U.S. Department of Transportation
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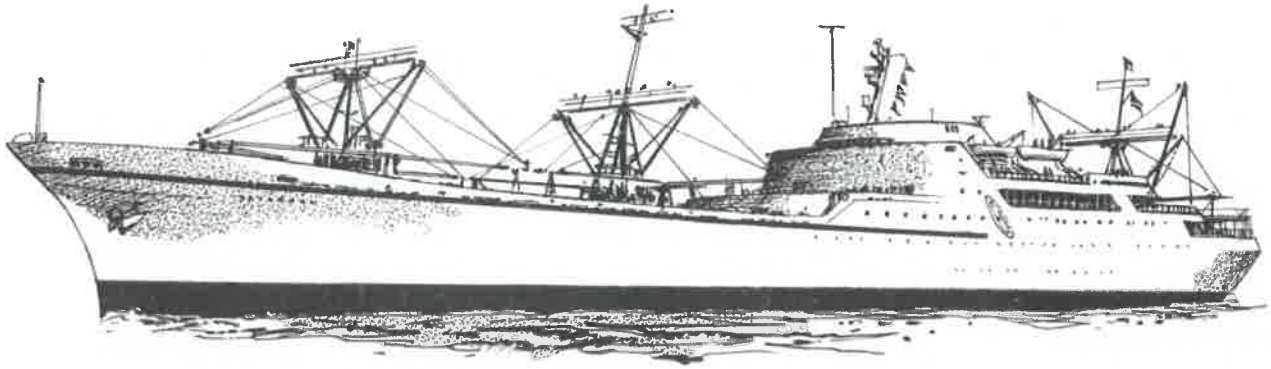

N.S. SAVANNAH

SHIP TECHNICAL DESCRIPTION POST DECOMMISSIONING

MR-007

Revision 0

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Prepared by:
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RECORD OF REVISIONS

Revision	Summary of Revisions
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1.0 INTRODUCTION

This *Ship Technical Description Post Decommissioning* report provides a consolidated explanation of the expected configuration of the National Historic Landmark (NHL) vessel N.S. *SAVANNAH* (NSS) following the removal of its nuclear power plant, and termination of its Nuclear Regulatory Commission (NRC) operating license. The report has been prepared to accompany a Notice of Availability (NOA) / Request for Information (RFI) published in the Federal Register on October 30, 2023, which supports the Maritime Administration's (MARAD) disposition planning for NSS. The decommissioning and disposition of NSS is an Undertaking as defined in the National Historic Preservation Act of 1966, as amended (NHPA). Because the removal of the nuclear power plant is an adverse effect under the NHPA, and the disposition end-state is unknown, a Programmatic Agreement (PA) was executed in March 2023.

The decommissioning effort to remove the nuclear power plant resulted in many modifications and upgrades to the ship's interior arrangements. Although primarily focused on project needs, the modifications were purposefully designed to permit adaptive reuse applications if the eventual disposition of NSS is for preservation purposes. The modifications were subject to review by the Maryland State Historic Preservation Officer (MDSHPO) under Section 106 of the NHPA. No adverse effect was identified arising from these modifications.

In addition to decommissioning modifications, NSS underwent rehabilitation and limited restoration of public spaces and infrastructure in 2016 – 2017. Finally, the ship itself underwent certain modifications following its 1994 removal from the Patriots Point Naval and Maritime Museum, and during its protective storage periods in Virginia and Maryland. The cumulative effect of all of these modifications and upgrades are described herein. The report itself is derived from numerous source documents, among which the current layberthing contract Statement of Work, and report MR-004 *Decommissioning Operations Plan* are significant contributors. Reference and Basis documents are listed later in this chapter.

1.1 APPLICABILITY AND LIMITATION

This report is intended to provide parties interested in preserving NSS with sufficient technical information to make informed decisions regarding that interest. In this context, preservation is any use that does not involve physical destruction of the vessel, does not restore it to seagoing condition, or is otherwise not prohibited by law. No attempt is made to define the manner in which the preserved ship is employed, or how the ship spaces may be adaptively reused.

The report itself is a product of good faith based on MARAD's operation and maintenance of NSS over the period 1994 – 2023. Some information may be omitted or simplified in the interest of narrative clarity; however, any oversights or inaccuracies contained in this document are not intentional.

1.2 DECOMMISSIONING CONCEPT DESCRIPTION

The NSS is licensed by the NRC as a commercial power reactor, similar in most respects to the nearly 100 nuclear power plants operated by commercial and public utilities around the nation. Decommissioning of these landside sites is performed by a specialized segment of the nuclear services industry. Decommissioning occurs on the site, and so decommissioning contractors mobilize to a site, bringing in personnel, tooling, equipment and materials to perform the work. At landside sites, there is sufficient property within the site boundary to accommodate all project needs; in addition, existing buildings and services can be re-purposed for decommissioning use during the term of the project before they are themselves demolished.

MARAD's NSS servicing facility at the former Todd Shipyard in Galveston, TX was closed in 1975. There are no commercial shipyards in the United States that service non-naval nuclear vessels. Consequently, MARAD designed the NSS decommissioning project to make use of commercial services

mobilized to the ship, with maximum use of the ship's interior volume and a minimal offsite footprint. In practice, the volume within NSS proved more than adequate to support the administrative infrastructure required for decommissioning, and to perform the basic functions of waste material handling and packaging for offsite transport. Pier and waterside infrastructure were utilized for crane operations, landing and loading waste packages for shipment, worker parking, and supply of basic utilities (electricity, water, sanitary water and garbage collection) and stores.

The major decommissioning modifications were carried out from 2017 to 2021. As noted in the introduction, rehabilitation and renovations to public spaces and some infrastructure improvements were performed during 2016 and 2017. From 2008 to 2016, the ship was incrementally rehabilitated to serve the needs of its protective storage staff, and to meet the NRC contemporary protective storage criteria. Some improvements were made by the non-profit N/S/ SAVANNAH Association (NSSA). A Fire Hazards Analysis completed in 2017 provided a framework for life safety and occupational safety improvements completed during the decommissioning modifications phase of the work.

In broad concept, NSS has been modified to provide: a) administrative facilities, such as office space, meeting rooms, break rooms and pantries, security and watch standing locations, and document and record storage; b) support infrastructure, such as security, flooding and fire detection systems, access control systems, internet and internal network service; c) utility services and connections for shore power, fresh water, compressed air, and mechanical stores loading and material handling; d) modified access and emergency egress arrangements; and e) decommissioning-specific infrastructure related to the dismantlement of the nuclear power plant, and the handling, packaging, and lifting of the resultant low level radioactive waste and containers. In addition, numerous functions and electrically driven equipment have been reactivated, with some modifications, to suit the operational needs of the vessel. Surrounding all of this are the public and display spaces located throughout the vessel, some of which also have contemporary functions. Savannah Technical Staff (STS) Drawing SK-13-F-5021 Rev A, *Modifications for Decommissioning*, depicts the scope of modifications and general uses of the ship in plan views of decks, and an Inboard Profile, using color-coded shaded areas. Other relevant documents are listed in the References and Bases section below.

1.3 DECOMMISSIONING END STATE AT LICENSE TERMINATION

On October 23, 2023, MARAD submitted its License Termination Plan (LTP) to the NRC for its review and approval. The LTP considers and describes three (3) potential end states for NSS after license termination: preservation, shipbreaking and artificial reefing. Because the last two are not preservation end-states, they will not be discussed herein. As early as 2003, MARAD drafted and articulated a preservation goal for NSS. The primary goal for decommissioning, however, is to terminate the NRC license without conditions. This requires meeting the NRC license termination radiological criteria without exception. The PA discussed in the Introduction covers the decommissioning and license termination aspects of the NHPA Undertaking. MARAD has sought to minimize harm to the NHL, as required under the NHPA, by not dismantling signature elements of the nuclear power plant where it can be demonstrated that those elements (composed of structures and components) do not contain radioactive material that results in a dose greater than the NRC unrestricted release criteria of 25 mrem / year to the average member of the critical group, over a sustained period of seventy (70) years, while not constraining the shipbreaking or artificial reefing end states. MARAD took this a bit further by adopting the Environmental Protection Agency's (EPA) lower radiological criteria of 15 mrem / year, and set its radiological screening levels at seventy (70) percent of 15 mrem. All of this is described fully in the LTP.

Assuming that the LTP is approved, and that final radiological surveys demonstrate compliance, the following elements of the nuclear power plant will be intact at license termination, and preservation conveyance of the ship:

- Containment Vessel (CV) shell, Cupola Head (reinstalled) and Shield Ring (reinstalled). Elemental lead and polyethylene shielding on the upper hemispheric surface of the CV and cupola will remain in place.
- CV Access Portal on D Deck, with exposed cross-sectional cutaway of the Reactor Compartment (RC) secondary shield and collision mat.
- Pressurizer (PZR) shell (decontaminated). The PZR lower hemispherical end has been removed. A large vertical access is cut in the shell, on the side opposite from the CV Portal. The PZR internals were removed thru this access.
- Port and Starboard Steam Generator (SG) assemblies. Each SG included a horizontally-oriented, shell and tube heat exchanger, arranged in an open-ended "U" configuration. The tubes, also U-shaped, carried primary coolant, and were connected to the Reactor Primary Coolant System piping at the open U ends. A horizontal steam drum is arranged above the centerline of the heat exchanger. The steam drum and heat exchanger are connected by risers and downcomers, which carried secondary water to and from the components. The primary coolant tubes have been removed from both heat exchangers, whose shells have been decontaminated; to accomplish this work, a number of riser and downcomer pipers were removed, and portions of the shell opened. The piping connections and the open U ends have been removed. After license termination, the risers and downcomers will be reinstalled, and the open shell sections will be closed; a walking path through the Starboard SG assembly will be left in place to provide access to the CV aft hemisphere.
- The common exterior circumferential shell of the Neutron Shield Tank (NST) (lower section) and Fuel Transfer Tank (FTT) (upper section). The exterior elemental lead shielding on the NST remains in place. Two large vertical manways were cut, in diametrically-opposite areas of the NST, to allow workers access to the interior. The interior circumferential shell of the NST was removed along with the Reactor Vessel itself in November 2022. The central void is accessible via the manway arches.
- Grating platforms and ladders (the original grating material will be replaced).
- Original lighting fixtures have been retained in-situ, but are de-energized by removal of their original cabling. Temporary lighting fixtures are presently fitted, and will be replaced with permanent lighting.
- Speaker strobes and general alarm system bells will remain in place.
- Circa 2021 HVAC will remain in place.
- Main steam piping and stop valves in the RC Upper Level.

The practical effect of this work is that the pre-decommissioning viewshed from the CV Portal entrance is largely maintained. Visitor access to the CV interior will be possible, allowing for interpretation of the components in relation to the Reactor, the balance of the nuclear power plant and the steam plant.

In addition to the above, a mock-up of the reactor vessel which was employed for refueling and defueling training of operators is stored onboard the ship in Cargo Hold 1. This mockup is not an exact replica of the removed reactor; however, it does include, in representative form, the reactor's major internal components. Several dummy control rods are known to exist in the ship's collection; it is unknown at time of issuance (November 2023) whether a dummy fuel element is available.

With one exception, the decommissioning modifications described more fully in Section 2 of this report will remain in place and functional. A truss and winch structure that was constructed to raise and lower

the RC exterior hatch on the Promenade Deck will be removed, and the components stored in Cargo Hold 1.

1.4 REFERENCES, BASES AND ADDITIONAL REPORTS

The principal public basis documents for the decommissioning plan include:

- MARAD STS Drawing No. SK-13-F-5021 Rev A dated 08/23/2019; Modifications for Decommissioning
- MARAD STS Drawing IA-310-J-365 Rev 5 (Preliminary, Nov 2023); Booklet of General Plans
- STS Drawing RC-04-J-757 Capacity Plan
- STS Drawing FC-F-5104 Rev D Fire Control Plan (Draft 2022)
- MSCorp Drawing 3254-302-01 Rec C NS Savannah Electrical One-Line Wiring Diagram

2.0 SHIP LAYOUT AND CONFIGURATION

The ship's Booklet of General Plans (BGP) has been revised and updated as of November 2023 (a preliminary copy will be published). The BGP reflects the ship in its current configuration, with decommissioning modifications complete. MARAD has also prepared a comprehensive photo survey of the vessel, with recent photographs depicting the completed and current configuration of the vessel. Readers should consult the BGP and the photo survey when reviewing this report.

2.1 GENERAL DESCRIPTION

The NSS structural arrangement, and arrangement of decks is unchanged from its condition at the end of its service history in 1970, and defueling in 1971. The ship is a modified Mariner hull, whose principal particulars are shown below. The ship has three (3) complete decks, and three (3) major superstructure decks. There are seven (7) cargo holds, plus a Reactor Compartment and Machinery Space. Cargo Holds 1 through 4 are forward of the Reactor Compartment. Cargo Hold 5 is a blind hold aft of the Machinery Space. Cargo Holds 6 and 7 complete the arrangement. NSS was originally constructed as a shelter decker, with B Deck designated as the watertight shelter deck (and bulkhead deck) and tonnage openings throughout. Prior to completion, the ship was reconfigured as a full scantling vessel. Although the tonnage openings were closed, B Deck remained watertight. The configuration of B Deck as a watertight boundary continues today; however, because NSS no longer is required to meet a damaged stability standard, MARAD has elected to provide non-watertight passages throughout the length of B Deck. The ship is accessible internally from Cargo Hold 1 to the After Peak area on B Deck, and from Cargo Hold 2 to Cargo Hold 7 on C Deck. There are no watertight doors fitted on C Deck aft of the Machinery Space. Stability arrangements are described later in this chapter.

The NSS is in a near-lightship condition, drawing approximately 17 feet forward and 21 feet aft. All sea chest openings are plated-over with welded blanks. No fuel oils or lubricants are stored in double-bottom tanks, and only residual hydraulic and lubricating oils are found in equipment or operating tanks. Ballast tanks in the forward half of the ship are filled with treated freshwater ballast; tanks in the after half of the ship are empty. Solid ballast is located in Cargo Hold 2.

Principal Particulars of the Vessel

Length Overall:	595'-06"
Length betw Perpendiculars:	545'-00"
Beam:	78'-00"
Depth to Main Deck at Side:	50'-00"
Depth to Promenade Deck at Side:	58'-09"
Draft - Current Condition:	17'-00" FWD; 21'-00" AFT
Draft – Full Load (Mean):	29'-07"
Mast Height abv Baseline (Max at Foremast):	123'
Estimated Air Draft (Max at Foremast):	104'
Estimated Sail Area at Current Drafts:	26,600 SQ FT
Displacement Lightship:	12,000 L/T
Displacement Full Load:	22,000 L/T
Approx Parallel Mid-body:	Frames 90 to 148 at D Deck, 90 to 157 at C Deck

The ship has a deep sheer and dramatic flare forward, with extended bulwarks near the bow to heighten the effect. The stern is a modified cruiser type, with a hard chine and set-back just above B Deck. The Main (A) Deck has camber. Both B and C Decks have internal sheer, while D Deck and the flats are

parallel to baseline. The superstructure decks do not have sheer, and the Promenade deck, although exposed to weather, does not have camber. The hull is transversely framed, and a composite riveted and welded structure. Riveted seams are at the turns of the bilge, along the bilge keel, at the sheer strake on A Deck (including inside the superstructure), at the connection to the sideshell along A Deck, and at the Sideport openings (excluding the Cargo Hold 3 Sideport). The Promenade Deck is also riveted at the sideshell connection, and at the first strake inboard of the deck edge. The lap joint has been fitted with a welded flat plate cover on the weather-exposed aft section of the Promenade Deck. There are no riveted butts in the shell. Frames, bulkheads, decks and flats are welded to the side shell except where described above.

As planning for shipboard modifications and decommissioning progressed in the 2005 – 2007 timeframe, the designs were made so that NSS is arranged and equipped to be moored port-side to the pier. Although the ship can be temporarily berthed starboard to, all of the permanent service connections and access points are configured on the port side, and only the port side mooring equipment is functional.

Beginning in 2008 and throughout the protective storage period, the ship's existing interior accommodations and public spaces were rehabilitated and renovated to support MARAD and contractor staff, and allow for public visitation under controlled conditions. Other than electrical distribution, no existing hotel service systems were, or have been since, restored to functionality. Several blocks of crew and passenger staterooms were equipped with new Heating, Ventilation and Air Conditioning (HVAC), aka climate control systems, and augmented electrical convenience power and internet service. The ship's passenger sideport and adjoining stateroom A-18 were modified to control access to the ship. Incremental improvements to access and egress were made over time. The ship's principal public spaces (Dining Room, Main Lobby, Veranda and Eisenhower Room {Main Lounge}) were restored in 2016-2017 and continue to serve the needs of public access and event support.

Decommissioning modifications were planned and carried out between 2017 and 2021. A comprehensive Fire Hazards Analysis completed in 2017 provided a framework for life safety and occupational safety improvements. The interior modifications carried out to support decommissioning administrative services followed the pattern established in earlier modifications, and were sensitive to the architectural character of existing ship spaces. Modifications of the cargo holds were designed to improve the occupational safety of workers engaged in decommissioning industrial activities, and to support the industrial processes conducted therein. Cargo Holds 3 and 4 are climate controlled, and fitted with fire-rated stairtowers that reach from D Deck to the weather on A Deck. Cargo Hold 2 is accessible from the forward stairtower. Climate controls extend to the Reactor Compartment. Renovations to crew staterooms on B Deck, starboard side provide climate-controlled office and meeting space for contractor staff, that is suitable for future adaptive reuse.

2.2 SHIP ACCESS AND EGRESS ARRANGEMENTS

As noted above, the ship is arranged and equipped to berth port side to the pier. All access and egress arrangements are configured on the port side. The two midships A and C Deck sideports are fitted with steel mounting bars for their corresponding gangways. No such arrangement exists on the starboard side. Use of the starboard sideports will require either gangways that fit over the lip of the door (thus exposing the entry to the weather), or installation of mounting bars before the gangways can be landed.

The primary ship access and egress point is through the A Deck Passenger Sideport into the Main Lobby. This access point has been in-use since the ship arrived in Baltimore in May 2008. The gangway / stairtower combination projects approximately fifty (50) feet in overall length from the ship side shell connection. The gangway is arranged for mounting perpendicular to the side shell. The stairtower and gangway are ship's equipment, and will convey with the ship. An awning protects the opening from light weather, and the sideport doors can be closed during heavy weather. Entrants would be required to signal during heavy weather, so that the doors can be opened; they are secured from within.

Four (4) additional access and egress points are available. Two (2) of these provide emergency egress from the ship's exterior weather decks, in accordance with the findings and recommendations of the Fire Hazards Analysis. The arrangements support occupancy by several hundred persons, but would be subject to local ordinance and jurisdictional authority.

2.2.1 ACCESS FOR PERSONS WITH IMPAIRED MOBILITY

The ship access and egress arrangements are not compliant with the Americans with Disabilities Act (ADA). A limited capacity to support access by persons with impaired mobility is provided by commercial chair grade lifts installed on the aft starboard ladder runs connecting C Deck to the Promenade Deck. Access to this ladder run is via either of the C Deck gangways, which land almost directly onto the pier deck.

2.2.2 EXISTING SIDEPORTS

Other than the A Deck Main Lobby passenger sideports, the ship is fitted with four existing sideports on the port side, and three on the starboard. Only those on the port side are available for regular use; either as a controlled access point, or emergency egress point.

The C Deck engineering sideport at Frame 145 is routinely used for secondary access, and for stores and material loading and discharge. It is fitted with the fresh water supply connection for the distilled water tank. This sideport is located directly below the A Deck main entrance, and is equipped with a portable gangway that must be rigged whenever the sideport is used. A guard shack is placed on the pier adjacent to this sideport to provide access control. The gangway and guard shack are ship's equipment, and will convey with the ship.

Two other port C Deck sideports exist; an original sideport for stores loading is at Frame 126, and a visitor access sideport that was constructed in Cargo Hold 3 during the ship's museum-era. The Frame 126 stores sideport is not equipped with a gangway, and has not been used for personnel. It has been used as an entry point for temporary, industrial shore power cables and other service connections. The current layberth arrangement interferes with personnel access at this sideport; however, at a more open location, the sideport could be configured for personnel access or egress. A jib boom is fitted on the Promenade Deck above the sideport to support cable runs.

The Cargo Hold 3 sideport is described in Section 3 Decommissioning Modifications. It is connected to and served by the landing platform for the forward exterior emergency egress ladder described in the next section.

The port B Deck sideport at Frame 168 is fitted on the exterior of the side shell with a landing platform for the aft emergency egress (accommodation ladder). Although not normally used, this sideport is designated as a public access event interior emergency egress point.

2.2.3 EXTERIOR EMERGENCY EGRESS LADDERS AND ACCESS PLATFORMS

A National Fire Protection Association (NFPA) and Occupational Safety and Health Administration (OSHA)-compliant exterior emergency egress ladder (i.e., landings are no more than twelve feet apart vertically) has been fitted to the ship at Frame 96 on the Main Deck. The ladder drags forward to about Frame 80 at C Deck, ending in a platform that runs forward in way of the cargo hold 3 C Deck sideport. This platform supports a hinged brow that can be lowered to a landing platform on the pier. The ladder provides emergency weather deck egress from the forward end of the ship. It can also be a controlled access point, when the forward brow is lowered, and the guard shack is staffed. This pathway is not, however, included with the ship's access control (Integra) system.

The ladder system components are bolted to padeyes welded to the ship's side. The components can be removed for towing. They require crane service for removal and reinstallation. The landing platform on the pier is ship's equipment. It will be removed and conveyed with the ship.

The aft emergency egress is composed of the ship's accommodation ladder fitted to the exterior of the port side of the ship, at Frame 160 on the Promenade Deck. It lays aft to a platform attached to the ship's side in way of the B Deck sideport at Frame 168. The platform supports a hinged brow that can be lowered to a raised landing platform on the pier. This system is intended for emergency egress only, and the brow will be kept in the raised position except when in use.

The opening at the Promenade Deck is the original location for the accommodation ladder, and is fitted with hinged doors to provide access. The doors were reconstructed in 2021. With the ladder rigged in place, the doors cannot close, so the opening is fitted with a weather enclosure that can be easily opened (zipper and snaps) in an emergency. The B Deck Frame 168 Sideport doors can be opened if and as required, but are not equipped for easy or quick opening in an emergency.

The pierside landing platform spans and connects to a twenty-foot storage container on the pier. The accommodation ladder can be removed for towing if required. The ship's landing platform and brow are bolted to the sideshell, similar to the forward egress ladder components, so they can be removed for towing. Removal and reinstallation of the components requires crane service. All of the components of this system, including the storage container, are ship's equipment, and will convey with the ship.

2.2.4 ACCESS CONTROL POINTS

Controlled access is maintained at three points; the A Deck Main Lobby primary entrance; the C Deck cargo hold sideport, and the C Deck engineering sideport when it is in-use. The Main Lobby and 3 hold access control points are in daily use during decommissioning, and are fitted with an Integra swipe card system for personnel accountability.

Exterior Security Guard stations (portable guard shacks) are located at the Forward Access Gangway, and adjacent to the C Deck Engineering Sideport. These stations are staffed as required when the access points are in use. The guard shacks are ship's equipment, and will convey with the ship.

2.3 MOORING EQUIPMENT AND ARRANGEMENTS

The ship generally makes use of its original mooring equipment and arrangement, using modern lines that can be handled by a small number of personnel. Some supplemental equipment has been added to assist. Only the port side equipment has been restored and maintained. The original hydraulic gypsy heads fitted to the cargo winches have not been reactivated, and in most cases, the exterior hydraulic piping connected to the winches from the mast houses has been disconnected and removed.

With the ship in the light condition, the mooring equipment is quite a bit higher from the waterline than the original mooring arrangement contemplated. To compensate for the extreme lay of the spring lines, two weldments were installed during the 2019-2020 drydocking availability, to relocate four spring lines to approximately the C Deck level. The performance of the springs is much improved after the relocation.

2.3.1 ANCHOR WINDLASS AND MOORING CAPSTANS

The ship's anchor windlass is functional. It is the only active hydraulic equipment on the ship. The windlass is fitted with a gypsy head that can be independently controlled to assist with setting and adjusting mooring lines. The windlass is tested quarterly, and one anchor is normally set.

The aft, port electric mooring capstan is functional. The starboard aft electric mooring capstan controls are damaged and not in service. MARAD considered, but has not implemented, a new control cabinet that would permit operation of either capstan from a single location.

The anchor windlass and port capstan are inspected and maintained under the ship's Preventative Maintenance program.

2.3.2 SUPPLEMENTAL MOORING WINCHES

Two small electric vertical capstans have been installed to assist with mooring line management. These were salvaged from a retired Navy T-AGOS-1 class vessel, and overhauled. A third capstan is available for spares or rebuild. One capstan is installed on the waist of the main deck, roughly abreast the number 2 mast house (between cargo holds 3 and 4). The other is installed on the Promenade Deck.

The capstans are inspected and maintained under the ship's Preventative Maintenance program.

2.3.3 LINES AND FENDERS

The existing suite of mooring lines are two-inch Amsteel Blue, which were certified and new for service in 2020. The lines are fitted with Samson Chafe-Pro chaffing gear in addition to ship's force manufactured chaffing gear (fire hose wraps), and inspected on a regular basis. There are sufficient lines, with some back-up material, for normal and heavy weather berthing at the Pier 13 location in Baltimore. The lines will be maintained in a serviceable condition, or replaced as required, up until the conveyance of the ship. The lines will be conveyed with the ship.

The Amsteel two-inch lines have proven to be easily managed without significant mooring equipment assistance. Any additional mooring lines or wires that may be required for initial heavy weather berthing (meaning necessary to obtain a USCG-approved heavy weather mooring plan) in a different location are not included in the ship's outfit.

There are four (4) Yokohama fenders included in the ship's outfit that will convey with the ship. These fenders are inspected regularly, but are aged. Recipients should exercise caution if planning to place them into service.

2.3.4 ROLLER CHOCKS, FAIRLEADS, AND SPRING LINE ATTACHMENTS

The ship's port side and stern roller chocks were serviced and restored to function during the 2019-2020 drydocking availability; the starboard roller chocks are not in service, and were not attended to during the shipyard period. The active roller chocks are inspected, greased and maintained under the ship's Preventative Maintenance program.

There are no roller fairleads on the ship. All of the fairleads are fixed.

As noted above, two weldments were installed on the ship within the parallel midbody and roughly at the level of C Deck, as attachment points for four (4) spring lines. These weldments brought the spring lines down to a level closer to the pier attachment points, and significantly improved their performance such that surging has been reduced to a nearly negligible extent. Each spring is attached to the weldment with a heavy-duty steel shackle. The arrangement permits one each fore and aft spring, and a set of crossing springs between the weldments. The spring lines have excess length at the pier end.

The ship can be towed with the weldments in place. The spring lines will be conveyed with the ship, along with the associated tackle.

2.3.5 PLATE ANCHOR ATTACHMENTS

The vessel is fitted with fourteen (14) in-stream plate anchor fittings forward, amidships and aft on both the Port and Starboard sides; these fittings were installed for use at the James River Reserve Fleet in conjunction with high adhesion "mud" anchors. These fittings are not currently, but may be used as attachment points for heavy weather mooring lines / wires or anchors. The ship is not equipped with the necessary tackle to make use of the plate anchor fittings.

2.4 SERVICE CONNECTIONS AND UTILITIES

Because the ship's original systems are not functional, the original service connections are for the most part out of service. One original connection has been repurposed as described below.

2.4.1 WATER CONNECTIONS AND STORAGE

Freshwater is supplied from the city main by hose connections made at the Cargo Hold 3 sideport, and the C Deck Engineering Sideport. Cargo Hold 3 is fitted with four (4) freestanding 2,500-gallon plastic storage tanks, arranged around the perimeter of the hatch coaming structure on D Deck. The tanks are connected via PVC piping systems that supply, and discharge the tanks. The two port side tanks are designated for fresh water supply to the toilet compartment and slop sink on C Deck, above the tanks. The two starboard tanks are designated for process water to support decommissioning operations. These tanks are not connected to the toilet compartment. The common fill line is supplied from a hose connection adjacent to the Cargo Hold 3 sideport, which can be serviced from the landing platform outside the ship's hull. The tanks are also piped to accept condensate from the cargo hold HVAC units.

The ship's Distilled Water Tank has been modified to serve as a freshwater holding tank, of about 6,000 gallons capacity. All original suction connections to the tank have been blanked internally, and coatings have been repaired. A single fill connection has been piped to the ship's original port Potable Water service connection inside the sideport. The Potable Water fill line has been modified to isolate it from the original Potable Water Tanks, the port tank of which is adjacent to the Distilled Water Tank (separated by a common cofferdam). Suction from the Distilled Water Tank is through a connection made through the manhole cover. Water is pumped through a PVC / PEX system installed to service a 1,000-gallon bladder in Cargo Hold 7, B Deck. This bladder provides water service to the toilet and shower trailer on the Main Deck above, and to several slop sinks and deck water connections.

The water systems described above are not certified for potable water. Potable water is supplied by bottle service.

2.4.2 SHORE POWER

The primary shore power electrical service connections are made inside Stateroom C-12; immediately forward of the port engineering sideport. The stateroom furnishings and furniture were removed to suit this purpose, and a freestanding electrical connection box is installed inboard of the porthole opening. Fixed cable runs to the Shore Power Load center exit C-12 through the ceiling space. Two (2) 400 Amp 3-phase connections are available, with two (2) corresponding penetrations and saddles in the stateroom porthole (C Deck, approx. Frame 145; 36 feet above the baseline). A jib boom mounted on the ship and fitted with slings is employed to support the shore power cables between ship and pier, and allows for vessel movement due to tides, surges, and variable sea conditions.

A cable saddle is bolted to the pier deck, and is part of the ship's outfit. It will be removed from the pier and conveyed with the ship. The two 400 Amp cables are ship's equipment, and will convey with the ship. There is also a spare 400 Amp 3-phase cable of approximately 123' in length that will convey with the ship.

As noted in 2.2.1, the C Deck stores sideport at Frame 126 has been configured for temporary service connections, and is equipped with a jib boom and saddles to support cable runs between the ship side and the pier. No pierside cable saddle is provided at this location. The principal use in this location has been for temporary decommissioning power supply, welding cables, and hose connections.

The 400 Amp shore power connection from the ship's tenure at the James River Reserve Fleet is located on the Main Deck aft, at about Frame 190. This connection is not presently in service. It would require a cable connection from its termination in the Engineering Cross Passageway to the Load Center.

2.4.3 TELEPHONE AND INTERNET

The ship does not have a current landline telephone connection; however, such a landline connection can be made inside the Shore Power Room (stateroom C-12). Some of the offices are equipped with telephone jacks for a central system, but the system was not installed or connected. These jacks are not currently operational. Current staff employ mobile phones exclusively, with moderate cell coverage inside the ship, and more extensive Wi-Fi connectivity. The alarm systems employ an NFPA-approved configuration of cellular and internet communications methods to connect to their respective monitoring centers.

Internet service is provided to the ship by a line-of-sight antenna mounted to the port side of the aftermost cargo truss footwalk. The antenna connection is led down into the Server Room located within the Cargo Hold 6 B Deck office complex. Distribution from the Server Room is via a series of hard wire runs to several locations throughout the ship. The offices on A Deck and B Deck are fitted with hardwire drops. Wireless pucks are also located throughout the ship to provide Wi-Fi connectivity in areas both with and without hardwire connections. Ship motions can sometimes affect the quality of the connection. A land connection (e.g., FIOS or cable) can be made into the Shore Power Room.

The exterior antenna is the property of the current Internet Service Provider (ISP), and may be removed when service is terminated; however, as is often the case with older equipment, the ISP may abandon the antenna as a less burdensome activity. A similar older antenna is currently abandoned in place on the footwalk. The interior equipment is ship's equipment and will convey with the ship.

2.4.4 SANITARY FACILITIES

Two sanitary facilities are located onboard the ship; these were constructed or installed specifically for current operations, and neither connect to, nor use any element of the ship's original sanitary water system. All sanitary and gray water generated on the ship is discharged through the toilets (either fore or aft based on proximity of the generated discharge water). The ship's original system and equipment is not functional. When converting the starboard B Deck Crew Stateroom block into contractor galleries, the toilet compartments were removed. This also cut off the existing water supply and drains from the A Deck Passenger Staterooms and Officer Staterooms on the Boat and Bridge Decks. That piping was capped in the B Deck overhead.

A commercial toilet / shower trailer was acquired and installed in 2009. It is sited on the Starboard side of the Main Deck abreast the Cargo Hold 7 hatch coaming. This trailer features two (2) shower stalls, and four (4) toilet stalls; all private and serviced by their own exterior doors. The trailer is fitted with a 250-gallon holding tank. Under current operations, with upwards of eighty (80) persons onboard, the holding tank is pumped down to the aft pierside storage tank twice weekly. The holding tank is fitted with a service connection, and could be piped to a sewage line on shore, if such a line is available (no line is fitted on Pier 13 in Baltimore). No design for such a connection has been developed. The trailer is fitted with independent climate controls, and local vents.

A toilet facility was constructed in Cargo Hold 3 on C Deck as part of the decommissioning modifications. This compartment has a common 3-stall men's bathroom compartment, and a single stall woman's compartment. The facility is fitted with a 1,000-gallon holding tank, and equipped with a macerator-equipped pumping station to transfer effluent to the forward holding tank on the pier. The hose connection is adjacent to the water fill line at the Cargo Hold 3 C Deck Sideport. The facility is equipped with an independent exhaust fan, and is vented to atmosphere above the Number 2 Mast House. The facility is supplied with conditioned air from within Cargo Hold 3.

2.4.5 COMPRESSED AIR

The ship is equipped with two electrically-driven service air compressors, one each fore and aft. The aft compressor is located inside the Number 3 Mast House, and is fitted with a commercial piped air distribution system with multiple quick disconnect fittings. The forward compressor is located inside the former Hatch Machinery Room on the starboard side, at Frame 102. This machinery space is located below the curved transition between the Main Deck and Promenade Deck. The fore deck is also fitted with a commercial piped air distribution system, serving both the port and starboard sides of the Main Deck. Air for the Promenade Deck and above is supplied via hoses from either compressor. The forward compressor also supplies air for the ship's Leslie Tyfon Air Whistle, located on the cargo truss above the Number 2 Mast House.

2.5 ELECTRICAL SYSTEMS

The vessel operates exclusively on electrical service from the pier. There is no emergency generator installed (note that the ship's original diesel-driven auxiliary and emergency generators are not functional, and their respective switchboards have been removed from service). Internal electrical distribution and lighting systems are functional, and provide power to a limited suite of hotel services and auxiliaries. Certain systems, such as the alarm systems, are fitted with backup batteries. These are noted in the respective system descriptions.

2.5.1 LOAD CENTER – 800 AMPS

A new 800 Amp Shore Power Load Center was fabricated and installed in 2009. The load center is located inside the former Battery Locker within the C Deck Engineering Cross Passage, which is serviced by the Engineering Sideport. The equipment and installation were reviewed and approved by the American Bureau of Shipping (ABS). The load center receives and distributes electricity to load centers dispersed throughout the ship. Drawing 3254-302-01 Rev C, N.S. Savannah Electrical One-Line Wiring Diagram is the most recent drawing revision available. A new revision is under development, and will describe the ship's current electrical configuration and connected loads. In accordance with normal engineering practice, the load center is sized for the combined connected load, even though in practice the full load is never experienced. The connected load is presently limited by the 800 Amp service. Industrial power for decommissioning is connected to a separate temporary power panel in the RC adjacent to the CV Portal. This panel is serviced via the FR 126 Stores Sideport, and will be removed from service when decommissioning activities are complete.

2.5.2 DC RECTIFIER

A rectifier is installed in the same Battery Locker as the Shore Power Load Center, and supplies direct current to the ship's original General Alarm (GA) and Fire Screen Door (FSD) Magnetic Holdback systems. The controls for these systems are located in the A-18 Security Office (note that each individual Fire Screen Door also has a local trip switch). The GA system was powered by batteries when nit was reactivated; these remain in place as a backup.

2.5.3 MAIN AND EMERGENCY SWITCHBOARD MODS

The Main Switchboard has largely been removed from service. To ensure electrical safety, all breakers not in service have been disconnected from the main busses, and dismantled internally. The face plates and switch assemblies have been reinstalled for cosmetic purposes only. All breakers not in service are placarded with red phenolic signs bearing white lettering.

The Emergency Switchboard has been similarly removed from service, disassembled, and placarded. Only the emergency lighting circuit is energized. Power for the General Alarm and Fire Screen Door Holdbacks is now routed from the DC Rectifier.

The lighting distribution sections of the original main busses remain in service, and serve to distribute power to the ship's lighting centers.

2.5.4 TRANSFORMER REPLACEMENTS

The ships three banks of original lighting transformers were replaced in 2017. The new transformers reduced energy consumption by about 15 percent compared to the original, aged equipment.

Some other original transformers remain in service. A transformer survey is underway in October 2023 to identify those transformers in service, and determine whether they can be effectively replaced.

2.5.5 LIGHTING UPGRADES AND CONVERSIONS

Throughout the vessel, incandescent lighting fixtures have been equipped with modern CFL or LED bulbs, and the circuits downgraded somewhat to account for the reduced load (and provide margin elsewhere). Fixtures are placarded with max wattages for bulb replacements.

Fluorescent fixtures have been rebuilt and converted, first to remove ballasts, and later to operate with LED replacement tubes. It is believed that there are no fixtures remaining that contain Polychlorinated Biphenyl (PCB)-bearing ballasts.

Emergency lighting is provided in the RC/CV by use of LED lamps with built-in batteries in the new lighting strings. Similar lamps have been retrofitted throughout the vessel to supplement battery-operated emergency lighting fixtures.

2.5.6 IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM

The ship is fitted with an impressed current cathodic protection system. Wilson Walton is the successor OEM for this system. All of the exterior components of the system (six anodes, two reference cells) were replaced during the 2019-2020 drydocking. The power supplies and controllers were also replaced at the same time, so that the system is a fully contemporary Aquamatic 4 (AQ 4) configuration.

2.5.7 DAMAGE CONTROL CIRCUIT

The ship is equipped with three (3) Navy-style portable electrically-powered submersible damage control pumps. These pumps are dispersed fore an aft on either B or C Deck, so that they can be rapidly moved to a flooding location. Dedicated 440V Damage Control electrical circuits are installed at each cargo hold access trunk opening, and are reserved solely for the pumps; appropriate placards are placed at each location.

2.5.8 COLD AND DARK

Because the ship itself is providing the administrative and industrial process infrastructure for decommissioning, it has not been made cold and dark for the project. However, in anticipation of dismantlement activities, the RC and CV spaces were made cold and dark by physically disconnecting, and in many cases, removing original energy supplies; and verifying and validating such disconnects and removals. Power supply cabinets have been disconnected (air gapped) from their energy sources, and breakers on the main switchboard have been physically disconnected and dismantled as described above.

Temporary, industrial lighting and alarm systems have been added in the RC / CV, with clearly marked energy supplies connected from sources independent of original RC / CV systems. These will remain in place when decommissioning operations are complete.

2.6 STORES AND MATERIAL HANDLING

The ship's original cargo gear and stores handling equipment is not operational. All current operations involve self-sufficient equipment or fixed equipment added to the ship with new power sources. The use of Cargo Hold 4 for material handling requires an external crane, and is not discussed in this section. See the description of the Cargo Hold decommissioning modifications in Chapter 3 for more information on this topic.

Stores and material can be hand-carried aboard, or removed by hand. The C Deck Engineering Sideport is equipped with a 5-ton electric chain hoist to assist in deploying the portable gangway. This chain hoist can also assist with material movement. The chain hoist is part of the ship's outfit.

2.6.1 STORES DAVIT AND HATCHES

A 15 short ton capacity jib boom stores davit is fitted at the aft, port corner of the Promenade Deck, in way of the original Vang Post at about Frame 192. The davit is manually slewed with an electric hoist. A whip controller is located on the Main Deck below the davit. This equipment is maintained on the ship's Cargo Gear Register, and is tested annually.

The Promenade Deck handrail section inboard of the davit is removable (as original for cargo operations), so loads can be landed or picked from the Promenade Deck. A 4' x 4' hatch opening was installed in the Main Deck below the end of the jib to allow material handling into or from Cargo Hold 7 B Deck.

These modifications were performed during the 2007-2008 shipyard availability under review and survey by ABS.

2.6.2 MATERIAL HANDLING EQUIPMENT INSIDE SHIP

Inside Cargo Hold 7 there is a hinged opening installed in B Deck, adjacent to the Main Deck hatch opening, to allow material to be moved between B and C Decks using chain fall hoists. Cargo Holds 6 and 7 are connected by a watertight hinged towing patch on C Deck, allowing material movement between the holds. Cargo Hold 6 is similarly connected to the port passageway in Cargo Hold 5, which is then opened to the Engineering Cross passage through an arch cut in the bulkhead. This allows for the flow of material between the Stores Davit and Engineering Sideport, via the various deck and bulkhead openings.

A hinged material handling opening is fitted in Cargo Hold 6, port side, on C Deck to provide access to the storage areas on the 16'-6" Flat below. These two decks are also connected by a ladder installed in 2020.

Portable material handling equipment includes powered and non-powered pallet jacks. This equipment is ship's outfit, and will be conveyed with the ship.

2.7 PIERSIDE EQUIPMENT AND MISCELLANY

Layberth operations in Baltimore are supported by a variety of items located on the pier. This section describes these items.

2.7.1 MOTOR WHALEBOAT AND DAVIT

The ship is equipped with a Navy-excess Mark 26 motor whaleboat, with fiberglass hull. This boat is currently operational, and lettered as "Savannah No. 6." A gravity davit system removed from the MARAD Ready Reserve Force (RRF) vessel *Antares* has been modified and adapted to stow, launch and recover the motor whaleboat from the pier. The davit winch is air operated, using a pneumatic impact drill. Compressed air is supplied from the ship's forward air compressor, using a hose dragged from the Main Deck at the bow.

The davit installation was designed and stamped by a Maryland-licensed Professional Engineer. The davit system is bolted to concrete footers placed in the pier deck, so it can be removed and conveyed with the ship. The motor whaleboat will also convey with the ship.

2.7.2 FORKLIFT

The ship is equipped with one (1) YALE Model # GLP050VXNDAE084 propane-powered forklift of 4,800 pounds (2.4 tons) capacity. The forklift will convey with the ship. It is normally stored inside one of the storage containers on the pier.

2.7.3 STORAGE CONTAINERS AND TANKS

There are two (2) twenty-foot shipping containers staged on the pier that provide storage for pierside equipment. These containers are ship's equipment, and will convey with the ship.

The two sanitary water storage tanks described in 2.4.4 are ship's equipment, and will convey with the ship.

2.7.4 OFFSITE EMERGENCY RESPONSE FACILITY

Two (2) twenty-foot shipping containers have been modified to serve as an offsite emergency response facility. The containers are climate-controlled and equipped as office space, with one large storage section in one of the containers. These containers can be handled conventionally. They are ship's equipment, but may not be conveyed with the ship if an alternate purpose is developed for them.

2.7.5 DISPLAY ITEMS

The ship's original Lifeboat No. 2 is mounted in a cradle with viewing steps on the pier, where it functions as an armed forces memorial during public access events. This item is part of the ship's equipment, and will convey with the ship. It can be transported by truck, or loaded onto the ship with crane service.

The N/S SAVANNAH Association owns the main reduction (bull) gear segment displayed on the pier at the foot of the main entrance stairtower. This object weighs 37,500 pounds. It will be loaded onto the ship during the redelivery preparations period after license termination. Crane service will be required to remove it from the ship.

2.8 WORKSHOPS, STOREROOMS, AND MISC OUTFITTING

2.8.1 WORKSHOPS

Workshops have been established within the footprint of Cargo Hold 7 B Deck. Work benches and fixed and portable machines are installed to support carpentry, metal work, and mechanical work. This area of the Cargo Hold is climate-controlled, and also contains the 1,000-gallon water bladder, and the Hazardous Waste Accumulation Area. A Welding Shop is established in the former Lamp and Paint Room, on the starboard side aft of the tonnage well. The equipment located herein is ship's equipment, and will be conveyed with the ship, along with all fittings and stock.

The former workshops on D Deck aft of the tonnage well are not in service. The electrician's shop is installed in a twenty-foot climate-controlled container located on the Main Deck port side, abreast the Cargo Hold 3 hatch coaming. The outfit here, as above, will convey with the ship.

2.8.2 STOREROOMS

Storage areas have been created throughout the ship, generally in proximity to the type of work that each room supports. Seven (7) Staterooms located on the starboard, forward quadrant of A Deck, and two (2) others in the aft quadrant support a variety of purposes. The Crew and Stewards Pantries on

B Deck are used for storage. Storage areas for spare and repair parts, and consumable materials are generally located in Cargo Hold 7 and Cargo Hold 5 near the Instrument Shop. Deck storage areas are described below.

2.8.3 PAINT LOCKER AND PAINT MIXING ROOM

The Paint Locker is located on the port side aft of the tonnage well; it is fitted with a working explosion proof ventilation fan, and a fixed FM-200 fire suppression system. The FM-200 system can be actuated from a pull station outside the space, or by a pneumatic fire detector that ties into the Fire and Smoke Detection system.

Paint mixing is performed in the former Fan Room inside the Docking Bridge structure on the Main Deck, port side. The mechanical ventilation serviced by the Fan Room is not operational. The Fan Room is easily accessed from the Paint Locker by the inclined stairs leading from the tonnage well to the Main Deck.

2.8.4 INSTRUMENT SHOP

The Instrument Shop is located in Cargo Hold 5 on the 16'-6" Flat, immediately aft of the Control Room. Power is available in the shop, which is used for a variety of purposes including electronics repair, engraving, and various display preparation activities.

The power supply and control cabinet for the Impressed Current Cathodic Protection System is located in this space.

2.8.5 DECK STORAGE CONTAINERS AND LOCKERS

There are four (4) twenty-foot containers stowed on the Main Deck, inside original container sockets, two (2) each to port and starboard of the Cargo Hold 3 hatch coaming. The primary purpose for these containers is to act as a screen to shield the Decommissioning HVAC units mounted on the No. 3 Hatch from view. The aft container on the port side is the Electrician's Shop, as described above. Immediately forward, the container has been cutaway on its bottom, top, and inboard side to clear the boom rest. Materials which do not need protection from the weather can be stored inside the footprint of this container. The two containers on the starboard side are designated for deck stores. The doors face fore or aft so that both containers are accessible.

2.8.6 MAST HOUSES

There are three mast houses, located beneath each of the three cargo handling trusses. The cargo gear is de-rigged and inoperative. The hydraulic machinery inside the mast houses, if not removed, is drained and inoperable. Working aft, Mast House No. 1 is reasonably intact. Portions of the mast house are outfitted as supply and exhaust for the Dehumidification Machinery fitted in Number 1 Hold, B Deck, to service Cargo Holds 1 and 2.

Mast House No. 2 is similar to No. 1. Some equipment removals have been made to permit ductwork penetrations for the two ventilation fans mounted on the house top. One fan is the exhaust fan for the Cargo Hold 3 toilet facility. The other is the forced exhaust for the Decommissioning HVAC system servicing the radiological working areas of the RC and Cargo Holds 3 and 4; this exhaust stream is fitted with a radiation monitor and automatic shutdown circuits. There is a legacy lighting transformer bank still in service inside the house. Mast House No. 2 also supports two of the four electric winches that service the Cargo Hold 4 Main Deck Hatch, which are mounted on the house top. The operator station is located on the former Cargo Gear operating platform on the truss work above the mast house. This truss also supports the ship's Leslie Tyfon air whistle, whose control switch is located on the starboard aft face of the mast house.

Mast House No. 3 has had most of the cargo gear machinery removed. The aft air compressor is installed inside the mast house, as is the aft Dehumidification Machinery that services Cargo Hold 6. The original vertical access trunks for holds 6 and 7 are located inside the mast house.

2.8.7 PROMENADE DECK LOCKERS AND FAN ROOMS

There are four deck lockers located at the forward end of the enclosed Promenade, two each port and starboard. The port lockers are designated for emergency equipment storage; one for damage control equipment, and the other for radiological emergency supplies. The lockers on the starboard side house deck maintenance and other bulky items, such as folding tables for use in the Eisenhower Room or on deck.

The two fan rooms at the aft end of the Promenade Deck structure have been gutted of their machinery, and are designated for additional storage.

2.8.8 FORWARD AND AFT BOSN'S STORES

The Forward Bosn's Stores are accessible by booby hatch near the bow, and are not in use. The Aft Bosn's Stores are located on B Deck aft of the tonnage well, and are presently neatly organized and in-use.

2.8.9 CARGO HOLD STORAGE AREAS

Cargo Holds 6 and 7 are used to store a wide variety of materials. A revised stow plan is in development for these areas. In general, Hold 6 still contains a number of spare and repair materials from the ship's original outfitting. These will be relocated forward to Cargo Holds 1 and 2, which store similar material already. Some material may be disposed as scrap. The categories of other material include, but may not be limited to the following:

- Vintage furniture from Passenger and Officer Staterooms.
- Retained historic furnishings, equipment and fabric from renovated spaces.
- Period equipment and furnishings for future restoration, sympathetic architectural use, replacement of missing items, or interpretive display.
- Material and equipment obtained via GSA, in excess of the immediate need.
- Portable display items for public access events.
- MARAD hardcopy documents retained for program office needs.

Most of the material onboard will remain with the ship and be conveyed, except for those identified in the last bullet.

Cargo Hold 1 contains a significant quantity of original equipment and material, consolidated into this location from other dispersed areas of the ship. In particular, all of the tackle from the ship's cargo gear rigging is stored on B Deck, along with the removed decorative ceramic tiles from the enclosed Promenades, the swimming pool steel "beach", and the shuffleboard courts. Components of the refueling mockup and certain nuclear spare equipment (e.g., unused sections of primary coolant piping) is also stored in Cargo Hold 1.

2.9 PUBLIC AND DISPLAY SPACES

Not all of the interior volume of NSS is employed for current operations and decommissioning, and some areas enjoy a dual use. MARAD has maintained public visitation to NSS since it arrived in Baltimore in 2008, including an annual public open house on National Maritime Day, multi-day visitation during Maryland Fleet Week events, other special events and tours by request. NSS is also employed on an occasional basis as a meeting site for federal, state or local agencies, and non-profit groups whose organizational purpose has a nexus to NSS. Meetings of up to 100 persons have been conducted satisfactorily using the ship's existing facilities and equipment.

The ship has been adorned with interpretive displays regarding the ship's history and context, as well as individual aspects of the ship's design, function, operating history, architectural elements and décor. All of this material is considered part of the ship's outfit, and will convey with the ship. Some limited exceptions apply, and may continue to be developed over time as part of the ship's Collections Management Plan. As an example, the large wooden shell plating model displayed in the Card Room is on loan to MARAD by the Independence Seaport Museum. If the ship is preserved, specific arrangements will be required for this item, or it will be returned to ISM.

2.9.1 TOUR ROUTE

MARAD offers both guided and self-guided tours of *Savannah*. The tour highlights passenger and crew staterooms, services, dining, entertainment, art, cargo holds, and the ship's navigational and propulsion system features, such as the pilot house/bridge, engine room, and control center. In the 1960s, passengers could view these spaces while sailing on board or when visiting the ship in port. Visitors can view these same spaces today. MARAD created a brochure for the self-guided tour. These spaces are further detailed in the following sections.

Tours also focus on the decommissioning of *Savannah's* nuclear power plant. MARAD has arranged Cargo Hold 4 so that tours can observe decommissioning activities when they are active. The Steward's Mess is a decommissioning gallery, and Cargo Hold 4 B Deck has short videos highlighting decommissioning activities.

2.9.1.1 Tour Route Accessibility

As noted in 2.2.1, the ship is not ADA accessible, but is fitted with a chair lift to provide some access among and between C Deck and the Promenade Deck. The ship's Passenger Elevator is not in service. It connects C Deck to the Boat Deck, running within the Main Stairwell enclosure. The hoist machinery for this elevator is on top of the trunk in a machinery room on the Navigating Bridge Deck. Studies have been made to relocate the hoist machinery forward into an out-of-service fan room, and extend the elevator trunk to service the Bridge Deck. The Battery Locker in the Emergency Diesel Generator flat can be converted into a lobby of equal size to the existing lobbies on lower decks. This elevator would not meet ADA requirements if reactivated, but could provide some access to all of the principal decks on the tour route.

2.9.2 MAJOR PUBLIC SPACES

Major public spaces on *Savannah* typically include spaces intended for dining, social activities, and entertainment. The Main Lobby, with restored counter and furnishings, is located on the ship's A Deck. The display cases in the lobby are original and house artifacts and memorabilia. The Main Stairwell is accessed from the Lobby, and extends four of the ship's six decks, from the B Deck level to the Boat Deck. The stairwell changes color from deck to deck, and features murals on the floors.

The Veranda Lounge is located on the aft end of the Promenade Deck, and has enclosed walkways outboard, and a glass wall overlooking the swimming pool (note, the pool is planked and used for ceremony seating) and promenade deck aft. The lounge features a dance floor, and the backlit wine rack behind the bar symbolizes the Trilinear Chart of Nuclides. The exterior portion of the promenade deck serves as the ceremonial deck, and the bell, nameboard, and builders' plate (replica) are displayed here. The Eisenhower Room, which previously served as the Main Lounge, is located at the forward end of the Promenade Deck. The room is used for meetings and other gatherings, and features a permanent timeline exhibit illustrating *Savannah's* history. Other semi-permanent exhibits are displayed in the adjacent Card Room and Writing Room.

The Dining Room is on B deck and seats about 75 people. A gold-plated model of SS *Savannah* (namesake of the NS *Savannah*), the first steamship to cross the Atlantic Ocean, is suspended in a glass panel at the foyer's entrance. An expansive wall sculpture entitled "Fission," by Pierre

Bourdelle, is located at the aft end. The overhead lights feature a decorative grillwork representing the swirling atom.

These spaces have contemporary functions as meeting and reception spaces, briefing areas, and for the Main Lobby, access control and as an emergency response center.

2.9.3 DISPLAY SPACES

In addition to the major public spaces, *Savannah* also features a number of display spaces, which generally include accommodations and services. Passenger Stateroom A-3 is located on A Deck and was one of 30 passenger staterooms. A Deck also features the Barber Shop (with original equipment) and Hospital. The hospital included a full surgery suite, wardrooms, as well as equipment for radiation monitoring. Food was prepared in *Savannah'*s Main Galley, located on B Deck. It features an early microwave oven - the Raytheon RadaRange. The ship also had a laundry room, which is located on C Deck.

Staterooms for officers and the Chief Engineer are located on the Boat Deck. The officer staterooms were single occupancy with a private bath, and the Chief Engineer had a larger space. The Chief Mate Stateroom is also on the Boat Deck and is currently used as the ship's amateur radio club space. This space will be climate controlled in 2024. Crew staterooms are located on B and C Decks and featured double-occupancy rooms with shared bath. The Crew Mess, Officer's Mess, and Steward Mess are all located on B Deck. The Crew Mess houses displays highlighting nuclear energy and power. The Steward Mess serves as a decommissioning gallery as noted in Section 2.9.1. The Officer's Mess serves as a working space.

2.9.4 ENGINE ROOM AND CONTROL ROOM

The Control Room is located on D Deck and features the main control console, which is *Savannah's* nerve center. The Control Room is separated from the Engine Room by a bulkhead with windows. Dominating the center of the engine room are the components of the steam propulsion system: main steam turbines, reduction gears, and auxiliary electric motor. Both the Control Room and Engine Room are visible from a viewing gallery located on C Deck, and by guided tours. The ship's propeller was removed in 2008, and is stored on the Cargo Hold 7 Main Deck hatch. It can be viewed from the aft end of the Promenade Deck.

2.9.5 NAVIGATING BRIDGE DECK

The Navigating Bridge Deck is the uppermost interior deck of the ship, and contains the spaces required for controlling the ship. The Gyro and Radar Room, Pilot House, Chart Room, and Radio Room are all located on the navigating bridge deck. All of the navigation and communications equipment on this deck is original to the ship. The ship's Emergency Diesel Generator is located on this deck, but is only accessible on guided tours.

2.9.6 MUSIC ENTERTAINMENT SYSTEM

The ship's original Galbraith-Pilot music entertainment system has been restored to operating condition. External outputs are provided to the central unit. Original speaker circuits are active in all public spaces, and throughout the vessel from C Deck to the Boat Deck. This work has been carried out by the NSSA, and is continuing with restoration of several weather deck speakers on the Promenade Deck.

3.0 DECOMMISSIONING MODIFICATIONS

3.1 OVERVIEW

As described in Section 1.3, the broad concept by which MARAD designed decommissioning modifications to NSS was to replicate, as much as possible, the typical facilities employed on a landside nuclear power plant within the ship's hull. This approach had two major benefits. First, it kept the licensed decommissioning activities within the licensed site boundary, which is defined by the perimeter of the ship's hull. And second, it meant that a full-service shipyard would not be required for the work, and thus costs could be greatly reduced for the necessary landside components of the work. The tradeoff between improving the ship versus creating an expanded licensed footprint on third-party property with all of the associated liability and costs involved, easily favored the approach taken.

With crane and transportation services placed pierside (or waterside for barge-crane heavy lifts), the facilities required inside the ship were basically in two forms; administrative spaces for project managers, work planners, and related professional disciplines (quality control, quality assurance, radiological protection, etc.), and industrial facilities for handling and packaging the waste streams generated by dismantlement inside the Radiologically Controlled Areas, with additional support facilities and infrastructure for the craft workers performing the dismantlement and waste management activities. These facilities were on top of the pre-existing spaces for the baseline activities of ship husbandry and licensed protective storage.

Cargo Holds 3 and 4 were modified to provide the industrial and craft worker support facilities. The large block of Crew Staterooms on B Deck starboard was gutted and rebuilt to provide the project administrative facilities, including dedicated office space for use by the NRC when onsite. Independent auxiliary systems were installed, including climate controls for the Reactor Compartment and cargo holds, a heel control system, and process and sanitary water storage. A temporary contaminated water collection and discharge system was installed in Cargo Hold 3, and will be removed prior to license termination. All of these modifications are technically reversible changes; they can be removed, and the ship can be restored to its original configuration at the discretion of a future recipient. In practice, MARAD considers them to be semi-permanent. These semi-permanent modifications are described through the balance of this chapter.

3.2 MODIFICATIONS TO CARGO HOLDS

Cargo Holds 2, 3 and 4 were originally modified for visitor access and displays during the ship's museum service at Patriots Point. The location of stairs and bulkhead arches followed a once-through flow path, and thus were not logically arranged to suit decommissioning (note, the arches were welded closed in 1994 before the ship was removed from Patriots Point). Furthermore, the stairs themselves were not OSHA compliant, and so they were removed over the summer of 2018. Where possible, original locations of stairs and arches were repurposed and upgraded; otherwise, deck openings were plated over, and new openings constructed using standard marine practices. Two (2) enclosed stairtowers were constructed from C Deck to the Main (A) Deck located diagonally opposite from each other; with one located on the port side of Cargo Hold 2, and the other on the starboard side of Cargo Hold 4. With the installation of stair access to cargo holds 2, 3 and 4, their respective vertical access trunks were designated and placarded for emergency use only.

A common characteristic throughout the cargo holds has been the repair and retrofit of lighting systems, and where necessary, the removal of legacy museum-era fixtures. In Cargo Hold 2, the lighting effort has largely been confined to original incandescent fixtures, which have been rebuilt and fitted with LED bulbs for improved illumination. The hatch square is open from D Deck upwards, so several new LED fixtures have been installed to better illuminate the hatch square. Cargo Holds 3 and 4 have received similar treatments, but depending on the deck and illumination, have received supplemental LED lighting in

modern marine fixtures. The large open hatch square in Cargo Hold 4 is fitted with four high intensity LED floodlamps on B Deck to illuminate the area from above.

3.2.1 CARGO HOLD 2

Cargo Hold 2 is fitted with a fireproof (A-60 marine joinery) stairtower from C Deck to weather. The stairtower is in the aft port corner of the hold, and connects to Cargo Hold 3 through their common transverse bulkhead via a fume tight door on B Deck, and Watertight Door No. 1 on C Deck. A non-fireproof ladder is fitted outside of the stairtower enclosure to connect C and D decks within the hold only – there is no D Deck connection to Cargo Hold 3. Space is available to fit a watertight door in that location. Cargo Hold 2 has no specific decommissioning function, however, it is the site of collected solid ballast used to reduce the ship's drag beyond what could be achieved with water ballast only. Significant weights removed from other cargo holds, principally the tween deck hatch leaves, were relocated to Cargo Hold 2 and stowed on the Tank Top, so as to not further reduce the ship's lightweight. Large component spare machinery, such as the spare main turbine rotors, were relocated from storage in Cargo Hold 6 to Cargo Hold 2 during the 2020 shipyard availably, again with a view to reducing the ship's drag by redistributing deadweight items within the ship. The NSSA owns two other solid ballast objects located in Cargo Hold 2; a cutaway Liberty Ship boiler donated to them by Project Liberty Ship (S.S. *John W. Brown*), and a 1906-vintage 4-cylinder triple expansion steam engine. These objects are not expected to be removed unless the ship is destined for scrapping or reefing. A fume tight door is fitted on the port side of B Deck to connect Cargo Holds 1 and 2.

3.2.2 CARGO HOLD 3

Cargo Hold 3 was modified for both administrative and industrial / support functions. Three hold also supports the two Decommissioning HVAC systems, whose machinery is mounted on top of, and penetrates through, the main deck hatch cover. One system services the administrative spaces, while the other services the industrial spaces, which must be isolated from one another. Welded foundations and coamings around the ductwork penetrations in the hatch cover were installed in the summer of 2020. Two Trane commercial / industrial HVAC units were installed. The system is described in Chapter 4. The HVAC supply and exhaust duct network branches out over the hatch square on B Deck to connect throughout holds 3 and 4, and the Reactor Compartment. The portside tween has no designated function, and serves as an interior passageway connecting holds 2 and 4. The starboard aft corner of B Deck connects via a fume tight door to the stairtower installed in Cargo Hold 4. The HVAC exhaust radiation monitor is located near centerline aft on B Deck. This monitor will be removed after license termination.

Cargo Hold 3 C Deck provides administrative and industrial support facilities. Within the hatch square is the Training Center, which is essentially a large classroom / theater-style facility constructed and finished to match architectural details elsewhere in the ship. The training center makes use of the deck sheer and ship's trim by placing the projection screen along the aft bulkhead, and allows seating to rise away from the screen. The center is Wi-Fi enabled and equipped with projection equipment that will convey with the ship. On the port side is the four-person toilet facility described in Section 2.4.4. The starboard tween is open and designated for training and mock-ups; it has also been used for material laydown and storage.

As mentioned in 2.2.1, Cargo Hold 3 was outfitted with a visitor sideport by Patriots Point, at some time prior to 1992. The modification did not follow standard marine construction practices, but the location proved useful for the secondary access point for decommissioning workers and material handling. The ABS required that a watertight vestibule be fitted around the shell opening, or else they would require the hinged plates to be removed and the shell repaired as original. Consequently, a watertight vestibule was constructed around the sideport area during the 2020 shipyard availability. Two bolted soft patches are provided, and while the ship is alongside a pier conducting normal operations, an automatic double-door with interior crash bar is fitted into one opening, and a security window for a watchstander is fitted in the other. A bolted manhole is similarly provided for the sanitary discharge hose through connection.

Based on the damage stability analysis described in Chapter 4, C Deck was made a horizontal watertight boundary by welding the hatch seam, and all through-deck penetrations. To maintain the watertight boundary, the vertical access trunk openings into C Deck were welded closed. This modification also serves as a ventilation boundary between the administrative spaces on B and C Deck, and the industrial spaces on D Deck and the Tank Top. The access trunk doors at B Deck and A Deck are placarded and administratively controlled to preserve the ventilation boundary.

D Deck is located within the RCA working envelope, and is accessible from Cargo Hold 4 via a non-tight arch fitted with a standard stateroom door for ventilation control (flow balancing). As described in Chapter 4, Cargo Hold 3 below C Deck is common with Cargo Hold 4 and the RC (inboard sections only) for damage considerations. This area is fitted with the four water storage tanks described in 2.4.1. It is also the location of the temporary contaminated liquid collection and discharge system, which will be removed when decommissioning is complete. Because this system was fitted, the hatch leaf seams and through-deck penetrations were welded closed as a preventative protection against the spread of any spills that might reach the deck, effectively making D Deck watertight. This configuration is not accounted for in the damage stability analysis, but does improve the ship's performance if flooded.

The Tank Top of Cargo Hold 3 was reserved for additional material handling and packaging space, however, the contractor elected not to use it. A design for a 10' x 10' arched opening connecting Cargo Holds 3 and 4 at the Tank Top was not implemented, however, a six-foot tall manway was cut to connect the spaces. MARAD tentatively plans to install an inclined ladder to connect the Tank Top to D Deck.

3.2.3 CARGO HOLD 4

Cargo Hold 4 was also modified for both administrative and industrial functions. The waste material handling and packaging function is performed at the Tank Top and D Deck levels. Shielded Low Level Radioactive Waste (LLRW) intermodal containers are landed and removed from the Tank Top through the Main Deck hatch using a pierside, truck-mounted crane. This operation requires that the hatch square be open from the bottom to the top of the hold, and so a ventilation boundary had to be constructed to isolate the industrial center of the hold from the administrative spaces surrounding the hatch square on B and C Decks. Reactivation of the hydraulically-actuated intermediate hatch leaves was not considered.

Several intermediate hatch leaves were removed from each deck level, and relocated to storage in Cargo Hold 2. A fume tight trunk was constructed on B and C Decks around the perimeter of the resulting hatch opening. The top of the B Deck trunk seals against the underside of the Main Deck hatch covers when they are closed. At the D Deck level, a standard six-foot high chain link fence is installed around the perimeter of the open hatch square, with a removable section along the starboard hatch coaming for material handling to the Tank Top. The approximate clear opening of the cargo hold 4 hatch square is 21' fore-aft, and 24'-6" port-stbd. A seven (7) foot wide bridge plate (one intermediate hatch leaf) is available to span the transverse opening at any of the intermediate decks, to facilitate landing or transfer of materials on those decks. The bridge plate must be lifted and set using a pierside crane. The bridge plate is stowed on the main deck port, adjacent to the number 4 hatch.

Cargo Hold 4 is fitted with a fireproof (A-60 marine joinery) stairtower from C Deck to weather. The stairtower is in the forward, starboard corner of the hold, and connects to Cargo Hold 3 through their common transverse bulkhead via a fume tight door on B Deck, and Watertight Door No. 2 on C Deck. The stairtower enclosure continues down to D Deck, but is currently configured for emergency egress from D Deck only as the stairs cross the radiological control / ventilation boundary, but are not fitted for isolation. After license termination this stairtower can be used without restriction.

An open set of industrial stairs is fitted against the aft bulkhead, and runs from the Tank Top to B Deck. The section from C Deck up to B Deck is caged and intended for upward emergency egress only. From C Deck down, the stairway is the primary means of access and egress between the RCA Control Point and

the industrial working spaces of the cargo holds and RC. The stairway is enclosed around the opening on D Deck as a ventilation boundary.

Most of B Deck is not designated for any particular purpose. In the aft port corner of the hold, a small enclosure was constructed to protect a high voltage power distribution panel. Adjacent to this enclosure is a fume tight door that connects to the B Deck port passageway inside the original habitability zone of the ship. The emergency exit from the aft stairs is located adjacent to this door, which provides immediate access to the original port, forward ladderway, and an escape path upwards to the Main Deck. Another fume tight door connects Cargo Holds 3 and 4 on the port side. The hatch square trunk is fitted with six observation windows, to allow visitors to watch decommissioning activities. The starboard side of the trunk is fitted with a six-foot wide sliding "barn door" style opening to allow for material handling on this deck (see the bridge plate discussion above).

The C Deck level provides the controlled entry point into the industrial / radiological working areas of the Reactor Compartment, and holds 3 and 4. The RCA checkpoint with dosimetry issue and receipt is located on the starboard tween. A quick-acting watertight door connects this area to the RC public passageway, with the ship's original forward starboard ladderway providing access to B and A Decks, similar to the arrangement on B Deck port. The decommissioning administrative offices are conveniently located on B Deck just aft and above the RCA checkpoint. The port tween is outfitted as a locker-style donning and doffing area for personal protective gear. The C Deck barn door for material handling is located on the port side. These arrangements and furnishings will be left in place after license termination.

The D Deck level is devoted to waste material handling and temporary storage. On the starboard tween, a hinged double watertight door with a clear opening of about 6' x 6' connects Cargo Hold 4 to the Reactor Compartment and Containment Vessel Portal (see section 3.3.3 below). This door is used for both personnel and material movement. Waste packaging takes place on the Tank Top level. At the base of the aft stairs is the pumping station for the Heel Control System. The Tank Top and D Deck levels will be surveyed and released for unrestricted use during the license termination process.

3.3 EXISTING (E), PERMANENT (P), AND TEMPORARY (T) ACCESSES

Ship accesses have been reactivated or modified for decommissioning activities. These include the Reactor Compartment exterior hatch, the Cargo Hold 4 Main Deck hatch, and the Auxiliary RC Hatch. The CV Cupola Head and Shield Ring were removed in preparation for dismantlement activities. These components will be restored into place after license termination.

3.3.1 CARGO HOLD 4 MAIN DECK HATCH COVER (E)

The existing Cargo Hold 4 Main Deck hatch leaves and hatch coaming wheel tracks have been reconditioned and repaired. There are four hatch leaves, hinged in pairs; each hinged pair retracts to expose the hatch opening. The original hydraulic operating system was not restored, and the original lifting pistons have been removed. Four electric winches, operating in pairs, retract (and lower) each hinged pair to open (and close) the hatch, and there is an operating instruction in place for opening these hatches. Two of the winches are installed on the Promenade Deck at the forward edge of the deckhouse. The other pair of winches are installed on the top of Mast House No. 2. The original cargo gear operating platform on the truss work overlooking Cargo Hold 4 has been fitted with the winch operating controls for this hatch. The Hatch will remain operational until the ship is conveyed. The hatch is fitted with tarpaulins to supplement the renewed seals at the leaf seams.

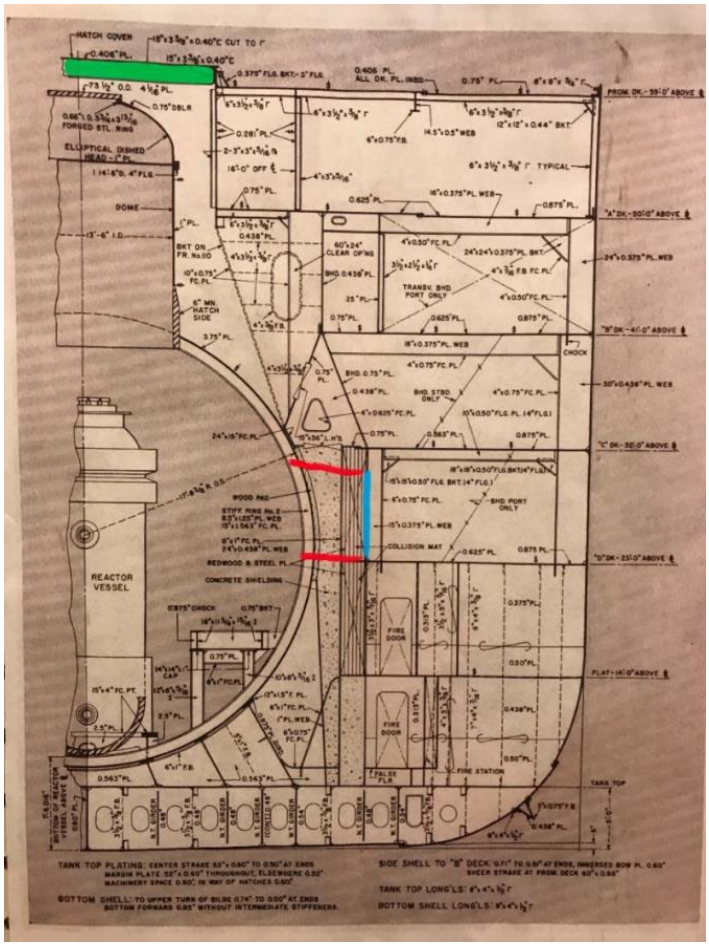
3.3.2 REACTOR COMPARTMENT AUXILIARY TRUNK (E)

The ship is fitted with an existing auxiliary access trunk that provides access from A Deck into the Cold Chemistry Lab complex, and the Reactor Compartment Lower Level (RCLL). The trunk is located on the ship's centerline, at Frame 99. The five-foot diameter shield plug at D Deck has been

removed, and a vertical ladder fitted into the opening to provide an additional means of access or egress from the RCLL. The shield plug is stowed on the Main Deck, between cargo holds 2 and 3. The trunk is secured with a pontoon hatch cover on the Main Deck that must be removed by lifting. The hatch opening is set into the ship's superstructure, which is hinged on its forward face, and fitted with a hinged hatch cover on the Promenade Deck. The shield plug will not be reinstalled.

3.3.3 CONTAINMENT VESSEL PORTAL ON D DECK (P)

In 2018 a horizontal portal was built to create walk-in access into the Containment Vessel. The portal is located on D Deck, at Frame 109. The surrounding refrigerated storeroom was gutted to create an open vestibule at the portal entrance. Two manually-operated, double-swing watertight doors were installed; one at the portal entrance to maintain the integrity of the Reactor Compartment bulkhead, and the other to connect the vestibule with Cargo Hold 4. In addition, the original inclined ladders connecting C to D Decks, and D Deck to the 14' Flat were removed to provide clearance during the portal construction. These ladder sections were repurposed in Cargo Hold 4. A new inclined ladder to connect C and D Decks was installed in the Starboard Stores Chute at Frame 122 to replace the ladder removed for construction of the portal. A new vertical ladder connecting D deck to the 14' Flat (Stabilizer Room) was installed in the starboard vertical chute at Frame 122. This ladder continues down to the Horseshoe Passageway at the Tank Top level. Due to the nature of the construction, this newly created access is considered permanent.



Vessel Cross Section through Containment Vessel showing horizontal portal location between red lines; new WT door in blue; Promenade Deck hatch in green.

3.3.4 REACTOR COMPARTMENT HATCH, PROMENADE DECK (T)

A temporary exterior truss with connecting cables and winches has been installed on the hinged Reactor Compartment Access Hatch on the Promenade Deck. The structure replicates an original industrial installation that was in place during the reactor defueling project in 1971. Original drawings were employed as the basis for the contemporary design. This structure, including winches and control stand, is intended to be removed when the decommissioning project is complete. The exterior of the superstructure bore witness marks to the 1971 installation after the original structure was removed. It is likely that the same witness marks will remain after the current structure is removed. The deck foundations for the winches, however, will be ground flush to the deck, and through-deck cable penetrations will be removed and inserted (cabling will remain in place, properly stowed and ended).

3.3.5 DECOMMISSIONING INDUSTRIAL ACCESSES (T)

A large access, approximately 5' x 6', was made through the watertight bulkhead between Cargo Hold 4 and the RCLL. A cross-flooding duct, approximately four feet high, connects the Port and Starboard Fin Stabilizer Rooms, and is fitted against the bulkhead inside the perimeter of the cargo hold. The access was placed on top of the duct, and slightly offset to port from the ship's centerline. This area of the bulkhead is shielded by lead and polyethylene only. No concrete removal was required. This opening provides for personnel access and egress, and material handling during dismantlement activities in the RCLL. A staging platform level with the access opening is installed on the tank top to provide a pathway for personnel, and also a landing area for material handling. The staging will be removed at the end of the project, but the access will not be restored (an inclined stair may be fitted). Nevertheless, it is considered a temporary installation. As described in Chapter 4, damage stability calculations were performed to demonstrate that the ship can remain afloat with the access in place, and the contiguous spaces flooded.

The only other decommissioning-related accesses are the personnel accesses that connect holds 3 and 4 at the Tank Top and C Deck levels. These are described in preceding sections, and will remain in place after license termination. The steel plate removed in way of these accesses was retained, and the accesses can be restored in future. Therefore, these accesses are considered temporary.

3.4 OTHER INTERIOR MODIFICATIONS

3.4.1 PRE-DECOMMISSIONING ADMINSTRATIVE OUTFITTING

The pre-existing office and administrative spaces continue to be used to support decommissioning and ship husbandry activities. Although not converted as part of the decommissioning project, they are described herein for context, and in the interest of completing the ship's technical description.

In 1963, the Cargo Hold 6 B Deck was converted into ten (10) single occupancy staterooms for reactor operator trainees, with a central conference room. This area was fitted with a climate control system that was independent of the original ship's systems. This feature made conversion of this room block attractive for the protective storage staff. The area was rehabilitated for staff use beginning in 2009. The original asbestos (acm)-bearing magnesite underlayment and vinyl-asbestos composition deck tiles were removed, along with the asbestos-containing marinite finished ceilings. Replacement, non-acm materials were installed, and a new HVAC system was installed, while reutilizing original duct work. The stateroom and conference room bulkheads and arrangements were retained, and provide ten (10) offices, some of which are designated for two occupants.

Beginning in 2008 and continuing over several years, the Passenger Staterooms on the port side aft quadrant were similarly converted for office use by MARAD staff. The forward-most room, A-18, was converted into the Security Office and Watch Stander station. A security window for access control was inserted into the Sideport Vestibule. The Fire and Smoke Detection system and other

auxiliary systems are consolidated in this space. The rooms from A-18 aft to and including A-34 are climate controlled. Ceilings were replaced to facilitate this work, but the magnesite underlayment did not contain acm above the threshold for replacement, and so was left intact. Remnant carpeting was removed, and vinyl deck tile installed. The Purser's Office on Centerline was included in this work. These two efforts, together with the Records Vault and Tech Library described below, completed the outfitting of climate-controlled administrative spaces before either the 2017 public space renovations or decommissioning modifications.

3.4.2 RECORDS STORAGE AND SHIP'S TECHNICAL LIBRARY

Records and Document Storage areas were created during the protective storage period by converting each of the port and starboard blocks of six (6) crew staterooms on C Deck between frames 151 and 168 (Cargo Hold 5). The port side rooms were converted in 2008, and serve as the Records Vault. The Vault is outfitted with fire-safe cabinets for hardcopy NRC records retention, approximately twenty (20) 3-drawer legal depth lateral files, and bookcases above. Four (4) Warner-Boyd tracked and movable shelving units are also provided. The Vault is expected to house the ship's copy of the consolidated document and records collection, which will convey with the ship unless it is scrapped or reefed. The starboard staterooms were converted into two spaces in 2018; a gallery of about 16' x 35', and a smaller workspace of 12' x 16'. The gallery currently houses the archival collections of MARAD HQ program files and the Galveston, TX shore-based correspondence and maintenance records covering the period from 1956 – 1972. All of these spaces are climate-controlled.

The ship's Technical Library is located in the midships area. It was upgraded in 2005-2006 by the MARAD Division of Logistics Support. The Tech Library includes drawings, technical manuals, and the ship's operating-period correspondence and maintenance records. The adjacent Passenger Baggage Room was used to store additional documents and records from 1971 onward. This central complex was climate controlled in 2008.

MARAD is presently engaged in an effort to organize the ship's entire document and record collection, and to prepare a comprehensive collection for transfer to the National Archives and Records Administration (NARA) after the license termination. The ship will retain, for the future use of any recipient, as complete a collection of technical information as is available today, as well the copy of the consolidated document and records collection mentioned above.

3.4.3 PUBLIC SPACE RENOVATIONS

Extensive renovations were carried out to the ship's public spaces under a heritage funding allocation in 2016 and 2017. The Dining Room, Main Lobby, Veranda, Eisenhower Room (former Main Lounge) and the connecting Card and Reading Rooms had their original perforated asbestos acoustic ceiling panels removed, and replaced with perforated aluminum panels designed to replicate the appearance of the original ceilings. Independent climate controls were installed in each location, and lighting fixtures were restored and converted to LED. All of the spaces play a role, by virtue of their central locations, in contemporary ship operations. In particular, the Eisenhower Room has been designated as the site of public meetings associated with licensing actions, and stewardship activities.

Just forward of the Main Lobby on the port side, the former Chief Purser Office and Stateroom, and the adjacent "Spare Room" were gutted and converted into a Conference and VIP reception space. These rooms were heavily damaged during the museum era, with the spare room burned out by a fire involving combustible materials stored in the space. The space is climate controlled, Wi-Fi enabled, fitted with marine joinery whose finish simulates the original wall coverings of the Spare Room, and is likewise sensitive to other existing architectural features. Period decorative elements from former MARAD RRF vessels round out the space. Furniture in the space is provided by the NSSA.

3.4.4 CONVERSION OF CREW STATEROOMS ON B DECK FOR DECOMMISSIONING

Outside of the cargo holds, the interior modifications for decommissioning include the reconstruction of the previously-damaged and deteriorated (Hurricane Hugo, c 1989) crew staterooms on B Deck to provide office and administrative workspaces for the large staff of contract engineers, planners and radiological protection personnel. The stateroom modifications were limited to the starboard side, and did not affect the passageway perimeter bulkhead. This bulkhead, and its interior doors, was retained to maintain the visual character of the surrounding space. The interior stateroom spaces were completely gutted and rebuilt to provide eight (8) large gallery-style climate-controlled common work areas, and one (1) smaller private office. All acm-containing materials were removed, with the exception of intact magnesite cement deck covering (tile underlayment, and structural fire protection). The electrical distribution, lighting, and internet service in these spaces is new. The approximate sizes of the galleries and office are:

- One at 16’ x 32’ (designated for conference room / group meeting space)
- Four at 16’ x 24’
- Three at 16’ x 16’
- One at 12’ x 16’ (designated for use by the NRC)

The galleries are finished to represent the former Crew Staterooms through choice of colors, and simulated or sympathetic architectural details.

4.0 SHIP OPERATIONS

Since May 2008, NSS has been operated by MARAD in a static condition at a fixed layberth in Baltimore. The initial purpose of this layberthing activity was to prepare NSS for continued long term retention under the NRC SAFSTOR protective storage criteria. The SAFSTOR criteria differ in some significant ways from the circa 1974 Mothballing criteria under which NSS was originally laid-up and prepared for storage (c 1975-76). The Mothballing criteria also applied during the ship's museum service from 1981 to 1994, and again for the period of retention in the James River Reserve Fleet (JRRF) to August 2006. For about twenty months, NSS was shifted in the Hampton Roads port complex, undergoing two shipyard availabilities with one short-term layberthing period between the yards. In Hampton Road the ship was staffed on a regular basis, as opposed to the intent of the Mothballing criteria, which defined a substantially unattended condition.

The budget for the SAFSTOR technical upgrade program was cut soon after NSS arrived in Baltimore. Had the budget not been cut, and the technical upgrades completed, NSS would have been returned to retention in the JRRF for an indeterminate period. Instead, however, the ship was maintained in Baltimore in a condition of attended (i.e., staffed) protective storage until the budget issues could be resolved. These eventually resolved in favor of the present decommissioning (DECON) and license termination project, which will complete the ship's licensed lifecycle.

Three major functions were performed during the attended period of protective storage: ship husbandry and custodial care; radiological protection (surveys, monitoring and emergency response); and license compliance. Overlaying the baseline nuclear program was stewardship of the NHL, to include periodic and controlled public visitation. In short, the ship was museum-like, although it was not operated as a museum, and visitation was far below museum standards.

Since 2013, MARAD has contracted for integrated services to provide the broad range of ship husbandry, radiological protection and license compliance that are required to meet its NRC requirements. Before 2013, these services were procured separately. Looking forward to the post decommissioning timeframe, a review of MARAD's ship husbandry and custodial services practices may be useful. This chapter also describes the material condition of the vessel, the design standards applied to it, and the various systems and equipment that support its daily operations.

4.1 SHIP HUSBANDRY AND CUSTODIAL CARE

4.1.1 MAINTENANCE STAFF

MARAD contracts for layberthing and ship husbandry services using commercial sources at market prices. On the ship husbandry side, a five-person maintenance staff (i.e., crew) is provided, composed of credentialed merchant mariners. The employment of merchant mariners is a policy choice by MARAD to support qualified personnel who can fill seagoing billets in times of need. The composition of the maintenance staff is as follows (note that some titles may be union-specific):

- A Licensed Officer (Deck or Engine – presently a Chief Mate, formerly a 1st A/E)
- Bos'n
- Electrician
- (2) General Utility Deck Engine

This composition was sufficient during the pre-decommissioning periods of protective storage to carry out the routine functions of ship husbandry, preventative maintenance, coatings maintenance, and housekeeping. Given the ship's heavy reliance on electricity, the ship's Electrician is a critical billet to keep filled, and continuity in the position is quite important. Some as-needed functions, such as line handling, would require additional short-term personnel. When staffing significantly increased for decommissioning (and was exacerbated by COVID cleaning protocols), the

housekeeping and daily cleaning routine workload was shifted to a two-person labor force contracted locally. This functionally increased the maintenance staff to seven (7) persons.

The maintenance staff is supervised by a Maintenance Manager, whose position is similar in some respects to a commercial Port Engineer. From a layberthing perspective only, these individuals are the minimum ship staffing required by MARAD for current operations.

4.1.2 PUBLIC ACCESS EVENT STAFFING

From a license compliance standpoint, visitation is managed under the NSS Access Control procedure, which requires all visitors to be escorted, and where a visitor is defined as anyone who has not been trained and granted unescorted access. Public access is managed under its own procedure, but is constrained by the overarching access control requirements, which ultimately stem from the NRC license Technical Specifications. This is distinctly different from the ship's museum era operations. In that timeframe, general public access to the NRC-licensed site was controlled through the use of hard barricades that defined the acceptable self-guided tour paths through the ship. The barricades ensured that visitors did not encroach on compartments that contained radioactive materials.

In crafting its public access process, MARAD took cues from the museum era experience. Tours are escorted. For group events, such as meetings or receptions, area monitoring by multiple escorts and remote camera monitoring is performed. For large open house type events, a self-guided tour path has been established, with temporary barricades as required, remote camera monitoring, and multiple trained docents (escorts) stationed in strategic locations along the path. Escorts and docents are drawn from MARAD and contractor staff, and from a cadre of individuals who have made gratuitous gifts of service to MARAD – typically under the auspices of the NSSA. Excluding the core staff of watchstanders and first responders, about twenty docents are required for an open house with self-guided tours.

Daily visitation during large events such as National Maritime Day and Fleet Week typically runs up to 800 persons, and it is not uncommon to have immediate occupancy of 400 persons. These numbers compare favorably to the historic limit of 750 persons at any given time, which was factored into the 2017 Fire Hazards Analysis for emergency egress calculations.

4.1.3 HUSBANDRY AND CUSTODIAL ACTIVITIES

The following text is adapted from MARAD's integrated services contract, and describes the scope of the ship husbandry and custodial care tasks carried out by the Contractor, using the maintenance personnel described above. Work that exceeds the basic scope is performed either through subcontracted services, or by acquiring supplemental labor to augment the maintenance staff. Italicized text is excerpted from the contract language.

The Contractor shall physically safeguard and maintain the NSS in a manner that complies … with USCG requirements promulgated by the Captain of the Port for vessels that remain in port; protects the safety and health of the public and environment, and respects the physical structure and furnishings of the vessel based on its status as a National Historic Landmark. The Contractor shall husband the NSS in accordance with the above requirements. To the extent not previously described in the General Requirements section, husbandry tasks include:

- *The inspection and monitoring of the material condition of the vessel proper, its spaces, and operating equipment, machinery and systems; and all maintenance and repair requirements arising from such inspection and monitoring;*
- *The inspection, monitoring and maintenance of the ship's mooring systems, including mooring lines and equipment; and fendering and access equipment (gangways, stairtower, etc.) that is owned by MARAD;*

- *The testing and monitoring of onboard safety, security and surveillance systems;*
- *Marine Port Operations and Emergency Response; and,*
- *Annual Classification and/or other related Third-Party Surveys and Inspections (excluding NRC).*

The Contractor is responsible to maintain the vessel safely moored at the layberth facility at all times. The Contractor shall annually inspect and verify as "fit for service" all mooring lines, mooring equipment, gangways, government furnished fenders and shore connections. The Contractor shall maintain a program to periodically rotate and replace mooring equipment, including fenders, as they wear. During the USCG identified Hurricane Season, and at any other time invoked by the Captain of the Port, the Contractor shall moor the vessel in accordance with the USCG accepted heavy weather mooring plan (HWMP). ... At the outset of the hurricane season, the Contractor shall submit the application to the USCG Captain of the Port for the vessel to remain in port during severe weather.

The General Requirements mentioned are adapted and stated below.

Maintenance & Repair includes all tasks necessary from initial identification of a deficiency or unsatisfactory condition through final acceptance of the corrected item ... This may include, overhauling, repairing, or replacing machinery, equipment, installations and spaces (including structure, habitability areas, cargo areas, etc.) to remedy deficiencies or unsatisfactory conditions. Maintenance work is anticipated as having to be performed in all areas of the NSS ...

Housekeeping refers to general custodial functions necessary to keep the workplace clean and presentable. Tasks include cleaning the ship's interior spaces and offices; removing garbage; sweeping, swabbing and waxing interior decks; lamping and re-lamping; removing standing water and debris from exterior decks; and sanitary.

Vessel Maintenance, Repair and Housekeeping duties are enumerated in the contract, and may in some cases duplicate material excerpted above. The enumerated duties are:

- *Line, Anchor, Stores and Material handling;*
- *Small boat launching and handling;*
- *Operation of Ship Systems and Equipment;*
- *Cleaning, touch-up, painting (interior and exterior including surface preparation) and Custodial;*
- *Lamping, and basic electrical repairs and maintenance;*
- *Minor Structural Repairs;*
- *Carpentry;*
- *Light Mechanical including Plumbing;*
- *Basic craft skills including Welding, Grinding and Fitting; Operation of Material Handling Equipment;*
- *Marlinspike, Rigging and Lifting, and Basic/Advanced Seamanship;*
- *Marine Emergency Response including Firefighting and First Aid, and;*
- *Surveillance, Monitoring and Testing of Systems & Equipment.*

4.2 HULL CONDITION AND MAINTENANCE

The ship's hull plays a critical role in the NSS license compliance program. It functions first as the licensed site boundary, within which the NRC currently holds primary jurisdiction, and MARAD nuclear compliance programs and procedures apply. The hull is also the primary safety structure associated with the nuclear power plant – in two significant ways. It is the first line of defense in protecting the nuclear power plant from external hazards, such as heavy weather and marine accidents (grounding, stranding, allision, collision, etc.). It is also the last line of defense to protect the environment and public from any harmful effects generated by the power plant itself. Given these critical functions, it is understandable that the material condition of the hull is of great interest to NRC and MARAD (note, the NRC interest

will end at license termination). MARAD puts significant effort and resources into maintaining the hull in a satisfactory condition to meet its license obligations.

4.2.1 MARITIME REGULATORY OVERSIGHT

The NSS is not certificated by the United States Coast Guard (USCG), but the USCG has cognizance over the vessel as a marine object within the sector that it occupies, and whenever the vessel is under tow. Typical areas of interest for the Coast Guard are heavy weather mooring, pollution controls, and facility / vessel security. Because the ship is not certificated, and falls under a use category which Coast Guard would not normally inspect, their traditional focus area of occupational safety is instead managed under the NRC license. After license termination, the jurisdictional authorities of the USCG, EPA and OSHA will require clarification.

4.2.2 HULL CLASSIFICATION AND CONDITION

The ship's original ABS classification was cancelled in 1984, during the museum operating period. MARAD sought to restore ABS classification beginning in 2006, so that it could have a credible, independent third-party service to report on the hull material condition, and define the scope of any needed corrective actions. Classification was restored in 2008 after MARAD's application was accepted, and extensive surveys performed during the drydocking availability earlier that year. The ship is classed as an Inland Barge in River Service because this service most closely approximates the conditions under which NSS is maintained, while defining a comprehensive set of structural rules on which to assess material condition. An ABS-approved Lay-Up Plan describes the scope of classification services performed on an annual basis, while intermediate and special surveys are progressed on a voluntary schedule during shipyard availabilities, such as the drydocking period in 2019-2020. ABS conducts an Annual Inspection of Lay-up which focuses on hull material condition, and the actively- managed equipment such as the Stores Davit. The vessel is subject to annual diver-based underwater inspection based on MARAD policy.

Overall, the hull is in good condition above the waterline and internally throughout. No shell plating or frame repairs have been required from 1994 to present, except for several interior hatch coamings that were inexplicably cropped for air conditioning ductwork while at Patriots Point. Ultrasonic thickness gaugings of the tank tops were found satisfactory, and showed little diminution over time. There have been some limited instances where deck repairs were required, including two inserts in the bridge wings where the deterioration of a heavy mastic coating had allowed water to penetrate and sit, and a small insert made in the Main Deck at the forward edge of the No. 4 Hatch coaming – again due to standing water. The exterior perimeter of the wheelhouse and some deck houses were fitted with flat bar doublers where the deck to bulkhead connection had eroded – also due to standing water. Deck drains were repaired or renewed during a 2006 topside availability at Colonna's Shipyard, and generally function well today. Rudder and shaft locks were fitted before the ship was towed from Galveston in early 1972, and remain in place and functional.

The enclosed Promenade is one weak spot. This area was laid with a ceramic tile finish over magnesite cement when the ship was built, and as noted elsewhere, two riveted seams run the length of the deck. The tile and cement were removed in 2006-2007, and revealed considerable erosion and deterioration of the deck. The deck has been well maintained since then, and is kept coated and preserved. No attempt has been made to repair or renew the deck surface because it lies above the passenger staterooms below, which would require significant alterations to perform the steelwork.

The exterior underwater hull condition is described in drydocking below.

4.2.3 DRYDOCKING AND HULL INSPECTION

Savannah has been drydocked three (3) times since being removed from museum service. It was also drydocked before the museum period, in 1975. The 1975 drydocking was performed before it was

known that the ship would be chartered to Patriots Point. MARAD had anticipated that the ship would enter long-term protective storage, probably at the Beaumont, TX reserve fleet site, for a period of up to fifty (50) years. Although there is no direct evidence on this point, it appears unlikely that MARAD intended for the ship to endure those 50 years without at least one intermediate drydocking. Nevertheless, substantial measures were taken to prepare the underwater hull for long-term storage. All sea chest openings were fitted with welded blank cover plates. The hull was blasted and coated with a high-performance (for the day) system. And the cathodic protection system was groomed and tested. There was one problem which was not addressed. From about 1967 onwards, a pitting phenomenon had been observed on the hull. The cathodic protection system was a partial response to this condition. There are some reports on file that document concern about hull pitting in the mid-1980s and again around 1991-92. The ship did in fact hole-through later in 1992, and the need to remove the ship for drydocking and inspection was the immediate reason for Patriots Point to end the museum charter, and return the ship to MARAD.

NSS was drydocked in Baltimore (Beth Steel) in the summer of 1994. The pitting was immediately obvious upon the removal of hull growth. Also obvious was a complete failure of the cathodic protection system, to the extent that five of the six anodes had physically detached and were missing from the ship. During this drydocking the underwater hull was blasted to near-white metal (SSPC SP-10), and a three-coat epoxy anticorrosive system was applied. No anti-fouling was applied. The pitting condition extended over virtually the entire surface of the hull. A rule of thumb was developed, and pits were filled by clad welding. If the pit was deeper than ¼" (most of the shell plating is ¾"), or if it was shallow but greater than ½" diameter, it was welded. Thousands of pits were welded, along with about 1,000 linear feet of eroded butts and seams. Four doubler plates were welded to eroded areas of the wind and water line on the port side. The cathodic protection system external components were all replaced, and the system was groomed and demonstrated to be functioning. The sea chest blanks were intact and unaffected by pitting, and only a handful of rivet heads required any attention. Both fin stabilizer blanks were doubled-over. The fore and after peaks were entered and inspected, and diesel oil tanks below the engine room and Cargo Hold 5 were pumped out and cleaned (other tanks were not entered). The ship was towed to the James River Reserve Fleet in mid-July, after three (3) weeks on the dock in generally favorable weather. MARAD implemented an annual diver-based underwater hull inspection beginning in 1995. The intent at that time was to resume the projected 50-year protective storage plan, with drydocking scheduled on a ten-year interval.

Off the dock the ship's draft had decreased, such that the doubler plates and adjacent lightly-eroded areas were above water. While at James River, NSS was nested alongside the Army Corps of Engineers nuclear power barge STURGIS. After about two years, and based on service reports from Electrocatalytic, the OEM for the cathodic protection system, the system was de-energized and replaced by an external hanging-anode system. This was typical fleet practice, and was intended to prevent any cathodic protection performance interferences between the nested hulls. Planning for a 2004 drydocking started in 1997, but this activity was pushed out to 2006 as the response to NRC license violations (issued in 2001) and initial decommissioning planning efforts took priority. The 2006 drydocking pushed into 2007 as circumstances played out, and then to 2008 as MARAD recovered from the decommissioning suspension. The ship was finally drydocked in February – March 2008 in Hampton Roads (Norshipco).

The 2008 drydock planning drew heavily on the 1994 experience, and featured additional measures to protect the hull structure. The drydocking also coincided with restoration of class, and so certain actions were required by ABS in order to credit a Special Survey Hull. Among the actions taken were:

- The entire hull envelope from keel to rail including the flat sides of the superstructure was water-jetted to near-white. The hull was coated with a three-coat high performance epoxy

anti-corrosive system. One coat of copper self-polishing anti-fouling was applied. The freeboard and superstructure topcoat is a high performance polyurethane that remains serviceable today.

- Three of the four 1994 doublers were removed and the shell inserted.
- The propeller was removed (and is stowed / displayed on Number 7 hatch), and the exposed tailshaft fitted with a mild steel cap. The stern tube packing inside the shaft alley was renewed.
- The cathodic protection system was serviced and reactivated.
- Weld repairs to eroded butts and seams were made as required.
- Clad welds and rivet heads were subjected to close-up survey and accepted with minor repairs.
- All double bottom and peak tanks were opened for survey and inspection, except for the four tanks within the Reactor Compartment.
- Several cargo hold tank tops were cleaned, prepared and coated.
- The anchors and chains were ranged and painted; the anchor windlass was blasted and painted and restored to function; the chain lockers were cleaned, repaired and recoated.
- The hull was gauged internally and externally. A scantling reassessment was performed by ABS to ensure that the existing structure was satisfactory for the intended service based on the contemporary Rules. On that basis the ship is overbuilt, but the reassessment accounts for clad weld repairs to the pits that would not have been an allowable repair if the ship was classed in 1994. In general, the plate thickness surrounding individual pits shows very little diminution.

By observation, there appeared to be little change to the hull condition from 1994. Upon docking, the 1994 epoxy topcoat was generally intact, but easily removed. Shortly after undocking, NSS was moved to Baltimore and layberthed. Annual diver-based underwater inspections continued, but this time with ABS surveyors in attendance. Repairs, modifications and upgrades to the ship since 2008 have been made under ABS review and survey.

The most recent drydocking was conducted in 2019 – 2020 in Philadelphia. This was a combined maintenance drydocking, and decommissioning effort. While on the dock, the contaminated pumps contained in the two Charge Pump Rooms were removed via shell accesses cut for the purpose, and relocated to storage areas established in Cargo Hold 4. Exterior modifications to support the emergency egress ladders and spring line weldments were carried out. The underwater hull was blasted, and the coatings system renewed, and the anchors and chains were again ranged and painted (but not disconnected). In the intervening years from 2008, and since the 2015 loss of S.S. *El Faro*, the ABS focus on hull structure was intensified. Although once again by observation there was little change to the hull condition, more repairs to eroded shell areas and rivets were required than anticipated. Through prior planning and preparation, the last of the 1994 doubler plates was removed and the shell inserted. Specialist rivet crews were brought down from Ohio to address rivet repairs, but crucially, no rivets had been lost over time, and no rivets were replaced. Because some areas of erosion high on the hull would have required extensive demolition of refrigerated storerooms in order to insert the plate, a high-build splash zone epoxy coating was applied instead.

Overall, there was no significant change in the hull condition from 2008 to 2020, and the coatings system applied in 2008 performed well. In this availability, there was no observed deterioration or delamination of previous clad weld repairs. Additional seams and butts required welding, but not to an extent not previously experienced. As noted in section 2.5.6, the cathodic protection system was completely renewed.

4.2.4 TOPSIDE PRESERVATION

The ship underwent a topside availability at Colonna's Shipyard in 2006. Much of the work performed was inside the ship. Exterior preservation work was limited in scope, with the understanding that the ship would be treated at the upcoming drydocking. Section 4.2.2 described some of the topside steel work performed during this availability.

During the 2008 drydocking, and while the ship lay at berth in the yard, the entire topside envelope was prepared and painted. In most cases, the structure was not taken to bare metal. This included the mast houses, cargo gear trusses, main deck hatches and coamings, deck fittings, among others. However, all surfaces were cleaned and prepared to some extent, and the entire exterior received at least one coat of epoxy and the urethane topcoat.

MARAD maintains an annual regimen of topside maintenance, including a thorough and complete washdown every spring, and a 3-year phased coatings program. Some of the higher-trafficked areas, such as the aft Promenade Deck, are coated annually.

4.3 STABILITY MANAGEMENT AND MAINTENANCE OF WATERTIGHT INTEGRITY

At no time during decommissioning planning was serious consideration given to performing dismantlement and large component removals with the ship on a drydock. If decommissioning is considered from the marine perspective of major machinery replacements, which first involve the removal of old components, it can be seen that performing the decommissioning dismantlement work afloat would be well within the traditional scope of ship repair and conversion. With this decision made, attention turned to considerations of the ship's stability, the effect that ship modifications and dismantlement activities would have on stability, and how those effects would be managed.

Two aspects of vessel stability were considered: intact and damaged stability. Since the ship was removed from service and placed into protective storage, MARAD has generally only been concerned with intact stability, as the ship has normally been berthed in a stationary condition, in reasonably protected areas. Even during infrequent towing operations, the regulatory concerns center on intact stability. Damage stability, in its truest sense, would not apply to NSS. However, the ship is still exposed to certain hazards, even in the relative safety of a port and at a protected berth. The actual experience of the 1992 Patriots Point cargo hold flooding incident also had to be considered. As decommissioning planning matured in 2018, it became apparent that several large industrial accesses would be required to perform dismantlement and material handling, and that these would open several compartments to each other. In this condition, even minor damage could become catastrophic if the consequences of flooding scenarios were not evaluated, and compensatory measures adopted. As an addendum to damage stability, it became equally important to assess, repair and maintain the integrity of the ship's watertight boundaries, so that the consequences of flooding could be limited to the planned effects of the decommissioning industrial accesses. These subjects are described in the following sections.

4.3.1 STABILITY

As noted in Section 2.1, the NSS is very close to the lightship condition. The ship is stable in this condition with adequate reserve buoyancy so long as the ship is undamaged. The decommissioning effort was expected to remove somewhere around 1,000 tons of equipment and material for disposal, and during the original planning process this created some concern that the ship would become too light, and potentially unstable. A Deadweight Survey was performed in 2007, as a first step towards evaluating the stability effects of decommissioning. The detailed planning for ship modifications did not start until decommissioning funding was available and the required National Environmental Policy Act (NEPA) assessments were complete. A concerted effort was then made to limit weight removals from the ship to the extent practicable (see intermediate hatch leaves described in Chapter

2), and to add solid ballast where available. The need for some compensatory ballast was recognized, and MARAD intended to utilize the double bottom tanks below the RC for this purpose; however, the timing for these actions depended on the disposal of contaminated liquids and radiological clearance of the tanks.

A design objective was to reduce the ship's six (6)-foot trim. Although the ship was constructed at an inclination of about seven (7) degrees before launching, the shipyard was accustomed to working in this condition when rigging and handling large objects. This is not normally the case with a ship afloat. The trim angle was not a consideration when the ship was ballasted in 2008 for its tow to Baltimore – in that circumstance, a greater trim was desirable. To minimize trim, all water ballast was confined to double bottom tanks from the Reactor Compartment forward (note, the reactor itself was only 12" off midships). Any further trim reduction could only be accomplished by redistributing deadweight items within the ship, generally by moving and consolidating material as far forward as practicable. MARAD also sought to add solid ballast where it was reasonable to do so. The deadweight relocations and installation of solid ballast were completed during the 2019-2020 shipyard availability, as were most of the structural modifications to the ship. An inclining experiment was conducted in February 2020 to determine the ship's initial stability condition before dismantlement, and to finalize the ballast arrangements.

Stability calculations were performed for the before and after dismantlement condition to determine whether additional water ballast was required. Based on the initial scope of dismantlement, which included the complete Neutron Shield Tank (with lead shielding) / Fuel Transfer Tank structure, ballasting of the RC Void Tank and Fresh Water Shield Tank (FWST) were required to maintain positive stability with adequate margin. The Void was ballasted after the ship returned to Baltimore. The FWST contained contaminated liquids and required cleaning and surveying (and possible remediation) before it could be ballasted. In February 2022, MARAD accepted an alternative dismantlement approach which leaves the exterior portion of the NST/FTS structure in place, including the bulk of the exterior lead shielding. Retaining this structure obviated the need to ballast the FWST for major component removals. Ultimately, the conclusion from the stability analysis is that the ship is stable in the post-decommissioning end state, with a reserve margin of about 1.4' with either the Void Tank or FWST ballasted. This would decrease to about 1.2' if both tanks are empty. The end-state ballast condition is not known at the time of writing.

Savannah was originally built to a two-compartment standard of subdivision. The possibility of sustaining two compartment damage at the layberth is quite small, and with watertight boundaries intact, the ship should survive any minor damage that would induce flooding, or any incidental flooding arises from leaks (e.g., through a pitted surface). However, the planned decommissioning modifications would intentionally expose the ship to two and potentially three compartment damage in the area of Cargo Holds 3 and 4, and the Reactor Compartment. A damage stability analysis was performed to determine the effects of these modifications in a flooding event. Assuming uniform flooding, the ship was shown to reach equilibrium at the level of C Deck, roughly following the deck's sheer line (forward draft of 38' at equilibrium). In fact, the flooded waterplane was slightly above C Deck inside Cargo Hold 3, which prompted the modification to make that deck watertight.

4.3.2 WATERTIGHT INTEGRITY

The key to the damage stability analysis above is that the watertight boundaries are intact. This requires, in any flooding scenario, that the watertight doors below B Deck are closed. The true watertight condition of transverse bulkheads could not be tested; however, MARAD performed light leak surveys to identify any small penetrations remaining from the ship's museum service. These were permanently repaired by welding. Large penetrations, such as the arches described in Chapter 3, and pipe penetrations for HVAC and sanitary facilities (removed in 2018) were either confirmed to have been plated over (c 1994), or repaired (2018-2019). Other than the industrial accesses described

in Chapter 3, all structural modifications involving watertight boundaries were made using standard marine practice, and under review and survey by ABS. The NSS ABS Layup Plan describes the watertight integrity design criteria employed by MARAD. The decommissioning modifications did not degrade the ship's watertight integrity beyond the intended result.

4.3.3 WATERTIGHT DOORS

The ship is fitted with ten (10) existing and new (decommissioning) watertight doors. None are capable of remote operation. The doors have been fitted with a position (open / closed) indicating system, whose panel is located in the watch stander's office in A-18.

Watertight doors below B Deck in cargo holds 2, 3 and 4, and the RC, must be closed at the end of each day. Doors may be opened for transit, such as the WT doors associated with the new stairtowers in cargo holds 2 and 4. These doors are fitted with easily-operated hand closing devices. The double-hung dogged watertight doors at the CV Portal and adjacent vestibule into cargo hold 4 may remain open during the workday, but must be staffed when open, and closed if staff is not available. All of these doors must be closed during any alarm event that requires evacuation of the ship.

The existing, original hydraulic sliding watertight door on C Deck at Frame 126 can only be operated manually, at the door. When the door is closed, fore and aft access across Frame 126 (between the Reactor Compartment and Engine Room spaces) can be made at A and B Decks.

4.3.4 BALLASTING AND HEEL CONTROL

Except for the independent heel control system (see below), the ship does not have a functional bilge and ballast system. Any fill, transfer or discharge of liquid ballast must be accomplished with independent pumps, and hoses rigged through tank manholes.

The forward double bottom sea water ballast tanks, up through and including the Reactor Compartment port and starboard tanks, but excluding the number 4 hold port and starboard tanks, are filled with fresh water treated with sodium silicate. This liquid ballast is considered fixed. The engine room starboard diesel oil tank is partially filled with treated fresh water, to compensate for a natural port list induced by the decommissioning modifications and exterior egress ladders. This tank is filled with an Argon inert gas blanket in the upper void space; the argon must be replenished periodically as the tank vent allows some air exchange over time. The manhole covers are fitted to connect the gas supply, and to monitor the oxygen content of the tank atmosphere without removal.

A skid-mounted heel control pumping system has been installed in Cargo Hold 4 at the Tank Top, and connected to the 4 port and 4 starboard ballast tanks in the ship's double bottom structure. These tanks have been fitted with new suction / fill piping, and cross-vented to one another to create a closed-system. Water is pumped from one tank to the other to keep the ship more or less on an even keel for lifting operations. At other times, a slight heel (list) to one side or the other is desirable to prevent the accumulation of standing water on the exterior decks.

4.3.5 DAMAGE CONTROL PUMPING ARRANGEMENTS

See 2.5.7 for the damage control circuit description. In the event of a flooding incident, ship's force can deploy the portable submersible dewatering pumps to the cargo hold vertical access trunk closest to the flooding location. Each trunk is equipped with a rigging attachment point to allow ship's force to lower a single pump to the bottom of the trunk, and begin dewatering operations. Each pump is equipped with 150' of discharge hose, which can be led to the Main Deck for overboard discharge. The pumps are periodically tested in a recirculating mode.

4.4 CLIMATE CONTROL SYSTEMS

The ship has been incrementally outfitted and equipped with climate control, aka HVAC systems, that are independent of the original engine room systems, and which do not require a licensed on-duty engineer to

operate. The systems are all closed, and do not require pumped cooling water to operate. They are commercial grade systems. Care has been taken to place exterior equipment, such as compressor units, in locations where they are sensitive to the ship's original appearance. As an example, the exterior units servicing A and B decks aft of the Main Lobby are clustered on the top of the Number 3 Mast House, in way of removed cargo gear winches. The large units for the cargo hold HVAC systems installed on top of the Cargo Hold 3 main deck hatch are an exception to this rule. The units have been painted a sky-blue color, and surrounded by four shipping containers in original c1967 deck fittings as a partial view block.

All of the ship's HVAC units are fitted with automatic shutdowns triggered by the Fire and Smoke Detection system. The ship's Booklet of General of General Plans has been revised to include a sheet depicting the scope of climate-control coverage.

4.4.1 OFFICE BLOCKS

HVAC systems installed from 2009 through 2012 service the office blocks on A Deck in the aft port quadrant from A-18 through A 30, and B Deck Cargo Hold 6. These systems utilize free standing fan units, and either original ductwork (B Deck), or new flexible ductwork connected to original ceiling louvers (A Deck). On A Deck the return airflow is natural, with louvers fitted to the bathroom doors in which the fan units are located.

The large office block on B Deck starboard from Frame 96 to 168 (Staterooms C1 to C43) is serviced by new split systems installed in 2020, with self-contained ceiling cassettes and line sets for the heat transfer fluid and condensate.

4.4.2 RECORDS AND DOCUMENT STORAGE AREAS

The Cargo Hold 5 C Deck Records Vault, Technical Library and Baggage Room systems were installed in 2009, and are similar to the A Deck office block. The fan unit serving the Tech Library and Baggage Room discharges conditioned air directly into those spaces, without ductwork except for a simple through-bulkhead penetration where the rooms are divided. The Records Vault unit is installed in a bathroom and is connected to the larger space by a through-bulkhead penetration, with a similar natural return through a louvered door.

The document storage galleries on the Starboard side of C Deck were outfitted in 2018, similar to the 2020 B Deck office galleries constructed for decommissioning.

4.4.3 PUBLIC SPACES

The four major public spaces, and the A Deck Conference Room were outfitted between 2017 and 2019. These spaces feature a similar split system with self-contained ceiling cassettes. In the Main Lobby, the cassettes are mounted inside the overhead, and provide air through original HVAC registers. The Eisenhower Room, Veranda and Dining Room each have four (4) ceiling mounted cassettes which are visible in the ceiling.

The Pilot House was equipped with two bulkhead-mounted split units, installed in place of original steam radiators. The Pilot House had not been air conditioned before this modification in 2017.

4.4.4 CARGO HOLD AND REACTOR COMPARTMENT HVAC

All of the aforementioned spaces were in the original habitable zone of the ship, and their boundaries were already insulated as required. Cargo Holds 3 and 4 were not previously climate controlled, and so as part of the modification, they were insulated on the side shell from the Tank Top to the Main Deck connection. The underside of the Main Deck, including the Main Deck hatch leaves are also insulated. Insulation consists of 4" mineral wool laid over the horizontal battens (or between Main Deck framing), covered by fire retardant canvas, which is coated with fire retardant paint.

The climate control system is an industrial system designed to maintain ambient conditions inside the industrial working areas within OSHA limits heat and cold stress limits, for worker productivity and performance. The system exhausts air from the dismantlement and waste material handling areas through high efficiency particulate air (HEPA) filters and maintains those areas under a slight negative air pressure by use of a large exhaust fan located in the original A Deck Reactor Compartment Fan Room (the room was gutted, and the new fan installed in 2019). The areas requiring HEPA exhaust are segregated from other climate-controlled areas by ventilation boundaries described in Chapter 3.

4.4.5 DEHUMIDIFCATION SYSTEMS

Two large capacity dehumidification machines were installed when the ship was placed into retention in the reserve fleet. These machines have been retained onboard the ship, and repurposed to service several of the cargo holds which are used to store equipment. One machine is located forward in Cargo Hold 1, and provides dehumidified air to Cargo Holds 1 and 2. The air is distributed through the ship's original cargo hold ventilation ductwork, with the transition connections made on B Deck. Exhaust air is vented to atmosphere through the Number 1 Mast House. The second machine is installed inside the Number 3 Mast House and services Cargo Hold 6.

4.5 ALARM, MONITORING, SECURITY, AND COMMUNICATIONS SYSTEMS

The vessel is equipped with two independent monitoring and alarm systems providing intrusion, flooding and fire detection, which are configured for remote call-center monitoring. At the current Pier 13 layberth, remote monitoring is provided by Tyco & BFPE International, and a valid fire alarm will result in a call notification to the Baltimore City Fire Department (BCFD).

The ship is fitted with a small stub mast equipped with indicator lights and a horn to alert local off-ship personnel (e.g., an off-hours security guard) to an alarm. The stub mast is fitted to the top of the house, and combines inputs from the two independent systems. The indicator lights are provided with battery backup.

4.5.1 SECURITY OFFICE

As noted elsewhere, Passenger Stateroom A-18 was modified in 2008 to serve as the ship's Security Office. It is adjacent to the main entrance gangway, and has been ergonomically equipped to allow a Watch Stander to monitor the entrance, maintain cognizance over personnel entry and exit, perform individual interactions for access control (i.e., log-in and admit contractors and visitors, clear error codes, etc.), and prepare muster sheets for evacuations, among other duties. The space has been outfitted incrementally and serves as a centralized command point for the following functions:

- Access Control
- Alarm Response
- Actuating General Alarm and Fire Screen Door Release
- Monitoring the position of Watertight Doors
- Monitoring Camera Surveillance Systems
- Monitoring Radio Communications

4.5.2 FIRE AND SMOKE DETECTION SYSTEM

The ship's original system is inoperable and not in service. Pull stations remain in place, some of which are placarded as not in service. In general, a modern pull station is located in the immediate vicinity of the vintage stations.

The ship was fitted with a Siemens MXL marine-rated fire and smoke detection system in 2009. The MXL system became functionally obsolete about ten years later, with new parts support discontinued. The hardware was replaced by a Honeywell Notifier system in 2020. Distribution cabling was, for

the most part, retained. The MXL system scope was expanded in the Notifier system to include additional cargo holds and exterior locations, as well as the Reactor Compartment and Containment Vessel. It is being expanded into the Engine and Control Room in November 2023. The central panels, backup batteries, and local monitoring are installed in the A-18 Security Office. External status indicators are located in the Port Passenger Sideport, and near the Main Deck connection to the emergency egress ladder (this is also a fire department emergency access point).

The Notifier system is multi-loop, Class A computerized and programmable. It is approved by the USCG, NFPA, and Underwriters Laboratories (UL) for marine use. The system is powered by a 120VAC uninterruptible power source via a 120/120VAC isolation breaker. The isolation breaker will prevent power spikes from damaging the Alarm Panel internal components. It consists of numerous smoke detectors, heat detectors and pull boxes throughout the ship, which will activate speaker strobe repeaters with alarm warnings and pre-recorded spoken directions. The system was designed and installed in consultation with the BCFD with the intent to meet the city fire code.

The alarm system is monitored by BFPE International, who also installed and services the system. Monitoring is via cellular and internet communications (see 2.4.3). A valid fire alarm (i.e., the system is not in Test mode) automatically alerts the fire department; if the system is in Test, the call center notifies the duty roster. The system also triggers a shutdown circuit to all HVAC units. Because the climate systems are independent of one another, and make minimal use of the ship's original ventilation ductwork, the shutdown circuit obviates a need for fire dampers. The system is keyed to evacuate the entire ship upon receipt of an alarm.

This system will be maintained until the ship is conveyed, and will convey with the ship unless it is scrapped or reefed.

3.5.1.1 Public Address and Annunciation

In accordance with NFPA 72, Fire Safety Codes, a speaker microphone is located at the Alarm panel in A-18, and speaker strobes are located throughout the normally occupied positions of the ship. Additional microphones allow for manual annunciation, and are located in the Main Lobby (Purser's Desk), Eisenhower Room and on the aft starboard corner of the Promenade Deck.

At a future date, the Music Entertainment System will also allow for public address via microphones.

4.5.3 GENERAL ALARM SYSTEM

The ship's Henschel General Alarm system was reactivated and placed into service in 2009. The original scope of the system was expanded for decommissioning by placing alarm bells into cargo hold working areas, and exterior stations fore and aft. A master switch for the system is located in A-18. Power is supplied by the DC Rectifier, supplemented by backup batteries (see 2.5.2). This system will be maintained until the ship is conveyed.

4.5.4 INTRUSION AND FLOODING DETECTION

The current version of the intrusion and flooding detection system is a Honeywell Vista 128 analog system with local and remote monitoring. It succeeds previous systems back to 1972. Flooding detectors (float switches) are placed in every ship compartment contiguous to the sea, typically in rose boxes. This system will be maintained until the ship is conveyed.

4.5.5 INTERIOR AND EXTERIOR CAMERA SYSTEM

A Camera Surveillance System has been installed to allow video monitoring of the ship's internal and external areas. The system display is mounted to the control console in A-18, where it can be monitored by the on-duty Watchstander. The system also allows for remote monitoring by a cell phone app. There is no intent to remove this system or its components from the ship after license termination.

4.5.6 HANDHELD RADIO COMMUNICATIONS SYSTEM

The ship is equipped with a licensed (Federal Communications Commission) digital handheld radio communication system. A digital repeater is installed in the shore power room, C-12. The system provides very good coverage throughout the interior of the ship. This equipment is expected to convey with the ship unless it is scrapped or reefed.

4.6 FIRE PROTECTION

The primary means of fire protection on NSS involves the administrative and technical acts of maintaining a safe and clean workspace, controlling the use of transient combustible materials, proper stowage of flammable and volatile materials, maintaining local fire suppression where appropriate (i.e., the paint locker, see 2.8.3), and not invalidating through poor work control (planning and execution) the passive fire protection features of the ship. The ship is not staffed or equipped to fight fires beyond the incipient stage (one or two extinguishers). Primary firefighting is the response of the BCFD. MARAD engages the BCFD on a regular basis for orientation, has filed its Fire Control Plan and related documents in the city's electronic repository, and maintains off-ship fire control technical documentation and access keys for use by responding units. The forward brow can be lowered remotely from the pier to provide off-hours access. Copies of the fire control plan are stowed in clearly marked tubes at entrances to the ship. The balance of this section covers additional aspects of fire protection.

4.6.1 STRUCTURAL FIRE PROTECTION

Under the U.S. and International rules in place when *Savannah* was built, the ship relies on passive structural fire protection to minimize and slow the spread of fire within the ship (allowing time for evacuation and firefighting response). The ship was not fitted with a fire suppression sprinkler system, and no such system was installed during renovations or as part of the decommissioning modifications. The elements of the passive structural fire protection system included the magnesite cement covering on decks (which also served as underlayment for carpet and deck tile), mineral wool insultation (also served as thermal insulation for climate zones), the steel and joiner bulkheads, and joiner doors and ceilings. The joiner materials, depending on location, carried ratings that defined their capacity to resist fire.

Modifications made to NSS have followed the intent of the structural fire protection concept. Construction employs incombustible materials throughout. Framing materials are steel. Joiner bulkheads and ceilings have included:

- Contemporary marine joinery (see 3.4.3, A Deck Conference Room; and 3.4.2, Cargo Hold 5 Starboard C Deck gallery and workspace, 4.5.3 Intrusion Alarm System cabinet in A-38);
- Fire-rated (one hour) Type OX drywall (see 3.4.4 B Deck Decommissioning Administrative and Office galleries; 3.2.2 Cargo Hold 3 Training Center; and misc. joiner repairs to the Boat Deck exterior door vestibules);
- Conventional greenboard drywall (see 3.4.1 ceilings in staterooms A-18 to A-34 and Cargo Hold 6 B Deck office complex; ceilings in the Master and Chief Engineer suites, and misc. repairs prior to 2017), and,
- Aluminum sheet (see 3.4.4 Cargo Hold 5 port side Records Vault, bulkheads)

Fire retardant coatings are employed over Type OX drywall and greenboard. Repairs to magnesite cement underlayment have employed contemporary non-acm Ardex underlayment.

The new stairtowers erected in Cargo Holds 2 and 4 are constructed using modern USCG-approved A-60 joiner bulkheads and doors, with either joiner panels or 4" mineral wool installed over the steel transverse bulkhead that forms one side of the enclosure (note, where part of the stairtower, the sideshell is not insulated). Where mineral wool is installed, it is fitted with fire retardant canvas and coated with fire retardant paint. Similar fume-tight doors are installed in the steel transverse

bulkheads on B Deck at the forward boundaries of Cargo Holds 2, 3, 4, 6 and 7, and the Reactor Compartment.

Combustible and residential grade materials used before 1994 have been removed in their entirety and disposed.

4.6.2 MAIN FIRE ZONES

The integrity of the Main Fire Zone boundaries has not been tested. Penetrations through the fire zone boundaries have employed fire-rated materials and construction details since 2009, beginning with the installation of cabling for the new Fire and Smoke Detection System. See the Fire Control Plan for locations of fire zone boundaries.

4.6.3 FIRE SCREEN DOORS AND CONTROLS

Fire Screen Doors (FSD) are fitted at each passageway penetration through a fire zone boundary, including the perimeter of original stairtowers and ladderways. The ship's magnetic holdback system for FSDs was reactivated around 2010, and is in service (see 2.5.2, DC Rectifier for power information). The system was reactivated to provide a means to reduce smoke infiltration in the event of a fire. The doors are released from a master switch in A-18. Each door is also fitted with a manual release. All of the doors are tested periodically, and freely swing and close. Some doors are missing fire hose flaps on the bottom corner. Smoke tests have not been performed to validate how effectively the doors resist the spread of smoke, however, their performance is generally much better than an open passageway.

4.6.4 FIRE STATIONS AND EQUIPMENT

Portable fire extinguishers are maintained and certified (annually) as required in all interior fire stations throughout the vessel. See the Fire Control Plan for locations and equipment. Additional fire extinguishers are maintained and certified for hot work fire watches; equipment from fire stations is not employed for hot work control.

4.6.5 ORIGINAL FIRE SUPPRESSION SYSTEMS DEACTIVATED

The original shipboard fire-fighting systems are inoperable; these include the fire main and fire pumps, and the fixed CO2 fire suppression system for the engine room and cargo holds. All of the fixed and portable CO2 storage bottles were evacuated between 2008 and 2010, mechanically disconnected, and mechanically disabled.

The ship's outfit includes a skid mounted electrically-operated emergency fire pump. This pump drew suction from the harbor and was configured to discharge to a "Y" Gate hose connection on the Promenade Deck at about Frame 115. This equipment was removed from service circa 2015 when it was determined that the local fire department would not use it, and the ship was not adequately staffed to use it. The pump has not been tested since it was disconnected.

Note that this section does not apply to the FM-200 system fitted to the Paint Locker.

4.7 OCCUPATIONAL SAFETY CONSIDERATIONS

Similar to the fire protection scheme, the primary means of ensuring occupational safety and health is through adherence to safety standards, proper use of tools and equipment, and awareness of safe working practices. Administrative controls are established in the Safety, Health and Environmental Management Plan, and implementing procedures. The ship is inspected overall on an annual basis, and safety concerns are addressed.

The ship's original physical structure met the safety standards of the day, and is largely unchanged. Door openings, for example, may limit occupational capacity based on egress calculations. Marine standards, e.g., the use of deep thresholds at exterior Main Deck doors, also complicate access. Contemporary

modifications apply modern standards and materials with appropriate aesthetic features to remain sensitive to the ship's surrounding historic fabric; an example here is the treatment of handrails.

4.7.1 HAZARDOUS MATERIALS EMPLOYED IN ORIGINAL CONSTRUCTION

Several well-known and typical materials that are now known to be hazardous were employed in *Savannah*'s construction, as was common in that era. These include zinc chromate primers, lead-based coatings, asbestos-containing materials and PCBs. Mercury is also present in thermometers and tank level gauges, some of which have been removed. Elemental lead was employed in radiation shielding within the Reactor Compartment, much of which remains in place – usually covered by polyethylene sheet.

Operations since 1994 have left these materials undisturbed, remediated or replaced. MARAD's integrated services contract requires immediate remediation of fixed hazardous materials that become damaged, or are discovered in a disturbed state. The zinc chromate primers are largely undisturbed because they are most often inaccessible, or where exposed, are surrounded by many interferences (cabling, piping, etc.). The original passageway ceilings (acm-containing marinite) have been removed from much of the ship to allow the installation of alarm and other system cabling, and are the areas where zinc chromate primers are visible. MARAD intends to replace the ceilings with sheet metal. Penetrations through zinc chromate primed steel requires removal of the coatings prior to making the hole.

Lead-based coatings remain in areas where steel or painted joiner work has not been taken to bare metal. This includes interior passageways, some rooms, and portions of the exterior structure. Asbestos-containing materials include marinite joiner panels, felt gaskets at the overlapping edges of sheet metal panels that protect mineral wool insulation, and most pipe lagging (including cold service). Treatment of disturbed asbestos has included both encapsulation and removal. Intact pipe lagging in public and display spaces is being removed on an incremental basis.

The ship contains PCBs in the usual locations for a ship of its vintage. There are no wet transformers containing PCBs onboard the ship. The in-service vintage transformers have largely been replaced, and an ongoing survey will identify any remaining vintage transformers (see 2.5.4). As noted in 2.5.5, a common location for PCBs was fluorescent lighting fixtures; none of which are known to remain on the ship. The issue of PCB compliance will be addressed with the EPA before the ship conveyed.

4.7.2 BIANNUAL SAMPLING PROGRAM

There are several exemplars of EPA Compliance Agreements for museum ships that contain PCBs, and which were donated by the Navy or other government agencies. The agreements stipulate a regular PCB testing program using a defined industry standard. In 2016, MARAD created and implemented a biannual testing and sampling program for airborne and surface PCBs. Similar testing and sampling for lead and asbestos is included in the program. Any results at or exceeding action levels have been remediated.

In 2023, MARAD completed a Human Health Assessment based on the data accumulated from 2016 to 2023, and shared that with EPA Region III for their review.

4.7.3 MISCELLANEOUS REMEDIATION

In addition to the various discussions throughout the sections, the following remediation efforts have been accomplished over the period 2008 to 2023 (note that some bullets indicate the presence of vintage materials, rather than the remediation of such materials):

- In general, the original vinyl-asbestos composition (VAC) decking employed 9" square tiles. Except as noted below, any 9" x 9" deck tile should be considered original VAC.

- All new deck tile installed from 2008 onwards employs 12" square tiles except where used for spot deck repairs (see below).
- VAC tile has been removed entirely from the Main Lobby and Veranda; these spaces have been retiled using sympathetic tile colors, and replicating the original tile patterns. Carpeting in the Eisenhower Room was installed in 2008. Carpeting in the Dining Room is original, as is the 9" blue VAC deck tile.
- Nine-inch VAC tile has been retained in passageways and staterooms where the material was tightly-adherent to the deck. Spot repairs to these decks, which are typically either grey or green tones, use contemporary 12" black tile, cut down to fit into 9" square openings. Where complete segments of passageway tiles are replaced, they use 12" square tiles.
- The original deck tile is in place in the Officer's Mess on B Deck, and in the Barber and Beauty Shop on A Deck.
- The Main Stairwell has residual VAC tile in place, typically gold-flecked black decor. Gaps were filled with contemporary solid black tile to create a smooth surface. The stairs and landings were then topped with printed sheet vinyl that replicates the original gold-flecked décor (scanned from samples), and the decorative treatment on each landing (recreated from drawings and remaining vintage material).
- Residual carpeting was removed from all A Deck staterooms. Except where tiled, the exposed magnesite underlayment was painted. Multiple rooms have been tiled with 12" contemporary tile. The display stateroom, A-3, is fitted with carpet squares donated from the National Geographic Society circa 2012. A Deck passageways has the VAC tile removed, and the exposed magnesite painted, except in the Main Lobby.
- Residual carpeting was removed from the Master and Chief Engineer suites and replaced with new USCG-approved fire-retardant carpeting in a sympathetic décor to the original.
- The Pilot House, Gyro and Radar Room, and Stateroom A-34 were fitted with perforated aluminum ceilings, using material leftover from the major public space renovations. The Pilot House VAC deck tile was removed and replaced in its entirety.
- Surface remediation and treatment of mold and mildew in various areas of the ship, including larger areas within the upper superstructure decks, Passageways surrounding the RC from C Deck down to the Tank Top, and the Steering Gear Room.
- Draining and removal of hydraulic oils containing PCBs from all cargo gear machinery, hatch leaves, mooring equipment, hydraulic control stands, and steering gear. De minimis quantities of residual oils may be present in these locations. The Control Rod Drive hydraulic machinery in its B Deck equipment room has been removed in its entirety as part of the decommissioning effort.
- Remediation of a PCB spill resulting from a vintage transformer failure inside a locker in the A Deck Starboard forward passageway, near the Health Physics Lab. The quarry tile decking in this locker was removed in order to clear the space.

4.8 DRAWINGS AND TECHNICAL INFORMATION

The ship's Technical Library contains as complete a set of drawings and technical manuals as is possible to create from local sources. As noted in Chapter 3, the Technical Library was rebuilt by MARAD's Division of Logistics Support in 2005. As part of that overhaul, all drawings and manuals in the library were removed to a shore location, inventoried and legible copies of drawings were scanned. There were at that time roughly 4,500 drawings of various types, representing about 3,500 individual drawings, of which about 3,000 were scanned. An inventory spreadsheet was created.

There are three major categories of vessel drawings; those created by the prime shipyard (New York Shipbuilding Corp, NYSB), the nuclear steam supply system prime contractor (Babcock & Wilcox, B&W), and the group of drawings that were maintained during the ship's 1962 – 1971 operational period

(Savannah Technical Staff, STS). Vendor drawings are associated with the NYSB or STS categories, depending on the date they were created for the ship. The NYSB and B&W drawings were generally not updated after the vessel delivery in 1962, consequently the STS drawings are the most up-to-date drawings for any given system.

In around 2010, MARAD modified the 2005 inventory spreadsheet into an index, by comparing and adding to the spreadsheet all the drawings from the latest available copies of NYSB, B&W and STS indices; drawings missing from inventory were shown with zero quantity. As drawings have been discovered, they have been added to the collection.

Drawings created after 2008 have, for the most part, been assigned STS drawing numbers and added to that group in the index. New drawings by title have been numbered in the STS-5000 series, and generally depict modifications made to support decommissioning activities. These newer drawings have been incorporated into the ship's Technical Library collection, and will be managed as described in Chapter 3.

4.9 AVERAGE ELECTRICITY CONSUMPTION DATA

As noted in Section 2.5.1, the ship's electrical distribution system is designed around an 800 Amp Shore Power Load Center, and connected loads may not exceed that rating. Decommissioning industrial work has required significant electricity consumption for tooling and equipment. For that purpose, a separate 100 Amp feeder was installed (also see 2.5.1). Both of these feeds come off the same meter, and thus it is not possible to distinguish ship's load from the industrial load on the basis of electricity billings.

The replacement of the vintage lighting load center transformers (see 2.5.4) in September 2018 resulted in a noticeable drop in electricity consumption. In the year over year comparison for which direct data is available, the reduction was 15%.

Electricity consumption in federal Fiscal Year 2018 (Oct 1, 2017, to Sept 30, 2018) was 650,598 kwh, at a total cost of $74,583.57, and an average unit cost of 11 cents per kwh. During FY 2019, the month-to month metrics were similar; however, data for one month is not available, and the ship departed for drydock and was away from the pier for the last three weeks of September. A direct year-to-year comparison to FY 2018 is not available. FY 2019 was the last year in which operations were not substantially influenced by decommissioning activities. The ship was at the drydock until February 14, 2020. In July 2020, the cargo hold HVAC systems became operational, and increased consumption by about 17,000 kwh for the two months for which a direct comparison can be made. This is roughly a 30 percent increase in consumption; however, it is skewed because there was substantial industrial shipwork being performed over two shifts due to COVID occupancy limits. The practical effect of the HVAC systems may be around 25 percent. On this basis, a rough extrapolation of the FY 2018 data shows a projected consumption of about 810,000 kwh. The data for several fiscal years shows the cooling load to range between 50 and 60 percent of the heating load, so the projected consumption will need to be adjusted for any future location which is not comparable to Baltimore's climate.

Data for FY 2021, 2022 and 2023 are all skewed by decommissioning operations, and is not included in this discussion except for the macro heating vs cooling analysis.

5.0 BACKGROUND INFORMATION

Built in 1959, the NSS is the world's first nuclear-powered commercial vessel and served as a signature element of President Eisenhower's Atoms for Peace program. While in service, the NSS demonstrated the peaceful use of atomic power as well as the feasibility of nuclear-powered merchant vessels. NSS operated as a passenger/cargo ship from 1962 to 1965, during which time it travelled 90,000 miles, visited 13 countries, and hosted 1.4 million visitors. Following the successful conclusion of the passenger/cargo phase, the ship entered its commercial phase in September 1965. The ship was operated as a cargo ship generating nearly $12,000,000 in revenue between 1965 and 1970, as well as continuing to serve as a goodwill ambassador for the peaceful use of nuclear power. After successfully fulfilling its objectives, the NSS ceased operations in 1970, and was deactivated and defueled in 1971.

Following deactivation, the NSS was moved to the city of Savannah, GA, where it was to be part of a proposed Eisenhower Peace Memorial; however, the memorial was never established. In 1980, Congress passed public law 96-331, which authorized the Secretary of Commerce to bareboat charter the ship to the Patriots Point Development Authority of South Carolina. The NSS operated as a museum ship at the Patriots Point Naval and Maritime Museum from 1981 through 1994. During this time, the NSS was listed in the National Register of Historic Places (1983) and registered as an NHL (1991) for exhibiting exceptional value in illustrating the nuclear, maritime, transportation, and political heritages of the United States.

Following termination of the charter in 1994, the NSS returned to MARAD and was entered into the James River Reserve Fleet in Virginia. The ship was removed from the reserve fleet in 2006 and underwent repairs prior to being relocated in 2008 to Pier 13 at Canton Marine Terminal in Baltimore, Maryland where it is currently berthed. In 2017, funds for decommissioning of the ship were appropriated. Because the decommissioning and disposition of the NSS is an Undertaking under Section 106 of the NHPA, MARAD initiated consultation in 2018 with the Maryland SHPO, the ACHP, the NRC, the NPS, and other consulting parties. Given the complexities of the Undertaking, including the yet undetermined disposition of the NSS, the parties agreed to develop a PA to guide the execution of the Undertaking.

The PA for the Decommissioning and Disposition of the NSS was executed in March 2023, and it outlines the process by which the disposition of NSS will be considered and executed, concurrent with the decommissioning project. The decommissioning process is well underway, and dismantlement and removal of the major systems, structures, and components that were part of the ship’s nuclear power plant is complete. As part of the decommissioning process, MARAD has made numerous modifications and improvements to the NSS from 2015 through the present. These improvements include: climate controls, sanitary spaces, shore power, mechanical systems, mooring and access/egress equipment, alarm, and monitoring systems (fire/smoke, intrusion, flooding, security cameras), restored public spaces, office, and administrative infrastructure. Details about these modifications and the ship’s overall condition are provided in the preceding chapters.

The disposition process is sequenced to reach a conclusion at the same time that decommissioning ends - effective with the license termination to allow a seamless transition to whichever end-state condition is approved. MARAD anticipates making its disposition decision no later than the license termination date with conveyance to follow three (3) to six (6) months later, after decommissioning demobilization and vessel redelivery contract actions are completed.

6.0 INVENTORY OF OUTFITTING MATERIAL AND EQUIPMENT

PPE Locker

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
1		White Hard Hat	12	8	-4
2		North Half Face Mask	24	21	
3		North Filte Cartridges	24	21	
4		Face shield Frame	10	5	-5
5		Face shield replacement - Clear	50	47	-3
6		Face shield replacement - shaded	5	3	-2
7		Danger Tape 1000' Roll	10	7	-3
8		Caution Tape 1000' Roll	10	7	-3
9		Moldex 2300N95	20	20	
10		3M 8515 N95	40	30	-10
11		3M 8511 N95	30	20	-10
12		KN95	0	520	
13		3M N100	6	6	
14		3M 6200 Half face Mask Medium	10	10	
15		3M 6300 Half face Mask Large	10	9	-1
16		3M 6001 Organic vapor Cartridge	8	8	
17		3M 6001i Organic vapor Cartridge	5	4	-1
18		3M 6003 Organic vapor/acid gas cartridge	8	7	
19		3M 6006 Organic vapor/Multi gas cartridge	8	8	
20		MSA Combination cartridges GME P100 Pair	34	34	
21		MSA Combination cartridges Mersorb P100 Pair	18	18	
22		MSA Combination cartridges GMA P100 Pair	3	3	
23		MSA Miscellaneous filters Individual	21	19	-2
24		MSA Full Face Mask	1	1	
25		Cold Snap Towel	24	20	-4
26		Sweat Band Sponge	75	50	-25
27		Moldex Ear Plugs Box 100	4	2	-2
28		Howard Leight Ear Plugs Box 100	2	1	-1
29		3M Optime 98 Hard Hat Ear Muffs	0	5	
30		3M Optime 105 Ear Muffs	10	8	-2
31		Black Rubber Chemical gloves	2	2	

PPE Locker

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
32		Green Rubber Chemical Gloves	2	2	
33		Kong Impact Gloves L	3	2	-1
34		Kong Impact Gloves M	2	2	
35		Tillman 1485XL Insulated Gloves	7	5	-2
36		Tillman 1485L Insulated Gloves	8	6	-2
37		Tillman 1485M Insulated Gloves	8	4	-4
38		Memphis Cut Pro Gloves XL	3	3	
39		Mechanix Gloves M	8	3	-5
40		Mechanix Gloves L	8	6	-2
41		Goggles	8	6	-2
42		Bifocal Safety Glasses Clear	5	4	-1
43		Bifocal Safety Glasses Shaded	8	8	
44		UVEX Safety Glasses	4	12	
45		UVEX Clear Lenses	32	29	-3
46		UVEX Amber Lenses	12	10	-2
47		UVEX Esppresso Lenses	18	17	-1
48		Condor Side Shields	4	21	
49		Knee High Muck Boots - Yellow - Various sizes	3	3	
50		Knee High Muck Boots - Brown - Various sizes	7	7	
51		Guardian Retractable Fall Arrestor	1	1	
52		Condor Suspension Relief Kit	1	1	
53		Hard Hat Strap	4	4	
54		Back Support M	1	1	
55		Back Support L	1	1	
56		Back Support Belt XL	4	4	
57		Back Support Belt L	2	2	
58		Back Support Belt M	2	2	
59		Tyvek Suit 2XL	50	47	-3
60		Tyvek Suit	12	10	-2
61		Non Skid tread Black	30	26	-4
62		Non Skid tread Caution	12	8	-4
63		Glove Clips	36	34	-2

PPE Locker

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
64					
65		Hard Hat, Blue	8	0	-8
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					
81					
82					
83					
84					
85					
86					
87					

Hard Hats/Back Brace

Qty	Size	Item	Color / Description
9		Hard Hat	NSSS White
22		Brand MSA	E Class White
48	4 boxes	Face Shields	12 per box
3		Level 5 Lens	For gas welding, plasma cutting, & brazing
5		Crown Headpiece	Fits curve face shield
3	M	Back Brace	
3	Lg	Back Brace	
4	XL	Back Brace	

Eye Protection

Qty	Size	Item	Color / Description
10	1 box	Deltaplus Glasses	"cheaters"
30		Radians Glasses	"non cheaters"
94		MCR Glass Safety	Universal / over the glasses-clear safety
28		Pyramex Chemical Goggles	
9		UVEX replacement lense	expresso
16		UVEX replacement lense	amber
28		UVEX replacement lense	clear
5		UVEX Dark Glasses	"cheaters"
60	6 bags	Eye Side Shields	10 qty per bag
15		Condor Side Shields	Individual
300	3 boxes	Sight Savers	100 per box

Hearing Protection

Qty	Size	Item	Color / Description
5		3M Earmuffs	32 NRR
6		3M Earmuffs	30 NRR
100	1 box	Moldex Corded Plug	100 per box
100	1 box	Smart Fit Corded Plug	100 per box
500	2 boxes	Honeywell Earplugs	Individual
500	2 boxes	E-A Risoft Superfit	refills

Respirator/Cartridge

Qty	Size	Item	Color / Description
9	Lg	3M Half Face Shield	serial # 6300-07026
10	M	3M Half Face Shield	serial # 6200-07025
8		3M Cartridge Multi Gas/Vapor	serial # 6006
4		3M Cartridge Organic Vapor Service Life Indicator	serial #600i
8		3M Cartridge Organic Vapor	serial # 6001
7		3M Cartridge Organic/Acid	serial # 6003/07047
11	M	Product North Respirator	serial #7700 series
20		Honeywell Cartridge	serial # 7580 P100
60	10 boxes	MSA Cartridge OV/CL/HC/SD/AM/MA/CD/H2S	serial #GME P100 (6 per pack)
18	3 boxes	MSA Cartridge MV/CL	serial # Mersorb P100 (6 per box)
6	1 box	MSA Cartridge P100/OV	serial # GMA P100 (6 per box)

COVID Mask

Qty	Size	Item	Color / Description
360	9 boxes	K95	40 qty per box
50	5 boxes	3M N95	10 qty per box
6		3M N100	individual
20	2 boxes	Moldex N95	10 qty per box

Gloves

Qty	Size	Item	Color / Description
14	Lg	Double Lined Gloves	Waterproof/Cold
15	XL	Double Lined Gloves	Waterproof/Cold
15	XXL	Double Lined Gloves	Waterproof/Cold
36	XL	Kaygo Industrial Gloves	black & gray (3 pk of 12 ct)
	Lg	Kaygo Industrial Gloves	gray & yellow
10	XL	Kaygo Industrial Gloves	gray & yellow
12	M	Kaygo Industrial Gloves	gray & yellow
14	Lg	Maxiflex Industrial Gloves	black & brown
1	XL	Maxiflex Industrial Gloves	black & gold
2	Lg	Kong Oil & Gas	
2	M	Mechanix Gloves	
1	M	Truefit Insulated	
3	XL	Truefit Insulated	
16	XL	Intra Fit Impact Gloves	black & gold
10	S	Chemical/Oil Resist Gloves	
4 boxes	M	Kimberly Clark	blue nitrile (100 ct per box)
3 boxes	Lg	Kleenguard	blue nitrile (100 ct per box)
6 boxes	XL	Kleenguard	blue nitrile (90 ct per box)
24	XL	Showa Chemical Gloves	2 pk (12 ct)

Sweat Band

Qty	Size	Item	Color / Description
1 bag	100 ct	Eyebrow Sweat Band	
19		Cold SNAP Cooling Towels	
25		Chill Towel Cooling Towels	

Barricade Tape

Qty	Size	Item	Color / Description
6	rolls	Caution Tape	
6	rolls	Danger Tape	

Tyvek

Qty	Size	Item	Color / Description
7	XL	Medtecs Hazmat Suit	
8	XXL	Medtecs Hazmat Suit	
14	XXXL	Medtecs Hazmat Suit	
50	XXL	DuPoint Tyvek	2 boxes (25 ct)

16	XXL	DuPoint Tyvek	1 bag (16 ct)

Gold Locker

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	Inventory June 2022
1		Orange Rain gear Large	2	1	0
2		Tillman 850XL Welding Gloves	4	4	4
3		Black Stallion 320XL Welding Gloves	3	1	1
4		Memphis Cut Pro Gloves XL	7	7	5
5		Mechanix Gloves XL	4	2	1
6		Leather Work Gloves	3	3	3
7		Cotton Jersey Work Gloves	2	2	2
8		2-1/2" Hole Saw	2	2	2
9		2-1/4" Hole Saw	2	2	2
10		Eye Bolts - Various	6	6	0
11		Hook-and-Loop Cable Tie Roll	2	2	1
12		Double sided tape	1	1	1
13		Indoor Carpet Tape	1	1	1
14		3M Duct Tape - Black 2"	8	7	2
15		3M Vinyl Duct Tape - White 1-1/2"	1	1	1
16		3M Vinyl Duct Tape - Black 1-1/2"	2	2	2
17		3M Vinyl Tape - Blue 3"	2	2	2
18		Milwaukee 6-1/2" Circular saw blade	2	2	2
19		Milwaukee 7-1/4" Circular saw blade	1	1	1
20		Milwaukee Portable Band saw blades Sub-compact box 3 pack	1	1	1
21		3/16" Quick Link	8	5	1
22		Fiberglass sounding tape	1	1	1
23		Fire Extinguisher mounting bracket	15	15	15
24		Suction head assembly	1	1	2
25		Phono to BNC Adapter	3	3	1
26		Hose connector FxF	4	4	4
27		Super Glue	3	2	1
28		1/2" Socket Various	1	1	3
29		3/4" Socket Various	1	1	3
30		Tapmatic Edge Lube	1	1	3
31		Fin Tool	1	1	1
32		Garden Hose sprayer	1	1	1
33		Hole saw center drill bit - Assorted	4	4	0
34		Air tool abrasive pads - Various	45	45	45
35		Spreaders 3-Pack	4	4	4
36		Pipe Cutter	1	1	1
37		Flashlight	1	1	6
38		Reciprocating saw blades- various	9	8	4
39		Glove Clip	1	1	1
40		Spanner	1	1	1
41		Carpenter Pencil	3	1	1
42		Wire Clamp	1	1	0
43		Pneumatic Chisel tips - Various sizes	4	4	4
44		Wire Twist Plyers	1	1	1

Gold Locker

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	Inventory June 2022
45		Wire stripper	1	1	1
46		7" Floor Scraper replacement blades	6	6	5
47		1-1/2"x6" teflon rod	1	1	0
48		6" Crescent Wrench	2	2	1
49		8" Crescent Wrench	2	1	1
50		Long Flat Head Screwdriver - Various	3	3	2
51		Bag of Zip ties	1	1	1
52		ESAB Sentinel Welding shield	1	1	1
53		Sellstrom Auto Darkening Welding shield	1	1	1
54		Shaded Face Shield	0	1	1
55		2" rubber Hose 10' Camlock ends	1	1	1
56		10' Ring sling - yellow	1	1	1
57		Type III PFD XL	1	1	1
58		Type III PFD XXXL	1	1	1
59		Hinge Door Stop	3	3	0
60		Flexable backboard	1	1	1
61		Fox Tail bench brush	2	4	3
62		3' Crow bar	1	1	0
63		Gems Sensor Float switch	2	2	2
64		Folding Cot	1	1	1
65		4" Floor Scraper	2	2	2
66		Corn Husk Broom	2	2	2
67		Box of whistle spares - sealed	2	2	0
68		Thermal Imager	1	1	1
69		Gas powered Hydraulic pressure unit	1	1	1
70		Hydraulic pipe sheer	2	2	2
71		Fly Trap	3	2	2
72		Funnel	2	2	2
73		IR 25-79337 Filter	1	1	1
74		IR 39329602 Filter	3	3	3
75		IR 88171913 Air Filter	1	1	1
76		500W Flood Light	1	1	1
77		Bearing Driver Kit	1	1	1
78		Eaton 200A Circuit Breaker	2	2	2
79		Assorted Cotter Pin Kit	2	2	1
80		Assorted Split washer Kit	2	2	1
81		Assorted Set Screw Kit	1	1	1
82		Assorted Snap Ring Kit	2	2	1
83		Hacksaw Blades	22	22	20
84		AL138404SV Equalizer	1	1	1
85		FLSR100D Fuse	3	3	3
86		Refrigeration Kwik-coupler	4	4	4
87		Jabsco Impeller	1	1	1
88		Allen Keys - Various	15	15	15

Gold Locker

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	Inventory June 2022
89		Hilti Nails X-U 62MX Box 100	1	1	1
90		Hilti Nails Partial box X-C 62 P8	1	1	0
91		3" Camlock Gaskets 300G	12	12	12
92		Dometic Toilet bowl Seal Kit	1	1	1
93		Assorted Dometic toilet bowl parts	1	1	1
94		Miller XMT 350 CC/CV Welder	0	1	1
95		5/8 Vinyl Tubing Black 10'	1	1	1
96		Refrigeration Hose set	1	1	1
97		2" Foam weather stripping ~20'	1	1	0
98		Cargo Hold Light fixture	0	1	1
99		Large outdoor light fixture jar and cage	3	3	3
100					
101					
102					
103					
104					
105					
106					
107					
108					
109		Partial Spool of plastic yellow chain	0	1	1
110		Dust Pan	1	1	1
111		4" Knotted Wire Wheel Brush	1	1	1
112		48" Torque Wrench	1	1	1
113		Schneider LRD21 Relay	0	2	
114		Schneider LC1D18G7 Contactor	0	2	
115		Flow Meter 30GPM	0	0	in use
116		Justrite Oily Rag can	1	1	1
117		66" Folding Easel	3	3	0
118		Miller TIG Kit for Multimatic	1	1	1
119		Hydraulic hoses Various	3	3	3
120					
121					
122					
123					
124					
125					
126					
127					
128		Kano Flow away Degreaser	12	12	12
129		Ceremonial Cannon	1	1	1
130		Black Powder	1	1	0
131		Jumper Cables	1	1	1
132		Tinted window shade	10	10	10

Gold Locker

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	Inventory June 2022
133		7018 3/32"	25lb	3 LB	19
134					
135					
136					
137					
138					
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140					
141					
142					
143					
144					
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175					
176					

Paint Locker

LINE ITEM	Inventory May 2020	DESCRIPTION	5 Gal	1 Gal	
1	8	Interlac 665 Light Grey CLE06G	7		
2	4	Interlac 665 Sand JC0135	4		
3	5	Interlac 665 White CLB000	5		
4	2	Interlac 665 Light Green CLF321	1		
5	12	Interlac 665 Deck Green CLG609	8		
6	1	Interlac 665 Storm Grey CLK724	1		
7	3	Interlac 665 Yellow CLB134	1	6	
8	6	Interlac 665 Black CLY999		6	
9	10	Interlac 665 Deck Red CLL274	2		
10	2	Interlac 665 Blue Grey M400	2		
11	2	Interlac 665 Signal Red CLC287	2		
12	2	Interlac 665 Signal Blue CLD913	1		
13	1	Interlac 665 Signal Green CLL 549	1		
14	5	Interlac 665 Signal Orange CLD 260		5	
15	22	Interfine White SUB000		22	
16	10	Interprime 198 White CPA097	3		
17	5	Interprime 198 Red CPA099	5		
18	5	Interprime 198 GreyCPA098	5		
19	0 -Part A	Interthane 990 Black PHY999	1		
20	0	Interthane 990 Green PH74812	1		
21	1	Interthane 990 Navy Green PH74812	1		
22	0	Interthane 990 Light Grey JC0167UH	1		
23	0	Interthane 990 Sky Blue PHB915	2		
24	1	Interthane 990 Navy Green 74808	1		
25	2	Interthane 990 White PHB000		4	
26	8 - Part B	Interthane PHA 046		8	
27	0	Interthane PHA 046			7 Qt
28	0	Intershield 803 Grey EGA 808	7		
29	0	Intershield 803 Red EGA 808	3		
30	0	Intershield 803 Part B EGA 808		12	
31	0	Total Boat Gelcoat		5	
32	1	Paint Thinner 004	1	1	
33	1	Paint Thinner 007	1		
34	1	Paint Thinner 220	1	3	
35	2	Polyurethane Water based			2 Qt
36	2	Corroseal		11	
37	1	Penetrol			3 Qt
38	23	Nonskid		23	
39	1	9700 Polyester Urethane		1	
40	17	Black Spray Paint		16	
41	6	Brown Spray Paint		6	
42	8	White Spray Paint		8	
43	8	Green Spray Paint		8	
44	6	Galvanized spray		5	

NS SAVANNAH PAINT LOCKER INVENTORY

3/21/2022

COLOR	*CODE*	*DISC*	*SIZE*	*QTY*	
WHITE	CPA 097	INTERLOC 665	5 GAL	5	
RED PRIMER	CPA 099	INTERPRIME	5 GAL	8	
GREY PRIMER	CPA 098	INTERPRIME	5 GAL	8	
CARGO HOLD GREY	EGA 803	INTERSHIELD	5 GAL	4	
WHITE	PHB000	INTERTHANE	5 GAL	1	
NAVY GREEN	PHD98X	INTERTHANE 990	5 GAL	11	
LIGHT GREY	PH74808	INTERTHANE 990	5 GAL	1	
RED	KHA303	INTERTUF	5 GAL	1	
GREY	KHA302	INTERTUF 262	5 GAL	1	
SKY BLUE	PHB915	INTERTHANE 990	5 GAL	2	
SIGNAL GREEN	CLL549	INTERLAC 665	5 GAL	2	
NAVY GREY	PH74808		1 GAL	8	
WHITE	SUB000	INTERFINE	1 GAL	9	
INTERNATIONAL ORANGE	CLD206		1 GAL	7	
YELLOW	CLB134		1 GAL	6	
BLACK	CLY999		1 GAL	3	
WHITE	PHB000	INTERTHANE	1 GAL	5	
WHITE GELCOAT		FOR WORKBOAT	1 GAL	6	
MACROPOXY 646 KIT		(A AND)	1 KIT	1	
PART B	EGA809	INTERSHIELD 803	1 GAL	5	
PART B	PHA046	INTERTHANE 990	1 GAL	16	
SAND	CLB123	INTERLAC 665	5 GAL	4	
LIGHT GREY	CL7480	INTERLAC 665	5 GAL	2	(OLD PAINT)
GREY LIGHT	CLE06G	INTERLAC 665	5 GAL	7	
WHITE	CLB000	INTERLAC 665	5 GAL	4	
DECK RED	CLL274	INTERLAC 665	5 GAL	10	
SIGNAL RED	CLC287	INTERLAC 665	5 GAL	4	
SIGNAL BLUE	CLD913	INTERLAC 665	5 GAL	4	
DECK GREY	CLG609	INTERLAC 665	5 GAL	2	
YELLOW	CLE134	INTERLAC 665	5 GAL	2	
BLACK	CLY999	INTERLAC 665	5 GAL	2	
LIGHT GREEN	CLA033	INTERLAC 665	5 GAL	3	
SILVER GREY	CLH001	INTERLAC 665	5 GAL	4	
BLUE GREY	CLM400	INTERLAC 665	5 GAL	2	
TEAK	CLM231	INTERLAC 665	5 GAL	0	
STORM GREY	CLK724	INTERLAC 665	5 GAL	1	

THINNER 004	5 GAL	4
THINNER 004	1 GAL	2
THINNER 007	5 GAL	2
THINNER 007	1 GAL	5
THINNER 220	5 GAL	2
THINNER 220	1 GAL	6
NON-SKID ADDITIVE	1 GAL	15

CH7 Tools and Consumables

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	InventoryMarch 21	Inventory Jun 2022
1		Milwaukee 1/2" Drill M18	2	3	2
2		Milwaukee 1/4" Impact Driver M18	2	3	2
3		Milwaukee 3/4" Impact wrench M18	1	1	1
4		Milwaukee 1/2" Impact wrench M18	1	0	0
5		Milwaukee Hackzall Recip saw M18	1	2	1
6		Milwaukee Transfer Pump M18	0	1	1
7		Milwaukee Angle Grinder M18	1	1	1
8		Milwaukee LED Jobsite light Tripod M18	2	2	2
9		Milwaukee LED Lantern flood light M18	4	3	4
10		Milwaukee LED Flashlight M18	0	1	0
11		Milwaukee Jobsite Radio/Charger M18	1	1	1
12		Milwaukee 6 battery charger M18	2	2	2
13		Milwaukee Backpack Vacuum M18	1	1	1
14		Milwaukee Portable Vacuum M18	0	1	1
15		Milwaukee Drain snake	1	1	1
16		Milwaukee Mini Band Saw M12	2	2	1
17		Milwaukee Portable Band saw M28	2	2	1
18		Milwaukee Circular saw 18V	1	1	1
19		Milwaukee Flashlight 18V	1	1	0
20		Ryobi hand sander	1	1	1
21		Black and decker hand sander	1	1	1
22		DeWalt Jig Saw	1	1	1
23		Milwaukee 1/2" Drill	1	2	2
24		GMC Circular Saw	1	1	1
25		Pneumatic Impact wrench	1	1	0
26		Pneumatic Drill	1	1	1
27		Electric Impact 1/2"	1	1	1
28		Drill Press	2	2	2
29		Central Machinery 9" Band Saw	0	1	1
30		DeWalt Table saw	1	1	1
31		Milwaukee 7" grinder	1	1	1
32		Makita 7" grinder	1	1	0
33		Dewalt 7" grinder	0	1	1
34		Dewalt 4" grinder	2	2	0
35		Westward ratchet combination wrenches -set	1	1	1
36		Milwaukee Drill bit set	1	1	
37		Craftsman drill bit set	1	1	
38		Irwin Drill bit set	1	1	
39		CL Drill bit set	0	1	
40		Proto Punch and chisel set	1	1	1
41		Allpax gasket cutter set	2	2	2
42		Allpax gasket cutter board	3	3	1
43		Mayhew Pro hole punch set	1	1	1
44		westward hole punch set	1	1	0

CH7 Tools and Consumables

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	InventoryMarch 21	Inventory Jun 2022
45		48" CI Pipe wrench	1	1	1
46		48" Aluminum Pipe wrench	1	1	1
47		36" Aluminum pipe wrench	1	1	1
48		24" CI Pipe wrench	1	1	1
49		Kinetic Ram	1	1	1
50		24" pipe reamer	1	1	1
51		Dayton 8" bench grinder	1	1	1
52		Apollo Pex Crimp tool	1	1	1
53		Craftsman Table Saw	1	1	1
54		Hisey-Wolf Bench Grinder	1	1	1
55		Lathe	2	2	2
56		Porter Cable Belt sander	1	1	1
57		Milwaukee Circular saw	1	1	1
58		Craftsman 16 Gal shop vac	1	1	1
59		Ridgid 10 Gal shop vac	1	1	1
60		Rigid tripod pipe vice	1	1	1
61		Electric Wire stripper	1	1	1
62		KwiKool Portable Air Conditioner	1	1	0
63		Rigid 1822 Pipe threader cutter	1	1	1
64		Screwdriver various	45	40	26
65		Acid brush	0	100	
66		Assorted wrenches	50	45	42
67		Assorted drill bits	55	50	40
68		Assorted Hole saw bits	18	18	11
69		Assorted Wedges	10	10	6
70		Channel locks 480 Big Azz	1	1	1
71		Channel Locks 460	1	1	0
72		Tin Snips	2	2	1
73		Letter Punch set -(missing O)	1	1	0
74		Files- Various	22	20	16
75		Thread files	4	4	1
76		Hole Punches - various	4	4	1
77		Spud wrench - Various sizes	2	2	2
78		Allen tools - various	55	45	44
79		Packing puller	1	1	1
80		Taps - various	72	70	64
81		Dies/Thread chaser - various	55	53	51
82		Tap tool holder - various	6	6	4
83		Die holders -various	7	7	6
84		Extractor set	1	1	1
85		Spanner - various	3	3	4
86		1/4" Sockets - various	43	40	28
87		3/8" Sockets - various	100	96	82
88		1/2" Sockets - various	115	107	96

CH7 Tools and Consumables

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	InventoryMarch 21	Inventory Jun 2022
89		Socket extensions and adapters - various	25	25	7
90		Breaker bar	3	3	3
91		Snap ring plyers - Various	4	4	3
92		Channel locks - various	2	2	2
93		Socket holders - various	8	8	
94		3/4" Sockets - Various	12	10	9
95		1/2" ratchet	3	1	1
96		3/8" Socket turning tool - various	3	3	1
97		Extractors Various	8	8	8
98		U-bolts various sizes	24	20	10
99		Eye-Bolts Various sizes	25	19	16
100		Hose Clamps various sizes	150	129	42
101		3/4" Sockets - Various	40	37	34
102		1" Sockets - Various	21	21	21
103		3/4" Socket adapters	3	2	1
104		1" Socket adapters	2	2	2
105		3/4" extensions various sizes	2	2	2
106		3/4" Ratchet	1	1	1
107		1" Breaker Bar	1	1	1
108		Slugging wrenches Various sizes	2	2	2
109		Chicago fittings - various connections	27	26	
110		Female Quick connect fittings various	40	32	
111		Male Quick Connect fittings various	40	18	
112		3/4" hose fittings various	15	9	5
113		1" gate valve	1	1	0
114		3/4" ball valve	4	4	3
115		Barb fittings- various	32	32	
116		Hose vacuum breaker	4	4	
117		Hose Sprayer	3	2	
118		Extinguisher hanger brackets	5	5	
119		Hacksaw blades - various types	16	15	9
120		2" Female Camlock Fittings - Various	2	2	0
121		1-1/2" Male Camlock Fittings- Various	3	3	
122		1-1/2" Female Camlock Cap	1	1	
123		1" Female Camlock Cap	1	1	
124		1" Male Camlock Plug	2	2	
125		3" Female Camlock Fitting - Various	2	1	
126		2-1/2" Fire Hose fittings - Various	3	3	1
127		24" CI Pipe wrench	2	2	1
128		18" Aluminum Pipe Wrench	1	1	1
129		18" CI Pipe Wrench	1	2	2
130		10" CI Pipe Wrench	1	1	1
131		Slide Hammer	1	1	1
132		Chipping Hammer - wood handled	5	5	4

CH7 Tools and Consumables

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	InventoryMarch 21	Inventory Jun 2022
133		Sledge Hammer - Various	3	3	3
134		Claw Hammer	1	1	1
135		Ball Pean Hammer	1	2	3
136		Mallet	1	1	1
137		3 Jaw Bearing puller	1	5	2
138		Rigid Thread Ratchet tool -Various size	2	2	2
139		Rigid Thread Die 1/8"	1	1	1
140		Rigid Thread Die 3/8"	1	1	1
141		Rigid Thread Die 1/2"	1	1	1
142		Rigid Thread Die 1"	1	1	1
143		Rigid Thread Die 1-1/4"	1	1	1
144		Rigid Thread Die 1-1/2"	1	1	1
145		Rigid Thread Die 2"	2	2	1
146		Rigid Pipe Extractor	1	1	1
147		3/4" Sharkbite Ball valve	3	4	4
148		3/4" Quarter turn Drain valve	4	4	4
149		3/4" Pex x MNPT adapter	4	4	4
150		3/4" Sharkbite Ball valve x FNPT	1	1	3
151		1/2" Sharkbite Ball valve	2	2	0
152		1/2" Sharkbite 90	2	2	0
153		1/2" Sharkbite Coupling	3	3	1
154		1/2" Sharkbite Tee	4	4	4
155		1"x3/4" Sharkbite Tee	1	1	0
156		3/4" Sharkbite Male Adapter	1	1	1
157		3/4" Sharkbie Cap	1	1	0
158		Tap and Die Kit	1	2	2
159		Electrician Nut Driver set	1	1	1
160		Milwaukee Nut driver set	1	1	1
161		2 Pc Inspection Kit Mirrior and Magnet	3	2	1
162		Rubber Mallet	1	1	1
163		Rigid 4 blade pipe cutter	1	1	1
164		Rigid Pipe cutter	1	1	1
165		Screwdriver various	36	30	16
166		1/2" ratchet	1	1	1
167		1/2" Sockets - various	22	18	17
168		1/4" Sockets - various	27	27	1
169		1/4" Socket extension	1	1	18
170		1/2" Socket extension	1	1	1
171		Wrenches Various	13	10	1
172		Punches/chisels - Various	10	3	0
173		Hex Pipe wrench 18"	1	1	5
174		Hex Pipe wrench 24"	1	1	1
175		Ultrasonic thickness meter	1	1	1
176		Reciprocating saw blade - Various	100	103	0

CH7 Tools and Consumables

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	InventoryMarch 21	Inventory Jun 2022
177		3/8" Socket - Various	24	16	14
178		Heat Stress Monitor	2	1	1 A/E office
179		Water Finding Paste	10	10	10
180		3" Fernco Coupling	2	2	
181		2" Fernco Coupling	2	2	
182		2" x 1-1/2" Fernco Coupling	2	2	
183		1-1/2" Fernco coupling	2	2	
184		50' Extension Cord	2	1	
185		Milwaukee Mag Drill	1	1	1
186		Holesaw Drill bits for Mag Drill Kit	1	1	1
187		Set screw Kit	1	1	1
188		Flange type puller kit	1	1	0
189		Electrical timer - Various	1	2	1
190		Swagelock kit - Orange box	1	1	1
191		Fire Hose spanner	2	2	4
192		Grinder Spanner	1	1	1
193		Dewalt drill bit kit	1	1	0
194		Greenlee Knockout Punch Driver kit	1	1	1
195		Tire inflator with gauge	2	1	1- In Use
196		Quick Connector Male - various	36	16	
197		Quick Connector Female - various	36	24	
198		4" SS Threaded Flange	1	1	
199		4" SS Nipple	1	1	
200		4" SS 90	1	1	
201		3" Camlock Female x Barb	1	1	
202		Wilden Exhaust Muffler 3/4"	1	1	
203		Wilden Exhaust Muffler 1"	1	1	1
204		Wilden WIL-04-9824-52 Wet Kit	1	1	
205		Wilden WIL-02-9993-99 Air Kit	1	1	
206		Wilden WIL-04-9993-99 Air Kit	1	1	
207		Wilden WIL-02-9814-52 Wet Kit	1	1	
208		Large Tap and Die set 14 pc	1	1	1
209		Nipples Assorted 1/8"	29	24	
210		Nipples Assorted 1/4"	55	52	
211		Nipples Assorted 3/8"	125	117	
212		Nipples Assorted 1/2"	15	8	
213		Nipples Assorted 3/4"	7	0	
214		Nipples Assorted 1"	40	32	
215		Nipples Assorted 1-1/4"	12	9	
216		Nipples Assorted 1-1/2"	15	10	
217		Nipples Assorted 2"	28	24	
218		Nipples Assorted 2-1/2"	5	4	
219		Elbows Assorted 1/8"	8	7	
220		Elbows Assorted 1/4"	33	29	

CH7 Tools and Consumables

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	InventoryMarch 21	Inventory Jun 2022
221		Elbows Assorted 3/8"	30	28	
222		Elbows Assorted 1/2"	10	6	
223		Elbows Assorted 3/4"	10	0	
224		Elbows Assorted 1"	16	14	
225		Elbows Assorted 1-1/4"	6	3	
226		Elbows Assorted 1-1/2"	8	8	
227		Elbows Assorted 2"	5	4	
228		Tees Assorted 1/8"	8	7	
229		Tees Assorted 1/4"	20	18	
230		Tees Assorted 3/8"	10	9	
231		Tees Assorted 1/2"	18	16	
232		Tees Assorted 3/4"	2	0	
233		Tees Assorted 1"	7	7	
234		Tees Assorted 1-1/4"	2	2	
235		Tees Assorted 1-1/2"	16	16	
236		Tees Assorted 2"	10	10	
237		Tees Assorted 2-1/2"	2	2	
238		Couplings Assorted 1/8"	4	3	
239		Couplings Assorted 1/4"	6	4	
240		Couplings Assorted 3/8"	9	6	
241		Couplings Assorted 1/2"	10	5	
242		Couplings Assorted 3/4"	10	6	
243		Couplings Assorted 1"	6	5	
244		Couplings Assorted 1-1/4"	4	4	
245		Couplings Assorted 1-1/2"	3	3	
246		Couplings Assorted 2"	8	8	
247		Couplings Assorted 2-1/2"	4	4	
248		Unions Assorted 1/8"	3	3	
249		Unions Assorted 1/4"	9	9	
250		Unions Assorted 3/8"	23	22	
251		Unions Assorted 1/2"	5	5	
252		Unions Assorted 3/4"	2	2	
253		Unions Assorted 1"	6	6	
254		Unions Assorted 1-1/4"	5	5	
255		Unions Assorted 1-1/2"	3	3	
256		Unions Assorted 2"	3	3	
257		Unions Assorted 2-1/2"	0	0	
258		Reducers Assorted	25	18	
259		Reducer bushings Assorted	8	4	
260		Plugs 1/8"	3	1	
261		Plugs 1/4"	5	3	
262		Plugs 3/8"	7	6	
263		Plugs 1/2"	5	2	
264		Plugs 3/4"	5	1	

CH7 Tools and Consumables

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	InventoryMarch 21	Inventory Jun 2022
265		Plugs 1"	3	2	
266		Plugs 1-1/4"	1	1	
267		Plugs 1-1/2"	1	1	
268		Plugs 2"	1	1	
269		Plugs 2-1/2"	0	0	
270		Caps Assorted 1/8"	1	1	
271		Caps Assorted 1/4"	10	9	
272		Caps Assorted 3/8"	10	8	
273		Caps Assorted 1/2"	2	0	
274		Caps Assorted 3/4"	5	5	
275		Caps Assorted 1"	4	4	
276		Caps Assorted 1-1/4"	0	0	
277		Caps Assorted 1-1/2"	2	2	
278		Caps Assorted 2"	7	7	
279		Caps Assorted 2-1/2"	0	0	
280		Assorted Y fittings	22	22	
281		Assorted Cross Fittings	14	14	
282		PVC Couplings Assorted	6	4	
283		PVC Tees Assorted	20	17	
284		PVC Valves Assorted	4	3	
285		PVC Elbows Assorted	8	4	
286		PVC Caps Assorted	2	1	
287		PVC Pipe 1/2"	40'	40'	
288		PVC Pipe 3/4"	5'	56"	
289		PVC Pipe 1-1/4"	30'	22'	
290		PVC Pipe 2"	10'	8'	
291		PVC Pipe 3"	38'	38'	
292		PVC Pipe 4"	2.5	2.5'	
293		Assorted PVC Camlock fittings	10	8	
294		Pipe 1"	35'	35'	
295		Pipe 1-1/4"	20'	16'	
296		Copper Pipe 1/2"	8'	8'	
297		Copper Pipe 3/8"	12	12	
298		Flat Bar 1"	25'	25'	
299		Flat Bar 1/2"	20'	12'	
300		Flat Bar 1-1/4"	20'	10'	
301		Drum Lifer	2	3	1
302		Saw Horses	6	6	4
303		Sand Blaster	1	1	1
304		Metal Chop Saw	1	1	1
305		Ultrasonic Parts Cleaner	1	1	1
306		4'x8' Steel plate	2	2	0
307		Battery operated Pallet Jack	2	2	2
308		Manual Pallet Jack	3	3	2

CH7 Tools and Consumables

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	InventoryMarch 21	Inventory Jun 2022
309		Furnature Dollies	4	4	2
310		Grinder Disk 4-1/2"	35	28	3
311		Flapper Disk 4-1/2"	20	7	36
312		Grinder Disk 7"	12	11	8
313		Sanding Disk 7"	16	16	14
314		Bench Grinder wheel 6"	2	2	2
315		Bench Grinder wheel 7"	1	1	0
316		Cup wire wheel 6"	3	3	3
317		Cup wire wheel 5"	10	7	7
318		Cup wire wheel 3"	6	4	0
319		Cut off disk 4"	1	21	16
320		Cut off disk 4-1/2"	12	4	10
321		Grinder Disk 8"	4	3	0
322		Cut off Disk 18"	1	1	0
323		Gtinding Disk 9"	6	6	7
324		Grease Gun	4	4	2
325		Large Porta band saw blades	6	2	3
326		Small Porta band saw blades	8	4	5
327		Milwaukee M18 Leaf Blower	1	1	1
328		Milwaukee M18 1/2" Drive Impact driver (missing)	1	0	0
329		Milwaukee 18V Cordless Drill (Broken/Disposed)	1	0	0
330		ICON Torque Wrench	0	1	1
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Weld shop

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	Inventory Jun 22
1		Miller Multimatic 200	1	1	1
2		Miller XMT 300 CC/CV Welder	1	1	1
3		Miller Spectrum 2050 Plasma Cutter	1	1	1
4		Bernard Mig Gun	1	1	1
5		Chipping Hammer	4	3	3
6		Wire Brush	3	2	2
7		Face shield	4	4	4
8		Welding shield	4	4	3
9		Welding Magnet	8	5	3
10		10" Aluminum Pipe Wrench	1	1	1
11		Files Asst	2	2	2
12		Ball Pean hammer	0	1	3
13		Cut off wheel	0	6	1
14		Vice grip plyers	1	1	1
15		Cable Cutting Tool	2	2	2
16		Spanner	1	1	1
17		Miller Plasma Cutter Retaining Cup	1	1	1
18		Miller Plasma Cutter Extended Tip 5 Pack	1	1	1
19		Miller Plasma Cutter Extended Electrode 5 Pack	0.8	0.8	0.8
20		Miller Plasma Cutter Deflector	1	1	1
21		Miller Plasma Cutter Swril Ring	1	1	1
22		Wilden Pump P2	1	1	1
23		Wilden Pump M4	2	2	1
24		Diaphram Pump Wilden M4 Equivelent	1	1	1
25		Wilkerson In-Line Pneumatic Lubricator	2	2	0
26		Wilkerson In-Line Pneumatic Filter	1	1	0
27		Lubricator L74C	2	2	0
28		Striker	2	2	1
29		In-Line Regulator	1	1	0
30		Accetlyne regulator with Flashback arrestor	1	1	1
31		Oxygen Regulator with Flashback arrestor	1	1	1
32		Welding curtian hooks bag of 10	8	8	8
33		Drill Doctor 750	1	1	0
34		Welding Gloves Pr	3	5	3
35		Leather Welding Coat	2	2	1
36		See-Through Welding Curtain 10 oz./SQ. YD. Vinyl, 6 Feet High x 4 Feet Wide - GREEN	1	1	1
37		See-Through Welding Curtain 10 oz./SQ. YD. Vinyl, 6 Feet High x 6 Feet Wide - GREEN	3	2	0
38		Miller Thunderbolt 160 Welder	1	0	1
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Consumable products

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	Inventory Jun 22
1		Acetone 32 Oz	0	8	7
2		Electric Clean Spray	6	6	7
3		Brasso	1	1	1
4		Great Stuff Spray foam sealant	20	7	5
5		Sikaflex Construction Sealant	32	28	1
6		Ultratane Butane fuel	5	5	5
7		Striping Paint Inverted spray paint	2	2	0
8		Fiberglass resin liquid hardener	5	5	5
9		X-treme tack 5000 adhesive	1	1	1
10		Blaster Air tool conditioner	2	2	2
11		Lock Lube and De-icer	3	3	3
12		Belt Dressing and conditioner	1	1	1
13		Holding tank cleaner/treatment	0	4	0
14		Aerokroil	12	7	0
15		Insect fogger	4	4	3
16		3M Super 77 Adhesive	7	7	7
17		3M Neoprene High Performance Contact Adhesive	2	2	2
18		Kano Flowaway Cleaner and degreaser	4	4	4
19		Denso Paste 5 lbs	0	3	.
20		Denso Tape Roll	0	5	4
21		CRC RTV Silicone sealant	3	2	2
22		Brakleen	5	2	3
23		Greased lightning cleaner and degreaser	2	2	2
24		Clover Compound 240 Grit	1	1	1
25		Clover Compound 280 Grit	1	1	1
26		Clover Compound 400 Grit	1	1	1
27		Dura-syn PGWS 150 Gear Oil	2	2	2
28		Dura-syn PGWS 320 Gear Oil	2	2	2
29		Belzona 1111 (2 Part)	1	1	1
30		Mobil XHP 222 Special Grease	3	3	0
31		Tapmatic Edge Lube	6	2	0
32		Mobil SCH 100 Grease	1	1	1
33		Anti-seize -Various	2	2	2
34		Liquid wrench Hydraulic Jack oil	1	1	1
35		Air Tool Oil	1	1	1
36		Plumbers Putty	2	3	1
37		Belzona 1121 (2 Part)	1	1	0
38		Dow Corning G-n Metal Assembly Paste	1	1	1
39		Spray Paint -various	8	16	10
40		LPS ThermaPlex Multipurpose Bearing Grease	1	1	0
41		Rigid Dark Threading Oil	2	2	3
42		Brakleen	16	14	5
43		Bernzomatic MX	1	1	0
44		Shell Gadus S2 V220	10	8	7

Consumable products

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	Inventory Jun 22
45		Mobil Polyrex EM	4	3	1
46		Duct Tape - Grey 2"	12	11	1
47		Packing Tape 2"	5	2	2
48		Red Vinyl Tape 2"	1	1	0
49		Red Vinyl Tape 3"	1	1	1
50		Double sided tape 2"	1	1	0
51		WD-40 Foaming Degreaser	12	8	2
52		WD-40 Various sizes	18	13	5
53		3-36 Multipurpose Lubricant	2	2	0
54		2-26 Electra Lube	6	5	4
55		Industrial Power Lube	6	6	0
56		QD Contact Cleaner	24	23	16
57		CO Contact Cleaner	4	4	4
58		Maevel Mystery Oil	3	2	1
59		Gorilla Waterproof Patch and Seal	0	2	2
60		Kano Aerokroil	8	5	2
61		PB Blaster	8	3	9
62		Blaster Air tool conditioner	2	2	2
63		Blaster air tool lubricant	2	2	2
64		Anti-seize -Various	12	8	4
65		Permatex #2	1	1	0
66		Starting Fluid	1	1	0
67		Liquid tape	2	1	0
68		PVC Cement - Various	4	4	4
69		PVC Primer	2	2	2
70		Forerm Forklift Straps	1	1	1
71		1/2" Pex Coupling	25	25	
72		1/2" Pex Elbow	25	25	
73		1/2" Pex Tee	25	25	
74		1/2" Pex Crimp Ring	300	300	
75		3/4" Pex Coupling	25	25	
76		3/4" Pex Elbow	25	25	
77		3/4" Pex Tee	25	22	-3
78		3/4" Pex Crimp Ring	100	87	-13
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Bosun Shop

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	Inventory Jun 2022
1		Screwdriver - assorted	8	6	6
2		Wrenches - Assorted	15	11	5
3		Crescent Wrench 24"	1	2	1
4		T-Handle Allen wrenches	10	10	9
5		Chisel - assorted	3	2	0
6		Impact driver set, reversible	1	1	1
7		Tap - Assorted	1	1	0
8		Putty Knife -Assorted	3	1	0
9		Tape measure - Assorted	1	2	0
10		Dremel Sanding disk Assorted	2	2	0
11		Fid	1	1	1
12		Grinder Spanner	1	1	0
13		1/2" Socket -Assorted	4	3	0
14		Paint Roller 3/8" roller	0	2	0
15		DeWalt Pressure Washer	1	1	1
16		Kneeling pad	1	1	1
17		Oar for work boat	1	1	0
18		Ball Pean Hammer - Assorted	0	5	4
19		Spanner Wrench	3	3	1
20		Lens Cleaning station	1	1	1
21		Multipurpose Adhesive	2	2	0
22		409 Degreaser	3	3	0
23		4 Way Hose manifold	1	1	0
24		Spray Paint - Assorted	1	1	0
25		Liquid Wrench	1	1	0
26		Can Air Horn	1	1	1
27		4 Cycle engine Oil	1	1	0
28		Lysol	1	1	0
29		Chlorox wipes	1	2	0
30		TSP All Purpose heavy duty cleaner	1	1	0
31		Paint roller handle	0	1	0
32		3" PVC Drain Cover	6	6	3
33		4" Gripper Drain Plug	0	1	1
34		3" Gripper Drain Plug	0	2	2
35		Kano Aerokroil	4	3	0
36		Tapered Wood Plug	0	1	0
37		Marvel Mystery Oil	1	1	0
38		Gojo Hand Cleaner	0	1	0
39		Ear Plug Box	1	1	1
40		3M 8210 Respirator	9	9	1
41		Funnel Small	1	1	0
42		Milwaukee M18 Charger	1	1	1
43		Needle Nose Plyer	1	1	0
44		1/2" Green Barrier Tape Roll	25	25	25

Bosun Shop

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	Inventory Jun 2022
45		10' Pig tail	1	1	1
46		Broom	2	2	0
47		Dustpan	2	2	8
48		Heaving lines	15	13	4
49		GFCI adapter	2	2	2
50		Sticky Mat	30	30	0
51		Nitrle Gloves, Box	1	2	1
52		Crescent Wrench -Assorted sizes	0	4	4
53		Dead blow hammer	0	1	2
54		4lb Sledge hammer	0	1	0
55		Allen tool set - assorted	0	3	3
56		Painters Tape Roll	8	7	1
57		4x8x16 Cinder Block	6	6	6
58		48" Zip Ties 15 pack	5	5	5
59		Slow Close Lav Faucet Valve	4	4	0
60		Door Knob BC0115KA4	4	4	4
61		Pipe Blank 9"	2	2	2
62		Deck Brush	2	2	2
63		Foxtail Brush	2	2	2
64		2" ratchet strap	5	3	0
65		Deck Drain Cover - Old	0	5	5
66		Caster 6-1/2"	1	1	0
67		Welding Magnet - Assorted	0	3	3
68		Electric Drill Pump	1	1	1
69		Chipping Hammer	0	1	0
70		Knee Pads Pair	1	1	1
71		3/8" Quick Link	5	4	0
72		3/8" Carabeaner	8	8	0
73		3/16" Quick Link	5	5	0
74		1/2" Cable Clamp	4	4	0
75		Quick Release hook	3	3	0
76		Steel wire spool	1	1	0
77		Crowbar	1	1	1
78		Cement Epoxy metal repair	1	1	0
79		Cement Epoxy Hardener	1	1	0
80		Tap magic cutting fluid	1	1	0
81		Pressure washer pump fluid	1	1	1
82		Anti-seize	2	1	0
83		Petrolium Jelly	1	1	1
84		Grommet Kit, washers and hole cutter	3	2	2
85		Scissors	0	1	0
86		Bungee Cord Hooks 10/Bag	6	6	6
87		Grease Fittings Assorted Containers	2	2	2
88		30" Belt sander belts - assorted	50	50	0

Bosun Shop

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	Inventory Jun 2022
89		Corks assorted sizes - bag	1	1	1
90		Hanger strap 3/4" 100'	1	1	1
91		Dremel Moto Shop Kit	1	1	0
92		Hole Punches assorted sizes	10	10	10
93		Jacobs Chuck	1	1	0
94		Socket Set 3/16 to 1/2	1	1	1
95		Socket Set 3/8 to 7/8	1	1	1
96		Ryobi hand sander	1	1	1
97		Electrician's hole saw kit	1	1	1
98		Caution Tape Roll	1	2	0
99		Danger Tape Roll	1	2	1
100		14" Zip Ties	250	250	0
101		4" Zip Ties	500	500	0
102		Ear Muffs	1	1	0
103		Guardian Self Retracting Fall Arrestor	2	2	1
104		Sala Teather 3'3"	1	1	1
105		Fall protection body harness	5	5	4
106		Shock Absorbing lanyard	2	2	2
107		120v Heater	1	1	1
108		Cigarette disposal can	0	1	0
109		Dewalt Pressure Washer Tip set	1	1	0
110		Hose Washer	20	20	20
111		Sewing needle assorted	5	5	1
112		Wire cutter	1	1	1
113		Sheet Metal Sheer	1	1	1
114		Channel Lock - assorted	3	3	0
115		Adjustable nozzle	1	1	0
116		Small Tool Box	1	1	1
117		Levels - assorted	2	2	2
118		Hand Rail Belt Sander	1	1	0
119		CHAFE-PRO® FS Size D 1-9/16" - 2-1/4" (All in service, Consumed)	4	0	0
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Rigging Gear

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	Inventory Jun 2022
1		10 Ton Chainfall	4	4	4
2		5 Ton Chainfall	1	1	1
3		3 Ton Chainfall	1	1	1
4		1 Ton Chainfall	3	3	4
5		1/2 Ton Chainfall	1	1	2
6		4' 2" Strap 1 Ply	1	2	2
7		10' 2" Strap 1 Ply	2	1	2
8		20' 4" Strap 2 Ply	2	2	2
9		4' 6" 2 Ply	1	1	1
10		20' 2" 4 Ply	2	1	0
11		18' 2" 4 Ply	2	1	0
12		12' Round Sling	1	1	1
13		20' 2" 1 Ply	4	2	5
14		16' 2" 2 Ply	2	1	2
15		20' 3" 2 Ply	4	4	2
16		3 Ton Beam Clamp	4	4	2
17		1 Ton Beam Clamp	1	1	1
18		3/4 Ton Shackle	6	6	6
19		1 Ton Shackle	4	2	4
20		6 Ton Shackle	1	1	0
21		9-1/2 Ton Shackle	1	1	0
22		12 Ton Shackle	3	3	0
23		25 Ton Shackle	1	1	0
24		3/4 Ton Comealong	1	1	1
25		2 Ton Comealong	1	1	1
26		10' 1" 1 Ply strap	4	3	2
27		14' 2" 1 Ply Strap	6	5	2
28		10' 2" 1 Ply Strap	1	1	2
29		20' 2" 1 Ply Strap	2	2	4
30		16' 1" 2 Ply Strap	2	2	0
31		4' Round Sling	2	2	1
32		8' Round Sling	2	1	1
33		10' 2" 3 Ply Strap	1	1	0
34		3/4 Ton Shackle	1	1	1
35		Poly Rope 3/8"	1	1	0
36		3-1/4T Shackle	1	1	1
37		9500 Lb Winch	1	1	1
38		Cargo Net	1	1	1
39		2 Ton Chainfall	0	2	1
40		20000 Lb Snatch Block	1	1	0
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1 A/E Office

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	Inventory June 2022
1		Head Lamp	3	9	0
2		Flashlight	3	12	1
3		EEBD	4	4	4
4		EEBD Training kit	1	1	1
5		Power Strip	0	1	1
6		Broom	1	4	1
7		Ashcroft 3" Dial Thermometer	3	3	3
8		Dewalt 300' Measuring tape	1	1	1
9		Triple tap inline GFCI 2' extension cord	10	4	0
10		1/2" ratchet	4	3	0
11		Chromate Check Swabs 8 Pk	10	9	5
12		Lead Check Swabs 8 Pk	20	18	12
13		Electrical safety gloves, pair	1	1	1
14		Box 50 disposable dust masks	4	2	1
15		Ammonia test swabs tube/25	1	1	1
16		AAA Batteries	60	8	30
17		AA Batteries	52	21	30
18		C Batteries	12	5	0
19		D Batteries	36	36	
20		A23 Batteries	8	4	4
21		9V Batteries	36	32	24
22		Heat stress Monitor	1	1	1
23		Decible meter	1	1	1
24		Utility Knife	8	5	2
25		Hose Nipples - Various	20	16	
26		Hose Caps	5	4	
27		CR2450 Button Batteries	0	18	
28		Molykote 111	1	1	1
29		3/8" Ratchet	0	1	1
30		Black and yellow Stripped tape	0	4	0
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Electrician Office

ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
	Milwaukee Right Angle Drill	1	1	
	Master Heat Gun 120V	1	1	
	Makita driver drill	1	1	
	Stanley Proto Socket Set	1	1	
	Miscellaneous electrical connector set	1	1	
	Heat trace strip	35	36	
	Zip ties, bag	9	8	-1
	Extension cord	4	4	
	TV	1	1	
	Assorted Connector, tote	1	1	
	Rigid 2' multi outlet cord	7	7	
	8" Crimped wheel brush	1	1	
	Rigid Extention connector	4	4	
	Rigid Couplings	4	4	
	Petrolium jelly	1	1	
	Knee Pads	1	1	
	Ideal Push-in Wire Connectors	100	100	
	Weller Solder gun	1	1	
	Milwaukee Drill bit set	1	1	
	Klein Bag	1	1	
	GOJO scrubbing towel	1	1	
	Klein screwdriver	1	1	
	Wire stripper	2	2	
	Snips	1	1	
	Needle Nose Plyer	1	1	
	Assorted wire connectors	8	6	-2
	4' Cord Cover White	1	1	
	50' Stringer Lights	1	1	
	Harness Laynard	1	1	
	Clamp work light	2	2	
	GFI Cord adapter	2	2	
	Folding table	1	1	
	Battery backup emergency light	1	1	
	2' T5 LED Replacement lamp	2	1	-1
	Analog meter	1	1	
	Ideal circuit breaker	1	1	
	Fluke Circuit test set	1	1	
	Dymo Lable Maker	1	1	
	Drill bits - Various	3	3	
	Circle Megger	1	1	
	Cable Cutter	1	1	
	Fuse Puller	1	1	
	Amprobe Amp Clamp	1	1	
	Assorted Heat shrink kit	1	1	

Electrician Office

ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
	Husky assorted bits	1	1	
	Klein insulated screwdriver set	1	1	
	Mag Drill bits	2	2	
	Klein screwdrivers	3	3	
	Long reach bulb changer	1	1	
	1/2" one hole strap	80	72	-8
	A19 Replacement Base	40	37	3
	Backpack vacuum	1	1	
	Desktop computer	1	1	
	Mini refrigerator	1	1	
	Mop	1	1	
	Duct Tape	1	1	
	4' Power strip	1	1	
	Type III PFD	1	1	
	Desk Chair	1	1	
	1" Flex Tubing	2	2	
	Electrical tape	15	12	-3
	Plastic J-box	2	2	
	Toggle switch plate	8	8	
	20A Twist lock cord Female	3	3	
	20A Twist lock cord Male	1	1	
	Electrical splicing tape	4	3	-1
	Large Black Nitrile Glove, box	1	2	
	Klein 125' Fish Tape	1	1	
	Bell Weatherproof box	1	1	
	DeWalt Radio Charger	1	1	
	Hard Hat	3	3	
	2" White Binder	2	2	
	Keurig Coffee maker	1	1	
	Ceramic Heater	1	1	
	Fulke Remote Display Meter	1	1	
	Little Giant Ladder	1	1	
	Folding step lader 2'	1	1	
	Pipe Wrench	1	1	
	Bucket of Pull String	1	1	
	225A Cutler Hammer Breaker	2	2	
	Broom	1	1	
	Hilti Gun	1	0	-1

Electrician Conex

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
1		Fall Protection Harness	0	1	1
2		Double Pelican Hook Teather	0	1	1
3		Justrite Oily Rag can	1	1	1
4		Miscellaneous hardware set	2	2	2
5		Set of wire Terminations	1	1	1
6		Caution Tape	1	1	1
7		Shop Stool	1	1	1
8		Extension Cord	3	3	3
9		7pc Chisel Set	1	1	1
10		Drill Bit Set	1	1	1
11		Mag Drill bits	31	30	19
12		Tap Set SAE	1	1	
13		Heat shrink roll set	1	1	
14		LED Ceiling light	1	1	0
15		Fluke Remote Display Meter	1	1	1
16		Bahco Hole Saw Kit	1	1	1
17		Brady Lable Maker	1	1	1
18		Brady Label tape	0	2	4
19		Dyno loll	1	1	1
20		Battery Cell Tester	1	1	1
21		Milwaukee M18 Drill	1	1	1
22		Milwaukee M18 Grinder	1	1	1
23		Milwaukee M18 1/2" Drive Impact	1	1	1
24		Milwaukee M18 Right angle drill	1	1	1
25		Milwaukee M18 Sander	1	1	1
26		FP301 Heat Shrink kit	1	1	1
27		8pc Carbide bur set	1	1	1
28		Milwaukee Impact set	1	1	1
29		Dremel 3000	1	1	1
30		Hilti Steel Pins	200	200	100
31		Hilti Red Shots	100	100	100
32		4" Octagon box cover	28	25	0
33		Milwaukee Portaband blades	6	6	6
34		1/2" One Hole Strap	400	400	300
35		Milwaukee M18 Circular Saw	2	2	2
36		Milwaukee M18 Blower	1	1	1
37		Milwaukee M18 Hammer drill	1	1	1
38		Milwaukee M18 Jig saw	1	1	0
39		Fire Caulk	15	12	0
40		2' Aluminum ladder	1	1	1
41		Glass Cloth Electrical tape	12	10	8
42		3/4 seal tite Male adapter	12	4	4
43		Lamp socket replacement base	20	20	20
44		Porcelan Lamp socket base	6	7	22

Electrician Conex

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
45		Male Cord Cap	4	3	3
46		Female Cord Cap	5	3	3
47		500W Halogen Lamp	20	10	0
48		Wire Connector screw on	100	76	50
49		8-32 Machine Nuts	200	200	150
50		8-32 Machine Screw	200	200	150
51		#14 Crimp on terminal rings	1000	900	800
52		22-18 Butt Splices	700	600	600
53		16-14 Butt Splices	800	800	600
56		FRN-10	17	40	30
57		FRN-15	10	40	30
58		FRN-20	25	70	20
59		Tags	600	600	65
60		Yellow Wire Nuts	300	300	200
61		Red Wire Nuts	200	200	200
62		Gray Wire Nuts	200	196	150
63		Orange Wire Nuts	200	187	180
64		Blue/grey wire nuts	300	221	200
65		Zip ties	750	627	2000
66		1900 Combo Box	10	6	4
67		NM 1/2 Connector	50	37	21
68		NM 3/4 Connector	50	46	30
69		1/2" Male Stuffing tube brass	50	31	30
70		3/4" Male Stuffing tube brass	50	35	22
71		3/4" Female Stuffing tube brass	50	9	28
72		3/4" Knock out seal	175	167	80
73		1" Knock out seal	125	121	100
74		Hubbel cord cap Male Weather tite	15	10	0
75		Hubbel cord cap Male	40	31	0
76		Hubbel cord cap Male 25A	6	6	6
77		3/4" one hole strap	600	600	6
78		Bell weatherproof box	5	5	4
79		23 rubber splicing tape	12	7	6
80		10000 lb ratchet strap	4	4	2
81		Sledge hammer	1	1	1
82		6pc Torx driver set	1	1	1
83		3pc plyer set	1	1	1
84		1/2" 24" socket extension	1	1	1
85		1/2" Breaker bar	1	1	1
86		Allen wrench set	2	2	2
87		8pc screwdriver set	1	1	1
88		5pc metric flare wrench set	1	1	1

Electrician Conex

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
89		Wire stripper set	2	2	2
90		Ratcheting palm screwdriver	1	1	1
91		8" flex 3/8" Extension	1	1	1
92		Snap ring plyers	2	2	2
93		Safety wire plyers	1	1	1
94		Channel Locks	3	3	3
95		Reciprocating saw blades	12	10	8
96		Magnetic parts tray	1	1	1
97		Dual outlet 2614B-125	15	13	8
98		20A 125V Dual flat cover	12	8	8
99		Lamp Holder 66W 250V E89092	40	34	0
100		1/2 Soft Pipe Clamp 0028	40	38	0
101		7/8 Soft Pipe Clamp 0048	15	15	0
102		Hose Connector 90 TE2088	7	7	0
103		15A 125V Duplex Outlet 5252-DWI	26	26	0
104		15A 125V Single Pole slater outlet 1NX3181	52	52	0
105		10A 125V Single Pole switch 90IV Box	27	27	0
106		Round Lighting Terminal Block	24	24	0
107		Circle Switch	33	33	0
108		500' 16 Ga Black	1	1	1
109		500' 14 Ga Black	1	1	1
110		500' 12 Ga Black	1	1	1
111		500' 12 Ga Green	1	1	1
112		500' 14 Ga Red	1	1	1
113		500' 16 Ga Red	1	1	1
114		500' 12 Ga Red	1	1	1
115		500' 14 Ga White	1	1	1
116		200' 12 Ga White	1	1	1
117		15' Retractable HDMI	1	1	1
118		Toshiba Surround sound system	1	1	1
119		42" Samsung TV	1	1	1
120		Toshiba DVD Player	1	1	1
121		Screwdrivers - assorted	4	4	4
122		GFI 20A Breaker	3	3	0
123		2p 100A Square D Breaker	1	1	1
124		15A GE Built in Breaker	1	1	1
125		Stapler	1	1	1
126		Pencil Sharpener	1	1	1
127		Inspection Set	1	1	0
128		Tap and Die Set	1	1	1
129		Wago wire connectors	100	100	100
130		Loctite Power Grab Adhesive	8	8	5
131		Liquid Tape 4oz	12	9	1
132		Fluke Insulation Tester	1	1	4

Electrician Conex

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
133		Weatherproof Single gang bell box cover	10	11	15
134		Super 88 Electrical tape	27	20	11
135		1/2" Socket Deep well	17	17	9
136		1/2" Socket	9	9	15
137		1" Socket	15	15	19
138		Ratcheting Wrenches	19	19	10
139		Slip jaw wrenches	10	10	1
140		26 pc Impact Chisel set	1	1	1
141		3/8" Socket	40	38	29
142		Large Dogbone Wrench	16	16	20
143		1/2" Socket Deep well Impact	20	20	20
144		1/2" Socket Impact	28	28	28
145		3/8" socket Deep well Impact	36	36	29
146		1/2" Ratchet	1	1	1
147		5pc File set	1	1	1
148		Plyer Set	1	1	1
149		3/4" Socket allen	9	9	9
150		Screw extractor set	1	1	1
151		Bow Saw	1	1	1
152		1" Rachet	1	1	1
153		Pry Bar Assorted	4	4	4
154		Speed Bar	1	1	1
155		3/8" Socket extensions assorted	2	2	2
156		Double flex rachet set	1	1	1
157		6pc Screwdriver set	1	1	1
158		9pc Metric Box Wrench set	1	1	26
159		1" Socket	26	26	1
160		Dead Blow Hammer	1	1	1
161		CDI Torque Wrench 2503MFRMH	1	1	1
162		CDI Torque Wrench 1002MFRMH	1	1	1
163		CDI Torque Wrench 6004MFRMH	1	1	1
164		4pc Screwdriver set	1	1	1
165		4pc wrench set	1	1	1
166		2pc tin sip set	1	1	1
167		10pc wrench set SAE	1	1	1
168		9pc wrench set SAE	1	1	1
169		1/2" socket Deep Well	27	27	
170		4pc Flare Wrench set	1	1	0
171		10pc wrench set metric	1	1	1
172		8pc box wrench set SAE	1	1	0
173		5pc Ratching Wrench set	3	3	3
174		4pc Adjustable Wrench set	1	1	1
175		7pc box wrench set SAE	1	1	1
176		6pc plyer set	1	1	1

Electrician Conex

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
177		10pc large wrench set	1	1	1
178		1/2" socket 8 Pt	14	14	14
179		1/2" socket 12 Pt	12	12	12
180		3/8" socket Deep well	14	14	14
181		3/8" socket allen	14	14	14
182		3/8" socket	52	52	37
183		3/8" universal socket	5	5	1
184		1" socket Deep well Impact	24	19	0
185		1" Socket	14	14	0
186		Ratchet Wrench SAE	6	6	2
187		Rachet Wrench Metric	12	12	12
188		Mini Rachet Wrench SAE	8	8	8
189		Mini Rachet Wrench Metric	12	12	12
190		Bolt Cutter 4559-24	1	1	1
191		Large Socket	11	11	0
192		Ratchet Wrench SAE	4	4	0
193		Wrenches R-20A	13	13	
194		Torx socket	14	14	7
195		Allen socket	11	11	1
196		1/4" Socket	22	22	1
197		Torx Socket nut/bolt remover socket	13	13	4
198		Nut Driver - pieces	7	7	1
199		Pick set 4pc	1	1	1
200		Utility Set 4pc	1	1	1
201		Hack saw blades	5	4	4
202		Double ended socket wrench 1/2 and 3/8	1	1	1
203		Wood Saw	1	1	1
204		Pry Bar	2	2	2
205		Files - assorted	6	6	6
206		Large Channel Lock	1	1	1
207		Adjustable wrench	1	1	1
208		1-1/16 wrench	1	1	1
209		Hack Saw	1	1	1
210		Long Flat head Screwdriver	1	1	1
211		C-clam - various	2	2	1
212		Hammer - various	8	8	8
213		Adjustable wrench - various	3	3	3
214		Leverage Bar	1	1	1
215		Box Cutter	1	1	1
216		Gasket Scrapper	1	1	1
217		Wire Stripper	1	1	1
218		15/16 wrench	1	1	1
219		Phillips screwdriver	1	1	1
220		Side cutter	2	2	2

Electrician Conex

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
221		1" Breaker bar	1	1	1
222		13/15 wrench	1	1	1
223		1-1/2 wrench	1	1	1
224		Scraper	1	1	1
225		Brush	1	1	1
226		Allen wrench set 9pc metric	1	1	1
227		1-3/8 wrench	1	1	1
228		Chain wrench	1	1	1
229		1/2" Extension - various	3	3	3
230		wrenches -various	11	11	11
231		Speed Handle	3	3	3
232		Electrical plyers	3	3	3
233		plyers	1	1	1
234		SAE and Metric Stubby wrenches 14 Pc	2	2	2
235		Adjustable Breaker Bar	1	1	1
236		1" Sockets -various	22	22	22
237		Allen wrenches - various	13	11	11
238		Tool box mats	1	1	1
239		Snips	2	2	2
240		1/4" Socket - various	10	10	10
241		Allen wrenches SAE - various	13	13	13
242		Allen wrenches Metric - various	13	13	13
243		Black Momba	1	1	0
244		Milwaukee M18 Reciprocating Saw	1	1	1
245		Milwaukee M16 6 Battery Charger	1	1	1
246		DeWalt Wood Clamps	0	5	0
247		60W LED Bulb	20	16	0
248		Chain Hoist 2T	1	1	1
249		Head Lamp	2	0	0
250		Kline Bag	1	1	1
251		Kline back pack	1	1	1
252		Makita Charger	1	1	1
253		Makita Battery	1	1	1
254		Milwaukee M18 Battery	2	2	2
255		Dayton Shop Vac	1	1	1
256		Milwaukee Knock-out Tool	1	1	1
257		Milwaukee Knock-out Tool accessories	1	1	1
258		Champion Mag Drill	1	1	1
259		Bench Grinder	1	1	1
260					
261		Milwaukee M18 3/4" Impact driver	1	0	0
262					
263					
264					

Tonnage Well

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
1		Used General Bell alarm assemblies	8	6	-2
2		8x8x4 J-box	1	1	
3		Microswitch	1	1	
4		30A 3ph Disconnect	1	1	
5		Chicago 12V battery charger	1	1	
6		HFD3030L 30A Breaker	2	2	
7		HFD1515L 15A Breaker	1	1	
8		Female socket adapters	5	5	
9		THQB1115 GE Breaker	20	20	
10		CH215 2 Pole 15A Cutler Hammer Breaker	4	4	
11		Single Porcelan A19 Lamp base	30	25	-5
12		817 Eagle Single 15A Receptacles	40	40	
13		5251 I Ivory 15 A Signgle Receptacles	10	22	
14		Pass and Seymour Ivory Duplex Receptacles	20	4	-16
15		FS4 Flourescent Starter	23	23	
16		FS5 Flourescent Starter	40	40	
17		Octagon Knock out Metal Boxes	16	16	
18		1900 Electrical J-Box	9	9	
19		3" Round Metal J-Box Cover	11	11	
20		124D Black Outdoor Lamp holder	75	75	
21		656 6 Watt indicator bulb	120	120	
22		BS07A Ball Valve lockout	1	1	
23		Hubbell 30 A 3 Prong receptacles	5	5	
24		Crimp Sleeves 411	27	27	
25		47 Lamps/NO 379 Lamps	60	60	
26		43 Lamps	40	40	
27		44 Lamps	30	30	
28		NO 334 Lamps	40	40	
29		NO 328 Lamps	30	30	
30		1819 Bulb	30	30	
31		1829 Bulb	20	20	
32		7 1/2 Watt Indicator Lamp	12	12	
33		150 Watt Halogen Lamp	2	2	
34		500 Watt Halogen Lamp	15	17	
35		F3A Lamp	10	10	
36		7220 Lamp	10	10	
37		35 W Bi-pin Halogen Lamp	13	13	
38		40 T-10 Lamp	3	3	
39		PL-7 Flouresent Lamp	6	6	
40		Microplug 223 MP2	4	4	
41		Wire Light Basket	20	20	
42		Glass Jelly Jar Globe	11	11	
43		Kerosene Lantern	1	1	
44		500 W work light	1	1	

Tonnage Well

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
45		Plastic 3 Gal Bucket	1	1	
46		Cutting oil	8	8	
47		Grease tube	12	12	
48		F8TS Lamp	275	275	
49		INX6600BFT Jelly Jar Light base	9	9	
50		Used Motor 120v 3/4 HP	1	1	
51		1060A Light	6	6	
52		15W Transformer/Ballast	12	12	
53		30A Bulkhead Mt G/A Bell switch	1	1	
54		F40T12 Ballast	102	102	
55		89172 F14T12 Lamp	29	29	
56		74472 GE 2F40T12 Ballast	90	90	
57		GFCI Receptacles	6	6	
58		LC-14-20-C Ballast	30	30	
59		50' 3/8" Air hose	1	1	
60		McMaster-Carr Thread Set Screw Kit	1	1	
61		333MPXT Male Plug	1	1	
62		#8 1/2" Self Tapping screw	5lb	5lb	
63		33FCV Female Plug	15	12	-3
64		OTS3 Fuses	10	10	
65		FRN-R-3 Fuses	10	10	
66		OTS10 Fuses	10	10	
67		BAF10 Fuses	112	112	
68		NON7 Fuses	30	30	
69		OTS25 Fuses	10	10	
70		NON50 Fuses	10	10	
71		NON60 Fuses	30	20	
72		AGC-5 Fuses	725	725	
73		RL-15 Fuselinks	2	2	
74		FNM-6 Fuses	30	30	
75		OTS20 Fuses	20	20	
76		TRS15 Fuses	10	10	
77		LPJ-25P Fuses	4	4	
78		FLNR Fuses	20	20	
79		FNM-5 Fuses	20	20	
80		OTS5 Fuses	10	10	
81		OT5 Fuses	25	25	
82		NOS-1 Fuses	10	10	
83		TRS6R Fuses	10	10	
84		NON6 Fuses	20	20	
85		BAF6 Fuses	10	10	
86		FNM-1 Fuses	30	30	
87		FRN-R-2 Fuses	30	30	
88		BAF 5 Fuses	20	20	

Tonnage Well

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
89		NON1 Fuses	20	20	
90		NON3 Fuses	10	10	
91		10KOTS Fuses	10	10	
92		FNM30 Fuses	10	10	
93		OT30 Fuses	27	27	
94		FNA4	90	90	
95		TRM2	37	36	
96		FNM5	620	620	
97		4' LED bulb flourescent replacement	45	11	34
98		Wire Mold 5'	120	90	-30
99		T8/T12 LED Bulb flourescent	6	6	
100		Bag 12x18	500	500	
101		Bag 24x30	200	200	
102		White Lamp Cord	50'	50'	
103		150W Incandescent Lamp	70	62	-8
104		Outdoor LED Bronze Flood Light 50W	11	11	
105		12 Ga Stranded Black Wire	200'	200'	
106		LED 6.5W A19 Dimmable Lamp w/ Filament	175	145	-30
107		Lumapro 13.5W LED A19	35	30	-5
108		Box Power Feed Wires for Deck Capstan	2	2	
109		15W T8 24" Lamp	3	3	
110		Window Kit	1	1	
111		250W Heat Lamp	10	9	-1
112		150W Flood Lamp	2	2	
113		EcoSmart LED 75W replacement	145	136	-9
114		EcoSmart LED 60W replacement	15	11	-4
115		Red and Blue Lamps	4	4	
116		60W Incandescent Lamp	22	21	-1
117		150W Incandescent Lamp	19	19	
118		GE 60W Replacement LED Lamp A19	6	3	-1
119		LED 65W Flood light replacement A19	155	155	
120		75W A19 Replacement LED	4	2	-2
121		75W Incandescent Lamp	15	13	-2
122		F20 T12 Lamp	20	20	
123		Philips TL 12"	22	22	
124		Heater Cable Kit12-4	5	5	
125		115V Bell	10	10	
126		Cord Grip	12	12	
127		Mobil 1 Gear Oil 5 Gal	1	1	
128		Oxy Accetlyne Torch Kit	1	1	
129		Corroseal	0	4	
130		3/4" Ball valve	4	4	
131		Submersible Pump	2	2	
132		Utility sink faucet	1	1	

Tonnage Well

Line Item	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
133		12x12x1 Filter AFP	4	4	
134		15A 125V Marine Plug HBL520M66C	45	42	-3
135		60W Lamp Holder 0034550	20	15	-5
136		Rigid Lock Nut 2" 96196	10	10	
137		Rigid Lock Nut 1-1/2" 96195	10	10	
138		Leviton Plug 15A 125V	3	1	-2
139		Cooper Light Socket 1NX400	40	33	-7
140		240V Switch 1871B	5	5	
141		20A 125V Switch/plug 2640B0-125	2	2	
142		Square J-Box 574	3	2	
143		Round J-Box 525	5	4	
144		240V Switch 862B	3	3	
145		Single Outlet 2632B-125	10	10	
146		Single Switch 861B	6	6	
147		Light/Outlet Combo 250V 1060-A	3	3	
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Cleaning Gear

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	March 2021	Inventory Jun 2022
1		Dawn soap 40oz bottle	8	4	1
2		409 Degreaser 32 oz spray bottle	4	6	12
3		409 Degreaser gallon refill jug	0	8	2
4		Dial Hand soap 7.5 oz	9	6	0
5		Dial Hand soap 40 oz Refill bottle	3	3	0
6		Surface wipes 72 ct package	0	8	4
7		Swiffer Moping cloths	0	8	0
8		Disposable gloves Box	6	3	6
9		Swiffer Mop kits	0	4	0
10		Lysol toilet bowl cleaner	12	20	0
11		Windex Glass cleaner 32 oz spray bottle	10	7	6
12		Mop Head	12	12	5
13		Toilet Paper Case	2	1.5	3
14		Fabreeze bathroom spray	10	4	0
15		Hand sanitizer 8oz	15	9	0
16		Hand sanitizer Gallon	4	3	3
17		Pine sol 175 oz	6	8	8
18		Septic Tank treatment Gallon	1	4	3
19		Mop Bucket	8	7	7
20		Gojo hand cleaner Gallon	1	1	1
21		Bleach Gallon	12	7	3
22		Trash bag 13 Gal 150 Bags	2	1	2
23		Trash bag 55 Gal 50 Bags	4	2	1
24		Clorox wipes 75 Ct	15	5	0
25		Toilet brush	3	2	5
26		Garden Hose spray nozzle	4	4	4
27		Paper Towels Roll	47	36	20
28		Mr Clean Gal	1	1	0
29		Anti Bacterial cleaner 19oz	0	12	0
30		Scouring pads	82	78	0
31		Scrubbing Sponge	15	11	0
32		Hand Soap - Bar	90	90	90
33		Vacuum Bag	10	10	10
34		Rubbermaid cleaning cart	0	1	1
35		Toilet seat cover 250 per box	4	4	4
36		Milwaukee HEPA Filter	1	3	3
37		Hand wipe 72 ct	0	3	0
38		Pine sol 175 oz	0	2	0
39		Toilet Paper Roll	0	16	2
40		Trash bags	0	50	0
41		Mop Bucket	0	1	1
42		Rubbermaid cleaning cart	0	1	1
43					
44					

Pantry

LINE ITEM	ITEM NO.	DESCRIPTION		Inventory	Inventory Jun 2022
1		Dixie Ultra® Interfold Dispenser Napkin, Plain Brown, 5" x 6-1/2" Folded Size, 6000 PK	1	1	
2		Disposable Dispenser Cutlery, PK 960 Fork	1	2	
3		Disposable Dispenser Cutlery, PK 960 Knife	1	1	
4		Disposable Dispenser Cutlery, PK 960 Spoon	1	1	
5		12 oz. Paper Disposable Hot Cup, White, PerfecTouch®, 1000 PK Sleeves	35	20	15
6		Melitta 605211 Classic Decaffeinated (12- Pack)	5	13	5
7		Dunkin Donuts Original Blend Ground Coffee Medium Roast (45 oz)	7	5	0
8		Domino Premium Pure Cane Granulated Sugar, 10 lbs.	6	4	2
9		Wellsley Farms Mediterranean Sea Salt Grinder, 14.6 oz.	0	7	2
10		Wellsley Farms Whole Black Peppercorn Grinder, 6.5 oz.	0	7	2
11		Wellsley Farms Pure Honey, 3 lbs.	1		1
12		Nestle Coffee Mate Coffee Creamer, 56 oz.	7	12	6
13		Artstyle 54" x 108" Table Cover, 4 ct. - White	1	3	0
14		Bigelow Earl Gray Tea, 100 pk.	1	1	1
15		Bigelow Decaffeinated Premium Black Tea, 150 ct.	1	3	2
16		Bigelow Lemon Ginger Herbal Tea, 80 ct.	1	1	1
17		Bigelow Organic Green Tea, 150 ct.	1	1	1
18		Swiss Miss Milk Chocolate Hot Cocoa Mix, 50 pk./1.38 oz.	0	1	3
19		Bunn Coffee Karafe	7	7	0
20		Bunn Coffee Maker	1	1	0
21		5 Gallon Water Cooler	1	1	1
22		Dixie Napkin Dispenser	1	1	1
23		Smart Stock Fork Dispenser	1	1	1
24		Smart Stock Knife Dispenser	1	1	1
25		Smart Stock Spoon Dispenser	1	1	1
26		Microwave	1	1	1
27		Bounty Napkins 800 Pack	3	2	0
28		Sweet-n-Low Box	2	3	2
29		Splenda Box	1	1	1
30		Bunn Coffee Filters Case	1	3	1
31		Wood Coffee stirrer 100 pack	3	3	0
32		Coffee cup lids, Case	1	1	1
33		Refrigerator/Freezer	1	1	1
34		Water 5 Gal	31	15	75
35		Water Case	15	18	0
36		Paper Plates	750	500	250
37		Paper Bowls	125	100	100

Pantry

LINE ITEM	ITEM NO.	DESCRIPTION		Inventory	Inventory Jun 2022
38		Small Plates	100	75	50
39		Food Container disposable	100	100	0
40		Tea, Chamomile	1	1	1
41		Coffee Cup Dispenser rack	1	1	1
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Office Supplies

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
1		BIC Xtra-Smooth Mechanical Pencil, Medium Point (0.7 mm), 40-Count	0	4	
2		Pentel Refill Eraser for Mechanical Pencils, 3 Tubes per pack, 4 erasers per tube	0	3	
3		Mr. Pen - T Square, T Ruler, 12 inch Metal Ruler, T Square Ruler, Drafting Tools, Architect Ruler, Set Square, Drafting Ruler, Tsquare, Truler, Architectural Triangle, Tee Ruler, L Square, Scale Ruler	0	0	
4		Roaring Spring 5x5 Grid Engineering Pad, 15# Green, 3 Hole Punched, 8.5" x 11" 200 Sheets, Green Paper	0	0	
5		Letter Size Clipboard Standard Clip 9" x 12.5" Hardboard	0	6	
6		Paper Mate 89465 Profile Retractable Ballpoint Pens, Bold (1.4mm), Black, 12 Count (Package May Vary)	12	40	
7		Paper Mate Profile Retractable Ballpoint Pens 12 count - Blue	0	0	
8		Pentel Hi-polymer Block Eraser, Large, 3 Pack, White (ZEH10BP3-K6)	0	3	
9		Heavier Tyvek Wristbands 7.5 Mil – Goldistock 1,000 Count Rainbow Variety Pack – ¾" Arm Bands - 200 Each: Neon Green, Blue, Red, Yellow & Orange Paper-Like Party Armbands - Wrist Bands for Events	0	0	In use
10		Book Style Leather Business Name Card Holder Business ID Credit Card Organizer Professional Cards Booklet for Men and Women (Black)	0	0	In use
11		Deflecto Docupocket Stackable Wall Pocket, 13 x 4 x 7", Black (73204)	0	6	
12		Mr. Pen Pink Pencil Erasers, Large, Pack of 12	0	2	
13		Monitor Stand Riser with Drawer - Mesh Metal Desk Organizer PC, Laptop, Notebook, Printer Holder with Pull Out Storage Drawer	0	2	
14		Hilitchi 16 Pcs Pack Plastic Measuring Templates Building Formwork Stencils Geometric Building Furniture Drawing Template Geometry Rulers and Drafting Scale Ruler with Eraser Pencil and Refills	0	0	
15		Scissors, Multipurpose, Ergonomics, Ambidextrous, Steel, Length of cut 3 1/2"	2	0	In use
16		Hook-and-Loop Type Reclosable Fastener with Rubber Adhesive Black 3/4" X 15'	1	1	
17		Industrial Marker, Black, Acrylic, PK36	36	3	
18		Sharpie Permanent Markers, Various	36	34	

Office Supplies

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
19		Fat Book Spiral Notebooks, 6 Pack, Small Notebooks with Poly Plastic Covers, 5.5 x 4 inches, 1-Subject, College Rule, 200 Sheets, by Better Office Products, 6 Assorted Primary Colors, 6 Count	0	2	
20		Rite in the Rain Weatherproof 3"x5" Top Spiral Notebook, Blue Cover, Universal Pattern, 6 Pack (No. 235L6)	0	2	
21		Labelife Compatible Label Tape Replacement for Brother TZe231 Ptouch Tape TZe Label Tape 12mm 0.47 Inch Laminated White Label Maker Tape TZe-231 for P-Touch PTH110 PT-D200 PTD600, 26.2 Feet, 6-Pack	0	1	
22		Labelife Compatible Label Tape Replacement for Brother P-Touch TZe Label Tape 18mm 0.7 Inch Laminated (Black on Orange/Red/Blue/Yellow/Green) for P Touch D400 D600 1880 Label Maker, 3/4 inch, 5-Pack	0	1	
23		Brother Genuine Standard Yield Toner Cartridge, TN730, Replacement Black Toner, Page Yield Up To 1,200 Pages, Amazon Dash Replenishment Cartridge		0	
24		Fasmov 120 Page Divider Pack 3 Ring Binder Dividers with Reinforced Edge, Binder Index Dividers 1/5-Cut Tab, Letter Size	0	3	
25		Avery 8-Tab Binder Dividers, Write & Erase White Big Tabs, 1 Set (23078)	0	3	
26		Avery 15-Tab Dividers for 3 Ring Binders, Customizable Table of Contents, Multicolor Tabs, 6 Sets (11197)	0	3	
27		Cardinal OneStep Binder Dividers, 52-Tab, Customizable Table of Contents, Reversible Multicolor Tabs, Numbered 1–52, 1 Set (60118)	0	1	
28		Binder Clips - Assorted	20	19	-1
29		Thermal Laminator Machine for A3/A4/A6, Abwei Laminating Machine 2 Roller System with Rotary Trimmer, Corner Rounder, 20 Laminating Pouches, Fast Warm-up, for Home and Office Use (A3 Laminator)	1	1	
30		ID Badges for scanning	20	100	
31		Post-it pads	22	19	
32		Sign Here tabs -Various	4	10	
33		Staples - Box	15	15	
34		Stapler	6	6	
35		Rubber Bands- Various Bag	3	3	
36		Highlighters - various	12	108	
37		Gorilla Mounting Tape	1	5	
38		Red Pen	12	6	-6
39		Red Sharpie	12	3	-9
40		Red Felt tip pen	24	24	

Office Supplies

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
41		Dry erase - various	120	117	-3
42		Mechanical Pencil	12	160	
43		Zebra G301	9	36	
44		Zebra Refill	3	28	
45		USB Drive	0	1	
46		Letter opener	3	3	
47		File riser	3	3	
48		Desk Organizer	2	1	
49		Badge Holder	100	100	
50		Paper clip box	40	31	-9
51		Tape dispenser	4	4	
52		Tape, Clear	25	23	-1
53		Gorilla 2 sided tape	3	2	-1
54		Masking Tape	3	2	
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Paint Supplies

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	Inventory Jun 2022
1		4" Mini Roller	25	8	8
2		9" x 3/8" Roller	100	91	71
3		Radiator Brush	10	6	6
4		Straight Brush 2-1/2"	7	1	1
5		Straight Brush 2"	8	1	1
6		Straight Brush 1-1/2"	7	3	3
7		Straight Brush 1"	5	1	1
8		9" Roller Frame	4	1	1
9		4" Mini Roller Frame	8	6	6
10		3" Putty Knife	5	2	2
11		1-1/2" Putty Knife	6	1	1
12		1-1/4" Putty Knife	6	2	2
13		4x15 Drop Cloth	4	2	2
14		Expandable Paint roller handle	4	1	3
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NEW TOOLS

Green Tool Box
CMR3

LINE ITEM	ITEM NO.	DESCRIPTION		Inventory	
1	64721	U.S. GENERAL 30 In. 5 Drawer Green Mechanic's Cart		1	
2	64725	U.S. GENERAL Folding Side Tray For Green Tool Cart		1	
3	56523	ICON Professional Hollow Shaft SAE Nut Drivers, 7 Pc.		1	
4	56525	ICON Professional Hollow Shaft Metric Nut Drivers, 7 Pc.		1	
5	64710	ICON SAE Professional Combination Wrench Set, 14 Pc.		1	
6	64802	ICON SAE Professional Large Combination Wrench Set, 4 Pc.		1	
7	56340	ICON 1/2 In. Drive Professional Low Profile Ratchet		1	
8	64850	ICON 1/2 In. Drive SAE Professional Socket Set, 13 Pc.		1	
9	56508	ICON Professional Mechanic's Screwdriver Set, 8 Pc.		1	
10	61941	HFT Funnel Set, 4 Pc.		1	
11	63363	GRANT'S Microfiber Cleaning Cloth 12 In. X 12 In., 4 Pk.		1	
12	67554	STOREHOUSE O-Ring Assortment, 382 Pc.		1	
13	67580	STOREHOUSE Metric O-Ring Assortment, 397 Pc.		1	
14	42159	PITTSBURGH O-Ring Hook Scribe Set, 2 Pc.		1	
15	56732	ICON Professional Wobble Socket Extension Set, 7 Pc.		1	
16	66936	T-Handle Reamer		1	
17	94162	CHICAGO ELECTRIC 24 In. 2-In-1 Magnetic Pickup Tool		1	
18	7361	PITTSBURGH AUTOMOTIVE Telescoping Mirror		1	
19	64262	QUINN Pliers Set, 4 Pc.		1	
20	30024	PITTSBURGH Welding And Sheet Metal Clamp Set, 2 Pc.		1	
21	64036	PITTSBURGH Curved Jaw Locking Pliers Set, 3 Pc.		1	
22	63813	PITTSBURGH Precision Pliers Set, 6 Pc.		1	
23	56908	PITTSBURGH Industrial Punch And Chisel Set, 12 Pc.		1	
24	62918	VANGUARD 100 Ft. X 10 Gauge Triple Tap Extension Cord		1	
25	69427	PITTSBURGH 4 Pc Adjustable Wrench Set		1	
26	39619	PITTSBURGH 15 In. Adjustable Jumbo Wrench		1	
27	62780	PITTSBURGH 12 In. Hacksaw		1	
28	60714	PITTSBURGH 16 Oz. Fiberglass Claw Hammer		1	
29	39217	PITTSBURGH Ball Peen Hammer Set, 5 Pc.		1	

NEW TOOLS

Green Tool Box
CMR3

LINE ITEM	ITEM NO.	DESCRIPTION		Inventory	
30	69003	PITTSBURGH 2-1/2 Lb. Neon Orange Dead Blow Hammer		1	
31	98258	PITTSBURGH 4 Lb. Fiberglass Drilling Hammer		1	
32	56193	ICON 3/8 In. Drive Professional Low Profile Ratchet		1	
33	64791	ICON 3/8 In. Drive SAE Professional Socket Set, 12 Pc.		1	
34	56588	ICON 3/8 In. Drive SAE Professional Hex Bit Socket Set, 8 Pc.		1	
35	56639	ICON 1/2 In. Drive SAE Professional Hex Bit Socket Set, 8 Pc.		1	
36	98410	PITTSBURGH 7 In. Wire Stripper With Cutter		1	
37	63307	PITTSBURGH 8 In. Four-Way Wire Crimper/Stripper Tool		1	
38	94725	PITTSBURGH SAE & Metric Long Reach Hex Key Set, 36 Pc.		1	
39	90566	PITTSBURGH AUTOMOTIVE 4 In. Magnetic Parts Holder		2	
40	56344	QUINN 10-In-1 Multi-Bit Screwdriver		1	
41	56677	BAUER 30 Ft. Slide-Lock Tape Measure		1	
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TWO-WAY RADIO INVENTORY LIST TYPE: Motorola Solutions Professional Digital Two-Way Radio XPR7550e/XPR3300e Series										**DATE:** 1/31/2023
Radio ID#	Issued To (Company)	Issue Date	Return Date	Radio S/N	Battery S/N	Antenna	Back Clip	Dust Cover	Charger Holder	Charger Supply
NSS-001	Erhard Koehler (MARAD)			871TTPL109	500001D54647	Yes	Yes	Yes	Yes	Yes
NSS-002	Lost (Eric Loyd's original radio)			871TTPL222	500001D060D5	Yes	Yes	Yes	Yes	Yes
NSS-003	Jim Brown			871TTPL103	500001D621A2	Yes	Yes	Yes	Yes	Yes
NSS-004	Caleb Soeun			871TTPL124	500001D10C83	Yes	Yes	Yes	Yes	Yes
NSS-005	Admin Office			871TTPL223	500001D7093D	Yes	Yes	Yes	Yes	Yes
NSS-006	Jayson Easley			871TTPL108	500001CF30B6	Yes	Yes	Yes	Yes	Yes
NSS-007	Chuck Wharton			871TTPL138	500001D59E7E	Yes	No	Yes	Yes	Yes
NSS-008	Rob Swartz			871TTPL221	500001D5C53D	Yes	Yes	Yes	Yes	Yes
NSS-009	Greg Sperbeck			871TTPL232	500001DF89F8	Yes	Yes	Yes	Yes	Yes
NSS-010	Art Paynter			871TTPL207	500001D6E905	Yes	Yes	Yes	Yes	Yes
NSS-011	Broken			871TTPL195	500001D59E42	Yes	Yes	Yes	Yes	Yes
NSS-012	Steve Hoskins			871TTPL120	500001CF0D4E	Yes	Yes	Yes	Yes	Yes
NSS-013	Cynthia Bearor			871TTPL208	500001DFB9F7	Yes	Yes	Yes	Yes	Yes
NSS-014	Scott Ginter			871TTPL146	500001D044F8	Yes	Yes	Yes	Yes	Yes
NSS-015	Adam Blackwell			871TTPL165	500001DFFA19	Yes	Yes	Yes	Yes	Yes
NSS-016	Paul Zeitlin			871TTPL141	500001D70328	Yes	Yes	Yes	Yes	Yes
NSS-017	Lost			871TTPL085	500001D54059	Yes	Yes	Yes	Yes	Yes
NSS-018	Eric Loyd			871TTPL090	500001DFAA05	Yes	Yes	Yes	Yes	Yes
NSS-019	Lost At Sea			871TTPL128	500001DF7A7C	Yes	Yes	Yes	Yes	Yes
NSS-020	Visitor/Contractor - (Victor			871TTPL209	500001D51D89	Yes	Yes	Yes	Yes	Yes
NSS-021	Visitor/Contractor - (Victor			446TTTL254	500001F6EE5E	Yes	Yes	Yes	Yes	Yes
NSS-022	Visitor/Contractor			446TTTL819	500001D7B	Yes	Yes	Yes	Yes	Yes

	(Missing)				A38					
NSS-023	SERAT Trailor			446TUB8795	5000020B9FA9	Yes	Yes	Yes	Yes	Yes
NSS-024	SERAT Trailor			446TUB8639	50000207B7F7	Yes	Yes	Yes	Yes	Yes
NSS-025	Dominic Walsh			446TUB8799	5000020079 6F	Yes	Yes	Yes	Yes	Yes
NSS-026	Steve Hutchins			446TTTL727	500001E876D0	Yes	Yes	Yes	Yes	Yes
TWO-WAY RADIO INVENTORY LIST										**DATE:**
TYPE: Motorola Solutions Professional Digital Two-Way Radio XPR7550e/XPR3300e Series										1/31/2023
NSS-027	Visitor/Contractor (Radio Room) (Missing)			446TTTK068	500001F1CAF2	Yes	Yes	Yes	Yes	Yes
NSS-028	A-18			446TTTL290	500001CEF671	Yes	Yes	Yes	Yes	Yes
NSS-029	Admin's Office			446TTV4268	500001EF62F9	Yes	Yes	Yes	Yes	Yes
NSS-030	Gwen Turner			446TTTL470	500001EF823C	Yes	Yes	Yes	Yes	Yes
NSS-031	Broken			446TTX0408	500001EC465E	Yes	Yes	Yes	Yes	Yes
NSS-032	SERAT Trailor			446TTX0314	500001EEFC9E	Yes	Yes	Yes	Yes	Yes
NSS-033	A-18			446TTX0154	500001EC4602	Yes	Yes	Yes	Yes	Yes
NSS-034	Tamara Songer			446TTX0479	500001EC794F	Yes	Yes	Yes	Yes	Yes
NSS-035	A-18			446TTX4716	500001F29C82	Yes	Yes	Yes	Yes	Yes
NSS-036	A-18 (Missing)			446TTX0224	500001EEEAC3	Yes	Yes	Yes	Yes	Yes
NSS-037	Tom Osborne			446TTX0402	500001EA3FD0	Yes	Yes	Yes	Yes	Yes
NSS-038	Jimmy Klouch			446TTX4724	500001EC696D	Yes	Yes	Yes	Yes	Yes
NSS-039	Visitor/Contractor			446TTX0488	500001EF070F	Yes	Yes	Yes	Yes	Yes
NSS-040	Broken			446TTX0161	500001ECFCA0	Yes	No	Yes	Yes	Yes
OLD-016	**Broken**			**037TPQK810**	**PMNN4069A**	**Yes**	**No**	**Yes**	**Yes**	**Yes**
NSS-041	Victor Ventura			446TUM2923	50000203974A	Yes	Yes	Yes	Yes	Yes
NSS-042	A-18			446TUM2884	5000021E6A61	Yes	Yes	Yes	Yes	Yes
NSS-043	Victor Ventura			446TUM3005	5000021E6B2A	Yes	Yes	Yes	Yes	Yes
NSS-044	John			446TUM289	500002091B	Yes	Yes	Yes	Yes	Yes

NSS-044	Galaher			0	04	Yes	Yes	Yes	Yes	Yes
NSS-045	Admin Office			446TUM2844	5000021E5B31	Yes	Yes	Yes	Yes	Yes
NSS-046	Ernie McElroy			446TUM2963	500002039DC7	Yes	Yes	Yes	Yes	Yes
NSS-047	Admin Office			446TUM3030	500002091ED7	Yes	No	Yes	Yes	Yes
NSS-048	Vanessa Lagasca			446TUM2836	50000220902F1	Yes	Yes	Yes	Yes	Yes
NSS-049	Sandra Holley			446TUM3021	5000021DF2DA	Yes	Yes	Yes	Yes	Yes
NSS-050	Justin Long			446TUK1158	5E+11	Yes	Yes	Yes	Yes	Yes
NSS-051	April Thomas			446TURG138	5000022543F3	Yes	Yes	Yes	Yes	Yes
NSS-052	A-18			446TURF978	5000022A7631	Yes	Yes	Yes	Yes	Yes
TWO-WAY RADIO INVENTORY LIST TYPE: Motorola Solutions Professional Digital Two-Way Radio XPR7550e/XPR3300e Series										**DATE:** 1/31/2023
NSS-053	A-18 (Missing)			446TURG242	50000221D7BA	Yes	Yes	Yes	Yes	Yes
NSS-054	Nick Watls			446TURG295	50000210B095	Yes	Yes	Yes	Yes	Yes
NSS-055	Anthony Margan			446TURG293	50000214755A	Yes	Yes	Yes	Yes	Yes
NSS-056	Admin's Office (Missing)			446TURH483	5000022B3600	Yes	Yes	Yes	Yes	Yes
NSS-057	AECON			446TURF239	5000021E7797	Yes	No	Yes	Yes	Yes
NSS-058	Nestor A.			446TURH411	5000021FE05B	Yes	Yes	Yes	Yes	Yes
NSS-059	Broken			446TURH478	5000021FA128	Yes	Yes	Yes	Yes	Yes
NSS-060	Broken			446TURH611	5000221D045	Yes	Yes	Yes	Yes	Yes
NSS-061	A-18			446TURG571	5000022AD6ZE	Yes	Yes	Yes	Yes	Yes
NSS-062	A-18 (Missing)			446TURG296	5.00E+24	Yes	Yes	Yes	Yes	Yes
NSS-063	Tiffany McCallum			446TURG118	5000022558A1	Yes	Yes	Yes	Yes	Yes
NSS-064	Rob Millican			446TURG248	500022AB458	Yes	Yes	Yes	Yes	Yes
NSS-065	Jakiera Bailey (J.B.)			446TURG298	5000022AB5E5	Yes	Yes	Yes	Yes	Yes
NSS-066	Admin Office			446TURH067	5000224D689	Yes	Yes	Yes	Yes	Yes
NSS-067	Jacqueline			446TURG78	500002144E	Yes	Yes	Yes	Yes	Yes

NSS-067	Benetiz			8	2B	Yes	Yes	Yes	Yes	Yes
NSS-068	Frank Okono			446TURH003	5000021F9067	Yes	Yes	Yes	Yes	Yes
NSS-069	Broken			446TURG972	500002255F91	Yes	Yes	Yes	Yes	Yes
NSS-070	Jim Woods			446TURG984	5E+11	Yes	Yes	Yes	Yes	Yes
NSS-071	Victor Ventura			446TURG976	500002144D6E	Yes	Yes	Yes	Yes	Yes
NSS-072	A-18			446TURH024	5000021F9CD4	Yes	Yes	Yes	Yes	Yes
NSS-073	Darren Calhoun			446TURG974	500002145ECC	Yes	Yes	Yes	Yes	Yes
NSS-074	Victor Ventura			446TURH085	5E+11	Yes	Yes	Yes	Yes	Yes
NSS-075	Admin Office			446TURH108	5E+11	Yes	Yes	Yes	Yes	Yes
NSS-076	Broken			446TURH590	5000021472D8	Yes	Yes	Yes	Yes	Yes
NSS-077	Ryan Adkins			446TURH588	500002147F15	Yes	Yes	Yes	Yes	Yes
NSS-078	Matt Arsenault			446TURH599	500002246B63	Yes	Yes	Yes	Yes	Yes
NSS-079	Victor Ventura			446TURH480	5000022AAEFB	Yes	Yes	Yes	Yes	Yes
TWO-WAY RADIO INVENTORY LIST TYPE: Motorola Solutions Professional Digital Two-Way Radio XPR7550e/XPR3300e Series										**DATE:** 1/31/2023
NSS-080	Broken			446TURH597	5000021FE719	Yes	Yes	Yes	Yes	Yes
NSS-081	Mark McEvoy			446TURH039	5000022A753	Yes	Yes	Yes	Yes	Yes
NSS-082	Visitor/Contractor (Missing)			446TURG156	500002144BAD	Yes	Yes	Yes	Yes	Yes
NSS-083	Broken			446TURG211	5000021FE609	Yes	Yes	Yes	Yes	Yes
NSS-084	David Johnson			446TURG219	500002144CB4	Yes	Yes	Yes	Yes	Yes
NSS-085	Broken			446TURG05	500002146FB4	Yes	Yes	Yes	Yes	Yes
H1				CAB188HA19VD						
H2				CAB188HA1CPJ						
H3				CAB188HA1HR4						

H4				CAB188HA1 HSF						
H5				CAB188HA1 L2G						
H6				CAB188HA1 J9G						
H7				CAB188HA1 BB						
H8				CAB188HA1 J29						
H9				CAB188HA1 CBN						
H10				CAB188HA1 CP6						

Blue Tool Box

Fwd Tool Room

NEW TOOLS

LINE ITEM	ITEM NO.	DESCRIPTION		Inventory	
1	64434	U.S. GENERAL 26 In. X 22 In. Single Bank Blue Roller Cabinet		1	
2	64430	U.S. GENERAL 26 In. Single Bank Blue Top Chest		1	
3	56523	ICON Professional Hollow Shaft SAE Nut Drivers, 7 Pc.		1	
4	56525	ICON Professional Hollow Shaft Metric Nut Drivers, 7 Pc.		1	
5	64710	ICON SAE Professional Combination Wrench Set, 14 Pc.		1	
6	64802	ICON SAE Professional Large Combination Wrench Set, 4 Pc.		1	
7	56340	ICON 1/2 In. Drive Professional Low Profile Ratchet		1	
8	64850	ICON 1/2 In. Drive SAE Professional Socket Set, 13 Pc.		1	
9	56508	ICON Professional Mechanic's Screwdriver Set, 8 Pc.		1	
10	61941	HFT Funnel Set, 4 Pc.		1	
11	63363	GRANT'S Microfiber Cleaning Cloth 12 In. X 12 In., 4 Pk.		1	
12	67554	STOREHOUSE O-Ring Assortment, 382 Pc.		1	
13	67580	STOREHOUSE Metric O-Ring Assortment, 397 Pc.		1	
14	42159	PITTSBURGH O-Ring Hook Scribe Set, 2 Pc.		1	
15	56732	ICON Professional Wobble Socket Extension Set, 7 Pc.		1	
16	66936	T-Handle Reamer		1	
17	94162	CHICAGO ELECTRIC 24 In. 2-In-1 Magnetic Pickup Tool		1	
18	7361	PITTSBURGH AUTOMOTIVE Telescoping Mirror		1	
19	64262	QUINN Pliers Set, 4 Pc.		1	
20	30024	PITTSBURGH Welding And Sheet Metal Clamp Set, 2 Pc.		1	
21	64036	PITTSBURGH Curved Jaw Locking Pliers Set, 3 Pc.		1	
22	63813	PITTSBURGH Precision Pliers Set, 6 Pc.		1	
23	56908	PITTSBURGH Industrial Punch And Chisel Set, 12 Pc.		1	
24	62918	VANGUARD 100 Ft. X 10 Gauge Triple Tap Extension Cord		1	
25	69427	PITTSBURGH 4 Pc Adjustable Wrench Set		1	
26	39619	PITTSBURGH 15 In. Adjustable Jumbo Wrench		1	
27	62780	PITTSBURGH 12 In. Hacksaw		1	
28	60714	PITTSBURGH 16 Oz. Fiberglass Claw Hammer		1	
29	39217	PITTSBURGH Ball Peen Hammer Set, 5 Pc.		1	

Blue Tool Box

Fwd Tool Room

NEW TOOLS

LINE ITEM	ITEM NO.	DESCRIPTION		Inventory	
30	69003	PITTSBURGH 2-1/2 Lb. Neon Orange Dead Blow Hammer		1	
31	98258	PITTSBURGH 4 Lb. Fiberglass Drilling Hammer		1	
32	56193	ICON 3/8 In. Drive Professional Low Profile Ratchet		1	
33	64791	ICON 3/8 In. Drive SAE Professional Socket Set, 12 Pc.		1	
34	56588	ICON 3/8 In. Drive SAE Professional Hex Bit Socket Set, 8 Pc.		1	
35	56639	ICON 1/2 In. Drive SAE Professional Hex Bit Socket Set, 8 Pc.		1	
36	98410	PITTSBURGH 7 In. Wire Stripper With Cutter		1	
37	63307	PITTSBURGH 8 In. Four-Way Wire Crimper/Stripper Tool		1	
38	94725	PITTSBURGH SAE & Metric Long Reach Hex Key Set, 36 Pc.		1	
39	90566	PITTSBURGH AUTOMOTIVE 4 In. Magnetic Parts Holder		2	
40	56344	QUINN 10-In-1 Multi-Bit Screwdriver		1	
41	56677	BAUER 30 Ft. Slide-Lock Tape Measure		1	
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HAZMAT Inventory

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory	
1		CFL Bulbs	12	50	
2		F4T5 Bulbs 4' Flourescent	11	21	
3		F4T5 Bulbs 4' Flourescent	0	34	
4		Sodium Lamps	12	12	
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6					
7					
8		Used Hydraulic Oil	0	100 Gal	
9		Used Paint Thinner		25 Gal	
10		Oily Rags			
11		HP Lab Fluid?			
12		PCB Rag drum		55 Gal	
13		Lead Paint chips drum		55 Gal	
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Records Vault
Tech Library

LINE ITEM	ITEM NO.	DESCRIPTION	Inventory May 2020	Inventory Mar 2021	
1		Model TX-3000 Printer	1	1	
2		Model GSC-7151W-CAAE Monitor	1	1	
3		Dell Precision15500	1	1	
4		Zeutschel 05 12000	1	1	
5		Dell Power Edge T310	2	2	
6		Monitor LCD 21"	1	1	
7		Monitor LCD 15"	1	1	
8		Microfilm projector	2	2	
9		MATRIX-CE-II-32	1	1	
10		Dell Optiplex 3060	1	1	
11		Type writer	1	1	
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