3 cont. Tour Propulsion System	Chapter 4 cont. Section 3.0 Logicmaster 6 Programming Software	Review Questions and Answers Weekly Critique

AGOR NOAA Teaching Schedule		WEEK 3			Instructor Mr. Upson
PERIOD	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1	Chapter 4 cont. Section 5.0 Cimstar I Computer	Chapter 4 cont. Cimplicity System 3000 Software cont.	Chapter 4 cont. Consoles cont.	Chapter 4 cont. Consoles [GE Tech Rep]	Chapter 4 cont. Consoles cont. [GE Tech Rep]
2	Chapter 4 cont. Cimstar I Computer cont.	Chapter 4 cont. Cimplicity System 3000 Software cont.	Chapter 4 cont. Consoles cont.	Chapter 4 cont. Consoles cont. [GE Tech Rep]	Chapter 4 cont. Consoles cont. [GE Tech Rep]
3	Chapter 4 cont. Cimstar I Computer cont.	Chapter 4 cont. Cimplicity System 3000 Software cont.	Chapter 4 cont. Consoles cont.	Chapter 4 cont. Consoles cont. [GE Tech Rep]	Chapter 4 cont. Consoles cont. [GE Tech Rep]
4	Chapter 4 cont. Section 6.0 Cimplicity System 3000 Software	Chapter 4 cont. Cimplicity System 3000 Software cont.	Chapter 4 cont. Tour MCS	Chapter 4 cont. Consoles cont. [GE Tech Rep]	Chapter 4 cont. Consoles cont. [GE Tech Rep]
5	Chapter 4 cont. Cimplicity System 3000 Software cont.	Chapter 4 cont. Section 7.0 Consoles	Chapter 4 cont. Tour MCS cont.	Chapter 4 cont. Consoles cont. [GE Tech Rep]	Chapter 4 cont. Tour Consoles cont. [GE Tech Rep]
6	Chapter 4 cont. Cimplicity System 3000 Software cont.	Chapter 4 cont. Consoles cont.	Chapter 4 cont. Tour MCS	Chapter 4 cont. Consoles cont. [GE Tech Rep]	Chapter 4 cont. Tour Consoles cont. [GE Tech Rep]
7	Chapter 4 cont. Cimplicity System 3000 Software cont.	Chapter 4 cont. Consoles cont.	Chapter 4 cont. Tour MCS	Chapter 4 cont. Consoles cont. [GE Tech Rep]	Chapter 4 cont. Tour Consoles cont. [GE Tech Rep]
8	Chapter 4 cont. Cimplicity System 3000 Software cont.	Chapter 4 cont. Consoles cont.	Chapter 4 cont. Tour MCS	Chapter 4 cont. Consoles cont. [GE Tech Rep]	Review Questions and Answers Weekly Critique

AGOR NOAA Teaching Schedule	WEEK 4				Instructor Mr. Upson
PERIOD	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1	Chapter 5 Auxiliary Systems Section 1.0 Incinerator	Chapter 5 cont. Section 4.0 Lube Oil System	Chapter 5 cont. Section 7.0 Compressed Air Systems	Chapter 5 cont. Section 10.0 Refrigeration System	Chapter 6 Deck Machinery Section 1.0 Traction Winch
2	Chapter 5 cont. Tour Incinerator	Chapter 5 cont. Tour Lube Oil System	Chapter 5 cont. Tour Compressed Air Systems	Chapter 5 cont. Tour Refrigeration System	Chapter 6 cont. Traction Winch cont.
3	Chapter 5 cont. Section 2.0 Sewage System	Chapter 5 cont. Section 5.0 Oily Waste System	Chapter 5 cont. Section 8.0 Potable Water System	Chapter 5 cont. Section 11.0 Seawater Systems	Chapter 6 cont. Section 2.0 Hydrographic Winch
4	Chapter 5 cont. Sewage System cont.	Chapter 5 cont. Oily Waste System cont.	Chapter 5 cont. Potable Water System cont.	Chapter 5 cont. Tour Seawater Systems	Chapter 6 cont. Hydrographic Winch cont.
5	Chapter 5 cont. Tour Sewage System	Chapter 5 cont. Tour Oily Waste System	Chapter 5 cont. Potable Water System cont.	Chapter 5 cont. Section 12.0 Damage Control Systems	Chapter 6 cont. Section 3.0 Heavy Lift Crane
6	Chapter 5 cont. Section 3.0 Fuel Oil System	Chapter 5 cont. Section 6.0 Bilge and Ballast System	Chapter 5 cont. Tour Potable Water System	Chapter 5 cont. Damage Control Systems cont.	Chapter 6 cont. Section 4.0 Hydroboom
7	Chapter 5 cont. Fuel Oil System cont.	Chapter 5 cont. Bilge and Ballast System cont.	Chapter 5 cont. Section 9.0 HVAC System	Chapter 5 cont. Tour Damage Control Systems	Chapter 6 cont. Section 5.0 Portable Capstan and Chocks
8	Chapter 5 cont. Tour Fuel Oil System	Chapter 5 cont. Tour Bilge and Ballast System	Chapter 5 cont. Tour HVAC System	Chapter 5 cont. Tour Damage Control Systems cont.	Review Questions and Answers Weekly Critique

AGOR NOAA Teaching Schedule	WEEK 5			Instructor Mr. Upson and Mr. Fedele	
PERIOD	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1	Chapter 6 cont. Section 6.0 Sea Crane	Chapter 7 Navigation Systems Section 1.0 Collision Avoidance System [Sperry Tech Rep]	Chapter 7 cont. Section 2.0 Dynamic Positioning System	Chapter 7 cont. SATNAV cont.	Chapter 8 Communication Systems Section 1.0 INMARSAT-A
2	Chapter 6 cont. Section 7.0 Anchor Windlass	Chapter 7 cont. Collision Avoidance System cont. [Sperry Tech Rep]	Chapter 7 cont. Dynamic Positioning System cont.	Chapter 7 cont. SATNAV cont.	Chapter 8 cont. Communication Systems INMARSAT-A cont.
3	Chapter 6 cont. Section 8.0 A-Frame	Chapter 7 cont. Collision Avoidance System cont. [Sperry Tech Rep]	Chapter 7 cont Tour Dynamic Positioning System	Chapter 7 cont. SATNAV cont.	Chapter 8 cont Tour INMARSAT-A
4	Chapter 6 cont. Section 9.0 Rescue Boat Davit	Chapter 7 cont. Collision Avoidance System cont. [Sperry Tech Rep]	Chapter 7 cont. Section 3.0 Gyrocompass	Chapter 7 cont. SATNAV cont.	Chapter 8 cont Tour INMARSAT-A cont.
5	Chapter 6 cont Tour Deck Machinery	Chapter 7 cont. Collision Avoidance System cont. [Sperry Tech Rep]	Chapter 7 cont. Gyrocompass cont.	Chapter 7 cont. Tour SATNAV	Chapter 8 cont. Section 2.0 GMDSS
6	Chapter 6 cont Tour Deck Machinery cont.	Chapter 7 cont. Collision Avoidance System cont. [Sperry Tech Rep]	Chapter 7 cont. Tour Gyrocompass	Chapter 7 cont. Section 6.0 Loran C	Chapter 8 cont. GMDSS cont.
7	Chapter 6 cont Tour Deck Machinery cont	Chapter 7 cont. Tour Collision Avoidance System	Chapter 7 cont. Section 4.0 Doppler Speed Log	Chapter 7 cont. Loran C cont.	Chapter 8 cont. Tour GMDSS
8	Chapter 6 cont Tour Deck Machinery cont.	Chapter 7 cont. Tour Collision Avoidance System cont.	Chapter 7 cont. Tour Doppler Speed Log	Chapter 7 cont. Tour Loran C	Review Questions and Answers Course Critique Course Completion Certificates

Appendix E

Initial Outfitting List

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
753A	7X POWER BINOCULAR, 50 I.F. 753A	DECK	6	SWIFT INSTRUMENTS, INC.	$296.00	$1,776.00	NEW P/N 753A	
33615	ABRASIVE DISKS, 24 GRIT	DECK	300	NORTON COMPANY	$0.90	$270.00		
33610	ABRASIVE DISKS, 36 GRIT	DECK	300	NORTON COMPANY	$0.90	$270.00		
33600	ABRASIVE DISKS, 60 GRIT	DECK	300	NORTON COMPANY	$0.90	$270.00		
AAL-2.0-20.0-FT	ALUMINUM ACCOMMODATION LADDER	DECK	1	RAMPMASTER	$22,550.00	$22,550.00	NO PLATFORMS	Sect 622b
EX208-12	ANTENNA EX208-12	DECK	1	TRIPLE G SUPPLY	$26.00	$26.00	NEW P/N EX208-12	
EX208-12	ANTENNA EX208-12	DECK	1		$26.00	$26.00	NEW P/N EX208-12 TRIPLE	
1635	BAROMETER, BLACK, WALL MOUNTED	DECK	1	SETH THOMAS CORPORATION	$62.00	$62.00		
CM-35	BATTERY CHARGER, AC, TRANSCEIV, NEED INPU	DECK	6	ICOM AMERICA, INC.	$110.00	$660.00		
CM7G	BATTERY PACK	DECK	1	TRIPLE G SUPPLY	$120.00	$120.00		
CM7G	BATTERY PACK	DECK	1		$120.00	$120.00	TRIPLE G SUPPLY	
	BELL, SHIPS, 25 LBS	DECK	1	ELISHA WEBB & SON COMPANY	$540.00	$540.00	ELISHA WEBB & SON CO.	COLREG 33
JHP204	BIB OVERALL, YELLOW W/FLY FRONT	DECK	2	NEESE MFG CO.	$9.90	$19.80		
JHP204	BIB OVERALL, YELLOW W/FLY FRONT	DECK	2	NEESE MFG CO.	$9.90	$19.80		
JHP204	BIB OVERALL, YELLOW W/FLY FRONT	DECK	1	NEESE MFG CO.	$9.90	$9.90		
JHP204	BIB OVERALL, YELLOW W/FLY FRONT	DECK	1	NEESE MFG CO.	$9.90	$9.90		
7206916	BLOCK & TACKLE SET	DECK	4	BREWER-TITCHENER TOOLS	$82.00	$328.00		
720044	BOAT FENDERS	DECK	6	SCANMARIN, INC.	$25.00	$150.00	NEW P/N 720044 6-1/2" x 23"	
SMH-9-12	BOAT HOOK	DECK	3	SEISMIC/MARINE HARDWARE, INC.	$42.00	$126.00		
D-17C	BRIDGE LOG BOOK	DECK	12	J.P. GRUNDY, INC.	$25.00	$300.00		
7879T	CANVAS, #6 FABRIC	DECK	1	MCMASTER-CARR SUPPLY COMPANY	$48.00	$48.00	McMASTER CARR CAT 99 P/N7879T	
R21	CARTRIDGE, ORGANIC VAPOR RESPI	DECK	36	WILLSON SAFETY PRODUCTS	$25.00	$900.00		
	CLAMP, WIRE ROPE (5)1/4,(5)5/16,(5)3/8,(5)1/2,(4)5/8 INCH	DECK	24	ELISHA WEBB & SON COMPANY	$3.30	$79.20	McMASTER-CARR CAT 99, PG 579 SAFELINE WIRE ROPE CL	
1268TJ	CLIPBOARDS	DECK	24	McMASTER-CARR SUPPLY COMPANY	$1.50	$36.00		24
936-06248	CONNECTOR, ANTENNA	DECK	1	TRIPLE G SUPPLY	$11.00	$11.00		
936-06248	CONNECTOR, ANTENNA	DECK	1		$11.00	$11.00		
4088A31	CROSSCUT SAW, HAND 26"	DECK	2	McMASTER-CARR SUPPLY COMPANY	$14.00	$28.00	26"	
906-05763	CRYSTALS	DECK	3		$35.00	$105.00		
906-05763	CRYSTALS	DECK	3	TRIPLE G SUPPLY	$35.00	$105.00	TRIPLE G SUPPLY	
	DAY SHAPES BALL SHAPE	DECK	2	SANDWICH SHIP SUPPLY	$38.00	$76.00	TO MEET COLLISION AVOIDANCE REP. PER CFR	
H2040-753-3983	DOCKING FENDERS	DECK	6	SEAWARD INTERNATIONAL	$1,450.00	$8,700.00	24" x 48"	
7954Y12	EXTENSION LADDER	DECK	1	McMASTER-CARR SUPPLY COMPANY	$120.00	$120.00		
	FID, WOOD	DECK	4	A.L. DON COMPANY/STEELSTRAN IND	$10.00	$40.00	TRIPLE G SUPPLY 18" x 2"	
	FLAG, CANADA, HALYARD RIGGED FOR HALYARD	DECK	2	DELTTRA FLAG COMPANY, INC.	$35.00	$70.00	BAKER LYMAN CO.	
	FLAG, COSTA RICA, HALYARD RIGGED FOR HALY	DECK	1	DELTTRA FLAG COMPANY, INC.	$31.00	$31.00	BAKER LYMAN CO.	

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
	FLAG, FRANCE, HALYARD RIGGED FOR HALYARD	DECK	1	DELTTRA FLAG COMPANY, INC.	$32.00	$32.00	BAKER LYMAN CO.	
	FLAG, MEXICO HALYARD RIGGED FOR HALYARD	DECK	1	DELTTRA FLAG COMPANY, INC.	$42.00	$42.00	BAKER LYMAN CO.	
	FLAG, PANAMA, HALYARD RIGGED FOR HALYARD	DECK	1	DELTTRA FLAG COMPANY, INC.	$42.00	$42.00	BAKER LYMAN CO.	
	FLAG, UNITED STATES,HALYARD RIGGED FOR HA	DECK	2	DELTTRA FLAG COMPANY, INC.	$54.00	$108.00	BAKER LYMAN CO.	
5312T51	GLOVES, WORK HEAT RESISTANT, LEATHER 5312	DECK	36	WESTERN FIRE EQUIPMENT CO.	$7.88	$283.68	NEW P/N 5312T51, LARGE	
GB100CB	GREASE, WIRE ROPE	DECK	4	CROWN INDUSTRIAL PRODUCTS	$85.00	$340.00		
15GEL-180WC	GRINDER, PNEUMATIC	DECK	3	CLECO TOOL/DRESSER INDUSTRIES	$720.00	$2,160.00		3
2655T2	HAND TRUCK, 2 WHEELS	DECK	2	McMASTER-CARR SUPPLY COMPANY	$49.00	$98.00		
S-168M	HAND-HELD MEGAPHONE	DECK	1	ELISHA WEBB & SON COMPANY	$231.00	$231.00		
	HOOK, GRAPNEL	DECK	3	COMMERCIAL	$142.00	$426.00	GATOR SUPPLY CO. 15" 12LB	
7453T17	HOSE ASSEMBLY, NON-METALLIC	DECK	4	McMASTER-CARR SUPPLY COMPANY	$26.00	$104.00		
100A	INCANDESCENT LIGHT BULBS	DECK	2	PHILLIPS ELECTRIC, INC.	$1.00	$200.00		2
40A	INCANDESCENT LIGHT BULBS	DECK	2	SYLVANIA/GTE	$90.00	$180.00		
60A	INCANDESCENT LIGHT BULBS	DECK	2	SYLVANIA/GTE	$90.00	$180.00		
F40T12	LIGHTS, FLUORESCENT TUBE	DECK	6	PAULUHN ELECTRICAL MANUFACTURIN	$5.90	$35.40		
3264	LINE THROWING APPLIANCE, SERVICE KIT	DECK	4	KILGORE CORPORATION	$130.00	$520.00	SERVICE KITS ONLY	
	LUMBER, PLYWOOD PANELING	DECK	4	COMMERCIAL	$58.00	$232.00	PRESSURE TREATED COMMERCIAL	
	LUMBER, ROUGH SHORING	DECK	5	COMMERCIAL	$10.00	$50.00	COMMERCIAL HARDWOOD	
	LUMBER, ROUGH SHORING	DECK	3	COMMERCIAL	$23.00	$69.00	COMMERCIAL HARDWOOD	
	LUMBER, ROUGH SHORING	DECK	5	COMMERCIAL	$12.00	$60.00	COMMERCIAL HARDWOOD	
	LUMBER, SHORING, ROUGH	DECK	4	COMMERCIAL	$14.00	$56.00	COMMERCIAL HARDWOOD 6" x 6" x 12'	
	LUMBER, SHORING, ROUGH	DECK	3	COMMERCIAL	$36.00	$108.00	COMMERCIAL HARDWOOD 8" x 8" x 12'	
	LUMBER, SOFTWOOD FRAMING	DECK	8	COMMERCIAL	$7.00	$56.00	2" x 4" x 8' PRESSURE TREATED PINE	
	LUMBER, SOFTWOOD POST	DECK	6	COMMERCIAL	$16.00	$96.00	4" x 4" x 12' PRESSURE TREATED PINE	
	LUMBER, SOFTWOOD POST	DECK	4	COMMERCIAL	$36.00	$144.00	6" x 6" x 12' PRESSURE TREATED PINE	
276-12	MARLINSPIKE	DECK	4	C.S. OSBORNE & COMPANY	$23.00	$92.00		
276-18	MARLINSPIKE	DECK	4	C.S. OSBORNE & COMPANY	$30.00	$120.00		
276-8	MARLINSPIKE	DECK	4	C.S. OSBORNE & COMPANY	$19.00	$76.00		
58549	MEASURING TAPE, STEEL	DECK	2	IRWIN MEASURING TOOL COMPANY	$26.00	$52.00		
4028T45	METAL WASTEPAPER BASKET	DECK	6	McMASTER-CARR SUPPLY COMPANY	$10.00	$60.00		
1242T432	OFFICE STAPLER, DESK TOP 1242T432	DECK	4	McMASTER-CARR SUPPLY COMPANY	$19.00	$76.00	NEW P/N 1242t432 7-1/4" LONG	4
54-16	PAINT BRUSH	DECK	36	OSBORN MANUFACTURING/JASON, INC	$0.30	$10.80	1"	

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
54-32	PAINT BRUSH	DECK	36	OSBORN MANUFACTURING/JASON, INC	$1.30	$46.80	2"	
54-48	PAINT BRUSH	DECK	36	OSBORN MANUFACTURING/JASON, INC	$1.80	$64.80	3"	
SNA93	PAINT ROLLER CARTRIDGES	DECK	24	ARSCO INTERNATIONAL/WELT INDUST	$2.50	$60.00		
98-354	PAINT SPRAY OUTFIT, AIR GUN	DECK	2	BINKS MANUFACTURING COMPANY	$670.00	$1,340.00		
	PAINTING KIT, ROLLERS W/PAN AND HANDLES	DECK	4	McMASTER-CARR SUPPLY COMPANY	$6.00	$24.00	McMASTER CARR CAT 99 Pg.1152/3 COVERS,FRAMES,TRAYS	
JHP204	PARKA JACKET, YELLOW W/HOOD	DECK	2	NEESE MFG CO.	$2.00	$4.00		
JHP204	PARKA JACKET, YELLOW W/HOOD	DECK	2	NEESE MFG CO.	$2.00	$4.00		
JHP204	PARKA JACKET, YELLOW W/HOOD	DECK	1	NEESE MFG CO.	$2.00	$2.00		
JHP204	PARKA JACKET, YELLOW W/HOOD	DECK	1	NEESE MFG CO.	$2.00	$2.00		
1225T14	PENCIL SHARPENER, WALL MOUNTED	DECK	4	McMASTER-CARR SUPPLY COMPANY	$20.00	$80.00		4
AAL-2.5-40.0-FT	PERSONNEL BROW, 2 SECTION, DELETED	DECK	1	RAMPMASTER, INC.	$0.00	$0.00	DELETED	
DJM# 2	PILOT LADDER, SOLAS APPROVED, P/N INDICAT	DECK	1	A.L. DON COMPANY/STEELSTRAN IND	$57.00	$57.00		
	PLUGS, SOFTWOOD LUMBER	DECK	24	A.L. DON COMPANY/STEELSTRAN IND	$4.00	$96.00	ASSORTED SIZES 3/8" - 2"ROUND TAPPERED	
QL500K	PORTABLE FLOODLIGHT, QUARTZ, PORTABLE	DECK	2	PAULUHN ELECTRICAL MANUFACTURIN	$37.00	$74.00		
903-00304	POWER MODULE 903-00304	DECK	1	TRIPLE G SUPPLY	$50.00	$50.00	NEW P/N 903-00304	
903-00304	POWER MODULE 903-00304	DECK	1	TRIPLE G SUPPLY	$50.00	$50.00	NEW P/N 903-00304	
RG100-2	RAT GUARDS, GALVANIZED	DECK	12	DOVER MARINE MANUFACTURING & SU	$42.00	$504.00		
3150	REFLECTING TAPE, GREEN	DECK	2	3M COMPANY	$290.00	$580.00		
#1221-15	RESPIRATOR, W/ORGANIC VAPOR CART R21	DECK	6	WILLSON SAFETY PRODUCTS	$39.00	$234.00		6
	ROPE, MANILA	DECK	1	AMERICAN MANUFACTURING COMPANY,	$680.00	$680.00	ROPE MANILA 2 1/4" DIA x 600' COILS	
	ROPE, MANILA	DECK	1	AMERICAN MANUFACTURING CO. INC,	$190.00	$190.00	ROPE MANILA 1-1/4" DIA x 600' COILS	
509 2-3/8"	SAIL MAKERS NEEDLES	DECK	2	C.S. OSBORNE & COMPANY	$20.78	$41.56		
265	SAIL MAKERS SEWING PALM	DECK	1	C.S. OSBORNE & COMPANY	$9.50	$9.50		
CH-32	SCALER & CHIPPING HAMMER, PNEUM	DECK	3	CLECO TOOL/DRESSER INDUSTRIES	$995.00	$2,985.00		
BICNBLT	SCALER, PNEUMATIC BICNBLT	DECK	12	CLECO TOOL/DRESSER INDUSTRIES	$490.00	$5,880.00	NEW P/N BICNBLT	
	SEA MARKERS, FLUORESCENT	DECK	6	COMMERCIAL	$210.00	$1,260.00	BAKER LYMAN CO. 12 PER B	
543-0735	SHACKLE, SCREW PIN	DECK	20	BREWER-TITCHENER TOOLS	$5.70	$114.00	QUANTITY INCREASED TO 20 EA 7/16"	
543-0835	SHACKLE, SCREW PIN	DECK	20	BREWER-TITCHENER TOOLS	$6.10	$122.00	QUANTITY INCREASED TO 20 EA 1/2"	
543-1235	SHACKLE, SCREW PIN	DECK	20	BREWER-TITCHENER TOOLS	$16.50	$330.00	QUANTITY INCREASED TO 20 EA 3/4"	
PN2DA	SHEARS, SAIL MAKERS	DECK	1	WISS TOOLS	$29.00	$29.00		
SIZE 7	SIGNAL & PENNANTS FLAG SET, HALYARD TYPE	DECK	2	DELTTRA FLAG COMPANY, INC.	$650.00	$1,300.00		
987-03976	SPEAKER	DECK	2		$17.00	$34.00	TRIPLE G SUPPLY	

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PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
987-03976	SPEAKER	DECK	2		$17.00	$34.00	TRIPLE G SUPPLY	
987-03976	SPEAKER	DECK	2		$17.00	$34.00	TRIPLE G SUPPLY	
987-03976	SPEAKER	DECK	2		$17.00	$34.00	TRIPLE G SUPPLY	
7044T13	SPRAYER, PORTABLE INSET	DECK	2	MCMASTER-CARR SUPPLY COMPANY	$72.00	$144.00		
M800DBNBNBN	SUBMERSIBLE SUMP PUMP, AIR OPE	DECK	1	WILDEN PUMP & ENGINEERING COMPA	$774.00	$774.00	NEW P/N M800DBNBNBN	
915-05907	SWITCH ON/OFF	DECK	1	TRIPLE G SUPPLY	$8.25	$8.25		
915-05907	SWITCH ON/OFF	DECK	1		$8.25	$8.25	TRIPLE G SUPPLY	
7897T25	TAPE, MASKING	DECK	6	MCMASTER-CAR SUPPLY COMPANY	$1.60	$9.60		
7897T27	TAPE, MASKING FLAT	DECK	6	MCMASTER-CARR SUPPLY COMPANY	$1.60	$9.60		
7635A3	TAPE, SCOTCH 7635A3	DECK	6	MCMASTER-CARR SUPPLY COMPANY	$3.05	$18.30	NEW P/N 7635A3	
07850	TOILET PAPER, 2-PLY	DECK	300	SCOTT PAPER COMPANY	$0.50	$150.00		300
6392A11	TOOL BELT AND POUCH	DECK	1	McMASTER-CARR SUPPLY COMPANY	$17.50	$17.50		
906-05604	TRANSISTOR	DECK	1		$3.00	$3.00		
906-05604	TRANSISTOR	DECK	1	TRIPLE G SUPPLY	$3.00	$3.00	TRIPLE G SUPPLY	
906-05616	TRANSISTOR	DECK	1		$1.20	$1.20		
906-05616	TRANSISTOR	DECK	1	TRIPLE G SUPPLY	$1.20	$1.20	TRIPLE G SUPPLY	
906-05995	TRANSISTOR	DECK	1	TRIPLE G SUPPLY	$1.30	$1.30	TRIPLE G SUPPLY	
906-05995	TRANSISTOR	DECK	1		$1.30	$1.30		
	TWINE, COTTON 1/8" DIAMETER	DECK	1	COMMERCIAL	$12.00	$12.00	McMASTER CARR CAT 99 PG 565 1/8" DIA x 1000' COILS	
	VACUUM CLEANERS WET/DRY 2-1/2 HP	DECK	4	TRIPLE G SUPPLY	$490.00	$1,960.00	CRAFTSMAN 2-1/2 HP WET/DRY	
IC-M11	VHF MARINE TRANSCEIVER	DECK	6	ICOM AMERICA, INC.	$560.00	$3,360.00		
	WEDGE, SOFTWOOD LUMBER	DECK	48	COMMERCIAL	$4.50	$216.00	TRIPLE G SUPPLY INC SOFTWOOD 14"	
333600	WET MOP HANDLE	DECK	24	RUBBERMAID COMMERCIAL PRODUCTS	$5.00	$120.00		
150119	WET MOP, COTTON, CUT-END	DECK	24	RUBBERMAID COMMERCIAL PRODUCTS	$4.50	$108.00		24
MAGI-KLIP-8"	WINDOW SQUEEGEE	DECK	4	MORSE-STARRETT PRODUCTS COMPANY	$4.60	$18.40		
W1770TN	WIRE ROPE CUTTERS, HYDRAULIC O	DECK	1	H.K. PORTER TOOLS	$850.00	$850.00		
MODEL WVO-100	WORK VEST, TYPE V	DECK	12	BILLY PUGH COMPANY, INC.	$62.00	$744.00		
B10-2013	WRECKING BAR, NON-SPARKING	DECK	2	NGK METALS CORPORATION	$98.00	$196.00	NON-SPARKING, 24", NEW P/N B10-2013	
	MOORING LINE, NYLON BRAID	DECK W/3FT E	6	AMERICAN MANUFACTURING COMPANY,	$805.00	$4,830.00	2" DIA 3-STRAND NYLON x 200' W/3' EYES	Sect 582a
54128	1/2 INCH SQUARE DRIVE SOCKET SET 54128	ENGINEERING	1	STANLEY-PROTO INDUSTRIAL TOOL	$435.00	$435.00	NEW P/N 54128	
4213E	3-WAY ADJUSTABLE JAW PULLER 4213E	ENGINEERING	1	STANLEY-PROTO INDUSTRIAL TOOL	$175.00	$175.00	NEW P/N 4213E	
4516K32	45 DEGRE PIPE ELBOW, GALVANIZED	ENGINEERING	8	McMASTER-CARR SUPPLY COMPANY	$1.25	$10.00		
4516K61	45 DEGREE PIPE ELBOW, BRASS	ENGINEERING	8	McMASTER-CARR SUPPLY COMPANY	$2.80	$22.40		
4516K62	45 DEGREE PIPE ELBOW, BRASS	ENGINEERING	8	McMASTER-CARR SUPPLY COMPANY	$2.80	$22.40		
4516K63	45 DEGREE PIPE ELBOW, BRASS	ENGINEERING	8	McMASTER-CARR SUPPLY COMPANY	$2.80	$22.40		
4516K64	45 DEGREE PIPE ELBOW, BRASS	ENGINEERING	3	McMASTER-CARR SUPPLY COMPANY	$3.95	$11.85		
4516K65	45 DEGREE PIPE ELBOW, BRASS	ENGINEERING	3	McMASTER-CARR SUPPLY COMPANY	$6.75	$20.25		

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PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
4516K31	45 DEGREE PIPE ELBOW, GALVANIZED	ENGINEERING	8	McMASTER-CARR SUPPLY COMPANY	$1.25	$10.00		
4516K33	45 DEGREE PIPE ELBOW, GALVANIZED	ENGINEERING	8	McMASTER-CARR SUPPLY COMPANY	$1.00	$8.00		
4516K34	45 DEGREE PIPE ELBOW, GALVANIZED	ENGINEERING	3	McMASTER-CARR SUPPLY COMPANY	$1.40	$4.20		
4516K35	45 DEGREE PIPE ELBOW, GALVANIZED	ENGINEERING	3	McMASTER-CARR SUPPLY COMPANY	$1.50	$4.50		
4515K61	90 DEGREE PIPE ELBOW, BRASS	ENGINEERING	8	McMASTER-CARR SUPPLY COMPANY	$2.40	$19.20		
4515K62	90 DEGREE PIPE ELBOW, BRASS	ENGINEERING	8	McMASTER-CARR SUPPLY COMPANY	$2.40	$19.20		
4515K63	90 DEGREE PIPE ELBOW, BRASS	ENGINEERING	3	McMASTER-CARR SUPPLY COMPANY	$2.40	$7.20		
4515K64	90 DEGREE PIPE ELBOW, BRASS	ENGINEERING	3	McMASTER-CARR SUPPLY COMPANY	$3.20	$9.60		
4515K65	90 DEGREE PIPE ELBOW, BRASS	ENGINEERING	3	McMASTER-CARR SUPPLY COMPANY	$5.15	$15.45		
4515K31	90 DEGREE PIPE ELBOW, GALVANIZED	ENGINEERING	8	McMASTER-CARR SUPPLY COMPANY	$0.95	$7.60		
4515K32	90 DEGREE PIPE ELBOW, GALVANIZED	ENGINEERING	8	McMASTER-CARR SUPPLY COMPANY	$0.95	$7.60		
4515K33	90 DEGREE PIPE ELBOW, GALVANIZED	ENGINEERING	3	McMASTER-CARR SUPPLY COMPANY	$0.65	$1.95		
4515K34	90 DEGREE PIPE ELBOW, GALVANIZED	ENGINEERING	3	McMASTER-CARR SUPPLY COMPANY	$0.75	$2.25		
4515K35	90 DEGREE PIPE ELBOW, GALVANIZED	ENGINEERING	3	McMASTER-CARR SUPPLY COMPANY	$1.40	$4.20		
AC-40	ACID CORE SOLDER	ENGINEERING	4	WELLER TOOLS	$4.75	$19.00		
W-154-2349	ADJUSTABLE END WRENCH, NON- SPARKING	ENGINEERING	2	NGK METALS CORPORATION	$82.00	$164.00	NON-SPARKING	
W-155-2350	ADJUSTABLE END WRENCH, NON-SPARKING	ENGINEERING	2	NGK METALS CORPORATION	$120.00	$240.00	NON-SPARKING	
	ANGLE, STEEL, STRUCTURAL	ENGINEERING	10	McMASTER-CARR SUPPLY COMPANY	$12.00	$120.00	SUPPLIER TRIPLE G SUPPLY	
51520	ANTI-SEIZING PIPE THREAD TAPE	ENGINEERING	10	FEL-PRO, INC.	$0.40	$4.00		
4058K11	BATTERY HYDROMETER SET	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$7.80	$7.80		
300-1-1/2	BILGE EDUCTOR, PERM-PORT	ENGINEERING	2	VITA MOTIVATOR COMPANY, INC.	$970.00	$1,940.00		
	BUSHING, BRASS	ENGINEERING	12	McMASTER-CARR SUPPLY COMPANY	$2.90	$34.80	Mc CARR CAT 99 Pg.1356. 4ea.3/4x1/2,1/2x3/8,3/8x1/4	
8911K41	BUSHING, BRONZE	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$130.00	$130.00	CORED BRONZE STOCK BUSHING/McMASTER CARR CAT 96	
8918K84	BUSHING, BRONZE	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$99.00	$99.00	CORED BRONZE STOCK BUSHING/McMASTER CARR CAT 96	
8918K94	BUSHING, BRONZE	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$125.00	$125.00	CORED BRONZE STOCK BUSHING/McMASTER CARR CAT 96	
	BUSHING, BRONZE	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$330.00	$330.00	CORED BRONZE STOCK BUSHING/J.M. TULL METALS	
	BUSHING, BRONZE	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$191.00	$191.00	CORED BRONZE STOCK BUSHING/J.M. TULL METALS	
	BUSHING, BRONZE	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$130.00	$130.00	CORED BRONZE STOCK BUSHING/J.M. TULL METALS	
	BUSHING, BRONZE	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$100.00	$100.00	CORED BRONZE STOCK BUSHING/J.M. TULL METALS	
	BUSHING,HEX, BRASS (4 EACH)	ENGINEERING	12	McMASTER-CARR SUPPLY COMPANY	$2.90	$34.80	McMASTER CARR CAT 99, PG.1356, 4 EA	
LSTTSU-1.5	CABLE, SHORE TELEPHONE LINE	ENGINEERING	2	COMMERCIAL	$600.00	$1,200.00	X 300 FT LONG	
11-406	CAPRENTERS HAMMER, CURVED CLAW	ENGINEERING	1	PLUMB TOOLS	$8.00	$8.00		1
1098K16	CAPS, LUBRICATION, FITTINGS, ASST	ENGINEERING	500	McMASTER-CARR SUPPLY COMPANY	$0.10	$50.00		500

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PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
5924A61	CARPENTERS HAMMER, CURVED CLAW	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$8.00	$8.00		
7478T24	CLEANER, HAND CREME, 5 LB.	ENGINEERING	12	McMASTER-CARR SUPPLY COMPANY	$16.50	$198.00	CAT# 96 PG. 1088, NEW P/N 7478T24	
MODEL 101C	CLEANER/LUBRICATOR, WIRE ROPE AND CABLE	ENGINEERING	1	BROOKE OCEAN TECHNOLOGY, LTD.	$3,400.00	$3,400.00		
	CLOTH, ASSORTMENT, ABRASSIVE	ENGINEERING	6	McMASTER-CARR SUPPLY COMPANY CA	$12.80	$76.80	MC. CARR CAT.96 PG.1867 10ea. #80-120-150-180-240	
8032-12	COLD CHISEL, HAND	ENGINEERING	1	BAHCO TOOLS, INC.	$36.00	$36.00		
8032-6	COLD CHISEL, HAND	ENGINEERING	1	BAHCO TOOLS, INC.	$36.00	$36.00		
MODEL 87	COMBINATION PIPE VISE WITH SWI	ENGINEERING	1	MILWAUKEE TOOL & EQUIPMENT COMP	$222.00	$222.00		
4872-000	COMPOUND, SEALING, GASKET	ENGINEERING	2	PERMATEX INDUSTRIAL CORP	$6.50	$13.00		
1S4872-800	COMPOUND, SEALING, GASKET TYPE 2D	ENGINEERING	2	PERMATEX INDUSTRIAL CORP	$8.50	$17.00		
CPT-D-Z486DLC	COMPUTER AND KEYBOARD (PC) CPT-D- Z486DLC	ENGINEERING	1	ZENITH DATA SYSTEMS	$1,625.00	$1,625.00	NEW P/N CPT-D-Z486DLC-40	
#5269C	CONNECTOR BODY	ENGINEERING	10	AMERACE IND. ELEC. PRODUCTS	$1,820.00	$1,820.00	QTY CHANGED TO 10 DZ	10
3913U1	CONNECTOR PLUG	ENGINEERING	1	TRIPLE G SUPPLY	$57.50	$57.50		
94	COTTER PIN, ASSORTMENT	ENGINEERING	2	MMC CORPORATION	$6.00	$12.00		
	COUPLING, HALF UNION BRASS	ENGINEERING	4	McMASTER-CARR SUPPLY COMPANY	$0.25	$1.00	McMASTER CARR CAT 96 Pg.1356 BRASS 1/4 IPS FEMALE	
	COUPLING, HALF UNION, BRASS UNION	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.30	$0.60	McMASTER CARR CAT 96 Pg. 1356 BRASS 1/2 IPS FEMALE	
	COUPLING, HALF UNION, BRASS UNION	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.25	$0.50	McMASTER CARR CAT 96 Pg.1356 BRASS 3/8 IPS FEMALE	
	COUPLING, REDUCING, BRASS	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$2.50	$5.00	McMASTER CARR CAT 96 Pg.1356 3/8 INCH TO 1/4 INCH	
	COUPLING, REDUCING, BRASS	ENGINEERING	6	McMASTER-CARR SUPPLY COMPANY	$3.80	$22.80	McMASTER CARR CAT 96 Pg.1356,3/4 INCH TO 1/2 INCH	
	COUPLING, REDUCING, BRASS	ENGINEERING	6	McMASTER-CARR SUPPLY COMPANY	$7.00	$42.00	McMASTER CARR CAT 96 Pg.1356, 1 INCH TO 3/4 INCH	
	COUPLING, REDUCING, BRASS	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$3.50	$7.00	MC. CARR CAT 96. PG. 1356 1/2" TO 3/8"	
8984K23	CRES BAR, ROUND 8984K23	ENGINEERING	5	McMASTER-CARR SUPPLY COMPANY	$11.50	$57.50	NEW P/N 8984K23, CHANGED TO 72" LENGTHS	
8984K22	CRES BAR, ROUND 8984K22	ENGINEERING	5	McMASTER-CARR SUPPLY COMPANY	$6.00	$30.00	NEW P/N 8984K22, CHANGED TO 72" LENGTHS	
8984K24	CRES BAR, ROUND 8984K24	ENGINEERING	5	McMASTER-CARR SUPPLY COMPANY	$14.00	$70.00	NEW P/N 8984K24 72" LENGTHS	
8984K26	CRES BAR, ROUND 8984K26	ENGINEERING	5	McMASTER-CARR SUPPLY COMPANY	$35.00	$175.00	NEW P/N 8984K26 72" LENGTHS	
8984K28	CRES BAR, ROUND 8984K28	ENGINEERING	5	McMASTER-CARR SUPPLY COMPANY	$58.00	$290.00	NEW P/N 8984K28 72" LENGTHS	
TBM5-SV	CRIMPING TOOL, WIRE	ENGINEERING	1	VALON/THOMAS-BETTS CORPORATION	$540.00	$540.00		
74303	CROSS TIP SCREWDRIVER, NO. 1	ENGINEERING	1	IRWIN MEASURING TOOL COMPANY	$1.20	$1.20		
74301	CROSS TIP SCREWDRIVER, NO. 1, STUBBY	ENGINEERING	1	IRWIN MEASURING TOOL COMPANY	$1.40	$1.40		
74304	CROSS TIP SCREWDRIVER, NO. 2	ENGINEERING	2	IRWIN MEASURING TOOL COMPANY	$1.60	$3.20		

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74306	CROSS TIP SCREWDRIVER, NO. 3	ENGINEERING	2	IRWIN MEASURING TOOL COMPANY	$2.20	$4.40		
74307	CROSS TIP SCREWDRIVER, NO. 4	ENGINEERING	2	IRWIN MEASURING TOOL COMPANY	$3.40	$6.80		
906-05763	CRYSTALS	ENGINEERING	3	TRIPLE G SUPPLY	$35.00	$105.00	CHANGED TO READ 3 EACH	
O-40	CYLINDER, COMPRESSED GAS , OXYGEN	ENGINEERING	4	UNITOR SHIPS SERVICE, INC.	$592.00	$2,368.00		
A-40	CYLINDER, COMPRESSED GAS, ACETYLINE, A-40	ENGINEERING	3	UNITOR SHIPS SERVICE, INC.	$640.00	$1,920.00	NEW P/N A-40	
204G	DIAGONAL CUTTING PLIERS	ENGINEERING	1	PROTO	$9.00	$9.00		
D202-6	DIAGONAL CUTTING PLIERS	ENGINEERING	1	KLIEN	$9.00	$9.00		
ED-118	DIESEL LOG BOOK	ENGINEERING	12	J.P. GRUNDY, INC.	$23.50	$282.00		
B252	DISPENSER, SHOP TOWEL	ENGINEERING	2	AMERICAN STANDARD, INC.	$28.00	$56.00		
03632	DOUBLE CUT FLAT FILE, AM PIN	ENGINEERING	2	NICHOLSON TOOLS	$7.00	$7.00		2
03797	DOUBLE CUT FLAT FILE, AM PIN	ENGINEERING	2	NICHOLSON TOOLS	$17.00	$17.00		2
03896	DOUBLE CUT FLAT FILE, AM PIN	ENGINEERING	2	NICHOLSON TOOLS	$17.00	$17.00		2
476-1/4	DRAIN COCK	ENGINEERING	6	PIMA VALVE, INC.	$15.00	$90.00		
476-1/8	DRAIN COCK	ENGINEERING	6	PIMA VALVE, INC.	$12.00	$60.00		
3548	DRILL CHUCK KEY, MODEL KG	ENGINEERING	4	THE JACOBS CHUCK MANUFACTURING	$6.50	$26.00		
665	EAR PROTECTORS, MODEL 665	ENGINEERING	30	WILLSON SAFETY PRODUCTS	$28.00	$840.00		
0141-1 REV	ELECTRIC DRILL, 120V	ENGINEERING	2	MILWAUKEE TOOL & EQUIPMENT COMPANY	$160.00	$160.00		2
0229-1 REV	ELECTRIC DRILL, 120V	ENGINEERING	2	MILWAUKEE TOOL & EQUIPMENT COMPANY	$150.00	$150.00		2
8606T14	ELECTRIC ETCHER/ENGRAVER	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$30.00	$30.00		
7089K16	ELECTRICAL EXTENSION CORD	ENGINEERING	6	McMASTER-CARR SUPPLY COMPANY	$12.00	$60.00		
50	ELECTRICAL INSULATION TAPE	ENGINEERING	18	3M/ELECTRICAL PRODUCTS DIVISION	$1.00	$18.00		
H-15	ENGINEERS HAMMER, DOUBLE FACED, NON SPARK	ENGINEERING	1	NGK METALS CORPORATION	$66.00	$66.00	NON SPARK	
14360	EPOXY CEMENT	ENGINEERING	3	DEVCON CORPORATION/ITW	$128.00	$384.00		3
5461	EXTENSION, SOCKET WRENCH	ENGINEERING	1	STANLEY PROTO INDUST TOOLS	$13.00	$13.00		
5463	EXTENSION, SOCKET WRENCH	ENGINEERING	1	STANLEY-PROTO INDUSTRIAL TOOLS	$18.00	$18.00		
2801K62	FAUCET WASHERS 2802K62	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$48.00	$96.00	NEW P/N 2802K62	
8992K15	FLAT BAR, STEEL,	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$20.00	$20.00		
8992K17	FLAT BAR, STEEL,	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$25.00	$50.00		
73904	FLAT TIP SCREWDRIVER, 1/4 INCH	ENGINEERING	2	IRWIN MEASURING TOOL COMPANY	$1.80	$3.60		
73908	FLAT TIP SCREWDRIVER, 3/8 INCH	ENGINEERING	2	IRWIN MEASURING TOOL COMPANY	$2.80	$5.60		
73912	FLAT TIP SCREWDRIVER, 7/16 INCH BLADE	ENGINEERING	2	IRWIN MEASURING TOOL COMPANY	$4.25	$8.50		
FDS-7	FLOOR MATTING SAFETY RUBBER 3X4 FT.	ENGINEERING	4	TEKNOR APEX	$65.00	$260.00		
FS-4-NA	FLUORESCENT LAMP STARTERS	ENGINEERING	100	PAULUHN ELECTRICAL MANUFACTURIN	$0.75	$75.00		
DO-32-AN	FLUSHING VALVE REPAIR KIT	ENGINEERING	2	SLOAN VALVE COMPANY	$26.00	$52.00		
514307	FLUX, ALUMINUM BRAZING ALLOY	ENGINEERING	3	UNITOR SHIPS SERVICE, INC.	$44.00	$132.00		
7693A2	FLUX, SOLDERING	ENGINEERING	1	MCMASTER-CARR SUPPLY COMPANY	$10.50	$10.50		
7798A12	FLUX, SOLDERING LIQUID 7798A12	ENGINEERING	1	MCMASTER-CARR SUPPLY COMPANY	$28.00	$28.00	NEW P/N 7798A12	
7696A1	FLUX, SOLDERING PASTE	ENGINEERING	2	MCMASTER-CARR SUPPLY COMPANY	$27.50	$55.00		
2W229-R502	FREON 2W229-R502	ENGINEERING	1		$350.00	$350.00	WW GRANGER P/N 2W229-R50	

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PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
2W462-R12	FREON 2W462-R12	ENGINEERING	5		$570.00	$2,850.00	WW GRANGER P/N 2W462-R12	
545814	FREON TEST AND CHARGING MANIFO	ENGINEERING	1	UNITOR SHIPS SERVICE, INC.	$295.00	$295.00		
6630005311968	FUEL OIL TEST KIT	ENGINEERING	1	COMMERCIAL	$360.00	$360.00	GERIN CORP OIL COND, KIT #6630005311968	
34-002	FUSE PULLER, 100 AMP, 250 VOLT	ENGINEERING	1	IDEAL INDUSTRIES, INC.	$8.25	$8.25		
34-003	FUSE PULLER, 100 AMP, 600 VOLT	ENGINEERING	1	IDEAL INDUSTRIES, INC.	$17.75	$17.75		
80003-1C	GASKET SEALING COMPOUND, TYPE 1C	ENGINEERING	2	PERMATEX INDUSTRIAL CORPORATION	$22.00	$44.00		
80011-2C	GASKET SEALING COMPOUND, TYPE 2D	ENGINEERING	2	PERMATEX INDUSTRIAL CORPORATION	$22.00	$44.00		
4606K21	GATE VALVE, BRONZE	ENGINEERING	1	WILLIAM E. WILLIAMS VALVE CORPO	$14.50	$14.50	McMASTER CARR CAT 99 Pg. 1414 P/N 4606K21	
4606K22	GATE VALVE, BRONZE	ENGINEERING	1	WILLIAM E. WILLIAMS VALVE CORPO	$14.50	$14.50	McMASTER CARR CAT 99 Pg. 1414 P/N 4606K22	
4606K23	GATE VALVE, BRONZE	ENGINEERING	1	WILLIAM E. WILLIAMS VALVE CORPO	$13.50	$13.50	McMASTER CARR CAT 99 Pg. 1414 P/N 4606K23	
4606K24	GATE VALVE, BRONZE	ENGINEERING	1	WILLIAM E. WILLIAMS VALVE CORPO	$14.50	$14.50	McMASTER CARR CAT 99 Pg. 1414 P/N 4606K24	
4606K25	GATE VALVE, BRONZE	ENGINEERING	1	WILLIAM E. WILLIAMS VALVE CORPO	$6.30	$6.30	McMASTER CARR CAT 99 Pg. 1414 P/N 4606K25	
9769K11	GLOBE VALVE, BRONZE	ENGINEERING	2	WILLIAM E. WILLIAMS VALVE CORPO	$9.00	$18.00	McMASTER CARR CAT 99 Pg. 1416 P/N 9769K11	
9769K12	GLOBE VALVE, BRONZE	ENGINEERING	2	WILLIAM E. WILLIAMS VALVE CORPO	$9.00	$18.00	McMASTER CARR CAT 99 Pg. 1416 P/N 9769K12	
9769K13	GLOBE VALVE, BRONZE	ENGINEERING	2	WILLIAM E. WILLIAMS VALVE CORPO	$12.00	$24.00	McMASTER CARR CAT 99 Pg. 1416 P/N 9769K13	
9769K14	GLOBE VALVE, BRONZE	ENGINEERING	2	WILLIAM E. WILLIAMS VALVE CORPO	$12.00	$24.00	McMASTER CARR CAT 99 Pg. 1416 P/N 9769K14	
9769K15	GLOBE VALVE, BRONZE	ENGINEERING	2	WILLIAM E. WILLIAMS VALVE CORPO	$19.50	$39.00	McMASTER CARR CAT 99 Pg. 1416 P/N 9769K15	
5331T2	GLOVES, INSULATED, HEAT-RESISTANT 5331T2	ENGINEERING	4	WESTERN FIRE EQUIPMENT COMPANY	$42.00	$168.00	P/N 5331T2 MC. CARR	
2274	GREASE GUN, HAND-LEVER OPERATE	ENGINEERING	2	BALCRANK INDUSTRIAL PRODUCTS	$20.00	$40.00		
202	GREASE, GRADE C	ENGINEERING	1	JET-LUBE, INC.	$80.00	$80.00		
MF1218BF	HACKSAW BLADE, 18 TEETH	ENGINEERING	12	MILLERS FALLS TOOL COMPANY	$0.75	$9.00		
MF1232BF	HACKSAW BLADE, 32 TEETH	ENGINEERING	12	MILLERS FALLS TOOL COMPANY	$0.75	$9.00		
B88	HAND CLEANER DISPENSER	ENGINEERING	2	AMERICAN STANDARD, INC.	$15.00	$30.00		
5449	HANDLE, SOCKET WRENCH	ENGINEERING	1	STANLEY PROTO INDUST TOOLS	$54.00	$54.00		
5466	HANDLE, SOCKET WRENCH	ENGINEERING	1	STANLEY PROTO INDUSTRIAL TOOLS	$39.00	$39.00		
5467	HANDLE, SOCKET WRENCH	ENGINEERING	1	STANLEY PROTO INDUSTRIAL TOOLS	$45.00	$45.00		
91236A587	HEX CAP SCREWS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$7.80	$7.80		
91236A591	HEX CAP SCREWS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$10.70	$10.70		
91236A624	HEX CAP SCREWS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$9.00	$9.00		
91236A632	HEX CAP SCREWS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$15.50	$15.50		

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91236A673	HEX CAP SCREWS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$16.90	$16.90		
91236A677	HEX CAP SCREWS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$20.50	$20.50		
91236A716	HEX CAP SCREWS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$22.00	$22.00		
91236A720	HEX CAP SCREWS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$27.00	$27.00		
91236A728	HEX CAP SCREWS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$49.00	$49.00		
SET #667	HEX KEY WRENCH SET, SHORT ARM	ENGINEERING	1	ALLEN/HOLO-KROME COMPANY	$6.00	$6.00		
90490A029	HEX NUT, STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$1.75	$1.75		
90490A030	HEX NUT, STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$2.40	$2.40		
90490A031	HEX NUT, STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$2.90	$2.90		
90490A032	HEX NUT, STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$4.80	$4.80	CHANGED TO 7/16-20 THREAD	
90490A033	HEX NUT, STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$5.80	$5.80		
2575A4	HEX RETHREADING DIE SET	ENGINEERING	1	GREENFIELD TAP & DIE	$162.00	$162.00	NEW P/N 2572A4	
2575A7	HEX RETHREADING DIE SET	ENGINEERING	1	GREENFIELD TAP & DIE	$163.00	$163.00	NEW P/N 2575A7	
8987K11	HEXAGON, BAR, STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$78.00	$78.00	CHANGED TO 3/16" DIA	
8987K13	HEXAGON, BAR, STEEL	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$98.00	$196.00		
7454T16	HOSE ASSEMBLY, NON-METALLIC	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$18.75	$37.50		
7454T22	HOSE ASSEMBLY, NON-METALLIC	ENGINEERING	4	McMASTER-CARR SUPPLY COMPANY	$32.00	$128.00		
270	HOSE CLAMP, ASSORTMENT, 304 STAINLESS STEEL	ENGINEERING	48	SCANDVIK, INC.	$7.60	$364.80		
874-BR	HOSE COUPLING SPANNER WRENCH	ENGINEERING	2	METROPOLITAN RUBBER COMPANY, IN	$62.00	$124.00		
MF48-12	INDUSTRIAL FRAME HACKSAW	ENGINEERING	2	MILLERS FALLS TOOL COMPANY	$7.50	$15.00		
	INSERT BLOCKS, CABLE ENTRY SEALING	ENGINEERING	1	HUBBELL	$250.00	$250.00	FOR 12 GAGE CABLE	
1016T1	INSPECTION MIRROR, ADJUSTABLE	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$20.00	$40.00		2
80024	INSULATED GLOVES, HEAT-RESISTANT	ENGINEERING	4	WESTERN FIRE EQUIPMENT COMPANY	$42.00	$168.00	LARGE SIZE	
7437K16	INSULATING VARNISH, ELECTRICAL	ENGINEERING	1	HENRIC-VECOM, USA, LTD.	$10.00	$10.00	McMASTER CARR CAT 99 Pg. 1614 P/N 7437K16	
7437K16	INSULATING VARNISH, SPRAY	ENGINEERING	12	McMASTER-CARR SUPPLY COMPANY	$3.50	$42.00		
4187-680	KNIFE, PUTTY 2 IN. WD. BLADE	ENGINEERING	6	HYDE TOOLS COMPANY	$3.00	$18.00		
C2001A	LASERJET, PRINTER #4	ENGINEERING	1	HEWLETT-PACKARD CORP	$1,749.00	$1,749.00		
8642T53	LEAD PENCIL	ENGINEERING	6	COMMERCIAL	$2.00	$12.00	McMASTER CARR CAT 99 Pg. 791 P/N 8642T53	
1625T65	LETTERING SET, 2 IN. GOTHIC	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$62.00	$62.00		
D213-8NE	LINEMAN'S PLIERS	ENGINEERING	2	KLIEN	$12.00	$24.00		
42001	LUBRICATING COMPOUND, WD-40	ENGINEERING	4	WD-40 COMPANY	$11.90	$47.60		
CHEVRON UNIV GER	LUBRICATING OIL, GRADE 90	ENGINEERING	1	CROWN INDUSTRIAL PRODUCTS	$38.00	$38.00		
42150	LUBRICATING SPRAY, WD-40	ENGINEERING	12	WD-40 COMPANY	$2.00	$24.00		
11-400	MACHINIST HAMMER, BALL PEEN	ENGINEERING	2	PLUMB TOOLS	$12.00	$24.00		2
11-521	MACHINIST HAMMER, BALL PEEN	ENGINEERING	2	PLUMB TOOLS	$12.00	$24.00		2
C604R-12	MACHINIST RULER, STEEL	ENGINEERING	1	THE L.S. STARRETT COMPANY	$20.00	$20.00		
C604R-6	MACHINIST RULER, STEEL	ENGINEERING	1	THE L.S. STARRETT COMPANY	$18.00	$18.00		
1270	MACHINIST SQUARE	ENGINEERING	1	MILLERS FALLS TOOL COMPANY	$9.00	$9.00		1
58549	MEASURING TAPE, STEEL	ENGINEERING	1	IRWIN MEASURING TOOL COMPANY	$26.00	$26.00		

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58555	MEASURING TAPE, STEEL	ENGINEERING	1	IRWIN MEASURING TOOL COMPANY	$15.00	$15.00		
W-9	METAL CUTTING SHEARS	ENGINEERING	2	WISS TOOLS	$26.00	$52.00		
4380T1	METAL FUNNEL WITH FLEXIBLE CEN	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$26.00	$52.00		
4260T4	METAL PAIL, GALVANIZED STEEL 4260T4	ENGINEERING	6	McMASTER-CARR SUPPLY COMPANY	$7.30	$43.80	NEW P/N 4260T4	
233	METAL POLISH PASTE	ENGINEERING	12	NUVITE CHEMICAL COMPOUNDS	$45.00	$540.00	McMASTER CARR CAT 96 Pg. 1005 P/N 7096T12 8 OZ.	
9036K331	METAL STRIPS, STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$15.00	$15.00		
9036K332	METAL STRIPS, STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$15.00	$15.00		
76-337	METAL TUBE FLARING TOOL, HAND-OPERATED	ENGINEERING	1	ARMSTRONG BROTHERS TOOL COMPANY	$45.00	$45.00		
	MONITOR, COLOR, COMPUTER	ENGINEERING	1	ZENITH DATA SYSTEMS	$0.00	$0.00	14" SUPER VGA MONITOR "COMPUADD"	
W-180-2440	MONKEY WRENCH, JAWS TO 1-7/8", NON-SPARKING	ENGINEERING	1	NGK METALS CORPORATION	$160.00	$160.00	NON-SPARKING	
W-182-2442	MONKEY WRENCH, JAWS TO 2-13/16, NON-SPARK	ENGINEERING	1	NGK METALS CORPORATION	$185.00	$185.00	NON-SPARKING	
8062A	MULTIMETER, DIGITAL	ENGINEERING	2	FLUKE	$415.00	$830.00		
97801A102	NAILS, BRIGHT STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$5.40	$5.40		
97801A104	NAILS, BRIGHT STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$5.10	$5.10		
97801A106	NAILS, BRIGHT STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$5.10	$5.10		
97801A108	NAILS, BRIGHT STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$5.10	$5.10		
97801A109	NAILS, BRIGHT STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$5.10	$5.10		
97801A111	NAILS, BRIGHT STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$5.10	$5.10		
97801D113	NAILS, BRIGHT STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$6.50	$6.50		
4549K531	NIPPLE, CLOSE PIPE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.40	$0.80		
4549K571	NIPPLE, CLOSE PIPE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.30	$0.60		
4568K135	NIPPLE, PIPE, BRASS, 4568K135	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$1.30	$2.60	P/N 4568K135 MC. CARR	
4568K137	NIPPLE, PIPE, BRASS, 4568K137	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$1.60	$3.20	P/N 4568K137 MC. CARR	
4568K142	NIPPLE, PIPE, BRASS, 4568K142	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$2.30	$4.60	P/N 4568K142 MC. CARR	
4568K155	NIPPLE, PIPE, BRASS, 4568K155	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$1.80	$3.60	P/N 4568K155 MC. CARR	
4568K157	NIPPLE, PIPE, BRASS, 4568K157	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$1.90	$3.80	P/N 4568K157 MC. CARR	
4568K162	NIPPLE, PIPE, BRASS, 4568K162	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$2.60	$5.20	P/N 4568K162 MC. CARR	
4568K175	NIPPLE, PIPE, BRASS, 4568K175	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$1.90	$3.80	P/N 4568K175 MC. CARR	
4568K177	NIPPLE, PIPE, BRASS, 4568K177	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$2.50	$5.00	P/N 4568K177 MC.CARR	
4568K182	NIPPLE, PIPE, BRASS, 4568K182	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$3.50	$7.00	P/N 4568K182 MC. CARR	
4568K194	NIPPLE, PIPE, BRASS, 4568K194	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$2.60	$5.20	P/N 4568K194 MC. CARR	
4568K196	NIPPLE, PIPE, BRASS, 4568K196	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$3.30	$6.60	PN/ 4568K196 MC. CARR	
4568K211	NIPPLE, PIPE, BRASS, 4568K211	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$4.50	$9.00	P/N 4568K211 MC. CARR	
4568K224	NIPPLE, PIPE, BRASS, 4568K224	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$3.40	$6.80	P/N 4568K224 MC. CARR	
4568K226	NIPPLE, PIPE, BRASS, 4568K226	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$4.50	$9.00	P/N 4568K226 MC. CARR	
4568K231	NIPPLE, PIPE, BRASS, 4568K231	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$6.50	$13.00	P/N 4568K231 MC. CARR	
4549K611	NIPPLE, PIPE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.65	$1.30		

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4549K612	NIPPLE, SHORT PIPE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.70	$1.40		
80851	O-RING FABRICATION KIT	ENGINEERING	2	PERMATEX INDUSTRIAL CORPORATION	$38.00	$76.00		
73906	OFFSET SCREWDRIVER, 3/8 INCH BLADES	ENGINEERING	2	IRWIN MEASURING TOOL COMPANY	$1.80	$3.60		
MODEL RBA	OILER, HAND	ENGINEERING	4	EAGLE MANUFACTURING COMPANY	$12.00	$48.00		
9556K75	PAPER GASKET MATERIAL, ASSORTMENT	ENGINEERING	12	McMASTER-CARR SUPPLY COMPANY	$2.00	$24.00	CAT# 96 PG. 2332 P/N 9556K75	
L1-16	PENETRATING OIL, NO.1	ENGINEERING	1	LIQUID WRENCH, INC.	$5.00	$5.00		
390	PIPE CUTTING OIL, 1GL.	ENGINEERING	2	A.W. CHESTERTON COMPANY	$26.00	$52.00		
4549K535	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.60	$1.20		
4549K537	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.75	$1.50		
4549K542	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$1.15	$2.30		
4549K555	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.65	$1.30		
4549K557	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.80	$1.60		
4549K562	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$1.20	$2.40		
4549K575	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.50	$1.00		
4549K577	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.55	$1.10		
4549K582	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.70	$1.40		
4549K595	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.55	$1.10		
4549K596	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.85	$1.70		
4549K602	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$1.10	$2.20		
4549K614	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.85	$1.70		
4549K616	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.98	$1.96		
4549K621	PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$1.50	$3.00		
4549K552	PIPE NIPPLE, SHORT , GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.45	$0.90		
4549K551	PIPE NIPPLE, SHORT, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.45	$0.90		
5065-040	PIPE PLUG, BRASS	ENGINEERING	2	STANLEY G. FLAGG & COMPANY, INC	$2.05	$4.10	BRASS	
5065-060	PIPE PLUG, BRASS	ENGINEERING	2	STANLEY G. FLAGG & COMPANY, INC	$2.00	$4.00	BRASS	
5065-100	PIPE PLUG, BRASS	ENGINEERING	2	STANLEY G. FLAGG & COMPANY, INC	$2.00	$4.00	BRASS	
5065-150	PIPE PLUG, BRASS	ENGINEERING	2	STANLEY G. FLAGG & COMPANY, INC	$2.40	$4.80	BRASS	
5065-200	PIPE PLUG, BRASS	ENGINEERING	2	STANLEY G. FLAGG & COMPANY, INC	$3.65	$7.30	BRASS	
4552K22	PIPE PLUG, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.85	$1.70		
4552K23	PIPE PLUG, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.85	$1.70		
4552K24	PIPE PLUG, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.85	$1.70		
4552K25	PIPE PLUG, GALVANIZED	ENGINEERING	2	MCMASTER-CARR SUPPLY COMPANY	$0.95	$1.90		
4552K26	PIPE PLUG, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.95	$1.90		
4554K15	PIPE PLUG, STAINLESS STEEL	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$2.80	$5.60		
4554K16	PIPE PLUG, STAINLESS STEEL	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$3.45	$6.90		
4638K121	PIPE TEE, GALVANIZED	ENGINEERING	3	STANLEY G. FLAGG & COMPANY, INC	$1.30	$3.90	McMASTER CARR CAT 99 Pg. 1474 P/N 4638K121	
4638K122	PIPE TEE, GALVANIZED	ENGINEERING	3	STANLEY G. FLAGG & COMPANY, INC	$1.20	$3.60	McMASTER CARR CAT 99 Pg. 1474 P/N 4638K122	
4638K123	PIPE TEE, GALVANIZED	ENGINEERING	3	STANLEY G. FLAGG & COMPANY, INC	$0.80	$2.40	McMASTER CARR CAT 99 Pg. 1474 P/N 4638K123	

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PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
4638K125	PIPE TEE, GALVANIZED	ENGINEERING	3	STANLEY G. FLAGG & COMPANY, INC	$1.90	$5.70	McMASTER CARR CAT 99 Pg. 1474 P/N 4638K125	
	PIPE, BRASS	ENGINEERING	1	COMMERCIAL	$46.00	$46.00	TRIPLE G SUPPLY INC	
	PIPE, BRASS	ENGINEERING	1	COMMERCIAL	$61.00	$61.00	TRIPLE G SUPPLY	
	PIPE, BRASS	ENGINEERING	1	COMMERCIAL	$46.00	$46.00	BRASS	
	PIPE, BRASS	ENGINEERING	1	COMMERCIAL	$61.00	$61.00	BRASS	
	PIPE, GALVANIZED	ENGINEERING	1	COMMERCIAL	$20.00	$20.00	TRIPLE G SUPPLY INC	
	PIPE, GALVANIZED	ENGINEERING	1	COMMERCIAL	$11.00	$11.00	TRIPLE G SUPPLY INC	
	PIPE, GALVANIZED	ENGINEERING	1	COMMERCIAL	$14.00	$14.00	TRIPLE G SUPPLY	
	PIPE, GALVANIZED	ENGINEERING	1	COMMERCIAL	$24.00	$24.00	TRIPLE G SUPPLY INC	
4549K591	PIPE, NIPPLE, GALVENIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.50	$1.00		
	PLATES METAL FLOOR	ENGINEERING	40	COMMERCIAL	$80.00	$3,200.00	TRIPLE G SUPPLY INC. 3/16" x 48" x 96" DECK FLOOR	
#5266C	PLUG	ENGINEERING	1	AMERACE IND. ELEC. PRODUCTS	$105.00	$105.00		1
	PLUG, CONICAL, SOFTWOOD	ENGINEERING	4	A.L. DON COMPANY/STEELSTRAN IND	$5.50	$22.00	TRIPLE G SUPPLY, INC	
	PLUG, CONICAL, SOFTWOOD	ENGINEERING	4	A.L. DON COMPANY/STEELSTRAN IND	$20.00	$80.00	TRIPLE G SUPPLY, INC	
	PLUG, CONICAL, SOFTWOOD	ENGINEERING	4	A.L. DON COMPANY/STEELSTRAN IND	$39.00	$196.00	TRIPLE G SUPPLY, INC	
	PLUG, CONICAL, SOFTWOOD	ENGINEERING	4	A.L. DON COMPANY/STEELSTRAN IND	$42.00	$168.00	TRIPLE G SUPPLY, INC	
	PLUG, CONICAL, SOFTWOOD	ENGINEERING	4	A.L. DON COMPANY/STEELSTRAN IND	$49.00	$196.00	TRIPLE G SUPPLY, INC	
	PLUGS, COMPATABLE TO HUBBLE ENT. SYS	ENGINEERING	4	HUBBELL	$12.00	$48.00	NAVAL ELECTRONICS P/N 201.505 MALE P/N201.506 FEMA	
450	PLUNGER FORCE CUP	ENGINEERING	1	TRAEX/MENASHA CORPORATION	$2.20	$2.20		
550	PLUNGER FORCE CUP	ENGINEERING	1	TRAEX/MENASHA CORPORATION	$4.50	$4.50		
95-2 X 50 FT	POTABLE WATER HOSE W/COUPLED BRASS M/F FITTINGS	ENGINEERING	6	ACCORD INTERNATIONAL, INC.	$130.00	$780.00		
THOF 500	POWER CABLE, SHORE 400 AMP	ENGINEERING	1	COMMERCIAL	$5,900.00	$5,900.00		1
1554-4	PUMP, JET EJECTOR	ENGINEERING	1	VITA MOTIVATOR COMPANY, INC.	$2,900.00	$2,900.00		
4187-940	RAZOR BLADE, FOR UTILITY KNIFE	ENGINEERING	1	HYDE TOOLS COMPANY	$2.30	$2.30		
6659A210	RIVETING TOOL, HAND	ENGINEERING	1	COMMERCIAL	$10.00	$10.00	McMASTER CARR CAT 96 P/N 6659A210 BLIND RIVIT TOOL	
87517A020	RIVETS, LONG, STEEL	ENGINEERING	1	COMMERCIAL	$6.50	$6.50	McMASTER CARR CAT 99 Pg. 2417 P/N 87517A020	
87517A010	RIVETS, SHORT, STEEL	ENGINEERING	1	COMMERCIAL	$6.50	$6.50	McMASTER CARR CAT 99 Pg. 2417 P/N 87517A010	
RC-40	ROSIN CORE SOLDER	ENGINEERING	4	WELLER TOOLS	$4.50	$18.00		
	ROUND BRONZE STOCK	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$90.00	$90.00	J.M.TULL CO.	
	ROUND BRONZE STOCK	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$310.00	$310.00	J.M. TULL CO.	
	ROUND BRONZE STOCK	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$330.00	$330.00	J.M. TULL CO.	
197/3	RUBBER MALLET, NO.3	ENGINEERING	2	C.S. OSBORNE & COMPANY	$16.50	$33.00		
	RUBBER MATTING/SHEETS,3/16" THICK	ENGINEERING	3	U.S. MAT & RUBBER COMPANY, INC.	$50.00	$150.00	MC. CARR CAT 96 PG 940, BLACK 36" x 144" SWITCHBOA	
3750	RUSSELLSTOLL WATERTIGHT CONNECTORS	ENGINEERING	8	AMERACE IND. ELEC. PRODUCTS	$816.00	$6,528.00		

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PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
3913U1	RUSSELLSTOLL WATERTIGHT CONNECTORS	ENGINEERING	6	AMERACE IND. ELEC. PRODUCTS	$57.50	$345.00		
3934	RUSSELLSTOLL WATERTIGHT CONNECTORS	ENGINEERING	6	AMERACE IND. ELEC. PRODUCTS	$804.00	$804.00		
372001	RUSSELLSTOLL WATERTIGHT PLUGS	ENGINEERING	6	AMERACE IND. ELEC. PRODUCTS	$65.00	$390.00		
3760	RUSSELLSTOLL WATERTIGHT PLUGS	ENGINEERING	1	AMERACE IND. ELEC. PRODUCTS	$840.00	$840.00		
3933	RUSSELLSTOLL WATERTIGHT PLUGS	ENGINEERING	8	AMERACE IND. ELEC. PRODUCTS	$696.00	$5,568.00		
2W274	SAFETY CAN, OILY WASTE 2W274	ENGINEERING	1	EAGLE MANUFACTURING COMPANY	$85.00	$85.00	NEW P/N 2W274	
58052	SCISSORS, HAND	ENGINEERING	2	COOPERTOOLS	$26.00	$52.00		
LJ-0	SCREW JACK, HAND OPERATED	ENGINEERING	1	MILWAUKEE TOOL & EQUIPMENT COMP	$40.00	$40.00	CHANGED TO 3 TON CAPACITY	
LJ-12	SCREW JACK, HAND OPERATED	ENGINEERING	1	MILWAUKEE TOOL & EQUIPMENT COMP	$84.00	$84.00		
5352A11	SCREW STARTER, HAND	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$4.70	$9.40		
25FL1	SEWER AUGER, HAND	ENGINEERING	1	GENERAL WIRE SPRING COMPANY	$10.00	$10.00		
25FL2	SEWER AUGER, HAND	ENGINEERING	1	GENERAL WIRE SPRING COMPANY	$15.00	$15.00		
9055K999-16GA	SHEET METAL, GALVANIZED STEEL	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$56.00	$112.00		
9057K999-10GA	SHEET METAL, STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$53.00	$53.00		
9057K999-16GA	SHEET METAL, STEEL	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$48.00	$48.00		
4549K532	SHORT PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.40	$0.80		
4549K572	SHORT PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.40	$0.80		
4549K592	SHORT PIPE NIPPLE, GALVANIZED	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$0.50	$1.00		
8185526LA	SILACONE, SEALANT RED	ENGINEERING	6	PERMATEX INDUSTRIAL CORP	$18.00	$108.00		
08799	SINGLE CUT MILL FILE, AM PIN	ENGINEERING	2	NICHOLSON TOOLS	$9.00	$18.00		2
11-649	SLEDGE HAMMER, 3 LBS	ENGINEERING	2	PLUMB TOOLS	$10.00	$20.00	14" LONG	2
11-659	SLEDGE HAMMER, 6 LBS.	ENGINEERING	2	PLUMB TOOLS	$14.00	$28.00	36" LONG	2
420G	SLIP JOINT PLIERS	ENGINEERING	2	CHANNELLOCK, INC.	$11.00	$22.00		
SP353	SPARE PARTS KIT SP353	ENGINEERING	1	TRIPLE G SUPPLY	$5,700.00	$5,700.00	NEW P/N SP353	
1500-03	STAMP SET, 1/8 IN. ,HG. STEEL, LETTERS A-	ENGINEERING	1	MILLERS FALLS TOOL COMPANY	$34.00	$34.00		1
1550-03	STAMP SET, 1/8 IN., HG. STEEL, , NUMBERS	ENGINEERING	1	MILLERS FALLS TOOL COMPANY	$12.00	$12.00		1
921-FL	STEEL CAN WITH COVER, OILY WAS	ENGINEERING	2	EAGLE MANUFACTURING COMPANY	$138.00	$276.00		
8740A11	STONE, GRINDING HONING (GRINDING WHL, DRESS STN)	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$26.00	$52.00	McMASTER CARR CAT 96 P/N 8740A11 7" x 2" x 1"	
9861A010	STOVE BOLTS	ENGINEERING	4	McMASTER-CARR SUPPLY COMPANY	$58.00	$232.00		
4A505	STRAP WRENCH, PIPE TO 2"	ENGINEERING	1	MILWAUKEE TOOL & EQUIPMENT DIVISION	$15.00	$15.00	NEW P/N 4A505	
150352A	STUFFING TUBES 150352A	ENGINEERING	12	PAULUHN ELECTRICAL MANUFACTURIN	$44.00	$528.00	NEW P/N 150352A	12
1501-51A	STUFFING TUBES, TERMINAL TYPE	ENGINEERING	10	PAULUHN ELECTRICAL MANUFACTURIN	$36.00	$360.00		10
58819	TANK GAUGING TAPE, INNAGE	ENGINEERING	1	IRWIN MEASURING TOOL COMPANY	$64.00	$64.00		
58823	TANK GAUGING TAPE, INNAGE	ENGINEERING	1	IRWIN MEASURING TOOL COMPANY	$94.00	$94.00		
59019	TANK GAUGING TAPE, OUTAGE	ENGINEERING	2	IRWIN MEASURING TOOL COMPANY	$64.00	$128.00		
#50	TAPE CORROSION PROTECTING, ALL	ENGINEERING	1	AMERACE IND. ELEC. PRODUCTS	$72.00	$72.00		1
4638K124	TEE, PIPE, GALVANIZED	ENGINEERING	3	McMASTER-CARR SUPPLY COMPANY	$1.25	$3.75	MC. CARR CAT# 99 PG. 1474 P/N 4638K124	
816	TESTER, INSULATION (MEGGER)	ENGINEERING	1	FLUKE	$520.00	$520.00		

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PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
00047	THREAD CUTTING TAP SET, TAPER	ENGINEERING	1	GREENFIELD TAP & DIE	$800.00	$800.00		1
00082	THREAD CUTTING TAP SET, TAPER	ENGINEERING	1	GREENFIELD TAP & DIE	$770.00	$770.00		1
98520A029	THREADED STAINLESS STEEL RODS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$6.30	$6.30	72" LENGHTS	
98520A030	THREADED STAINLESS STEEL RODS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$8.30	$8.30	72" LENGHTS	
98520A031	THREADED STAINLESS STEEL RODS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$10.30	$10.30	72" LENGHTS	
98520A033	THREADED STAINLESS STEEL RODS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$29.00	$29.00	72" LENGHTS	
98520A035	THREADED STAINLESS STEEL RODS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$39.00	$39.00	72" LENGHTS	
98520A036	THREADED STAINLESS STEEL RODS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$55.00	$55.00	72" LENGHTS	
98920A029	THREADED STEEL RODS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$7.00	$7.00	CHANGED TO 72"	
98920A030	THREADED STEEL RODS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$10.00	$10.00	CHANGED TO 72"	
98920A031	THREADED STEEL RODS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$13.50	$13.50	CHANGED TO 72" LONG	
98920A033	THREADED STEEL RODS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$27.00	$27.00	CHANGED TO 72" LONG	
98920A035	THREADED STEEL RODS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$40.00	$40.00	CHANGED TO 72" LONG	
98920A036	THREADED STEEL RODS	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$59.00	$59.00	CHANGED TO 72" LONG	
W-7	TINNERS SHEARS, STRAIGHT CUT	ENGINEERING	1	WISS TOOLS	$20.00	$20.00		
1950SS	TOILET SEAT	ENGINEERING	2	BEMIS MANUFACTURING COMPANY	$12.00	$24.00		
1957K5	TOOL BOX, AIR COND/REFRIGERATION	ENGINEERING	1	MCMASTER-CARR SUPPLY COMPANY	$325.00	$325.00	McMASTER CARR CAT 99 Pg.104 P/N 1957K5 DELUXE KIT	
5741A21	TOOL BOX, MASTER MECHANICS 5741A21	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$1,865.00	$1,865.00	NEW P/N 5741A21	
6581A13	TOOL SET, ELECTRICIANS	ENGINEERING	1	MCMASTER-CARR SUPPLY COMPANY	$467.00	$467.00		
6126-A	TORQUE WRENCH, 1/2 INCH SQUARE 6126-A	ENGINEERING	2	STANLEY-PROTO INDUSTRIAL TOOL	$263.00	$526.00	NEW P/N 6126-A	
52082	TROLLEY, WELDING CYLINDER 52082	ENGINEERING	1	UNITOR SHIPS SERVICE, INC.	$190.00	$190.00	NEW P/N 52082	
2421A1	TUBE BENDER, HAND	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$730.00	$730.00		
1500M1	TUBE, THREADED, 90 DEG.	ENGINEERING	2	PAULUHN ELECTRICAL MANUF. CO.	$9.50	$19.00		2
1NX1502	TUBE, THREADED, 90 DEG. 1NX1502	ENGINEERING	2	PAULUHN ELECTRICAL MANUFACTURING CO.	$6.00	$12.00	NEW P/N 1NX1502	
#49F	TUBE, THREADED, 90 DEG. MALEENDS	ENGINEERING	2	PAULUHN ELECTRIC MANUF. CO.	$36.00	$72.00		2
	TUBING, COPPER	ENGINEERING	100	PAULUHN ELECTRICAL MANUFACTURIN	$0.15	$15.00	TRIPLE G SUPPLY INC 3/16" X 50FT COILS	
	TUBING, COPPER	ENGINEERING	50	PAULUHN ELECTRICAL MANUFACTURIN	$0.35	$17.50	TRIPLE G SUPPLY INC 5/16" X 50FT COILS	
	TUBING, COPPER	ENGINEERING	50	PAULUHN ELECTRICAL MANUFACTURIN	$0.40	$20.00	TRIPLE G SUPPLY INC 3/8" X 50FT COILS	
	TUBING, COPPER	ENGINEERING	50	PAULUHN ELECTRICAL MANUFACTURIN	$0.50	$25.00	TRIPLE G SUPPLY INC 1/2" X 50FT COILS	
	TUBING, COPPER	ENGINEERING	100	PAULUHN ELECTRICAL MANUFACTURIN	$0.15	$15.00	TRIPLE G SUPPLY INC 1/4" X 50FT COILS	
625-0305	TURNBUCKLES	ENGINEERING	12	BREWER-TITCHENER TOOLS	$19.80	$237.60		
DB-29	TWIST DRILL SET	ENGINEERING	2	JET TOOL CO.	$190.00	$380.00		
44605K192	UNION COUPLING, STEEL	ENGINEERING	4	COMMERCIAL	$4.10	$16.40	McMASTER CARR CAT 99 Pg.1475 P/N 44605K192	

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44605K193	UNION COUPLING, STEEL	ENGINEERING	4	COMMERCIAL	$4.10	$16.40	McMASTER CARR CAT 99 Pg.1475 P/N 44605K193	
44605K194	UNION COUPLING, STEEL	ENGINEERING	4	COMMERCIAL	$4.10	$16.40	McMASTER CARR CAT 99 Pg.1475 P/N 44605K194	
44605K195	UNION COUPLING, STEEL	ENGINEERING	4	COMMERCIAL	$5.00	$20.00	McMASTER CARR CAT 99 Pg.1475 P/N 44605K195	
44605K196	UNION COUPLING, STEEL	ENGINEERING	4	COMMERCIAL	$6.40	$25.60	McMASTER CARR CAT 99 Pg.1475 P/N 44605K196	
4187-910	UTILITY KNIFE, RAZOR	ENGINEERING	4	HYDE TOOLS COMPANY	$2.70	$10.80		
2790K71	VALVE, FLUSHING	ENGINEERING	8	SLOAN VALVE COMPANY	$12.95	$103.60	FOR TOILETS ONLY McMASTER CARR P/N 2790K71	
C-504	VINYL TAPE, HEAVY-DUTY	ENGINEERING	40	MOTT COMPANY	$5.60	$224.00		
2801K61	WASHERS, FAUCET, ASSORTMENT	ENGINEERING	2	McMASTER-CARR SUPPLY COMPANY	$58.00	$116.00		
	WASHERS, SUPPLY VALVE	ENGINEERING	4	McMASTER-CARR SUPPLY COMPANY	$2.50	$10.00	RUBBER WASHERS FOR WASHING MACHINE FAUCETS	
	WEDGE, TAPERED HARDWOOD	ENGINEERING	4	COMMERCIAL	$1.30	$5.20	TRIPLE G SUPPLY HARDWOOD	
	WEDGE, TAPERED HARDWOOD	ENGINEERING	4	COMMERCIAL	$1.30	$5.20	TRIPLE G SUPPLY HARDWOOD	
	WEDGE, TAPERED HARDWOOD	ENGINEERING	4	COMMERCIAL	$27.00	$108.00	TRIPLE G SUPPLY HARDWOOD	
	WEDGE, TAPERED HARDWOOD	ENGINEERING	4	COMMERCIAL	$28.00	$112.00	TRIPLE G SUPPLY HARDWOOD	
	WEDGE, TAPERED HARDWOOD	ENGINEERING	4	COMMERCIAL	$12.80	$51.20	TRIPLE G SUPPLY HARDWOOD	
	WEDGE, TAPERED HARDWOOD	ENGINEERING	4	COMMERCIAL	$16.00	$64.00	TRIPLE G SUPPLY HARDWOOD	
	WEDGE, TAPERED HARDWOOD	ENGINEERING	4	COMMERCIAL	$38.00	$152.00	TRIPLE G SUPPLY HARDWOOD	
	WEDGE, TAPERED HARDWOOD	ENGINEERING	4	COMMERCIAL	$34.00	$136.00	TRIPLE G SUPPLY HARDWOOD	
174557X21	WELDING - CUTTING KIT, OXY-ACE	ENGINEERING	1	UNITOR SHIPS SERVICE, INC.	$750.00	$750.00		Sect 665b
GPO-302S	WELDING ELECTRODES	ENGINEERING	50	UNITOR SHIPS SERVICE, INC.	$3.80	$190.00		
250	WELDING KIT	ENGINEERING	2	THE LINCOLN ELECTRIC COMPANY	$1,980.00	$3,960.00	NEW P/N 250	
1781	WIRE BRUSH, 14"	ENGINEERING	24	OSBORN MANUFACTURING/JASON, INC	$2.90	$69.60		
WT1300	WIRE CRIMPING TOOL	ENGINEERING	1	VALON/THOMAS-BETTS CORPORATION	$17.00	$17.00		
3738A1	WIRE NIPPERS, END CUTTING	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$17.60	$17.60		
39400	WOODEN FILE HANDLE FOR 12-14"	ENGINEERING	2	WARRENSVILLE FILE & KNIFE	$2.00	$4.00		
39300	WOODEN FILE HANDLE FOR 8-10" F	ENGINEERING	2	WARRENSVILLE FILE & KNIFE	$2.00	$4.00		
5458A65	WRENCH SET, BOX END	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$125.00	$125.00		
5458A68	WRENCH SET, COMBINATION, 12 PIT 5458A68	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$225.00	$225.00	NEW P/N 5458A68	
	WRENCH SET, STILLSON PIPE, HEAVY DUTY	ENGINEERING	1	McMASTER-CARR SUPPLY COMPANY	$40.00	$40.00	McMASTER CARR CAT 99 Pg.(1)EA:6",8",10",12",14",18	
ZUR-5	ZINC ANODES	ENGINEERING	12	WILSON WALTON INTERNATIONAL, IN	$14.00	$168.00		
4242	GEAR PULLER, JAWS TO 13"	ENGINEERING1	1	STANLEY-PROTO INDUSTRIAL TOOLS	$203.00	$203.00		
	PIPE, GALVANIZED	ENGINNERING	1	COMMERCIAL	$17.00	$17.00	TRIPLE G SUPPLY INC	
FLEX-TRED	ANTISLIP STRIP, SELF-ADHESIVE	GENERAL	60	WOOSTER PRODUCTS, INC.	$90.00	$5,400.00		
E-4000	ASHTRAY, ALUMINUM	GENERAL	48	DOVER MARINE MFG. & SUPPLY COMP	$26.50	$1,272.00	CHANGED TO BEAN BAG TYPE	
	BAG, LAUNDRY, WHITE COTTON	GENERAL	40	COMMERCIAL	$58.00	$2,320.00	42" x 57" KELLY & ABIDE	

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PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
EV50	BATTERY, HEAVY DUTY	GENERAL	200	EVEREADY BATTERY COMPANY	$0.20	$40.00		
	BED SPREADS, BLUE COTTON	GENERAL	75	COMMERCIAL	$23.00	$1,725.00	76" X 110" KELLY & ABIDE	
	BLANKET, WOOL, GREY	GENERAL	75	COMMERCIAL	$28.00	$2,100.00	62" x 90" EASTLAND WOOLEN CO.	
	BODY BAG, MORTUARY TRANSFER, LEAK PROOF	GENERAL	2	UNIVERSAL MARINE MEDICAL SUPPLY	$0.00	$0.00	INCLUDED IN MEDICAL LIST	
DQB-08400	BRUSH, SANITARY	GENERAL	4	OSBORN MANUF/JASON INC.	$1.75	$7.00		
5664T2	BULLETIN BOARD, CORK 5664T2	GENERAL	4	McMASTER-CARR SUPPLY COMPANY	$26.00	$104.00	NEW P/N 5664T2 36" x 24"	
TX400	CELLULAR TELEPHONE TX400 WITH CHARGER & B	GENERAL	1	MOTOROLA CORPORATION	$390.00	$390.00	NEW P/N TX400 W/CHARGER	
	CLOTH, WASH, WHITE COTTON	GENERAL	20	COMMERCIAL	$18.50	$370.00	KELLY & ABIDE CO. 12" x 12" WHITE	
9059T14	COAT HANGER, WOOD, WITH PANTS ROD	GENERAL	240	McMASTER-CARR SUPPLY COMPANY	$1.50	$360.00		
466189	COMBUSTIBLE GAS DETECTOR, MODE	GENERAL	1	MINE SAFETY APPLIANCES COMPANY	$492.00	$492.00		
	COVER, IRONING BOARD	GENERAL	3	IRON-A-WAY, INC.	$19.00	$57.00	48" SIZE	
	COVER, MATRESS, WHITE COTTON	GENERAL	100	COMMERCIAL	$19.00	$1,900.00	10 EA. 39" x 80" 90 EA. 30" x 80"	
420	DECK SCRUB BRUSH	GENERAL	4	OSBORN MANUFACTURING/JASON, INC	$8.00	$32.00		
C-520	DUCT TAPE, ALUMINUM	GENERAL	24	MOTT COMPANY	$4.60	$110.40		
8633T24	EMBOSSING GUN	GENERAL	2	McMASTER-CARR SUPPLY COMPANY	$75.00	$150.00		
1598T28	EMBOSSING TAPE, BLACK	GENERAL	10	McMASTER-CARR SUPPLY COMPANY	$2.75	$27.50		10
	EXERCISE ROWING MACHINE	GENERAL	1	TRIPLE G. SUPPLY	$599.00	$599.00	QUINTON OAR ROWING MACHINE	Sect 645b
101008	FEATHER PILLOW	GENERAL	75	AUTOMATIC BEDDING CORPORATION	$19.80	$1,485.00	CHANGED TO FOAM RUBBER ALERG.	75
3Z665	FLOOR POLISHER	GENERAL	1	DAYTON ELECTRIC COMPANY	$1,150.00	$1,150.00		
2631	GARBAGE CAN WITH COVER, PLASTIC WITH LID	GENERAL	10	RUBBERMAID COMMERCIAL PRODUCTS	$39.00	$390.00	WITH LID	
2610	GARBAGE CAN, PLASTIC WITH LID	GENERAL	20	RUBBERMAID COMMERCIAL PRODUCTS	$20.00	$400.00	WITH LID	
2610	GARBAGE CAN, PLASTIC WITH LID	GENERAL	6	RUBBERMAID COMMERCIAL PRODUCTS	$20.00	$120.00	WITH LID	
1416	HUCK TOWELS	GENERAL	75	ALL SEASONS SERVICES, INC.	$0.75	$56.24		75
33K	KEY TAGS, PAPER	GENERAL	2	REVERE SUPPLY COMPANY, INC.	$14.00	$28.00		
800	LAUNDRY DETERGENT	GENERAL	1	NUVITE CHEMICAL COMPOUNDS	$46.00	$46.00	COMMERCIAL LAUNDRY POWDER IN PAILS, 10 ea @ 25LBS	
2823T2	LAUNDRY HAMPER 2823T2	GENERAL	6	McMASTER-CARR SUPPLY COMPANY	$106.00	$636.00	NEW P/N 2823T2	
2823T5	LAUNDRY HAMPER BAG	GENERAL	6	McMASTER-CARR SUPPLY COMPANY	$26.00	$156.00	NEW P/N 2823T5	
5240	MARINE ANTENNA	GENERAL	1	COMMERCIAL	$60.00	$60.00	NEW P/N 5240	
4260T4	METAL PAIL, GALVANIZED STEEL 4260T4	GENERAL	6	McMASTER-CARR SUPPLY COMPANY	$7.30	$43.80	NEW P/N 4260T4	
6110	MOP BUCKET WITH WRINGER	GENERAL	4	RUBBERMAID COMMERCIAL PRODUCTS	$56.00	$224.00		
T-156	OIL SORBENT PADS	GENERAL	6	3M/ENVIRONMENTAL SAFETY DIVISIO	$13.00	$78.00		
G77	OMNIFAX	GENERAL	1	TELAUTOGRAPH	$745.00	$745.00		
2BLF/MK	PADLOCK SET	GENERAL	1	MASTER LOCK COMPANY PRICE FOR 2	$334.00	$334.00		
1500	PAPER TOWEL	GENERAL	2	SCOTT PAPER COMPANY	$12.00	$24.00		2
	PILLOWCASE, WHITE COTTON, 130 COUNT	GENERAL	75	COMMERCIAL	$2.00	$150.00	KELLY & ABIDE 42" x 36" WHITE	
SRX-1	RECEIVER SET, AFRTS	GENERAL	1	REDI-MARINE ELECTRONIC COMPANY	$2,120.00	$2,120.00		

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
	SCHWINN AIRDYNE EXERCISE BIKES	GENERAL	2	TRIPLE G. SUPPLY	$750.00	$1,500.00	SCHWINN AIRDYNE REG. EXECISE BIKE	Sect 645b
AJAX CLEANSER	SCOURING COMPOUND	GENERAL	10	COLGATE-PALMOLIVE COMPANY	$1.60	$16.00		
3Z665	SHAMPOOER/POLISHER, ELECTRICAL	GENERAL	2	COMMERCIAL	$1,365.00	$2,730.00	W.W. GRAINGER P/N 3Z665 W/SOLUTION TANK	
	SHEETS, BED, COTTON MUSLIN	GENERAL	150	COMMERCIAL	$6.50	$975.00	KELLY & ABIDE CO. WHITE 66" x 96"	
MODEL FL630S	STEAM IRON, ELECTRIC	GENERAL	4	BLACK-DECKER CORPORATION	$14.00	$56.00	BLACK & DECKER MODEL FL630S	
D-50	STEEL DUSTPAN, NON-SPARKING	GENERAL	6	NGK METALS CORPORATION	$90.00	$540.00	NON-SPARKING	
100H-04	STEP LADDER, HEAVY DUTY	GENERAL	2	ALUMINUM LADDER COMPANY	$65.00	$130.00		2
100H-10	STEP LADDER, HEAVY DUTY	GENERAL	2	ALUMINUM LADDER COMPANY	$160.00	$320.00		2
7635A2	TAPE DISPENSER, SCOTCH 7635A2	GENERAL	6	McMASTER-CARR SUPPLY COMPANY	$37.00	$222.00	NEW P/N 7635A2	
7560T14	TOILET DEODORANT, CAKE	GENERAL	4	McMASTER-CARR SUPPLY COMPANY	$35.00	$140.00		
	TOWEL BATH	GENERAL	75	COMMERCIAL	$2.90	$217.00	KELLY & ABIDE CO. WHITE 25" x 50"	
	TOWEL, FACE	GENERAL	50	COMMERCIAL	$1.30	$65.00	KELLY & ABIDE CO WHITE 16" x 27"	
BR1006	UPRIGHT BROOM	GENERAL	12	H.S. WHITE COMPANY, INC.	$4.90	$58.80		
BR1009	UPRIGHT WAREHOUSE BROOM	GENERAL	4	H.S. WHITE COMPANY, INC.	$12.00	$48.00		
7411T12	URINAL DEODORANT, CAKE	GENERAL	4	McMASTER-CARR SUPPLY COMPANY	$9.50	$38.00		
8911	VACUUM CLEANER, PORTABLE	GENERAL	2	MILWAUKEE TOOL & EQUIPMENT COMP	$490.00	$980.00		
7366T24	WIPING RAGS	GENERAL	4	McMASTER-CARR SUPPLY COMPANY	$14.00	$56.00	25 LB BOXES	
	ABSORBENT, COTTON, LARGE	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE 100'S	ACETAMINOPHEN WITH CODEINE, 15 MG	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	ADHESIVE ELASTIC BANDAGE	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	ADHESIVE ELASTIC BANDAGE	HEALTH	12	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	ADHESIVE PLASTER	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	ADHESIVE PLASTER	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE 10 X 1 ML	ADRENALINE INJ.	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	ADRENALINE INJ. 30ML	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 500 ML	ALCOHOL 70%	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	AMERICAINE AEROSOL BURNS	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	AMINOPHYLLIN TABS, 200 MG	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10'S	AMMONIA INHALANTS	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	AMPICILLIN, 250 MG	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 1 ML	AMPICILLIN-N INJ.	HEALTH	40	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10'S	AMYL NITRATE INHALANTS	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 15 ML	ANAESTHETIC EYE DROPS	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 120 GM	ANTISCABIES OINTMENT	HEALTH	10	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 15 ML	ANTISEPTIC EYE DROPS	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	APPLICATOR COTTON TIP	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	ARTIFICIAL AIRWAY	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
SIZE - 100'S	ASPIRIN, 300 MG	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 30 ML	ATROPINE SULFATE INJ	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 15 ML	AURALGAN OTIC	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 30 GM	BACITRACIN-NEOMY.-POLYMIX OINT.	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	BAND-AID, 1"WIDE X 3"	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	BANDAGES, ELASTIC	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	BANDAGES, ELASTIC	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	BANDAGES, GAUZE	HEALTH	24	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	BANDAGES, GAUZE	HEALTH	24	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	BANDAGES, GAUZE	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	BANDAGES, TRIANGULAR	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	BEN GAY OINTMENT	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10 ML	BENADRYL INJ. 50 MG/ML	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00	1 BOTTLE	DELETE
SIZE - 100'S	BENADRYL, 50 MG	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	BENEMID TABS, 50 MG	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 500 ML	BETADINE	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	BLOOD PRESSURE CUFF	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 45 GM	BURN OINTMENT	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	BUTTERFLY SKIN CLOSURES	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 120 ML	CALAMINE LOTION W/PHENOL 1%	HEALTH	8	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10'S	CALCIUM CLUCONATE, INJ. 2%, 25GM	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	CATHETER KIT, DISP.	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	CAVIT. (TEMPORARY FILLING)	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10'S	CEFAMANDOLE INJ.	HEALTH	12	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 15 ML	CERUMINEX	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	CHAP STICK	HEALTH	12	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 4 OUNCE	CHARCOAL, ACTIVATED	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	CHLOROQUIN PHOSPHATE, 300 MG	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 1 QT	CIDEX SOLUTION (FOR INSTRUMENTS)	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	COLCHICINE TABS, 0.6 MG	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	COLLAR, CERVICAL	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 4 OUNCE	COLLYRIUM EYE WASH	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 500 ML	CONCENTRATED ANTISEPTIC SOLUTION	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 5 GM	CORTISPORIN OPTH OINT.	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 15 ML	CORTISPORIN OTIC	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	DALMANE, 30 MG	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 5 ML	DECAMETHASONE INJ.	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10 ML	DEMEROL INJ. 50 MG/ML	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00	1 BOTTLE	DELETE
SIZE - 100'S	DEMEROL TABS, 50 MG	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 1000 ML	DEXTROSE SOL. 5%	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 50 ML	DEXTROSE, INJ. 50%	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
SIZE - 100'S	DIGOXIN, 0.25	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	DILANTIN, 100 MG	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 120 ML	DISPOSABLE ENEMAS	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	DISPOSABLE SYRINGE W/NEEDLE	HEALTH	5	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	DISPOSABLE SYRINGE W/NEEDLE	HEALTH	20	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	DISPOSABLE SYRINGE W/NEEDLE	HEALTH	20	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10'S	DISPOSABLE SYRINGE, U-100	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	DONNATAL TABS	HEALTH	5	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	DRIXORAL TABLETS	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	ENEMA KIT	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	EOA TUBE SET	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	ERYTHROMYCIN	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 25 G	FANSIDAR TABLETS	HEALTH	10	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 300'S	FLUROSTRIPS, EYE TEST	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	FORCEPTS, DENTAL EXTRACTION, STERILE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	FORCEPTS, FOR CLAMPS APPLICATION	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	FORCEPTS, HEMOSTAT, STERILE	HEALTH	5	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	FORCEPTS, SINUS, STERILE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	FORCEPTS, SPLINTER, STERILE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	FORCEPTS, TISSUE SERRATED, STERILE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	FORCEPTS, TOOTH, STERILE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	GANTRISIN, 500 MG	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	GAVISOON TABLETS	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 12 X 7	GELFOAM GAUZE	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 500 ML	GLYCERINE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	GLYCERINE TRINITRATE TABS, 0.4 MG	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 15 GM	HALOTEX CREAM	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	HEATING PAD	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	HEMORROID OINTMENT	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	HEMORROID SUPPOSITORIES	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 5 X 1 ML	HYDRALAZINE, 20 MG/ML	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 20 GM	HYDROCORTOSONE OINTMENT, 1%	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 500 ML	HYDROGEN PEROXIDE	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	INDOCIN, 25 MG, CAPS	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10 ML	INSULIN, U-100	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 30 ML	IPECAC	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	ISOPTOCARPINE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	KAOPECTATE SUSP. 1 PT.	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 1000 ML	LACTATED RINGERS SOL.	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10'S	LASIX INJ., 20 MG/ML	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	LASIX TABLETS, 40 MG	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 30 ML	LIDOCAINE INJ., 2%	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
SIZE - 10 ML	LIDOCAINE, 20%/5 ML, INJ.	HEALTH	10	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	LIGATURES, CATGUT, ASSORTED	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 500 ML	LIQUID LAXATIVE	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	LOMOTIL TABLETS	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100 GM	LUBRICATING JELLY, STERILE	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 500 GM	MAGNESIUM SULFATE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	MASKS DISP.	HEALTH	5	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	MASKS DISP.	HEALTH	5	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	MECLIZINE, 25 MG	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10 ML	MEDINHALER INHALER	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	METAL INSTRUMENT TRAY	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 500 ML	METASTARCH, 6%	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 240 ML	METHYL SALICYLATE LINIMENT	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	MICHEL CLAMP REMOVER	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 500 ML	MINERAL OIL, HEAVY	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10 ML	MORPHINE SULFATE, 10 MG/ML/STADOL	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 60'S	MOTRIN, 400 MG TABS	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	MULTIPLE VITAMINS	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 15 GM	MYCOLOG CREAM	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 6'S	NALOXONE INJ. 4 MG/ML	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	NASAL CANNULAE	HEALTH	5	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 5 ML	NEOSPORIN OPTH SOL	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 1000 ML	NORMAL SALINE SOL.	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 15 ML	NOSE DROPS, NEOSYNEPHERINE	HEALTH	12	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 5 DRM	OIL OF CLOVES	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	OXYGEN, USP	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	PENICILLIN VK, 250 MG	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	PHENAZOPYRIDINE, 200 MG	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	PHENOBARBITAL, 30 MG	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 25 G	PHENOBARBITAL, 65 MG/ML	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 500 ML	PHISOHEX	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	PREDNISONE TABS, 5 MG	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	QUINIDINE SULFATE, 200 MG	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	QUININE SULFATE, 300 MG	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 120 ML	ROBITUSSIN SYRUP	HEALTH	24	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	RUBBER EAR SYRINGE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 500'S	SALT TABLETS	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	SCALPAL, #10 BLADE, DISPOSABLE, STERILE	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	SCALPAL, #11 BLADE, DISPOSABLE, STERILE	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	SCISSOR, BANDAGE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
	SCISSOR, SURGICAL, STERILE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 400 GM	SILVADENE, BURN OINT.	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 180 ML	SKIN FREEZE	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 1 SYRINGE	SODIUM BICARBONATE, INJ.	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	SODIUM SALICYCLATE TABS, 650 MG	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	SPLINTS, PLASTIC, INFLATABLE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 12'S	SPLINTS, WOOD, FOR LIMBS & HANDS	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	STETHESCOPE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	STOMACH TUBE, STANDARD	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	SUDAFED, 30 MG	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 120 ML	SUNSCREEN PREPARATION	HEALTH	12	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	SUSPENSORIES, LARGE SIZE	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	SUSPENSORIES, MEDIUM SIZE	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 6 X .5 ML	SUSPHRINE INJ.	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	TAGAMET TABLETS, 300 MG	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 5 GM	TERRAMYCIN OPTH OINT., 1%	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	TETRACYCLINE, 250 MG	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	THERMOIMETER, HALF MINUTE, ORAL	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	THERMOMETER, HALF MINUTE, ORAL	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 1 ML	THORAZINE INJ. 25 MG/ML	HEALTH	10	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 20 ML	TIGAN INJ.	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10'S	TIGAN SUPP.	HEALTH	2	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	TONGUE DEPRESSOR, WOOD, STERILE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	TOURNIQUET	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	TROBION INJ. 2GM	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	TRUSS, DOUBLE PADS	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	TRUSS, SINGLE LEFT PAD	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	TRUSS, SINGLE RIGHT PAD	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	TYLENOL, 325 MG	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
	URETHAL SYRINGE, GLASS	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10 ML	VALIUM, 10MG/2ML	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	VALIUM, 5 MG	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 500 GM	VASELINE	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	VEGETABLE LAXATIVE TABS	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 2 ML VIAL	VERAPAML 2.5 MG/ML	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 12'S	VERMOX TABS	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 30 GM	VICS VAPORUB	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 15 ML	VISINE/MURINE	HEALTH	6	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 100'S	VITAMIN C TABS, 500 MG	HEALTH	1	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10 X 1 CC	VITAMIN K. INJ.	HEALTH	4	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 10'S	WYCILLIN SUSPENSION, 2.4 ML/2CC UNITS	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
SIZE - 10'S	WYCILLIN SUSPENSION, 600,000 UNITS	HEALTH	3	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
SIZE - 30 GM	ZINC OXIDE OINTMENT	HEALTH	12	SEE PRICE PAGE 2	$0.00	$0.00		DELETE
5096T53	CLEAN ROOM STOOL, FIXED HEIGHT	LABORATORY	6	McMASTER-CARR SUPPLY COMPANY	$120.00	$720.00		
4676T1	EXECUTIVE SIDE CHAIR	LABORATORY	6	McMASTER-CARR SUPPLY COMPANY	$65.00	$390.00		
ET27	4-SLICE ELECTRIC TOASTER	MESS DECKS	2	HOBART CORPORATION	$636.00	$1,272.00		
17010	BAKERS SCRAPER	MESS DECKS	2	RUSSELL HARRINGTON CUTLERY	$8.00	$16.00		
1620	BAKING PAN, ALUMINUM	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$160.00	$320.00		
CR-1826	BAKING PAN, ALUMINUM CR-1826	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$14.00	$28.00	NEW P/N CR-1826 26" x 18" x 1"	
DW1823	BAKING PAN, ALUMINUM DW1823	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$52.00	$104.00	NEW P/N DW1823 25" x 17" x 3"	
26880	BASTING SPOON	MESS DECKS	1	RESTAURANT SUPPLY WAREHOUSE	$14.50	$14.50		
01250	BONING KNIFE	MESS DECKS	1	RUSSELL HARRINGTON CUTLERY	$7.50	$7.50		1
94125	BOTTLE OPENER, WALL MOUNTED	MESS DECKS	2	MOTT COMPANY	$2.50	$5.00		
	BOWL SET, FOOD, STAINLESS STEEL	MESS DECKS	2	TRAEX/MENASHA CORPORATION	$15.00	$30.00	G.A. LOTZ CO. 3 PCE SET 1-1/2 QT, 3 QT, 5 QT	
6030	BRAZING PAN, ALUMINUM	MESS DECKS	1	EPICURE - COMM ALUM COOKWARE	$65.00	$65.00		
DW444	BREAD PAN, 4 COMPARTMENTS, ALUMINUM, DW444	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$62.00	$124.00	NEW P/N DW444	
417	BRUSH, CLEANING, POTS/PANS	MESS DECKS	6	OSBORN MANUF/JASON INC.	$8.50	$51.00		
04103	BUTCHER KNIFE	MESS DECKS	1	RUSSELL HARRINGTON CUTLERY	$13.00	$13.00		1
04113	BUTCHER KNIFE	MESS DECKS	1	RUSSELL HARRINGTON CUTLERY	$15.50	$15.50		1
04133	BUTCHER KNIFE	MESS DECKS	1	RUSSELL HARRINGTON CUTLERY	$13.00	$13.00	8" LONG	1
08080	BUTCHER MEAT CLEAVER	MESS DECKS	2	RUSSELL HARRINGTON CUTLERY	$37.00	$74.00		2
18850	CAN OPENER, HAND OPERATED	MESS DECKS	2	TRAEX/MENASHA CORPORATION	$8.00	$16.00		
MODEL 2	CAN OPENER, ROTARY KNIFE, MODEL 2	MESS DECKS	2	EDLUND COMPANY, INC.	$55.00	$110.00	NEW P/N MODEL 2	
	CANISTER, COFFEE, COVERED	MESS DECKS	2	RESTAURANT SUPPLY WAREHOUSE	$8.00	$16.00	G.A. LOTZ 2 LB CAPACITY	
	CANISTER, SUGAR, COVERED	MESS DECKS	1	RESTAURANT SUPPLY WAREHOUSE	$12.00	$12.00	G.A. LOTZ 10 LB CANISTER	
	CANISTER, TEA	MESS DECKS	1	RESTAURANT SUPPLY WAREHOUSE	$8.00	$8.00	G.A. LOTZ 10 LB CANISTER	
413	CLEANING BRUSH, GENERAL UTILIT	MESS DECKS	6	OSBORN MANUFACTURING/JASON, INC	$4.00	$24.00		
	CLOTH, WASH	MESS DECKS	72	COMMERCIAL	$1.20	$86.40	CHANGED FROM 20 EACH TO 6 DZ WHITE	
WJPK	COARSE PORE SPONGE	MESS DECKS	6	HYDRA SPONGE COMPANY, INC.	$1.80	$10.80		
PR9932	COFFEE MUG, WHITE	MESS DECKS	60	MELAMINE DINNERWARE	$1.90	$114.00		
1802	COFFEE PERCULATOR, AUTOMATIC DELETED	MESS DECKS	1	TRAEX/MENASHA CORPORATION	$0.00	$0.00	DELETED	
MODEL SW-2	COFFEE WARMER, 2 POTS	MESS DECKS	1	CECILWARE CORPORATION	$122.00	$122.00		
1802	COFFEE, PURCULATOR, AUTOMATIC, DELETED	MESS DECKS	1	TRAEX / MENASHA CORPORATION	$0.00	$0.00	DELETED	
12433	COOK KNIFE	MESS DECKS	1	RUSSELL HARRINGTON CUTLERY	$19.00	$19.00		1
8614	COOKING POT, ALUMINUM	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$32.00	$64.00		
DW608	COOKING POT, ALUMINUM DW608	MESS DECKS	1	EPICURE - COMM ALUM COOKWARE	$22.00	$22.00	NEW P/N DW608 8QT	
DW624	COOKING POT, ALUMINUM DW624	MESS DECKS	1	EPICURE - COMM ALUM COOKWARE	$45.00	$45.00	NEW P/N DW624 24QT	
311C	COVER, COOKING POT, ALUMINUM	MESS DECKS	1	EPICURE - COMM ALUM COOKWARE	$7.00	$7.00		

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PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
314C	COVER, COOKING POT, ALUMINUM	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$6.80	$13.60		
316C	COVER, COOKING POT, ALUMINUM	MESS DECKS	1	EPICURE - COMM ALUM COOKWARE	$9.40	$9.40		
1703C	COVER, FRYING PAN, ALUMINUM	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$5.50	$11.00		
1710C	COVER, FRYING PAN, ALUMINUM	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$9.40	$18.80		
1705-1/2C	COVER, SAUCE PAN, STAINLESS ST	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$6.50	$13.00		
1707C	COVER, SAUCE PAN, STAINLESS ST	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$7.00	$14.00		
1702-1/2C	COVER, SAUCE PAN, STAINLESS STEEL	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$5.50	$11.00		
	CUTTER, BISCUIT, STAINLESS STEE	MESS DECKS	2	RUSSELL HARRINGTON CUTLERY	$6.00	$12.00	G.A. LOTZ CO.	
GERB-00420	DESSERT SPOONS, STAINLESS STEE	MESS DECKS	75	RESTAURANT SUPPLY WAREHOUSE	$0.55	$41.25		
PR9921	DINNER PLATE, WHITE	MESS DECKS	72	MELAMINE DINNERWARE	$2.50	$180.00	CHANGED TO 9" DIA.	
1906	DISHPAN, STAINLESS STEEL	MESS DECKS	1	EPICURE - COMM ALUM COOKWARE	$125.00	$125.00		
30	DISHWASHER DETERGENT, POWDERED	MESS DECKS	6	NUVITE CHEMICAL COMPOUNDS	$20.00	$120.00	COMMERCIAL DISHWASHING POWDER	
	DISINFECTANT, GENERAL PURPOSE	MESS DECKS	10	NUVITE CHEMICAL COMPOUNDS	$18.00	$180.00	McMASTER CARR CAT 99 Pg.1090 ALL PURPOSE CLEANER 1	
	DOUBLE BOILER WITH LID, STAINLESS STEEL	MESS DECKS	2	TRAEX/MENASHA CORPORATION	$46.00	$92.00	G.A. LOTZ CO.	
	DOUBLE BOILER WITH LID, STAINLESS STEEL	MESS DECKS	2	TRAEX/MENASHA CORPORATION	$44.00	$88.00	G.A. LOTZ CO.	
GERB-00810	EGG SLICER	MESS DECKS	2	RESTAURANT SUPPLY WAREHOUSE	$6.50	$13.00		
GERB-00100	EGG WHIP, STAINLESS STEEL	MESS DECKS	2	RESTAURANT SUPPLY WAREHOUSE	$6.00	$12.00		
14120	FLAT TINE FORK, STAINLESS STEEL P/N CALLS	MESS DECKS	2	RUSSELL HARRINGTON CUTLERY	$23.00	$46.00	12" LONG	2
76	FLOUR SIFTER	MESS DECKS	1	RESTAURANT SUPPLY WAREHOUSE	$19.00	$19.00		
25060	FOOD CHOPPING BLOCK BOARD	MESS DECKS	1	TRAEX/MENASHA CORPORATION	$22.00	$22.00		
N-50	FOOD MIXER, ELECTRIC, WITH MEA, DELETED	MESS DECKS	1	HOBART CORPORATION	$0.00	$0.00	DELETED	
3485K14	FOOD STIRRING PADDLE 3485K14	MESS DECKS	2	McMASTER-CARR SUPPLY COMPANY	$38.00	$76.00	NEW P/N 3485K14	
16353	FOOD TURNER, BLADE	MESS DECKS	2	RUSSELL HARRINGTON CUTLERY	$11.00	$22.00		
PR9944	FRUIT DISH, WHITE	MESS DECKS	72	MELAMINE DINNERWARE	$1.20	$86.40		
1308	FRYING PAN, ALUMINUM	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$14.00	$28.00		2
1312	FRYING PAN, ALUMINUM	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$20.00	$40.00		2
LB29211K	GLASS TUMBLER	MESS DECKS	75	LIBBEY GLASS, INC.	$1.40	$105.00	NEW P/N LB29211K	
LB29211K	GLASS TUMBLER LB29211K	MESS DECKS	75	LIBBEY GLASS, INC.	$1.40	$105.00	NEW P/N LB29211K	
	HAT, COOK'S (SKULL CAPS)	MESS DECKS	3	COMMERCIAL	$9.00	$27.00	G.A. LOTZ CO.	
GERB-00216	ICE CREAM SCOOP, MECHANICAL	MESS DECKS	3	RESTAURANT SUPPLY WAREHOUSE	$10.60	$31.80		
00320	ICE PICK	MESS DECKS	2	TRAEX/MENASHA CORPORATION	$1.90	$1.90		2
9821T22	INSECTICIDE, GENERAL	MESS DECKS	2	McMASTER-CARR SUPPLY COMPANY	$28.00	$56.00		
6363T16	INSECTICIDE, GENERAL PURPOSE 6363T16	MESS DECKS	24	McMASTER-CARR SUPPLY COMPANY	$9.95	$238.80	NEW P/N 6363T16	
1413	KITCHEN TOWELS	MESS DECKS	20	ALL SEASONS SERVICES, INC.	$1.50	$30.00		20
GERB-00190	LADLE, STAINLESS STEEL	MESS DECKS	2	RESTAURANT SUPPLY WAREHOUSE	$2.30	$4.60		
GERB-00205	LADLE, STAINLESS STEEL	MESS DECKS	2	RESTAURANT SUPPLY WAREHOUSE	$4.00	$8.00		
190	MEASURING SPOON SET	MESS DECKS	2	RESTAURANT SUPPLY WAREHOUSE	$2.50	$5.00		

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
)40	METAL FUNNEL WITH SPOUT, ALUMI	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$18.50	$18.50		2
3-5045	MUFFIN PAN, ALUMINUM	MESS DECKS	4	EPICURE - COMM ALUM COOKWARE	$6.30	$25.20		
16373	OFFSET SPATULA	MESS DECKS	2	RUSSELL HARRINGTON CUTLERY	$9.00	$18.00		
981030	PAPER NAPKIN DISPENSER	MESS DECKS	6	SCOTT PAPER COMPANY	$33.00	$198.00		
98730	PAPER NAPKIN, FOR DISPENSER	MESS DECKS	5	SCOTT PAPER COMPANY	$77.00	$385.00		
S197	PARER/CORER TOOL	MESS DECKS	2	RUSSELL HARRINGTON CUTLERY	$1.80	$3.60		
15303	PARING KNIFE	MESS DECKS	1	RUSSELL HARRINGTON CUTLERY	$3.50	$3.50		1
1123	PASTRY BRUSH	MESS DECKS	2	RESTAURANT SUPPLY WAREHOUSE	$5.00	$10.00		2
GERB-00126	PIANO WHIP, STAINLESS STEEL	MESS DECKS	2	RESTAURANT SUPPLY WAREHOUSE	$6.00	$12.00		
P-3019-A	PIE PANS	MESS DECKS	6	EPICURE - COMM ALUM COOKWARE	$4.00	$24.00		
PR9940	PLASTIC CEREAL BOWL	MESS DECKS	72	MELAMINE DINNERWARE	$1.60	$115.20		
3062-6	PLASTIC JUICE PITCHER	MESS DECKS	12	RUBBERMAID COMMERCIAL PRODUCTS	$4.65	$55.80		
	PLASTIC TRAYS (ORANGE)	MESS DECKS	60	TRIPLE G SUPPLY	$3.50	$210.00	G.A. LOTZ 18" x 14" ORANGE	
PR9923	PLATE, WHITE	MESS DECKS	72	MELAMINE DINNERWARE	$2.60	$187.20		
PR9926	PLATE, WHITE	MESS DECKS	72	MELAMINE DINNERWARE	$2.20	$158.40		
61060	POTATO MASHER, STAINLESS STEEL	MESS DECKS	2	RESTAURANT SUPPLY WAREHOUSE	$9.00	$18.00		
GERB-00805	POTATO PEELER	MESS DECKS	1	RESTAURANT SUPPLY WAREHOUSE	$2.30	$2.30		
70017	SALT & PEPPER SHAKER SETS	MESS DECKS	6	LIBBEY GLASS, INC.	$1.90	$11.40		
1702-1/2	SAUCE PAN, STAINLESS STEEL	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$14.50	$29.00		
1705-1/2	SAUCE PAN, STAINLESS STEEL	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$21.00	$42.00		
1707	SAUCE PAN, STAINLESS STEEL	MESS DECKS	2	EPICURE - COMM ALUM COOKWARE	$25.00	$50.00		
PR9931	SAUCER, WHITE	MESS DECKS	60	MELAMINE DINNERWARE	$1.25	$75.00		
18160	SCALLOPED BREAD KNIFE	MESS DECKS	1	RUSSELL HARRINGTON CUTLERY	$8.00	$8.00		
PR9942	SOUP BOWL, WHITE	MESS DECKS	72	MELAMINE DINNERWARE	$1.60	$115.20		
PR9943	SOUP BOWL, WHITE	MESS DECKS	72	MELAMINE DINNERWARE	$1.70	$122.40		
16363	SPATULA	MESS DECKS	2	RUSSELL HARRINGTON CUTLERY	$11.00	$22.00		
18221	STEAK KNIFE	MESS DECKS	50	RUSSELL HARRINGTON CUTLERY	$2.50	$125.00		
GERB-00182	STRAINING SPOON	MESS DECKS	2	RESTAURANT SUPPLY WAREHOUSE	$2.90	$5.80		
930	SUGAR DISPENSER	MESS DECKS	6	TRAEX/MENASHA CORPORATION	$2.75	$16.50		
1414	SYRUP PITCHER	MESS DECKS	6	TRAEX/MENASHA CORPORATION	$9.00	$54.00		6
GERB-00250	TABLE FORKS, STAINLESS STEEL	MESS DECKS	75	RESTAURANT SUPPLY WAREHOUSE	$0.40	$30.00		
GERB-00265	TABLE KNIFES, STAINLESS STEEL	MESS DECKS	75	RESTAURANT SUPPLY WAREHOUSE	$0.70	$52.50		
GERB-00230	TABLE SPOONS, STAINLESS STEEL	MESS DECKS	75	RESTAURANT SUPPLY WAREHOUSE	$0.50	$37.50		
	TABLECLOTH, WHITE COTTON	MESS DECKS	18	COMMERCIAL	$50.00	$900.00	KELLY & ABIDE CO. WHITE 30" x 72"	
61970	TEA AND COFFEE STRAINER	MESS DECKS	2	RESTAURANT SUPPLY WAREHOUSE	$3.00	$6.00		
	THERMOMETER, FOOD, SELF-INDICAT	MESS DECKS	1	COMMERCIAL	$9.85	$9.85	MEAT THERMOMETER	
	TIMER, INTERVAL, COOKING	MESS DECKS	2	COMMERCIAL	$15.00	$30.00	G.A. LOTZ CO. 0-60 MIN BELL SIGNAL	
	TONGS, FOOD SERVING, STAINLESS	MESS DECKS	2	COMMERCIAL	$1.50	$3.00	G.A. LOTZ CO. STAINLESS 9"	
TP-800	TOOTHPICKS, FLAT, WOOD	MESS DECKS	10	TRAEX/MENASHA CORPORATION	$0.80	$8.00		
	TRAY, FOOD SERVICE, ALUMINUM	MESS DECKS	6	COMMERCIAL	$16.50	$99.00	G.A. LOTZ CO.	

AGOR 24 CLASS
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3339	WATER PITCHER, STAINLESS STEEL	MESS DECKS	6	RUBBERMAID COMMERCIAL PRODUCTS	$95.00	$570.00		
4352T6	WATER PITCHER, STAINLESS STEEL 4352T6	MESS DECKS	6	McMASTER-CARR SUPPLY COMPANY	$38.00	$228.00	NEW P/N 4352T6	
25080	WOODEN MEAT TENDERIZING HAMMER	MESS DECKS	1	TRAEX/MENASHA CORPORATION	$15.00	$15.00		
25800	WOODEN ROLLING PIN	MESS DECKS	1	RESTAURANT SUPPLY WAREHOUSE	$26.00	$26.00		
1212T12	30X60 TRIANGLE, PLASTIC	NAVIGATION	2	McMASTER-CARR SUPPLY COMPANY	$3.00	$6.00		2
1212T16	45X45 TRIANGLE, PLASTIC	NAVIGATION	2	McMASTER-CARR SUPPLY COMPANY	$3.00	$6.00		2
19320 THRU 19	CHART SETS, NAVIGATIONAL	NAVIGATION	1	SANDWICH SHIP SUPPLY	$465.00	$465.00	P/N 19320 THRU 19367	
61-B-444-A	CHART TABLE LIGHT WITH FILTER 61-B-444-A	NAVIGATION	2	OCEANIC ELECTRIC MANUFACTURING	$290.00	$580.00	NEW P/N 61-B-444-A	
	GYROCOMPASS AZIMUTH CIRCLE	NAVIGATION	3	BAKER, LYMAN & COMPANY, INC.	$610.00	$1,830.00	BAKER LYMAN CO. 7 1/2" U.S. NAVY STANDARD	
4900-MC	LIGHT, CHART, TABLE, WITH FILTER ASSY. DELETED	NAVIGATION	2	OCEANIC ELECTRIC MANUAFACTURING	$0.00	$0.00	DELETED	
PLATH/SEXTANT	LIGHTED SEXTANT, 4X40	NAVIGATION	2	MAXIMUM, INC.	$1,100.00	$2,200.00		
490-005-7	PARALLEL RULER, PLASTIC	NAVIGATION	2	NEW YORK NAUTICAL INSTRUMENT	$5.25	$10.50		
1033	SHIPS CLOCK, BRASS, 5 1/2-INCH DIAMETER	NAVIGATION	6	SETH THOMAS CORPORATION	$56.00	$336.00		6
2120A11	STAINLESS STEEL RULER	NAVIGATION	3	McMASTER-CARR SUPPLY COMPANY	$6.50	$19.50		
2120A12	STAINLESS STEEL RULER	NAVIGATION	3	McMASTER-CARR SUPPLY COMPANY	$8.50	$25.50		
SELECT 101	STOP WATCH/TIMER, 7 JEWELS SELECT 101	NAVIGATION	2	MAXIMUM, INC.	$78.00	$156.00	NEW P/N SELECT 101	
	RIBBON, TYPEWRITER	OFFICE	6	IBM CORPORATION	$8.00	$48.00	RIBBON FOR IBM 1000 TYPEWRITER	
	RIBBON, TYPEWRITER	OFFICE	12	IBM CORPORATION	$8.00	$96.00	RIBBONS FOR IBM 1000 TYPEWRITTER	
IBM 1000	TYPEWRITER, ELECTRIC, BALL, SELECTRIC II, IBM 1000	OFFICE	1	IBM CORPORATION	$725.00	$725.00	NEW P/N IBM 1000	
5021ZT	ZOOM COPIER WITH SORTER 5320ZTAS	OFFICE	1	XEROX CORPORATION	$6,930.00	$6,930.00	NEW P/N 5021ZT	
801281	AIR BOTTLE, FOR S.C.B.A. 801281	SAFETY	4	MINE SAFETY APPLIANCES COMPANY	$579.00	$2,316.00	NEW P/N 801281 WITH VALVE	
ISS-590-I	EXPOSURE SUIT	SAFETY	9	STEARNS MANUFACTURING COMPANY	$265.00	$2,385.00		
XP-162	EXTENSION LIGHT, EXPLOSION-PROOF	SAFETY	4	STEWART R. BROWNE MANUFACTURING	$256.00	$1,024.00		
MODEL WAW-10-6	EYE CUP GOGGLES, SHADE 6	SAFETY	6	WILLSON SAFETY PRODUCTS	$16.00	$96.00		
12036	FIRST AID KIT	SAFETY	12	MINE SAFETY APPLIANCES COMPANY	$65.00	$780.00		12
F-81-X (2-CELL)	FLASHLIGHT, 2 CELL, EXPLOSION-PROOF	SAFETY	48	STEWART R. BROWNE MANUFACTURING	$9.50	$456.00		
466354	HARD HAT, WHITE	SAFETY	15	MINE SAFETY APPLIANCES COMPANY	$8.90	$133.50		
1127-A	INDUSTRIAL SAFETY HARNESS	SAFETY	2	SINCO PRODUCTS, INC.	$96.00	$192.00	NEW P/N 1127-A	2
466773	OXYGEN GAS ALARM AND PROBE	SAFETY	1	MINE SAFETY APPLIANCES COMPANY	$656.00	$656.00		
11210028	PLASTIC COVERALL GOGGLES	SAFETY	6	WILLSON SAFETY PRODUCTS	$2.50	$15.00		6
4320-01-186-3377	PORTABLE CENTRIFUGAL PUMP, FIR	SAFETY	1	HALE FIRE PUMP COMPANY	$10,900.00	$10,900.00		
1101-1	SAFETY BELT SYSTEM WITH LINE A	SAFETY	2	SINCO PRODUCTS, INC.	$75.00	$150.00		2

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
801359	SELF CONTAINED BREATHING APPAR 801359	SAFETY	4	MINE SAFETY APPLIANCES COMPANY	$2,730.00	$10,920.00	NEW P/N 801359 WITH CASE	
30161	STOKES LITTER AND COLLAR	SAFETY	1	MINE SAFETY APPLIANCES COMPANY	$285.00	$285.00		
5841T27	TILTING FACESHIELD	SAFETY	4	McMASTER-CARR SUPPLY COMPANY	$14.00	$56.00		
MODEL 3	WELDER'S HELMET	SAFETY	2	THE LINCOLN ELECTRIC COMPANY	$15.00	$30.00		
ACU-206	ACOUSTIC COMMAND UNIT INCLUDES SOFTWARE	SCIENCE	1	DATASONICS	$10,200.00	$10,200.00	INCLUDES SOFTWARE	
ACU-206	ACOUSTIC COMMAND UNIT INCLUDES SOFTWARE	SCIENCE	1	TRIPLE G SUPPLY	$10,200.00	$10,200.00	INCLUDES SOFTWARE	
MODEL UAB-353	ACOUSTIC POSITIONING BEACON	SCIENCE	3	DATASONICS	$12,690.00	$38,070.00		
SA-6E	AIR BREATHING COMPRESSOR, ELEC	SCIENCE	1	RIX INDUSTRIES, INC.	$5,630.00	$5,630.00		
D5XL	COLORPRINT ENLARGER PHOTOLAB D5XL	SCIENCE	1	COMMERCIAL	$9,000.00	$9,000.00	OMEGA CO. P/N D5XL 4X5 ENLARGER	DELETE
FM/AM-1200SS	COMMUNICATIONS MONITOR WITH ANALYZER FM/AM 1200SS	SCIENCE	1	IC SYSTEMS NORTHWEST	$11,245.00	$11,245.00	NEW P/N FM/AM-1200SS	DELETE
SBE 11	CTD SYSTEM DATA PROCESSOR UNIT	SCIENCE	1	SEA-BIRD ELECTRONICS, INC.	$6,200.00	$6,200.00		
911 PLUS	CTD SYSTEM DECK UNIT	SCIENCE	1	SEA-BIRD ELECTRONICS, INC.	$29,400.00	$29,400.00	NEW P/N 911 PLUS	
MODEL AA-380E	DIRECTION FINDING ANTENNA AA-380E	SCIENCE	1	OAR, INC.	$6,250.00	$6,250.00	NEW P/N MODEL AA-380E	
MODEL 4004DF	DIRECTION FINDING PROCESSOR/RE	SCIENCE	1	OAR, INC.	$10,312.50	$10,312.50	NEW P/N MODEL 4004DF	
CP16-RA4	FILM DEVELOPING AUTOPROCESSOR	SCIENCE	1	KREONITE INC.	$9,460.00	$9,460.00		DELETE
AT-477	INTERROGATION TRANSDUCER	SCIENCE	1		$2,800.00	$2,800.00	TRIPLE G SUPPLY	
AT-477	INTERROGATION TRANSDUCER	SCIENCE	1	TRIPLE G SUPPLY	$2,800.00	$2,800.00		
AT-478	INTERROGATION TRANSDUCER	SCIENCE	1		$10,200.00	$10,200.00	TRIPLE G. SUPPLY	
AT-478	INTERROGATION TRANSDUCER	SCIENCE	1	TRIPLE G SUPPLY	$10,200.00	$10,200.00		
R6F3-2M-S	REFRIGERATOR - FREEZER	SCIENCE	2	COSPOLICH REFRIGERATOR COMPANY	$2,540.00	$5,080.00		
R10-2M-S	REFRIGERATOR, PHOTOGRAPHY LABO	SCIENCE	1	COSPOLICH REFRIGERATOR COMPANY	$2,435.00	$2,435.00		
	SOFTWARE FOR RELEASE COMMANDS	SCIENCE	1	TRIPLE G SUPPLY	$0.00	$0.00	ACOUSTIC COMMAND UNIT, RELEASE (ATR-395 & UAB-353)	
	SOFTWARE FOR RELEASE COMMANDS	SCIENCE	1	TRIPLE G SUPPLY	$0.00	$0.00	ACOUSTIC COMMAND UNIT, RELEASE (ATR-395 & UAB-353)	
SP-297M	SPARE PARTS KIT	SCIENCE	1	TRIPLE G SUPPLY	$2,100.00	$2,100.00		
SP-297M	SPARE PARTS KIT	SCIENCE	1	TRIPLE G SUPPLY	$2,100.00	$2,100.00		
SP395	SPARES KIT SP395	SCIENCE	1	TRIPLE G SUPPLY	$2,700.00	$2,700.00	NEW P/N SP395	
MODEL RF700A-1	SUBMERSIBLE DIRECTION FINDING RF700A-1	SCIENCE	3	NOVATECH DESIGNS, LTD.	$1,098.00	$3,294.00	NEW P/N RF700A-1	
MODEL FLS95505	TELEVISION, COLOR	SCIENCE	1	COMMERCIAL	$489.00	$489.00	ZENITH 25" REMOTE CONTROL MODEL FLS95505	
TTV-140	TOW VEHICLE	SCIENCE	1		$1,390.00	$1,390.00	TRIPLE G SUPPLY	
TTV-140	TOW VEHICLE	SCIENCE	1	TRIPLE G SUPPLY	$1,390.00	$1,390.00		
MODEL ATR-395	TYPE RS906 TRANSPONDER	SCIENCE	6	DATASONICS	$8,125.00	$48,750.00		
IBM 1000	TYPEWRITER, ELECTRIC, BALL, SELECTRIC II, IBM 1000	SCIENCE	1	IBM CORPORATION	$725.00	$725.00	NEW P/N IBM 1000	

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
MODEL VRM 2120	VIDEO CASSETTE RECORDER (VCR), VHS	SCIENCE	1	COMMERCIAL	$390.00	$390.00	ZENITH MODEL VRM 2120	
5021ZT	ZOOM COPIER WITH SORTER 5320ZTAS	SCIENCE	1	XEROX CORPORATION	$6,930.00	$6,930.00	NEW P/N 5021ZT	
PIN	0.05 PPM OCXO TIME BASE						OPTION ITEM FOR PN FM/AM 1200 SS MONITOR	
PIN	10.7 MHz 1.F.						OPTION ITEM FOR PN MODEL 4004 DF PROCESSOR/RECVR	
PIN	1EEE-488 IN LIEU OF RS232						OPTION ITEM FOR PN FM/AM 1200 SS MONITOR	
PIN 80582	300 BAND MODEM, PLUG IN MODULE						OPTION ITEM FOR PN 911 PLUS, DK UNIT, CTD SYSTEM	
PIN 80596	300 BAND MODEM, PLUG IN MODULE						OPTION ITEM FOR PN SBE11, PROCESSOR UNIT, CTD SYS	
PIN 3-1B	6800 METER, 7075 ALUMINUM HOUSING						OPTION ITEM FOR PN SBE11, PROCESSOR UNIT, CTD SYS	
PIN	AIR HOSE, 100 FT						OPTION ITEM FOR PN 98-354, SPRAY OUTFIT, AIRGUN	
PIN 1B	AIR PURIFICATION PKG W/PRESSURE SWITCH		1				OPTION ITEM FOR PN SA-6E,COMPRESSOR, AIR BREATHING	YES
PIN 207-50	AIR PURIFICATION SYSTEM, REPLACEMENT CARTRIDGE, 3LB						OPTION ITEM FOR PN SA-6E,COMPRESSOR, AIR BREATHING	
PIN	AIR STWG SYSTEM						OPTION ITEM FOR PN SA-6E,COMPRESSOR, AIR BREATHING	YES
PIN	AMPS MOBILE STATION TEST						OPTION ITEM FOR PN FM/AM 1200 SS MONITOR	
PIN	AUTO ACTIVATED INT LIGHTING FOR FREZZER COMPT						OPTION ITEN FOR PN R6F3-2M-S, REEFER/FREEZER	
PIN 49-90-1660	AUTOMOTIVE ACCESSORY KIT						OPTION ITEM FOR PN 8911, CLEANER, VACUUM, PORTABLE	
PIN 001403	BATTERRIES, LITHIUM (4 BATTERRIES PER SET)						OPTION ITEM FOR PN MODEL VAB-353, ACOUST POS BEAC	YES-3 SETS
PIN CM-35	BATTERY CHARGER						OPTION ITEM FOR PN CM7G, BATTERY PACK	
PIN MODEL #18	BINKS SPRAY GUN, INDUSTRIAL						OPTION ITEM FOR PN 98-354, SPRAY OUTFIT, AIRGUN	
PIN 2W302	BUFFING PADS		5				OPTION ITEM FOR SHAMPOOER/POLISHER	YES
PIN	CARRYING CASE, SOFT PADDED						OPTION ITEM FOR PN FM/AM 1200 SS MONITOR	
PIN	CLEAR CHANNEL LETTER						OPTION ITEM FOR PN FM/AM 1200 SS MONITOR	
PIN	DISCHARGE HOSE ASSEMBLY W/CAM LOCK		1				OPTION ITEM FOR PN MODEL M800DBNBNBN, SUBM. PUMP	YES

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
PIN SEB13	DISSOLVED OXYGEN SENSOR, 6800M DEPTH						OPTION ITEM FOR PN 911 PLUS, DK UNIT, CTD SYSTEM	
PIN	ETACS MOBILE STATION TEST						OPTION ITEM FOR PN FM/AM 1200 SS MONITOR	
PIN 3-2A	FAST (70MS) FOR CTD APPLICATIONS						OPTION ITEM FOR PN SBE11, PROCESSOR UNIT, CTD SYS	
PIN	FLUID HOSE, 100 FT.		1				OPTION ITEM FOR PN 98-354, SPRAY OUTFIT, AIRGUN	
PIN	FOOD FILES						OPTION ITEM FOR PN R10-2M-3, REEFER PHOTO LAB	
PIN	FOOD FILES						OPTION ITEM FOR PN R6F3-2M-S, REEFER/FREEZER	
PIN	FRESH OR SEAWATER COOLED CONDENSING UNITS						OPTION ITEM FOR PN R6F3-2M-S, REEFER/FREEZER	
PIN 49-90-1650	FURNACE CLEANING ACCESSORY KIT						OPTION ITEM FOR PN 8911, CLEANER, VACUUM, PORTABLE	
PIN	GENERATE AMPLIFIER +30 DB GAIN						OPTION ITEM FOR PN FM/AM 1200 SS MONITOR	
PIN 80052	GP1B CARD/SOFTWARE FOR INSTLN IN IBM PC						OPTION ITEM FOR PN SBE11, PROCESSOR UNIT, CTD SYS	
PIN	HOSE PKG SUCTION AND DISCHARGE						OPTION ITEM FOR PN 4320-01-186-3311, PUMP, CENTRI.	YES
PIN 11-4	INTERFACE PCB IN DECK UNIT						OPTION ITEM FOR PN SBE11, PROCESSOR UNIT, CTD SYS	
PIN AN710	LOW PROFILE FLEXIBLE ANTENNA						OPTION ITEM FOR PN RF700A-1, BEACON RADIO SUBM ADF	
PIN	MICROPHONE						OPTION ITEM FOR PN FM/AM 1200 SS MONITOR	,
PIN SBE3	OCEANOGRAPHIC THERMOMETER MODULAR SENSOR W/CLIBRATION CERTS						OPTION ITEM FOR PN SBE11, PROCESSOR UNIT, CTD SYS	
PIN 80585	PLUG IN CONTROL MODULE FOR MODEL 1015, ROSETTE						OPTION ITEM FOR PN 911 PLUS, DK UNIT, CTD SYSTEM	
PIN SBE5T	PUMP, SUBMERSIBLE						OPTION ITEM FOR PN SBE11, PROCESSOR UNIT, CTD SYS	
PIN	REGULATORS FOR CYLINDERS						OPTION ITEM FOR PN A-40, ACETYLENE CYLINDER	YES
PIN	REGULATORS FOR CYLINDERS						OPTION ITEM FOR OXYGEN CYLINDERS	YES
PIN 17533	ROSETTE INTERFACE CABLE, NORMAL POLARITY						OPTION ITEM FOR PN 911 PLUS, DK UNIT, CTD SYSTEM	
PIN 17196	ROSETTE INTERFACE CABLE, REVERSE POLARITY						OPTION ITEM FOR PN 911 PLUS, DK UNIT, CTD SYSTEM	

AGOR 24 CLASS
INITIAL OUTFITTING LIST (IOL)

PART NUMBER	ITEM DESCRIPTION/NOMENCLATURE	DEPARTMENT	QTY	MANUFACTURE	UNIT PRICE	EXTENDED PRICE	REMARKS	OAA_AGO
PIN	SEASOFT VERSION 4 CTD SOFTWARE FOR IBM COMPATIBLES						OPTION ITEM FOR PN SBE11, PROCESSOR UNIT, CTD SYS	
PIN	SIDE BAR FOR ATR-396 TO ALLOW UP TO 10,000 LB RELEASE LOAD						OPTION ITEM FOR PN MODEL ATR-395,TRANSPNDR, RS-906	
PIN	SPARE BUSHINGS SET OF 3 EA.		1				OPTION ITEM FOR PN MODEL 101C, CLEANER/LUBRICATOR	YES
PIN	SPRING CLOSING HINGES						OPTION ITEM FOR PN R6F3-2M-S, REEFER/FREEZER	
PIN 2W301	STRIPPING PADS		5				OPTION ITEM FOR SHAMPOOER/POLISHER	YES
PIN	SUCTION HOSE ASSEMBLY W/CAM LOCK AND STRAINER		1				OPTION ITEM FOR PN MODEL M800DBNBNBN, SUBM. PUMP	YES
PIN 50088	SUPPORT KIT						OPTION ITEM FOR PN 911 PLUS, DK UNIT, CTD SYSTEM	
PIN ANT-2	TELESCOPING ANTENNA						OPTION ITEM FOR PN FM/AM 1200 SS MONITOR	
PIN	TONE, SIGNALLING (ENCODE/DECODE)						OPTION ITEM FOR PN FM/AM 1200 SS MONITOR	
PIN	TRACKING GENERATOR						OPTION ITEM FOR PN FM/AM 1200 SS MONITOR	
PIN 49-90-1800	VACUUM ACCESSORY KIT		1				OPTION ITEM FOR PN 8911,CLEANER VACUUM PORTABLE	YES
PIN 49-90-1670	WET/DRY CLEANING ACCESSORY KIT						OPTION ITEM FOR PN 8911, CLEANER, VACUUM, PORTABLE	
						$496,677.19		

Appendix F

Top Level Requirements

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON, DC 20350-2000

IN REPLY REFER TO
9010
Ser 960/3U567845
4 February 1993

MEMORANDUM FOR THE HEAD, SHIP CHARACTERISTICS AND IMPROVEMENT BOARD/SHIP DESIGN SECTION (N863E)

Subj: TOP LEVEL REQUIREMENTS FOR OCEANOGRAPHIC RESEARCH SHIP, AGOR 24

Ref: (a) OPNAVINST 9010.343A of 03 Nov 89
(b) CNO (N096) Memo 9010 Ser 960/3U567464 of 27 Jan 93

Encl: (1) Oceanographic Research Ship, AGOR 24 Top Level Requirements
(2) Redlined Oceanographic Research Ship, AGOR 24 Top Level Requirements

1. The TAGS 60 Class and the AGOR 24 Class Top Level Requirements (TLRs), reference (a), are currently combined. Reference (b) forwarded for approval a separate TLR for the T-AGS 60 Class. The purpose of this memorandum is to separate and update the AGOR 24 Top Level Requirements and request approval of enclosure (1).

2. The revised AGOR 24 TLR is provided in two forms: a redlined version, enclosure (2), which contains both the old language lined-out and the new language underlined, and the new TLR, enclosure (1). The updates include aligning the TLR with the AGOR 24 Statement of Requirements, installing Global Maritime Distress and Safety System (GMDSS), clarifying Dynamic Positioning System (DPS) requirements, deleting helo hover capability, and adding manning options.

3. The CNO (N096) point of contact is Mr. Patrick Dennis, 960D1, 202-653-1295, DSN 294-1295.

C. A. MARTINEK
Oceanographer of the Navy
Acting

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COMSC
COMNAVOCEANCOM

OCEANOGRAPHIC RESEARCH SHIP, AGOR 24

TOP LEVEL REQUIREMENTS

OUTLINE

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    1.1 Objectives and Scope
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    1.3 Design Guidance

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    2.2 Primary Tasks
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    3.3 Survivability, Including Passive Protection
    3.4 Mobility
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    A Mission Sponsor Equipment
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1. OVERVIEW

1.1 Objectives and Scope

a. This document specifies the Top Level Requirements (TLR) for the university-operated Oceanographic Research Ship (AGOR 24). Included are the ship's mission, operational requirements, major configuration constraints, the plan for use, the maintenance concepts, the supply support concepts and minimum operational standards.

b. The objective of the AGOR 24 Ship Acquisition Program is to acquire oceanographic ships to meet worldwide oceanographic and data collection requirements.

c. The format of this TLR has been developed in accordance with the requirements of OPNAVINST 9010.300A. After this TLR is issued, serialized changes will be made to issue any changes to these requirements.

1.2 Constraints

If the provisions of this TLR cannot be met, the Commander, Naval Sea Systems Command will so advise the Chief Naval Operations (N096)

1.3 Design Guidance

The AGOR 24 is to be built to commercial standards and shall comply with all the applicable laws of the United States and the requirements of the regulatory bodies, American Bureau of Shipping (ABS), United States Coast Guard (USCG), SOLAS '74 (as amended), 46 CFR Subchapter U (Oceanographic Ships), U.S. Public Health Service and Federal Communications Commission. The ship shall be classified by ABS to (MALTESE CROSS) A1 CIRCLE E (UNRESTRICTED OCEAN SERVICE), (MALTESE CROSS) AMS, (MALTESE CROSS) ACCU, and Class C ice strengthening.

The ships will satisfy all the requirements to obtain certifications for transit of the Suez Canal and Panama Canal.

Design shall include emphasis on economy of operation. The maximum draft requirement is 17 feet without sonar dome; the maximum length requirement is 275 feet. Compliance with the General Specifications for Ships of the U.S. Navy, NAVSEA Technical Manuals, or other military requirements, is not required except as noted here.

2. MISSION STATEMENT

possible view of the working deck areas aft. Bridge wings shall include gyro repeaters, rudder angle indicators and shaft RPM indicators. Satisfactory visibility from pilot house forward, from bridge wings forward and aft, and from the aft control station, to the working deck areas aft-starboard, is required. Bridge wings shall be enclosed from beam to beam, as integral parts of the pilot house. The functions, communications, and layout of ship control must allow the close interaction of ship and science operations.

d. Communication, navigation, and IC systems are listed in Appendix B.

3.2 Acoustic Characteristics

a. The shipboard acoustic systems are identified in the appendices. It is required that the mounting, configuration and location of the sonar systems listed in the appendices to this TLR shall reduce hull induced flow noise and bubble-sweepdown interference within the current state-of-the-art for this type of acquisition. All installed sonars will operate at ships speeds up to 12 knots in SS4.

b. The choice of shipboard hull and machinery systems, their locations and their installation shall be to reduce impact on the operation of shipboard acoustic systems within the current state of the art for this type of acquisition.

c. Airborne noise levels shall meet OSHA and USCG requirements. In addition, for the main weather deck (except when deck machinery is operating), speech communications must be possible over moderate distances. Laboratories and interior scientific working spaces shall be sound insulated to maximize communication within these spaces.

3.3 Survivability, Including Passive Protection

a. Survivability provisions shall be under regulatory body requirements for oceanographic ships.

b. All radiators and receptors of electromagnetic energy and related electronics on the AGOR 24 shall be designed and installed to ensure electromagnetic compatibility (EMC) and to avoid hazards of electromagnetic radiation to personnel (HERP) and fuels (HERF). Automated control systems shall not respond spuriously to electromagnetic interference (EMI) from radiating sources or to transients on power lines.

c. The ship shall meet all applicable safety requirements of the regulatory bodies.

3.4 Mobility

A sustained operational speed of 15 knots is required. The ship shall be capable of 11,300 nm at 12 knots plus 29 days at 3 knots. A 10 percent fuel reserve shall be provided based on total fuel required.

3.5 Operating Environment

The AGOR 24 shall operate as required in worldwide service, and perform its mission under a range of weather conditions from tropic to subarctic.

3.5.1 Temperature and Humidity. Habitability areas and mission essential spaces shall be air conditioned and shall be designed for a maximum external air temperature of 95 degrees Fahrenheit dry bulb (82 degrees Fahrenheit wet bulb), with a maximum sea water temperature of 95 degrees Fahrenheit, and a minimum external air temperature of 0 degrees Fahrenheit with a minimum sea water temperature of 28 degrees Fahrenheit. Air conditioning for all laboratory spaces and interior scientific operations spaces shall be designed to provide maximum of 75 degrees Fahrenheit with maximum humidity of 55 percent. Heating for these spaces shall be designed to provide minimum of 70 degrees Fahrenheit. Other payload compartments, including scientific storage compartments, shall be designed to maintain 70-80 degree Fahrenheit dry bulb with maximum humidity of 55 percent.

3.5.2 Wind and Sea Conditions.

a. Safe transit of the AGOR 24 at all speeds up to approximately 15 knots on all headings in seas up to 8.2 ft significant wave height, and at 10 knots on best heading in seas up to 12.2 feet significant wave height is required.

b. The ability to launch, operate and recover scientific equipment while holding position, at best heading, in seas up to 11.0 ft significant wave height is required.

3.6 Ship Utilization

The AGOR 24 will have an irregular deployment cycle. The ship is expected to average 250 days per year at sea.

3.7 Maintenance, Overhaul and Supply Support Concepts

3.7.1 Logistics Support

a. The AGOR 24 shall be capable of self-sufficiency for regular preventive maintenance. Onboard maintenance and repair capability shall meet USCG and ABS requirements.

b. The AGOR 24 shall be capable of limited emergency repair of hull structure and engineering casualties. Repair task areas include:

(1) Limited repair of above-water hull structure.
(2) Minor steering system and/or shafting repair.
(3) Minor propulsion, auxiliaries and electrical repairs.
(4) Substantial repair of scientific deck machinery and electronics.

c. The maintenance and overhaul concept for the AGOR 24 shall be consistent with post-delivery logistic support by an academic institution using U.S. commercial sources of supply.

d. Regular drydocking and ship overhaul will be scheduled to maintain a valid USCG certificate of inspection and to maintain the ships in class with ABS.

3.7.2 Supply Support

a. The AGOR 24 shall carry consumables for accommodation of 60 as follows:

	AGOR 24(1)
Dry Stores	90 days
Frozen	90 days
Chilled	30 days
Medical	120 days

(1) Using ONR stowage factors

b. Adequate stowage spaces shall be separately provided for deck, engine, medical and steward stores.

3.8 Manning and Habitability

3.8.1 Manning. Manning shall be constrained to the maximum of 60 accommodations stated herein. Ship manning levels shall be established in order to comply with USCG regulations regarding minimum manpower requirements.

3.8.2 Accommodations.

AGOR 24 shall conform to USCG habitability standards.

Minimum capability: 50 permanent accommodations; 10 single staterooms (including two rooms for scientists) and 20 double staterooms (14 rooms for scientists). The ship shall be capable of accommodating 10 additional scientists in two deck

vans. A public toilet and shower shall be suitably located in the van area. (Same as AGOR 23)

Desired capability: Permanent accommodations for 59 personnel; nine single staterooms (including one scientist room) and 25 double staterooms (19 rooms for scientists). If this arrangement is used, the additional deck vans are not required.

3.8.3 Habitability Standards

a. Quarters for scientific personnel shall be comparable to those provided for ship's personnel. A hospital space, exercise room, and self-service laundry facilities are required. A common galley for cafeteria style feeding shall be utilized.

b. The AGOR 24 shall have a common messing facility (minimum 50 percent seating) for all officers, crew and scientists as well as a lounge area for recreation and training purposes.

3.9 Flexibility for Change, Including Space and Weight Reservations

a. Design and outfitting shall provide for rapid scientific payload changes for ship turnarounds and redeployments. This includes optimum access to work and storage areas, and laboratory facilities to permit changeout of electronics and other laboratory internal equipment.

b. Service life allowance of five percent of full load displacement and 0.5 foot of KG shall be provided.

4. SUBSYSTEM REQUIREMENTS AND CHARACTERISTICS

4.1 Hull Form and Structure

The following specific capabilities and characteristics are required:

a. The ship shall satisfy the requirements of the 1989 ABS Rules for Building and Classing Steel Ships with Class C ice strengthening.

b. The ship shall have a hull shape, appendages and openings so as to reduce hull induced flow noise and bubble sweep down within the current state-of-the-art for this type of acquisition.

4.2 Propulsion System

The following specific capabilities and characteristics are required:

a. The prime movers shall be diesel engines, using marine diesel fuel.

b. An integrated electric propulsion and auxiliary service system is required.

c. The machinery plant shall be capable of continuously variable ship speed control (0-15 knots) without switching systems.

d. Economy of operation shall be considered during the design.

e. The machinery plant shall be designed for unattended operation. An air conditioned central machinery control space shall be provided for operation and monitoring of propulsion and auxiliary machinery and systems. The centralized control room shall be located within or adjacent to the machinery space boundary with suitable access provided.

f. The bow thruster shall be steerable jet type to ensure minimum acoustic interference.

4.3 Electric Plant (Scientific purposes)

Provision shall be made for clean power to support a scientific load of approximately 100 kw including a 12 kw Uninterrupted Power Supply (UPS).

4.4 Command, Surveillance, and Scientific Mission Requirements

a. Appendix A provides a list of Mission Sponsor Equipment for the AGOR 24.

b. The following scientific facilities shall be provided and, where practical, are to be located contiguous to one another in the area of the ship which experiences the least motion in a seaway.

(1) Deck - Working Area. Approximately 3,500 sq ft total fantail working deck area is required. Working deck unit loading shall be 1,500 lb/sq ft. Working deck shall be 6 ft to 10 ft above the water line. All hatches on the working deck shall be flush type hatches. A disposable load of 100 tons, shall be accommodated at the working deck level.

(2) Vans: Additional deck area (working deck or 01 deck) for four 20 ft long ISO standard vans shall be provided near the lab complex and working deck with direct access to the ship's interior. The deck area for vans on the working deck

shall have a 1,500 lbs/sq ft unit loading. The ship cranes shall be capable of onloading and offloading the vans up to a weight of 20,000 lbs.

(3) Laboratories Approximately 4,300 sq ft of laboratory space shall be provided. 2,400 sq ft of space for the main and hydro labs shall be located near the working deck. 500 sq ft of space for the wet lab and staging bay shall be located adjacent to each other and adjacent to the working deck. The staging bay shall be enclosed with 10 feet wide access and 15 feet clear headroom. 300 sq ft for the biochemical clean lab, 700 sq ft for the computer lab, and a dark room, scientific freezer (8' x 8' x 10') and a climate control chamber (8' x 8' x 10') shall be provided. Provisions for handling and storage of chemical material shall be included near the laboratory areas. Chemical laboratory hoods will be provided in the wet laboratory and biochemical laboratory.

Rapid rearrangement and flexibility will be maximized by selective spaces being equipped with flush-deck boltdown fittings on two foot centers and through the use of unistruts on overheads and bulkheads. Laboratory cleanliness is a major objective. Materials which permit achievement of this objective will be used in the construction of these spaces. Furnishings, HVAC, doors, hatches, cable runs, and fitting will also be planned for maximum lab cleanliness. These spaces should have 9 to 11 air changes per hour. 100 percent filtered fresh air supply provided to the Analytical Laboratory, and all other laboratories shall have fresh air based on 3 changes per hour. Laboratories will be furnished with 110 and 220 volt AC power. Uncontaminated sea water and fresh water, and clean oil-free compressed air supplies with appropriate drains will be provided in selective spaces.

(4) Scientific Storage. Two to four storage compartments with a combined total of approximately 15,000 cu ft (75 tons) accessible from both the weatherdeck and the ship's interior shall be provided. High density storage spaces should be located aft with access to working areas by hatches using ship cranes. Maximum total weight in high density spaces is 100 tons.

(5) Other Scientific Spaces. In addition to the laboratories, the following scientific spaces are required: a library/conference room (350 sq ft minimum) and a separate science office (150 sq ft minimum).

(6) Overside Handling. Handling gear to accommodate overside operations shall include the capability to carry, launch, and recover equipment on starboard side from midships to stern, including a 100 ft core sampler.

(7) Mission-Related Deck Equipment. A suite of modern cranes, winches, stern A-frame, side deployment frame and other

deck gear shall be provided to permit loading and unloading the ship without assistance to support a variety of oceanographic operations at sea, such as coring, water sampling, equipment implantation, and array and trawl towing. These equipments will be located throughout the working deck areas during the ship's life. Electric power shall be provided to the deck machinery alternative locations. The AGOR 24 will have both a large trawl/-coring winch and a large towing winch which are to be located below the working deck. Provision shall be made for the remote control of permanently installed mission-related winches from weather protected enclosure(s) with maximum practicable visibility of the cable to the last overside block or sheave.

c. A Dynamic Positioning System (DPS) will be installed. This system shall provide control information to the ship's propulsors, bow thruster, or other devices used for speed and direction control, to achieve the following:

(1) Maintain maneuverability and keep station within a 300 foot radius circle in seas up to 11 feet significant wave height, a wind speed of 27 knots, and a 2 knot current at best heading.

(2) Maintain a trackline over the bottom in any direction at any speed between 0.5 and 2.5 knots with a constant towing force of 10,000 pounds within a lateral error of plus or minus 300 feet and a ship heading of plus or minus 45 degrees in seas up to 12.5 feet significant wave height, a wind speed of 27 knots and a 2 knot current.

The DPS shall be capable of accepting input data from a navigational computer system and a Global Positioning System (GPS). For the AGOR 24, the DPS will also be capable of accepting input data from an acoustic position indicator system.

d. Ship shall be capable of continuous tow of large scientific packages up to 10,000 lb tension at 5 knots, and 20,000 lb at 2.5 knots.

e. Flush deck boltdown fittings shall be provided in a uniform grid pattern on 2-foot centers over the entire area of the working deck, staging bay, and van tie-down area.

f. A Scientific Information System shall be provided. This system shall consist of a computer network and cables and junction boxes for a video network.

4.5 Auxiliary Systems

a. The following specific capabilities and characteristics are required:

(1) Fresh water making capacity shall be provided consisting of a minimum of two units, each capable of providing in excess of 60 gallons per day accommodation (60 people). Stowage for not less than 120 gallons of potable water per person shall be provided. An additional 10 percent watermaking and storage capacity shall be provided for lab use. A minimum of two potable water stowage tanks shall be provided.

(2) A clean ballast system will be provided. Dirty ballast shall not be permitted in any loading condition. Liquid ballast operations shall avoid partially full tanks in any hydrophone area.

(3) All overboard discharges shall be configured to restrict discharge to one side of the ship.

(4) An uncontaminated sea water system shall be provided with bow inlet and distribution to selected laboratories. Materials for this system shall not contribute to biological or chemical contamination.

b. The pollution emanating from the ship shall be controlled. A shipboard sewage system, including transfer system, marine sanitation devices, and holding tanks with 24 hour capacity shall be installed and shall meet USCG and Environmental Protection Agency (EPA) regulations. Oily waste separation equipment shall be provided.

c. A combined workshop shall be provided for both ship and scientific use equipped with industrial sized equipment including lathe, drill press, grinder, milling capability and welding machines (electric and gas). The workshop shall be located adjacent to or within the engine room boundaries and be provided with suitable access for handling both ship and scientific equipment and material.

d. The stack exhaust shall be arranged to minimize airborne pollution of the shipboard environment and airborne noise on main and/or working decks.

e. Laboratories, working deck stations, and van installation sites shall be provided with appropriate services.

f. Thrusters shall be sized to meet positioning and trackline requirements. Control of thrusters shall be in the pilothouse.

g. An incinerator for disposal of solid waste materials shall be provided.

4.6 Outfit and Furnishings

Shall follow USCG requirements and commercial standards.

4.7 Armament

Not applicable.

APPENDIX A

AGOR 24 MISSION SPONSOR EQUIPMENT SOURCES

Item

1. Two Large Deck Cranes
2. Two HAIB Articulated Cranes or Equivalent
3. Stern A-frame (large)
4. Side deployment frame
5. Two Hydro Winches
6. Trawl/Coring Winch
7. Deep Tow Winch
8. Multi-beam Deep Water Sonar System
9. One 12 kHz Bottom Profiler
10. Doppler Current Profiling System
11. Doppler Speed Log
12. Dynamic Positioning System
13. Four Vans
14. Cabinetry for Labs, 200 ft.
15. Lab Hoods, Two
16. Uncontaminated Sea Water System
17. Refrigerated and Climate Chambers
18. SATNAV and GPS System
19. Dial Telephone System
20. VAX 11/750 Computer System
21. SAIL System
22. Wire and Cable (one each, 2 sizes)
23. Diving Locker Outfit
24. Workboat
25. Clean Power System (100 kw)
26. Photo Lab Outfit
27. Scientific Information System
28. One 3.5 kHz Sub-bottom Profiler
29. Seismic Air System

APPENDIX B

AGOR 24 COMMUNICATION, NAVIGATION AND IC SYSTEMS

1. Infrared Facilities

None

2. Transmitting/Transceiving Facilities

a. Global Maritime Distress & Safety System (GMDSS)
b. (1) 1.5-1.6 GHz INMARSAT (MCS 9100)

3. Receiving Facilities

a. Global Maritime Distress & Safety System (GMDSS)

4. Terminal Facilities

None

5. Radar Facilities

a. (1) 10 CM Surface Search Radar
b. (1) 3 CM Surface Search Radar
c. (1) Collision Avoidance System

6. Sonar Facilities

a. (1) Deep Echo Depth Sounder with Record Capability (Navigation)
b. (1) Shallow Depth Echo Sounder with Flasher (Navigation)
c. (1) Doppler Speed Log (Dual Axis)

7. Countermeasure Facilities

None

8. Navigational Facilities

a. (2) Gyrocompass (MK 37)
b. (1) SATNAV (GPS Capability with Remote) 4 Channel
c. (1) Loran C (with Remote and Plot)
d. (1) Automatic Radio Direction Finder
e. (1) Dynamic Positioning System

9. Radiac Facilities

None

10. Remote Station Facilities

a. Wheel House

(1) Radar Display/Control of 10 CM Radar (16 inch)
(1) Radar Display/Control of 3 CM Radar (16 inch)
(1) Control of Collision Avoidance System
(1) Echo Depth Sounder Display
(1) Control of Dynamic Positioning System
(1) Anemometer Readout

b. Chart Room/Communication Room

(1) Display/Control of Echo Depth Sounder
(1) Display/Control of Doppler Speed Log
(1) Display/Control of Automatic Radio Direction Finder
(1) Control/Display of Weather Facsimile
(1) Control/Display of Loran C
(1) Control/Display of SATNAV
(1) Control of Radio Facilities
(1) INMARSAT Terminal
(1) Anemometer Readout

c. Scientific Laboratory (Electronics Lab)

(1) Remote Display from Ship's Echo Depth Sounder
(1) Remote Display from Ship's Doppler Speed Log
(1) Remote Display from Ship's Loran C
(1) Remote Display from Ship's SATNAV
(1) Gyro Repeater
(1) Remote Control System Dynamic Positioning System
(1) Anemometer Readout
(1) Remote from INMARSAT

11. Meteorological Facilities

a. (1) Weather Facsimile Converter/Recorder
b. (2) Wind Direction Equipment (Anemometers) with Read-outs (Wheel House, Chart Room, Electronics Laboratory)

12. Supplementary Facilities

Not Applicable

13. Special Facilities

a. (1) Lifeboat Radio
b. (2) EPIRB
c. (1) SOLAS Emergency Watch Receiver (2182 kHz)

14. IC Facilities

a. Electronic IC System serving all operating spaces, labs, public spaces and working deck stations, and four van stations

Appendix G

Task Summary

RONALD H. BROWN FLEET INTRODUCTION; TASK ORGANIZATION AND PARTICIPANTS

TASK ORGANIZATION

1000 Series	Scientific Sensors and Instruments
2000 Series	Ship HM&E - Systems, Equipment, and Outfit
3000 Series	Ship Electronics - Navigation and Communication
4000 Series	Ship Operations

LIKELY PARTICIPANTS

HMI	Halter Marine, Inc.
NAVSEA	Naval Sea Systems Command (PMS-325)
SUPSHIP	U.S. Navy Supervisor of Shipbuilding, Pascagoula
NOAA:	
SAO	Systems Acquisition Office
NC	Office of NOAA Corps Operations
NCx1	NC Staff
NCx2	FRAM Project Office
NC2	Systems Technology Division
AMC	Atlantic Marine Center
PMC	Pacific Marine Center
OAR	Office of Oceanic and Atmospheric Research
AOML	Atlantic Oeanographic and Meteorological Laboratory
PMEL	Pacific Marine Environmental Laboratory
OGP	Office of Global Programs
Crew of the RONALD H. BROWN	

August 14, 1996

RONALD H. BROWN Fleet Introduction Plan - Task Summary Worksheet

Date
By

Item No.
Item Name
Priority (1 highest to 5 lowest)

Description:

Phase	Is This a Required Phase?	Responsibility Org	Responsibility Who?	Funding ($K) Estimate	Funding ($K) Source	Planned Date/Event
Planning & tracking	yes					
Assisting						
Assisting						
Requirements definition						
Assisting						
Item Design						
Item Procurement						
Installation design						
Installation						
If to be crossdecked:						
Source = DI MB (circle one)						
Removal						
Shipping						
Delivery						
Testing & Acceptance						
Training						
Calibration						
			Total			

Other

Coordinate with NAVSEA?
Service Life Allowance impact: +/- Weight, lb
American Bureau of Shipping approval reqd?

+/- Vertical Mt, ft-lb

Comments:

rb_intro.xls

RONALD H. BROWN FLEET INTRODUCTION; TASK SUMMARY

09-Aug-96

Item No.	Item Name	Description
1001	5CM DOPPLER RADAR	ACCOMPLISH PERMANENT INSTLN OF 5CM DOPPLER RADAR TO OGP REQMENTS
1002	AUTOSALINOMETER	PROVIDE AND INSTALL AUTOSALINOMETER
1003	COMPUTERS & PRINTERS	PROVIDE COMPUTERS & PRINTERS; INSTALL AS REQUIRED
1004	NISKIN BOTTLES	PROVIDE NISKIN BOTTLES
1005	OAR CONSUMABLES	PROVIDE WX BALLOONS, SONDES, HELIUM AS REQUIRED. PROVIDE BOTTLE RACKS.
1006	CTD	PROVIDE CTD, ROSETTE, STAND. PROVIDE DECK UNIT AND INSTALL IN COMPUTER LAB.
1008	SEAS	PROVIDE AND INSTALL SEAS SYSTEM. LOCATION TBD.
1009	XBT LAUNCHER	PROVIDE XBT LAUNCHER W/CABLE AND STOWAGE. LOCATION TBD.
1010	THERMOSALINOGRAPH	PROVIDE THERMOSALINOGRAPH. LOCATION TBD.
1011	UPPER AIR SOUNDER	INSTALL NOAA UNIT IN STORAGE IN CHARLESTON.
1012	WIND PROFILER	PLAN FUTURE PROCUREMENT AND INSTALLATION OF WIND PROFILER.
1013	WOCE MET SENSORS & EQUIPMENT	PROVIDE AND INSTALL WOCE MET PACKAGE (SEE 2011)
1014	SCIENTIFIC INSTRUMENT TESTING	CONDUCT FAMILIARIZATION TESTS OF SCIENTIFIC INSTRUMENTS
1015	OUTFIT VANS	PLAN AND OUTFIT TWO VANS TO OAR REQUIREMENTS
2001	INITIAL OUTFIT LIST (IOL)	REVIEW IOL FOR MISSING ITEMS, PLAN ACQUISITIONS AS REQUIRED
2002	DECK SECURING GEAR	PROVIDE SECURING GEAR FOR VANS AND LOOSE LOAD ITEMS
2003	HOSPITAL	MODIFY HOSPITAL AND PROVIDE EQUIPMENT TO NOAA REQMENTS
2004	ET SHOP (SEE 3010)	SELECT SPACE, FURNISH, AND EQUIP ET SHOP
2005	SERVICES TO FORWARD VAN SITES	DEFINE, PLAN, AND PROVIDE SERVICES TO 02 LEVEL FWD VAN SITES
2006	LINE THROWING APPARATUS	PROVIDE LINE THROWING APPARATUS IF NOT A DELIVERABLE.
2007	SHIP'S OFFICE	SELECT SPACE, FURNISH AND EQUIP A SHIP'S OFFICE
2008	SHIP'S STORE	SELECT SPACE, FURNISH AND EQUIP A SHIP'S STORE
2009	DAMAGE CONTROL LOCKER	CREATE A DAMAGE CONTROL LOCKER FROM EXISTING SPACE. LOCATION TBD. (SEE 2009)
2010	DAMAGE CONTROL OUTFIT	REVIEW DC OUTFIT DELIVERABLES, AUGMENT AS REQUIRED (SEE 2009)
2011	FOREMAST	MODIFY FOREMAST TO HANDLE WOCE MET GEAR IN ADDITION TO EXISTING FUNCTIONS (S
2012	SAMM	VALIDATE, ENTER SPARES DATA, INITIATE VIBRATION & L.O. ANALYSIS. CONDUCT TRAINI
2013	MILK DISPENSER	PROVIDE MILK DISPENSER IN SERVING LINE
2014	DECK EQUIPMENT TESTING	CONDUCT FAMILIARIZATION TESTS OF DECK EQUIPMENT
2015	INCINERATOR SOOT PROBLEM	INVESTIGATE OPTIONS TO MINIMIZE SOOT ON WORKING DECK [ON SCRIPPS' LIST]
2016	RO UNIT OUTPUT FLOWMETERS	PROVIDE METERS TO MEASURE PRODUCTION [ON SCRIPPS' LIST]

Item No.	Item Name	Description
2017	MOORING LINE STOWAGE REELS	SELECT LOCATIONS AND PROVIDE REELS FOR MOORING LINE STOWAGE [ON SCRIPPS' LIST]
2018	SEWAGE SYSTEM IMPROVEMENTS	CONSIDER SCRIPPS' RECS FOR SEWAGE SYSTEM UPGRADE
2019	SAFETY RAIL ON UPTAKE LADDER	INVESTIGATE NEED FOR UPTAKE LADDER SAFETY DEVICE [ON SCRIPPS' LIST]
2020	SECOND FUEL OIL PURIFIER	PROVIDE SECOND PURIFIER AS BACKUP [ON SCRIPPS' LIST]
2021	CHILL WATER CIRC PUMP CAPACIT	INVESTIGATE NEED FOR ADD'L PUMP FOR FULL CAPACITY [ON SCRIPPS' LIST]
2022	DISHWASHER EXHAUST VENTILATI	INVESTIGATE NEED TO AUGMENT VENTILATION AT DISHWASHER [ON SCRIPPS' LIST]
2023	BOW THRUSTER MOTOR TEMP MONI	INVESTIGATE NEED TO DISPLAY TEMPS ON GE MONITORING SYS [ON SCRIPPS' LIST]
2024	CRANE MAINTENANCE PLATFORMS	INVESTIGATE NEED FOR BETTER ACCESS TO CRANE WHIP WINCHES [ON SCRIPPS' LIST]
2025	STEAM KETTLE IMPROVEMENTS	PROVIDE BASKET AND COVER FOR STEAM KETTLE [ON SCRIPPS' LIST]
2026	STOWAGE AIDS	PROVIDE SHELVES, CABINETS, ETC, AS NECESSARY THROUGHOUT SHIP [ON SCRIPPS' LIST]
2027	AUGMENT DAY TANKS	STUDY NEED FOR ADDITIONAL DAY TANK CAPACITY [SCRIPPS IS USING #5 CL TANK]
2028	Z-DRIVE OIL XFER SYSTEM	PROVIDE XFER CAPABILITY FROM TANKS TO Z-DRIVE UNITS
2029	SCIENTIFIC WIREWAYS	REVIEW WIREWAYS AS-DELIVERED; UPGRADE AS REQUIRED
2030	BILGE EDUCTORS	STUDY NEED FOR EDUCTORS IN GENERATOR ROOM [ON SCRIPPS' LIST]
2031	LAUNDRY UPGRADE	INSTALL ADD'L WASHER AND DRYER
2032	LUBE OIL TOTALIZER	INSTALL L.O. METER(S) TO MONITOR CONSUMPTION [ON SCRIPPS' LIST]
2033	COAMING, MAIN LAB	INSTALL WATERTIGHT COAMING AT MAIN LAB ENTRANCE FROM WX DECK [ON SCRIPPS' LI
2034	POTABLE WATER SYSTEM	UPGRADE WATER SYS W/ISOLATION VALVES. PLAN HOT WATER SYS MODS. [ON SCRIPPS' LI
2035	HYDROBOOM STATION	REVIEW CONFIG OF HEAD, CONTROLS, ACCESS TO HEAD, AND ADJACENT RAILINGS. MODIF
2036	INTERIOR DOOR SIZES	REVIEW SIZES OF DOORS AT FRS 21, 27, 30 MAIN DECK SCIENTIFIC SPACES [ON SCRIPPS' LIST
2037	HYDRO LAB ACCESS	IMPROVE HYDRO LAB ACCESS FROM WORKING DECK [SEE SCRIPPS' COMMENTS]
2038	SHIPS' SERVICE ELECTRICAL OUTLE	REVIEW NEED FOR UPGRADE OF SS OUTLETS [ON SCRIPPS' LIST]
2039	MCS BATTERY POWER INDICATOR	PROVIDE MCS CONSOLE INDICATION THAT SYSTEM IS ON 24V DC POWER [ON SCRIPPS' LIST
2040	COOLING SYSTEM INDICATORS	PROVIDE RAW WATER PRESSURE ALARMS/GAGES AT ENGINES [ON SCRIPPS' LIST]
2041	CLEATS AND PADEYES	REVIEW AS-DELIVERED HULL FITTINGS, INSTALL CLEATS, PADEYES, STAPLES AS REQD.
2042	A/C BOUNDARY DOORS	INSTALL A/C BOUNDARY DOOR 1ST PLATF FR 99 [ON SCRIPPS' LIST]
2043	AMERICAN BUREAU OF SHIPPING; C	COORDINATE WITH ABS TO INITIALIZE CLASSING SURVEY REQMENTS
2044	AMERICAN BUREAU OF SHIPPING; T	CONDUCT ABS TRAINING FOR SHIP AND PORT ENGINEERS
2045	440V OUTLETS	PROVIDE 440V OUTLETS AT LADDERWAYS ON MAIN DK FOR PORTABLE SUBMERSIBLE PUMP
2046	TRASH COMPACTOR	CHECK WHETHER PROVIDED
2047	BRIDGE WING WINDOWS	FIX PROBLEMS WITH WINDOW, WIPER, INSTRUMENT INTERFERENCES
2048	WEATHER DECK SERVICES	ASSESS NEED FOR ADD'L COMPRESSED AIR, 110VAC, ETC ON WEATHER DECKS. (SEE 2005)
2049	CAPSTAN AFT	PROVIDE PORTABLE OR FIXED CAPSTAN(S) AFT.

Item No.	Item Name	Description
2050	NOISE SURVEY	CONDUCT NOISE SURVEY TO IDENTIFY ANY PROBLEM AREAS.
2051	SHIP'S SAFE	PROVIDE AND INSTALL SHIP'S SAFE
2052	SMALL ARMS LOCKER	PROVIDE FOR THE STOWAGE OF SMALL ARMS AND AMMUNITION
2053	ENGINEERS' WASHER & DRYER	PROVIDE AND INSTALL WASHER/DRYER IN MACHINERY SPACE.
2054	BRIDGE WINDOW ANTI-FOG PROVISI	DEVISE A METHOD TO ELIMINATE FOGGING OF BRIDGE WINDOWS
2055	A-FRAME MODS	PROVIDE ADD'L PADEYES, CLEATS, ETC AS REQUIRED ON A-FRAME.
2056	ENGINEERS' STORES	PROVIDE ADD'L ENGRS' STORES SPACE
3001	CLASS B EPIRBS	PROVIDE NON-REGULATORY EPIRBS AS REQUIRED
3002	MX200 GPS	PROVIDE AND INSTALL MX200
3003	SCS	DESIGN AND INSTALL SHIP'S COMPUTER SYSTEM
3004	NAV/COMM EQUIPMENT TESTING	CONDUCT FAMILIARIZATION TESTS OF NAV/COMM EQUIPMENT
3005	MISSION ANNOUNCING SYSTEM	PLAN AND PROVIDE A MISSION ANNOUNCING SYSTEM
3006	ADDITIONAL PHONES AND JACKS	PROVIDE ADD'L PHONES AND JACKS AS REQUIRED
3007	TV ANTENNA	INSTALL TRAINABLE TV ANTENNA [ON SCRIPPS' LIST]
3008	INMARSAT A ANTENNA	RELOCATE INMARSAT A ANTENNA TO ELIMINATE BLIND SPOT [ON SCRIPPS' LIST]
3009	ADDITIONAL UPS CAPACITY	DEFINE NEED FOR ADD'L LABORATORY UPS AND INSTALL
3010	ET SHOP (SEE 2004)	
3011	VIDEOTAPE LOCKER/CABINET	PROVIDE STOWAGE FOR VIDEOTAPES. LOCATION TBD.
3012	WINCH HOUSE COMMUNICATIONS	PROVIDE FM COMMUNICATIONS IN THE WINCH HOUSE
3013	INTERCOM SYSTEM	PROVIDE INTERCOM TO WORKING STATIONS
4001	COMMISSIONING	COMMISSION VESSEL WITH CEREMONY, CERTIFICATE, ETC.
4002	DECK LOG	PROVIDE DECK LOG MEETING NOAA REQMENTS
4003	ENGINEERING LOG	PROVIDE ENGINEERING LOG SUITING PLANT CONFIGURATION AND IAW NOAA REQMENTS
4004	NAVIGATION CHARTS, PUBS, INSTR	SELECT AND PROVIDE CHARTS, PUBLICATIONS, INSTRUMENTS
4005	YEOMAN PUBLICATIONS AND CONS	SELECT AND PROVIDE YEOMAN PUBLICATIONS, FORMS
4006	ENGINEERING CONSUMABLES	PROVIDE FUEL, MISC OILS, FILTERS, ETC, , NOT IN CONTRACT
4007	BOS'N CONSUMABLES	PROVIDE DECK DEPT CONSUMABLES NOT ON IOL (SEE 2001)
4008	STABILITY SOFTWARE	PROVIDE STABILITY CALCULATION SOFTWARE (GSSP BY GLOSTEN ASSOC)
4009	PROVISIONS	SELECT AND PROVIDE INITIAL LOADOUT OF PROVISIONS
4010	GENERAL STORES	SELECT AND PROVIDE INITIAL LOADOUT OF GENERAL STORES
4011	TRAINING	DEFINE AND PROVIDE NECESSARY TRAINING - REFTRA, GMDSS, OTHER OUTSIDE CONTRAC
4012	SURVIVAL SUITS	PROVIDE SURVIVAL SUITS AND PLAN FOR STOWAGE
4013	MEDICAL SUPPLIES	SELECT AND PROVIDE MEDICAL SUPPLIES (SEE 2003)