

CHAPTER 1
INTRODUCTORY INFORMATION
WITH
THEORY OF OPERATION

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**INTRODUCTORY INFORMATION
FPU SYSTEMS OPERATION MANUAL
(INCLUDING REPAIR PARTS & SPECIAL TOOL LIST)
FOR
MODELS FPU-8-4/BOH-CARGO-12-3 & FPU-20-3**

GENERAL INFORMATION

SCOPE**Equipment Covered**

This technical manual contains instructions for the operation, preventive maintenance, Unit and Direct Support corrective maintenance for the Boh FPU Cargo Containers (FPU) and its associated equipment.

Type of Manual

This is an Operator, Unit and Direct Support, Operation and Maintenance Manual, including Repair Parts & Special Tools List.

Equipment Name and Model Number

Boh FPU Cargo Containers

FPU- 8-4/BOH-CARGO-12-3

FPU-20-3

Purpose of Equipment

The FPU consists of modular containers with bin, pallet, security basket, and bulk storage configurations tailored to meet individual Supply/Maintenance/ Logistical Support needs. The system has the ability to operate in fixed facilities or field environments in either its uploaded or downloaded configuration. Containers are air-deployable and linkable into variable length sections. The FPU provides containerized Class I, II, III(P), IV, VII, VIII and IX storage with full strategic/tactical intermodal transportability for supply support activities.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your FPU needs improvement, let us know. Send us a description of the recommended change to jstokes@bohenvironmental.com. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problem with the FPU be reported so that the problem can be corrected and improvements can be made to prevent the problem in the future items.

While corrosion is typically associated with rusting of metals, it can also include deterioration of other materiel, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

If a corrosion problem is identified, it can be reported directly to jstokes@bohenvironmental.com. Use of key words such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem.

PREPARATION FOR STORAGE OR SHIPMENT

All preventive maintenance checks and services should be performed on the FPU and its components prior to any storage or shipment.

RECEIVING THE FPU INVENTORY

Unpacking and Inventory of FPU Components upon Initial Receipt

With the FPU containers downloaded, check the equipment against the Components of End Item List and Basic Issue List (WP 0041 00). Report any discrepancy to your supervisor.

END OF WORK PACKAGE

DESCRIPTION AND THEORY OF OPERATION

FPU SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS & SPECIAL TOOL LIST) FOR MODELS FPU-8-4/BOH-CARGO-12-3 & FPU-20-3

EQUIPMENT CHARACTERISTICS, COMPONENTS AND ACCESSORIES

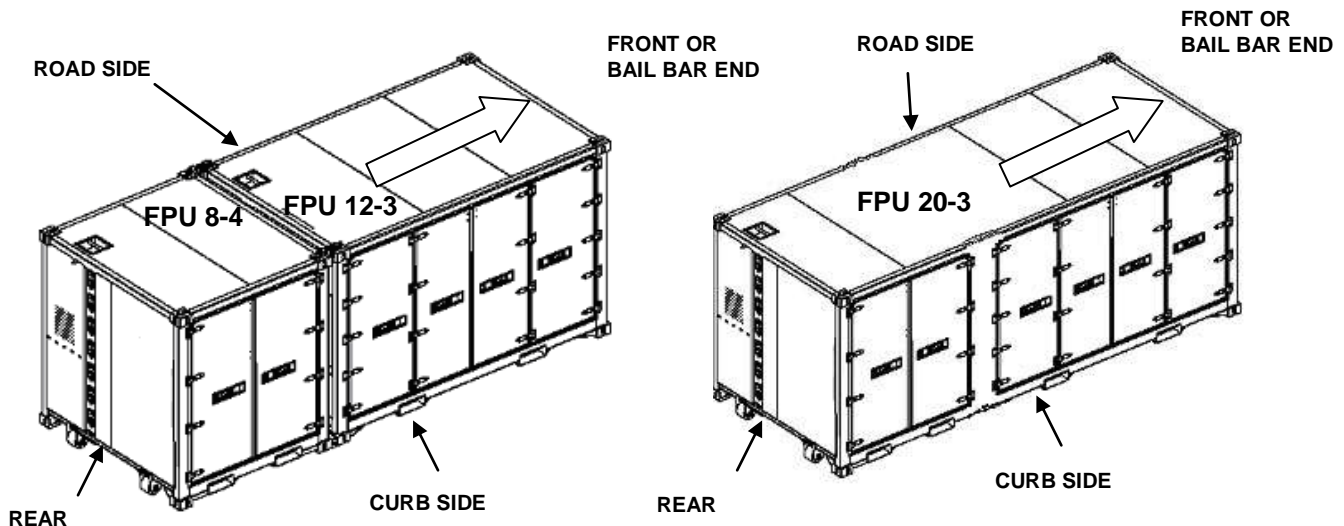
EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES

Boh FPU Cargo Container Systems are a durable standardized storage and transport system capable of rapidly mobilizing material. These systems can be configured to store and transport small, medium, large, palletized and bulk material. The FPU 8-4/BOH-CARGO-12-3 and FPU-20-3 containers (20'L x 8'W x 8'H) are side-load containers with bi-fold doors. Both of these FPU containers can be transported by standard material handling equipment but have been specifically designed for direct load on to the Palletized Loading Systems (PLS) and HEMTT-LHS without the use of a PLS Flatrack. These container systems are ISO Certified and CSC Safety Approved and can be stacked nine high onboard commercial or MSC container ships. FPU 8-4/BOH-CARGO-12-3 and FPU-20-3 maximum capacity is 37,000 lbs. The BOH FPU containers come in two color variations: Forrest Green and Desert Sand.

This manual will cover the FPU 8-4/BOH-CARGO-12-3 and FPU-20-3 and the variety of configurations for the internal storage aids.

CONTAINER ORIENTATION

FPU 8-4/BOH-CARGO-12-3 and FPU-20-3 orientation: When facing the side of the container and the bail bar is to your right, you are facing the curbside of the containers.



FPU 8-4/BOH-CARGO-12-3 and FPU-20-3 Container Configurations

The FPU 8-4/BOH-CARGO-12-3 and FPU-20-3 container systems are modular systems that can be configured with a variety of internal storage aids (see our web site at www.bohenvironmental.com for more information) to satisfy user needs. The following are storage aids that can be installed inside these containers:

- 19 standard removable storage modules for small and medium size material. These modules consist of 4-inch, 6-inch, 8-inch, 10-inch, 12-inch and 16-inch drawers.
- Flammable / Corrosive modules for storage of hazardous material.
- Weapons Vault module for the storage of M16, M4 and 9mm weapons.
- Pullout shelves for large material with a maximum capacity of up to 4,500 lbs.
- Parts Racks with drawers for medium size material.
- Bulk Racks with pallets for palletized material.
- Tie-down rings for oversize bulk material.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

FPU 8-4/BOH-CARGO-12-3

The Field Pack-Up Unit (FPU) when joined in a twenty-foot configuration is capable of transport via the HEMTT-LHS or PLS utilizing the built in bail bar with rail system and removable rear rollers without use of a PLS flatrack. This container system consists of a seven foot long container and a 12-foot 9-inch long container that when connected together with our ISO certified connectors form an 8' x 8' x 20' ISO certified container. This feature allows the container to be separated and move when heavy MHE is limited or unavailable.

FPU-8-4 Container

The FPU 8-4 container can be configured to accommodate up to four standard or specialized modules, up to two Glide-Out storage racks with pullout shelves, up to two pallet racks, up to eight tie-down rings or a combination of these storage aids. The FPU-8-4 consists of 2 barn doors (both sides), retractable roof access steps, door restraint straps, forklift pockets and a convection type ventilation system.

BOH-CARGO-12-3 Container

The BOH-CARGO-12-3 container can be configured to accommodate up to two pallet racks with special pallets, up to two parts racks with drawers or up to sixteen tie-down rings or a combination of these storage aids. The BOH-CARGO-12-3 consists of 2 barn doors (both sides), retractable roof access steps, door restraint straps, forklift pockets and a convection type ventilation system.

FPU-20-3 Container

The FPU-20-3 container can be configured to accommodate up to four standard or specialized modules, up to two Glide-Out storage racks with pullout shelves, up to two large pallet racks, up to two small pallet racks, up to twenty four tie-down rings or a combination of these storage aids. The BOH-CARGO-12-3 consists of two barn doors and two bi-fold doors (on both sides), retractable roof access steps, door restraint straps, forklift pockets and a convection type ventilation system.

BOH FPU STORAGE AIDS

Optional Standard Storage Modules

Boh Standard storage modules come in 19 configurations and are designed to accommodate small and medium material. Module drawers come in 4-inch with retention lid to secure small loose parts in individual compartments, 6-inch, 8-inch, 10-inch, 12-inch and 16-inch. Internal drawer dividers are

adjustable every 2-inches. These modules are extremely rugged and were designed for the dynamics realized during mobile application. Drawers have a maximum capacity of 200 lbs to 400 lbs depending on the drawer size. Modules are secured to the FPU container with a twist lock located inside the container and female receptacle located on the bottom of the module. Using a forklift and the forklift pockets located at the bottom of the module, they can be easily removed by pulling the locking arm outward to release the module from the twist lock. Modules consist of a removable locking bar to secure drawers during transport, individual drawer locks and a dust cover to resist water and dust from penetrating the drawers when operating outside the FPU container. Boh Standard Storage Modules are approved for airlift when with or without the FPU container. For more information about our standard storage modules see our web site at www.bohenvironmental.com.

Optional Specialized Storage Modules

Flammable / Corrosive Module: The Boh Flammable / Corrosive module is constructed to meet NFPA 30 and 29 CFR for the storage of hazardous material. These modules are extremely rugged and were designed for the dynamics realized during mobile application. It consists of dual wall construction with all steel exterior and spark resistant aluminum interior. Continuous welded drawers and floor area provide containment in the event of leaks. Drawer slides are designed using Ultra High Molecular Weight (UHMW) material to eliminate metal-to-metal contact and prevent sparks during transport. Door completely seals when in the closed position to protect stored material from the environment during transport. This module consists of a pressure relief valve to normalize internal pressure prior to opening. For more information about our Flammable / Corrosive modules see our web site at www.bohenvironmental.com.

Weapons Vault Module: The Boh Weapons Vault module is constructed with a dual wall, all-steel exterior / interior and accommodated 5 weapons drawers or security drawers. There are currently three different weapons drawers. The M16A2 is designed to store M16 weapons. Each drawer can store up to 8 rifles or 40 weapons in a single module. The M4 is designed to store M4 weapons. Each drawer can store up to 7 weapons per drawer or 35 weapons in a single module. The M4 drawer is adjustable to accommodate either the short barrel or long barrel. M4 weapons can be stored in the drawers and module with the laser equipment sight and equipment when attached at the top of the weapon. The 9MM drawer is designed to store 9MM weapons. Each drawer can store up to 56 weapons or 280 weapons in a single module. These modules are extremely rugged and were designed for the dynamics realized during mobile application. For more information about our Weapons Vault modules see our web site at www.bohenvironmental.com.

Optional Heavy Duty Retractable Shelves

The Boh Glide-Out Module is designed for the storage of large heavy material. These modules are extremely rugged and were designed for the dynamics realized during mobile application. Shelf capacities are 1,000 lbs, 2,000 lbs, 2,250 lbs and 4,500 lbs. Shelves are retractable to allow access to material stored at the rear of the shelf. Shelves lock in the closed and open position. Each shelf consists of a cargo net to secure material during transport. The Battery Shelf is rated at 2,250 lbs and consists of an 8-inch lip around the perimeter and an acid resistant secondary containment liner. This shelf is designed for the storage of batteries and hazardous material such as package POL. For more information about our Glide-Out modules see our web site at www.bohenvironmental.com.

Bulk Storage Aids

The Boh Bulk Storage Aids are design for the storage of bulk and/or palletized material. These racks and pallets are extremely rugged and were designed for the dynamics realized during mobile application.

Bulk Storage Aids for the Boh-Cargo-12 and front section of the FPU-20-3 consists of four vertical uprights that are mounted to the floor and ceiling of the containers, three 48-inch wide standard pallets, one 32-inch standard pallet, one 48-inch hazmat pallet with secondary containment and one 32-inch hazmat pallet with secondary containment. Each standard pallet comes with four 2-inch ratchet straps

and the hazmat pallets come with cargo nets. Individual pallets are adjustable every 4-inches. Tie-down rings are located at the bottom of the vertical uprights to secure floor-loaded material. Each floor load position comes with a cargo net. Pallets are secured into position by a rear cam lock that engages when the pallet is inserted into the pallet ledge. The front of the pallet is secured using two jackscrews located on the front the pallet ledges.

Bulk Storage Aids for the FPU-8-4 and rear section of the FPU-20-3 consists of two vertical uprights that are mounted to the floor and ceiling of the containers and two 67-inch pallets. Each standard pallet comes with four 2-inch ratchet straps. Individual pallets are adjustable every 4-inches. Tie-down rings are located at the bottom of the vertical uprights to secure floor-loaded material. Each floor load position comes with a cargo net. Pallets are secured into position by a rear cam lock that engages when the pallet is inserted into the pallet ledge. The front of the pallet is secured using two jackscrews located on the front the pallet ledges.

For more information about our Bulk Storage Aids see our web site at www.bohenvironmental.com.

Parts Storage Aids

The Boh Parts Storage Aids are design for the storage of bulk and/or palletized material. These racks and pallets are extremely rugged and were designed for the dynamics realized during mobile application. Boh Parts Storage Aids for the Boh-Cargo-12 and front section of the FPU-20-3 consists of four vertical uprights that are mounted to the floor and ceiling of the containers, eight 48-inch wide by 12-inch deep drawers, two 48-inch wide by 2-inch deep drawer, one 32-inch wide by 8-inch deep drawer and one 32-inch wide by 2-inch deep drawer. 8-inch drawers are provided with dividers that are adjustable every 2-inches. 2-inch drawers come with a cargo net to secure material during transport. Drawers have a maximum capacity of 150 lbs. Drawers consists of locks that secure the drawer in the closed and open position, a removable locking bar to secure drawers during transport and 100 percent extension drawer slides. For more information about our Bulk Storage Aids see our web site at www.bohenvironmental.com.

BOH FPU CARGO CONTAINER ACCESSORIES

Removable Module Cradle

The Removable Module Cradle consists of eight female receptacles, two twist locks and mounting hardware. This removable cradle accommodates two standard or specialized storage modules or one Glide-Out.

Fork Pocket Adapter Plug (Applicable to the FPU-8-4/BOH-CARGO-12-3 container system only)

Designed to fit into the opening of the FPU 8-4 forklift pocket, the Fork Pocket Adapter Plug allows the container to be locked down onto the PLS trailer during rail transport. The connectors are stowed inside the FPU-8-4/BOH-CARGO-12-3 and inserted only when the container is loaded on the trailer and/or is being transported by train. For storage, removal, and installing the rear rollers refer to WP 0004 00.

Rear Rollers

The rear rollers are detachable dual seven inch rollers mounted at the rear under the FPU 8-4 or rear of the FPU-20-3 container using two 3/4-inch pins. Once connected to the FPU 8-4/12, it allows the 20-foot configuration to be loaded/unloaded on the HEMTT truck and PLS trailer using the bail bar and integrated loading rails. The rear rollers are stored in the FPU-8-4/BOH-CARGO-12-3 or FPU-20-3 when not in use. For storage, removal, and installing the rear rollers refer to WP 0004 00.

Horizontal Interconnectors and Bridge Locks (Applicable to the FPU-8-4/BOH-CARGO-12-3 container system only)

The Horizontal Interconnectors used to lock our FPU-8-4/BOH-CARGO-12-3 container system together are ISO certified by ABS. These connectors were used during the container ISO certification process IAW ISO 1496-2. Horizontal interconnectors should be stored inside the FPU-8-4 or BOH-CARGO-12-3 when they are disconnected to prevent loss. These connectors must be installed in accordance with procedures described in WP 0004 00.

Bridge Locks (Applicable to the FPU-8-4/BOH-CARGO-12-3 container system only)

Bridge locks are used to provide extra security when the FPU-8-4/BOH-CARGO-12-3 are connected and the container system is to be transported using a PLS or HEMTT-LHS. Bridge locks must be removed prior to shipment of FPU-8-4/BOH-CARGO-12-3. These Bridge Locks must be installed in accordance with procedures described in WP 0004 00

Loading Rail Connector Assembly

A loading rail connector assembly is also provided for connecting FPU 8-4 and FPU 12-2 containers. This assembly is stored with other connector kit items in the FPU 12-2 container.

EQUIPMENT DATA

FPU-8-4/BOH-CARGO-121-3 (when connected) and FPU-20-3

Length:	20-foot (6.1m)
Width:	8-foot (2.44m)
Height:	8-foot (2.44m)

FPU-8-4

Length:	7-foot (2.13m)
Width:	8-foot (2.44m)
Height:	8-foot (2.44m)

BOH CARGO-12-3

Length:	12.9 foot (3.93m)
Width:	8-foot (2.44m)
Height:	8-foot (2.44m)

FPU-20-3

Length:	20-foot (3.88m)
Width:	8-foot (2.44m)
Height:	8-foot (2.44m)

FPU CONTAINER WEIGHT TABLE

For Operations with HEMTT-LHS or PLS				
Container Type	Tare Weight	Max Gross Weight	Net (Cargo) Weight	MHE Recommended
FPU-8-4	3,655	18,000	14,345	20K Forklift
BOH-CARGO-12-3	6,075	19,000	12,925	20K Forklift
FPU-8-4/BOH-CARGO-12-3 (When connected)	9,730	37,000 (Note)	27,270	RTCH
FPU-20-3	8,600	37,000 (Note)	28,400	RTCH
Note: When operating FPU-8-4/BOH-CARGO-12-3 or FPU-20-3 on a HEMTT-LHS, Max Gross Weight loaded into FPUs must be calibrated to comply with 26,000lb maximum restriction.				

END OF WORK PACKAGE

INTRODUCTORY INFORMATION

FPU SYSTEMS OPERATION MANUAL
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FOR
MODELS FPU-8-4/BOH-CARGO-12-3 & FPU-20-3

EQUIPMENT DATA LABELS, IDENTIFICATIONS, MARKINGS AND AIRLIFT CERTIFICATION

BOH FPU CARGO CONTAINER and CSC Data Plates

The BOH ISO data plates are affixed to the right-hand doors of each container, below the door handles. This plate identifies information required for transport aboard ship. The ABS data plate is located adjacent the ISO data plate. This plate identifies special requirements information for use during transport aboard ship.

THE FPU SHIPPING/STORAGE CONTAINER SYSTEM	
MANUFACTURER ADVANCED CONTAINMENT SYSTEMS INC. 8720 LAMBRIGHT HOUSTON, TX 77075 TEL(713) 967-0336 FAX(713)967-0355	PATENT HOLDER / DISTRIBUTOR BOH FPU SYSTEMS BOH ENVIRONMENTAL, LLC 14820 AVON PARKWAY, SUITE 200 CHANTILLY, VA 20151 TEL(703) 448-8020
NSN MODEL NO. MANUFACTURER'S P/N PATENT NUMBER SERIAL NUMBER DATE MANUFACTURED CONTRACT NUMBER MAXIMUM GROSS WEIGHT	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
GROUND <input type="text"/> KG <input type="text"/> LB AIR <input type="text"/> KG <input type="text"/> LB	

(Sample) FPU Manufacturers Data Plate

APPROVED FOR TRANSPORT UNDER CUSTOMS SEAL		
USA/174-AB/03-01		
TYPE FPU 8-3	MFG. No. OF CONTAINER AC000603	
MANUFACTURER ADVANCED CONTAINMENT SYSTEMS INC. 8720 LAMBRIGHT HOUSTON, TX 77075 TEL(713) 967-0336 FAX(713)967-0355	APPROVED BY AMERICAN BUREAU OF SHIPPING AB/17403	PATENT HOLDER / DISTRIBUTOR BOH FPU SYSTEMS BOH ENVIRONMENTAL, LLC 14820 AVON PARKWAY, SUITE 200 CHANTILLY, VA 20151 TEL(703) 448-8020
CSC SAFETY APPROVAL USA/AB - 174/03 -01		
DATE MANUFACTURED IDENTIFICATION NUMBER MAXIMUM GROSS WEIGHT ALLOWABLE STACK WT. FOR 1.00 PACKING TEST LOAD VALUE <small>SIDE WALL STRENGTH 2 Pg</small>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	INSPECTION SHALL BE BEFORE <input type="text"/> <input type="text"/> <input type="text"/>

(Sample) SPECIAL REQUIREMENTS
PLATE CSC APPROVAL PLATE

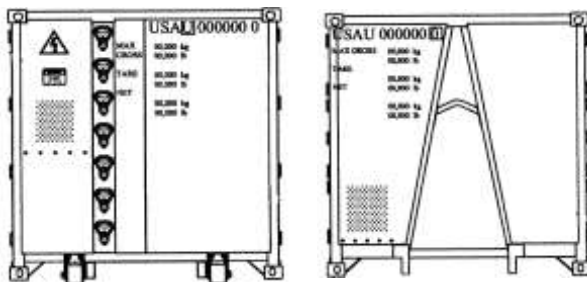
Both the BOH FPU-8-4/BOH-CARGO-12-3 and the FPU-20-3 are approved for transport as 20-foot ISO containers. Also the BOH FPU-8-4 and the BOH-CARGO-12-3 are approved independently when they are disconnected from each other. The BOH FPU-8-4/BOH-CARGO-12-3 containers must be connected to transport by commercial and MSC container ships. For their approval to be valid, the following requirements must be met:

1. Certified/tagged FPU's must be matched only. See the CSC Approval Plate on a certified FPU USA/174-AB/03-01 series container.
2. Individual FPUs must have a current CSC certification (shown on the CSC Approval Plate).

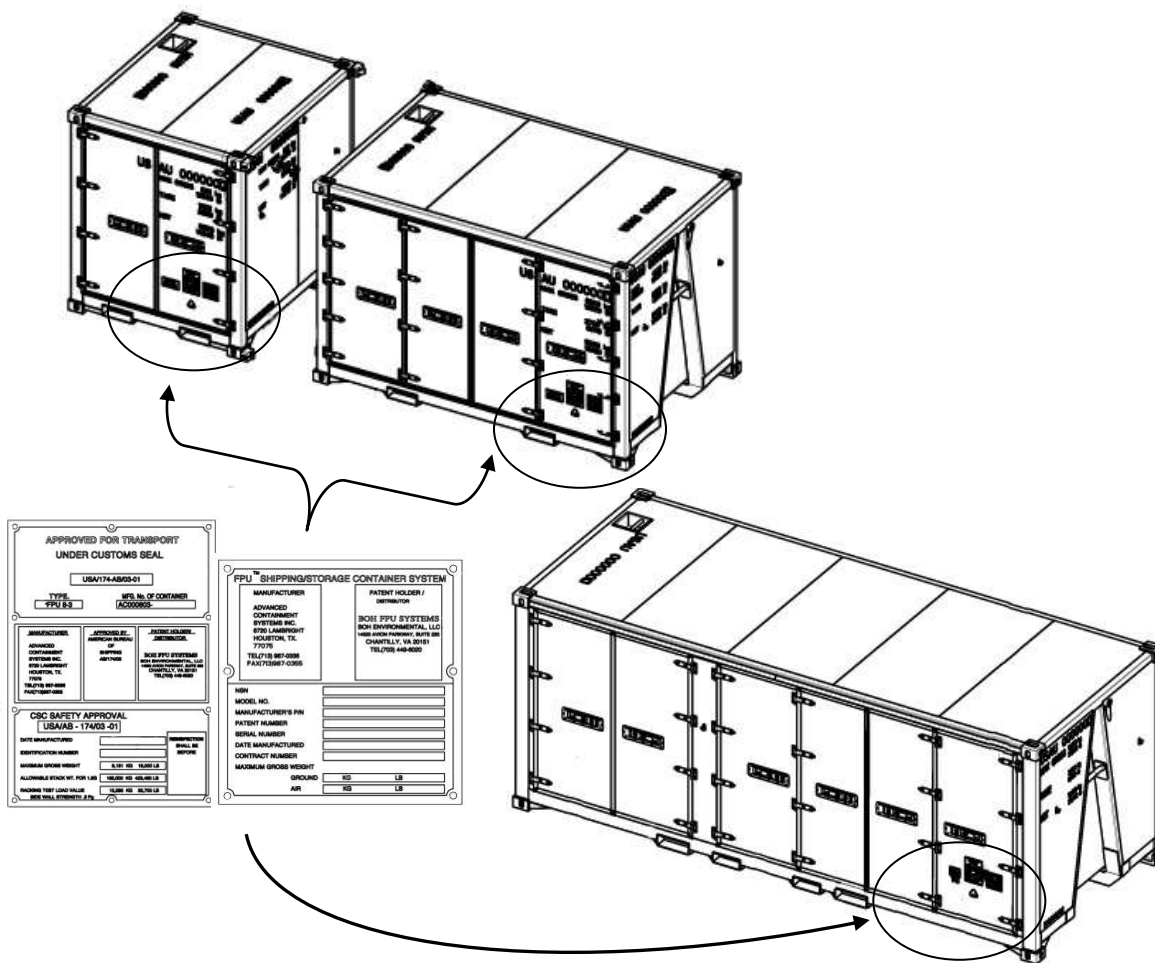
These certifications do not supersede military policies by MTMC in the shipment of serialized containers of matched sets.

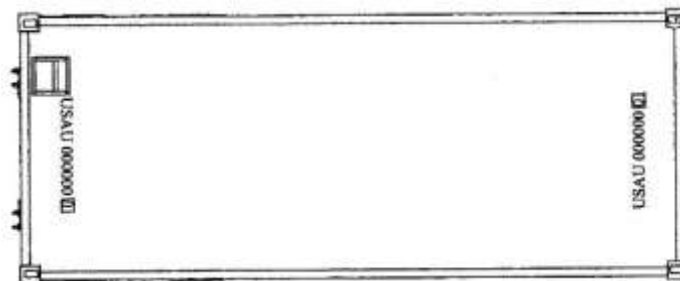
Special Requirements CSC Approval and FPU Manufacturers Data Plates

FPU data plates identify the manufacturer's part number, serialization, contract and delivery order number and National Stock Number (NSN). They are located visibly at the exterior rear end of each container. Each container has a FPU data plate unique to itself.

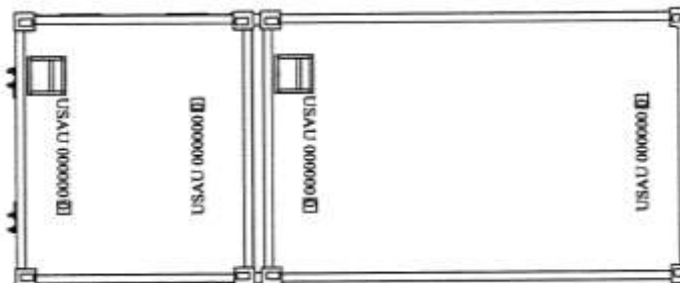


Location of Special Requirements CSC Approval and FPU Manufacturers Data Plates





TOP VIEW OF SIGNAGE FPU 20-3



TOP VIEW OF SIGNAGE FPU 8/12

BOH FPU CARGO CONTAINER containers have a series of markings that provide information and identification for shipping containers when transported aboard ships.

END OF WORK PACKAGE

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