

**CHAPTER 1**  
**INTRODUCTORY INFORMATION**  
**WITH**  
**THEORY OF OPERATION**

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**INTRODUCTORY INFORMATION  
FPU SYSTEMS OPERATION MANUAL  
(INCLUDING REPAIR PARTS & ACCESSORIES)  
FOR  
MODELS FPU-8-2, BOH-CARGO-12-1, BOH-CARGO-6, FPU-20-1 & FPU-20-2  
GENERAL INFORMATION**

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**SCOPE****Equipment Covered**

This technical manual contains instructions for the operation, preventive maintenance, and recommended Unit/Direct Support corrective maintenance for the Boh FPU Container Systems and the associated equipment.

**Type of Manual**

This is an Operator, Unit and Direct Support, Operation and Maintenance Manual.

**Equipment Name, Part Number and NSN****BOH FPU and Cargo Containers Table**

<b>BOH FPU SERIES</b>	<b>PART NUMBER</b>	<b>NSN</b>
FPU-20-1 GREEN	15002001G	8150-01-473-1207
FPU-20-1 TAN	15002001T	8150-01-518-8750
FPU-20-2 GREEN	15002002G	8150-01-473-1208
FPU-20-2 TAN	15002002T	8150-01-518-8751
FPU-8-2 GREEN	15000802G	8150-01-473-1213
FPU-8-2 TAN	15000802T	8150-01-518-8749
<b>BOH CARGO SERIES</b>	<b>PART NUMBER</b>	<b>NSN</b>
BOH-CARGO-12 GREEN	15001201G	8150-01-502-0581
BOH-CARGO-12 TAN	15001201T	8150-01-518-8859
BOH-CARGO-6 GREEN	15000501G	8145-01-481-0611
BOH-CARGO-6 TAN	15000501T	8145-01-518-8866
<b>End of BOH FPU and Cargo Containers Table</b>		

## ACCESSORIES Table

AVAILABLE ACCESSORIES FOR CONTAINERS	PART NUMBER	NSN
HORIZONTAL INTERCONNECTORS	15150108	8145-01-523-4120
RESTRAINT LOCKS, 2,250LBS	15150118	8145-01-523-4079
BRIDGE LOCK, 25,000LBS	15150115	8145-01-523-4136
<b>END of AVAILABLE ACCESSORIES FOR CONTAINERS</b>		

## BOH FPU Module Table

AVAILABE STANDARD SHIPPING/STORAGE MODULES	PART NUMBER	NSN
CLASS 1. PARTS MODULES	15700008	8145-01-523-4000
	15700009	8145-01-523-4003
	5700026	8145-01-501-0900
CLASS 2. PARTS MODULES	15700005	8145-01-523-4005
	15700007	8145-01-501-0865
	15700023	8145-01-523-4011
	15700024	8145-01-501-0892
	15700025	8145-01-501-0896
CLASS 3. PARTS MODULES	15700003	8145-01-523-4014
	15700014	8145-01-501-0869
	15700016	8145-01-523-4028
	15700019	8145-01-523-4022
CLASS 4. PARTS MODULES	15700018	8145-01-523-4025
CLASS 5. PARTS MODULES	15700011	8145-01-522-0667
	15700013	8145-01-501-0866
	15700020	8145-01-523-4039
	15700022	8145-01-523-4040
CLASS 6. PARTS MODULES	15700017	8145-01-502-2491
	15700021	8145-01-502-2494
<b>End of AVAILABLE BOH FPU Module Table</b>		

SPECIALIZED SHIPPING/STORAGE MODULES Table

AVAILABE SPECIALIZED SHIPPING/STORAGE MODULES	PART NUMBER	NSN
HULL WEAPONS MODULE	15500003	8145-01-502-2593
.M16A2 SHIPPING/STORAGE DRAWER	15500103	8145-01-502-2605
M16A2/M4 Drawer	15500104	NOT ASSIGNED
.9MM SHIPPING/STORAGE DRAWER	15500102	8145-01-502-2611
8-INCH SHIPPING/STORAGE DRAWER	15520860	8145-01-528-2853
FLAMMABLE/CORROSIVE MODULE	15500101	8145-01-473-1288
SHORT/HELO MODULE, STORAGE/SHIPPING	15700201	8145-01-502-0591
BASE, GLIDE-OUT SHELF SYSTEM	GOSEC10/1 5/BASE	8145-01-501-0916
.SHELF, STANDARD, 1,000LB	GO/1 0/1 5/1 000S	8145-01-501-0904
.SHELF, STANDARD, 2,000LB	GO/1 0/15/2000S	8145-01-501-0909
.SHELF, STANDARD, 4,500LB	GO/10/15/STD/2T	8145-01-501-0908
.SHELF, FULL EXTENSION, 4,500LB	GO/1 0/15/1 00/2T	8145-01-523-4593
.SHELF, BATTERY, 2,500LB	GO/10/15/BAT/1T	8145-01-501-0913
FLOOR PLATE, SINGLE	15530101	8145-01-473-3026
FLOOR PLATE, DOUBLE	15530102	8145-01-473-3032
ACCESSORIES FOR MODULES	PART NUMBER	NSN
4-INCH DIVIDER OPTION W/ LONGITUDINAL	15524001	8145-01-523-4068
4-INCH DIVIDER OPTION	15524002	8145-01-523-4592
6-INCH DIVIDER OPTION	15524003	8145-01-523-4591
6-ICH DIVIDER OPTION W/LONGITUDINAL	15524004	8145-01-523-4149
8-ICH DIVIDER OPTION	15524005	8145-01-523-4145
10-INCH DIVIDER OPTION	15524006	8145-01-523-4142
12-INCH DIVIDER OPTION	15524007	8145-01-523-4140
16-INCH DIVIDER OPTION	15524008	8145-01-523-4138
MODULE SLIP COVER	15522004	8145-01-523-4076

MODULE TRANSFER PLATE	15530118	8145-01-523-4073
SECURITY LOCKING BAR	15500021	8145-01-502-2630
<b>AVAILABLE SPECIALIZED SHIPPING/STORAGE RACK SYSTEMS FOR THE BOH-CARGO-12</b>	<b>PART NUMBER</b>	<b>NSN</b>
	PARTS STORAGE RACK FOR BOH-CARGO-12	15310023
BULK STORAGE RACK FOR BOH-CARGO-12	15310022	8145-01-524-0244
BULK TIE-DOWN RINGS	16509501	8145-01-513-6262
TRICON CONTAINER ADAPTER	15530128	Not Assigned
<b>End of AVAILABLE SPECIALIZED SHIPPING/STORAGE MODULES Table</b>		

## FPU Types and Configurations

### Description and Certifications.

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, V, VII, VIII and IX storage with full strategic/tactical intermodal transportability for supply support activities. . All FPU containers are side load. The FPU Mobility System series containers are designed to be transported by standard Materiel Handling Equipment (MHE), LHS, PLS, PLS Trailer, RTCH, Standard Flatbed Trailers, Strategic Aircraft (C-130, C17 and C-5) and Commercial/MSD ships. Tubular steel construction with ISO corner blocks enables the FPU-8-2/Boh-Cargo-12-1 and FPU-20 series container to be stacked nine high on commercial and MSD ships. The FPU comes in two color variations: Forrest Green and Desert Sand.

### FPU-20 Series Containers

All FPU-20 series containers are certified by the American Bureau of Shipping (ABS) to meet all requirements for International Convention for Safe Containers (CSC) and for International Organization of Standards (ISO) and FPUs are USAF certified for transport on C-130, C-5 and C-17 aircraft. They are PLS Flat-rack compatible.

The FPU 20-1 and FPU 20-2 series are 8'W x 8'H x 20'L ISO Certified (Type 1C) Containers. They are capable of transport via standard MTO&E including trailers and LHS/PLS systems when loaded on the M1077 Flatrack. Each FPU-20 is ISO certified and CSC Safety Approved by the American Bureau of Shipping. These containers are side load with recessing pocket doors. They accept a series of standard and specialized storage and shipping modules. The FPU-20-1 has a maximum capacity of 52,900 lbs. The FPU-20-2 has a maximum capacity of 33,000 lbs. Both the FPU-20-1 and FPU-20-2 can be stacked 9 high.

**FPU 8-2 Series Containers.**

The FPU-8-2 is 8'W x 92"H x 7'L with ISO corner blocks and has a maximum capacity of 18,000 lbs. These containers are side load with recessing pocket doors. They accept a series of standard and specialized storage and shipping support modules. The FPU-8-2 is approved for air transport aboard USAF C-130, C-5, and C-7 aircraft. They are PLS/Flatrack compatible. The FPU-8-2 can be stacked 9 high. Two FPU-8-2s and a Boh-Cargo-6 can be loaded and locked to a PLS Flatrack using the existing ISO twist locks on the Flatrack and bridge locks to tie the containers together at their corner blocks.

**BOH-Cargo-12-1 Container.**

The BOH-Cargo-12-1 measurements are 153"L x 8'W x 92"H. It is side-loaded and consists of four bi-fold doors on each side. It is designed to accept a varying array of racks, fully extendable and adjustable drawers and adjustable pallets. It is PLS Flatrack compatible and has a maximum air/ground capacity of 18,000 lbs. The BOH-Cargo-12-1 can be loaded and locked to a PLS Flatrack using the existing ISO twist locks on the Flatrack and horizontal inter-connectors that tie the containers together at their corner blocks. The BOH-Cargo-12-1 can be stacked 9 high.

**BOH-Cargo-6 Container.**

The BOH-Cargo-6 (or Boh-6) is a general-purpose side load bulk cargo container and is not ISO certified. The single door is equipped with exterior hinges and recessed cam type locking handle and comes with adjustable sectional shelves. The BOH-Cargo-6 measures 96"W x 72"L x 92"H with ISO corner blocks. It has a maximum capacity of 10,000 lbs and it can be fitted with additional shelves as required. It is designed as a stand-alone utility container or to fit between two (2) FPU-8 series containers to completely fill the 20 ft. configuration and allow connection with the twist locks when using a PLS Flat-rack. The BOH-Cargo-6 can be stacked 3 high.

**REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)**

If your FPU needs improvements in design and/or performance, let us know. Send us a description of the recommended change to [jstokes@bohenvironmental.com](mailto:jstokes@bohenvironmental.com).

**CORROSION PREVENTION AND CONTROL (CPC)**

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any irregular 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](mailto: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 packing list. Report any discrepancy to your supervisor.

## **END OF WORK PACKAGE**

**DESCRIPTION AND THEORY OF OPERATION**

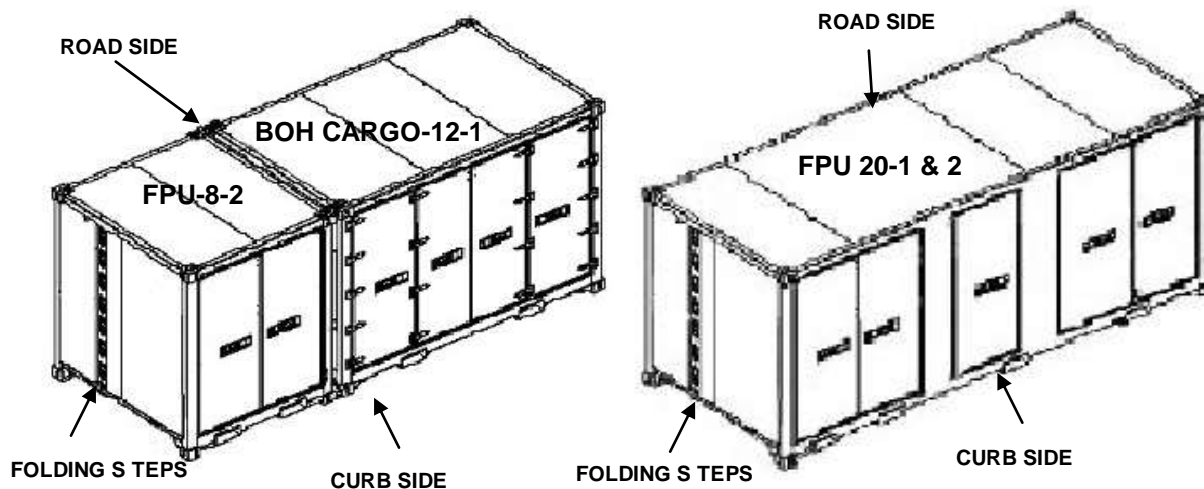
**FPU SYSTEMS OPERATION MANUAL**  
**(INCLUDING REPAIR PARTS & ACCESSORIES)**  
**FOR**  
**MODELS FPU-8-2, BOH-CARGO-12-1, BOH-CARGO-6, FPU-20-1 & FPU-20-2**

**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-8-2/BOH-CARGO-12-1(Combination), FPU-20-1 & FPU-20-2 containers are side-load containers with bi-fold doors. These container systems are ISO Certified and CSC Safety Approved and can be stacked nine high onboard commercial or MSC container ships. FPU-8-2/BOH-CARGO-12-1 (Combination) and FPU-20-2 have a maximum capacity of 33,000 lbs. The FPU-20-1 has a maximum capacity of 52,900 lbs. The BOH FPU containers come in two color variations: Forrest Green and Desert Sand.

This work package WP0002 will cover the FPU 8-2/BOH-CARGO-12-1, FPU-20-1 & FPU-20-2 and the variety of configurations for the internal storage aids.



## **FPU-8-2/BOH-CARGO-12-1, FPU-20-1 & FPU-20-2 Optional Container Configurations**

The FPU-8-2/BOH-CARGO-12-1 (Combination), FPU-20-1 & FPU-20-2 container systems are modular systems that can be configured with a variety of internal storage aids (see our web site at [www.bohenviro.com](http://www.bohenviro.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, 16-inch and bulk drawers.
- Flammable / Corrosive modules for storage of hazardous material.
- Weapons Vault module for the storage of M16A2, M4, 9mm weapons and sensitive material/equipment requiring additional security.
- 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-8-2/BOH-CARGO-12-1, FPU-20-1 & FPU-20-2**

The Field Pack-Up Unit (FPU) when joined in a twenty-foot configuration is capable of transport using the LHS or PLS when loaded on to a PLS Flatrack. The FPU-8-2/Boh-Cargo-12-1 (Combination) 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 92" x 20' ISO certified container. This feature allows the container to be separated and move when heavy lift MHE is limited or unavailable.

### **FPU-8-2 Container**

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

### **BOH-CARGO-12-1 Container**

The BOH-CARGO-12-1 container can be configured to accommodate up to two pallet rack systems with special pallets, up to two parts rack systems with drawers or up to sixteen tie-down rings or a combination of these storage aids. The BOH-CARGO-12-1 consists of 2 bi-fold barn doors (both sides), forklift pockets and a convection type ventilation system.

### **FPU-20-1 & FPU-20-2 Container**

The FPU-20-1 & FPU-20-2 container can be configured to accommodate up to ten standard or specialized modules or up to four Glide-Out storage racks with pullout shelves.

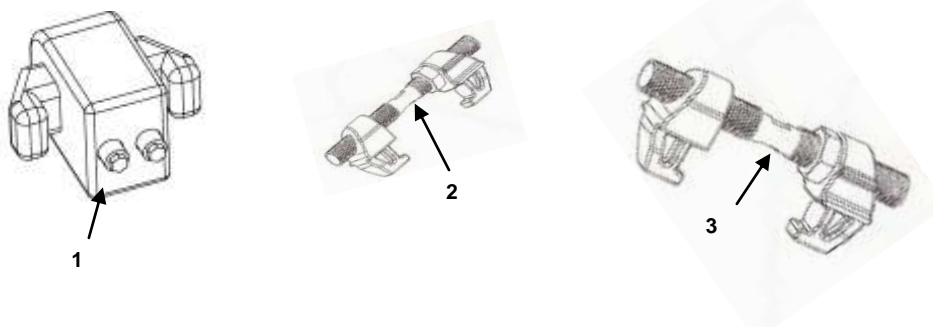
## BOH FPU CARGO CONTAINER ACCESSORIES

### **CAUTION**

The Horizontal Interconnectors (1) are only used in the FPU-8-2 and the BOH-CARGO-12-1 container connection.

The Restraint Locks (2) are only used in connection of FPU-8-2 and BOH-CARGO-6 containers with loads that do not exceed 2,550 lb.

The Bridge Locks (3) are only used in connection of the FPU-8-2 and BOH-CARGO-6 Containers with loads that do not exceed 25,000 lb.



## OPTIONAL BOH FPU STORAGE AIDS

### 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 high profile with retention lid to secure small loose parts in individual compartments, 6-inch, 8-inch, 10-inch, 12-inch and 16-inch high profiles. 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 and type. 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 an Optional dust cover to resist dust from penetrating the drawers when operating outside the FPU container. Boh Standard Storage Modules are approved for airlift when shipped inside the FPU container or when shipped independent of the container. For more information about our standard storage modules see our web site at [www.bohenvironmental.com](http://www.bohenvironmental.com).

### 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](http://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 four

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 M16A2/M4 drawer is designed to store M16A2 and 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 M16A2, M4 short barrel or M4 long barrel. M16A2 and M4 weapons can be stored in the drawers and module with the laser sight installed 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. The 8-inch security drawer is designed to provide storage for sensitive or pilferage items that require additional security. 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](http://www.bohenvironmental.com).

### **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](http://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-12-1 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 up and down at four-inch intervals. 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.

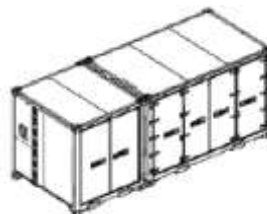
For more information about our Bulk Storage Aids see our web site at [www.bohenvironmental.com](http://www.bohenvironmental.com).

### **Parts Storage Aids**

The Boh Parts Storage Aids are design for the storage of medium size material that are to large for Boh standard modules and to small for pallets. These racks and drawers are extremely rugged and were designed for the dynamics realized during mobile application. Boh Parts Storage Aids for the Boh-Cargo-12-1 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. All 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](http://www.bohenvironmental.com).

**EQUIPMENT SIZE DATA**

FPU-8-2/BOH-CARGO-12-1.....  
 Length: 20-foot (6.1m)  
 Width: 8-foot (2.44m)  
 Height: 92-inches (???)



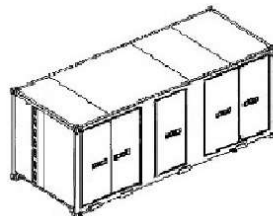
FPU-8-2.....  
 Length: 7-foot (2.13m)  
 Width: 8-foot (2.44m)  
 Height: 92-inches (2.33m)



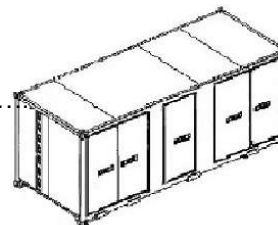
BOH-CARGO-12-1.....  
 Length: 12.9 foot (3.93m)  
 Width: 8-foot (2.44m)  
 Height: 92-inches (2.33m)



FPU-20-1.....  
 Length: 20-foot (6.1m)  
 Width: 8-foot (2.44m)  
 Height: 8-foot (2.44m)

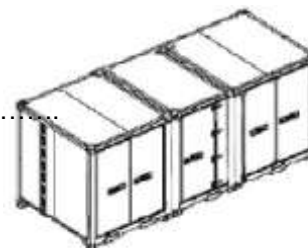


FPU-20-2.....  
 Length: 20-foot (6.1m)  
 Width: 8-foot (2.44m)  
 Height: 8-foot (2.44m)



**Non ISO Certified Connected Combination**

FPU-8-2/BOH-CARGO-6/FPU-8-2 (See Chapter 2 WP0008 00).....  
 Length: 20-foot (6.1m)  
 Width: 8-foot (2.44m)  
 Height: 92-inches (2.33m)



**Non ISO Certified Container**

BOH-CARGO-6 (See Chapter 2 WP0008 00).....  
 Length: 6-foot (1.83m)  
 Width: 8-foot (2.44m)  
 Height: 92-inches (3.33m)



**FPU and CARGO CONTAINER WEIGHT TABLE**

<b>Container weight Limits</b>				
<b>Container Type</b>	<b>Tare Weight</b>	<b>Max Gross Weight</b>	<b>Net (Cargo) Weight</b>	<b>MHE Recommended</b>
FPU-8-2	3,550	18,000	14,450	20K Forklift
BOH-CARGO-12-1	5,000	18,000	13,000	20K Forklift
FPU-8-2/BOH-CARGO-12-1 (When connected)	8,550	33,000 (Note)	24,450	RTCH
FPU-20-1	12,900	52,900 (Note)	40,000	RTCH
FPU-20-2	9,800	33,000 (Note)	23,200	RTCH
BOH-CARGO-6	2,200	10,000	7,800	10K Forklift

**END OF WORK PACKAGE**

**FPU SYSTEMS OPERATION MANUAL  
CIRTFICATIONS  
FOR  
MODELS FPU-8-2/BOH-CARGO-12-1, FPU-20-1 & FPU-20-2**

**FPU-8 Container (FPU 8-2)**

Certified by U.S. Air Force for transport on C-130, C-5 and C-17 aircraft (18 July 2001)



**DEPARTMENT OF THE AIR FORCE**

HEADQUARTERS AERONAUTICAL SYSTEMS CENTER (AFMC)  
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

MEMORANDUM FOR Defense Industrial Supply Center  
Attn Maureen Leiter  
700 Robbins Ave Bldg 3 Section A  
Philadelphia PA 19111

18 July 2001

FROM: ASC/ENFC (ATTLA)  
2530 Loop Road West  
Wright Patterson AFB, OH 45433-7101

SUBJECT: Air Transport Certification of BOH Environmental Field Pack-up Units (FPU-8 Series)

1. The subject Field Pack-up Units, FPU-8-1 and FPU-8-2, are steel containers measuring 84" L x 96" W x 92" H. The container has recessed pocket doors along its length and has ISO corner fittings on all eight corners. Up to four specialized storage/shipping modules may be mounted inside each FPU.
2. The above subject FPU-8-1 and FPU-8-2 are wherever approved for air transport aboard USAF C-130, C-141, C-5, and C-17 aircraft with the following provisions.
  - a. Maximum container weight shall not exceed 18,000 lbs. The specialized modules should not exceed 2,000 lbs each. Payload within the container may be in the modules or attached to the tie-down rings on the container floor.
  - b. The container shall be carried on a standard 463L HCU-8/E cargo pallet. Shoring at least 3/4" thick shall be placed between the container bottom and the pallet upper surface to distribute the load on the pallet and avoid point loading contact by the corner fittings or any projecting edge members. Shoring area requirements will vary with container weight and type of transport aircraft. For the maximum weight container, the shoring area shall equal the area of the container bottom.
  - c. The container shall be restrained to 3 G fwd, 2 G up, and 1.5 G aft & lateral using chairs through the corner fittings. If the container weight exceeds 13,000 lbs, the container will require additional restraint directly to the aircraft floor after it is loaded onto the aircraft. The shipper shall certify that the cargo within the container is capable of withstanding these forces in addition to a potential 4.5 G download. The shipper shall also certify that the cargo within the container can withstand a potential in-flight rapid decompression of up to 8.3 psi within 1/2 second without endangering the aircraft or personnel in the cargo compartment. The container doors may be open during flight.
  - d. Any hazardous materials must be prepared and certified for airlift in accordance with AFJMAN 24-204/TM 38-250. This memo is not to be considered an approval for shipping hazardous materials, which must be granted separately. The servicing aerial port can assist in this regard.
3. A copy of this certification should accompany the containers when processed for air shipment.
4. The point of contact (refer to file 2001.06.11) is the undersigned at DSN 785-2330 or 937-255-2330. Additional POCs are Mark Kuntavanish at xx5-6039, or Caroline Buckley at xx5-9647.

  
**JAMES E. LEGER**  
 Aerial Delivery Group

cc:  
HQ AMC/DOV  
IISA MTMC/TFA

## FPU Flammable/Corrosive (HAZMAT) Module

Certified for air transport aboard C-130, C-5 and C-117 aircraft INSIDE of FPU 8 Series Container (11 October 2001)



### DEPARTMENT OF THE AIR FORCE

HEADQUARTERS AERONAUTICAL SYSTEMS CENTER (AFMC)  
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

11 Oct 2001

MEMORANDUM FOR Defense Industrial Supply Center  
Attn Maureen Leiter  
700 Robbins Ave Bldg 3 Section A  
Philadelphia PA 19111

FROM: ASC/ENFC (ATLA)  
2630 Loop Road West  
Wright Patterson AFB, OH 45433-7101

SUBJECT: Air Transport Certification of BOH Environmental Flam Locker/Module for Field Pack-up Unit

1. References:

- a. BOH Memo with Attachments, 10 Sep 2001, Request for approval of Hazmat Module FM1A
- b. ASC/ENFC Memo, 12 July 2001, Airlift Certification of BOH FPU-8 Series containers.

2. The BOH Environmental LLC Flammable / Corrosive "Hazmat" Module Model FM1A (N SN 8145-01-473-1288) as contained in reference 1.a above is 74" high, 34 3/8" wide, and 42" deep. This item is herewith approved for air transport aboard USAF C-130, C-141, C-5, and C-17 aircraft with the following provisions.

- a. Loaded weight shall not exceed 2000 lbs per module. Prior to loading, modules should be inspected to assure that internal structure and locking mechanisms are structurally sound and that restraining bars are inserted to secure the drawers. Individual modules shall only be transported inside the FPU containers and must be secured via the locking system therein.
- b. Up to four modules may be mounted in each FPU-8 container. Air transport of the loaded FPU container shall comply with reference 1.b above.
- c. Preparation and packaging of hazardous materials within the modules shall comply with AFJMAN 24-204/TM 38-250/NAVSUP PUB 505. Secondary static grounds should be used where required. This memo is not to be considered an approval for shipping hazardous materials, which must be granted separately. The servicing aerial port can assist in this regard.

3. A copy of this certification should accompany the modules when processed for air shipment.

4. The point of contact (refer to file 2001.09.17) is the undersigned at D SN 785-2330 or 937-255-2330. Additional POCs are Mark Kuntavanish at x5-6039, or Caroline Buckley at x5-9647.

  
JAMES E. LEGER  
Aerial Delivery Group

cc:  
HQ AMC/DOV  
USA MTMC/TEA

**FPU Flammable/Corrosive (HAZMAT) Module**

Certified for air transport aboard C-130, C-5 and C-117 aircraft OUTSIDE of FPU 8 Series Container (6 August 2002)

**DEPARTMENT OF THE AIR FORCE**

HEADQUARTERS AERONAUTICAL SYSTEMS CENTER (AFMC)  
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

FOR Defense Industrial Supply Center  
Attn: Maureen Leiter  
700 Robbins Ave Bldg 3 Section A  
Philadelphia PA 19111

6 Aug 02

FROM: ASC/ENFC (ATTLA)  
2530 Loop Road West  
Wright Patterson AFB, OH 45433-7101

SUBJECT: Air Transport Certification of BOH Environmental, LLC Flammable/Corrosive Module  
NSN 8145-01-473-1288 shipped without Field Pack-up Unit outer container

1. References:
  - a. ASC/ENFC Memo, 18 Jul 2001, Airlift Certification of BOH FPU-8 Series Containers
  - b. ASC/ENFC Memo, 11 Oct 01, Air Transport Certification of BOH Environmental Flam Locker/Module for Field Pack-up Unit
2. The BOH Environmental, LLC Flammable/Corrosive Module without the Field Pack-Up Unit Outer Container, NSN 8145-01-473-1288, measures 74" high, 34 3/8" wide, and 42" deep. This item, as configured, is approved for air transport aboard USAF C-130, C-141, C-5, and C-17 aircraft with the following provisions.
  - a. Loaded weight shall not exceed 2000 pounds per module. Prior to loading, modules should be inspected to assure that internal structure and locking mechanisms are structurally sound and that restraining bars are inserted to secure the drawers.
  - b. The LLC Flammable/Corrosive Module shall be placed on a 463L pallet. A maximum of 4 modules shall be placed on one 463L pallet. Load spreading shoring shall be used, as needed, for proper roller-load weight distribution and to prevent exceeding the 250-psi pallet limit.
  - c. The LLC Flammable/Corrosive Module and any stowed items shall be restrained following standard procedures to meet the minimum restraint requirements of 3.0G fwd, 2.0G vertically, and 1.5G aft and laterally in addition to a potential 4.5G download force. A strap bridle shall be used to secure the module and its contents on a 463L pallet.
  - d. The shipper shall certify that the cargo within the container can withstand a potential in-flight rapid decompression of up to 8.3 psi with 1/2 second without endangering the aircraft or personnel in the cargo compartment.
  - e. Preparation and packaging of hazardous materials within the modules shall comply with AFMAN 24-2041. Secondary static grounds should be used where required. This memo is not considered an approval for shipping hazardous materials, which must be granted separately. The servicing aerial port can assist you in this regard.
3. A copy of this certification shall accompany the item during air shipment.
4. The air transportability engineer for this project is the undersigned at DSN 785-9647 or (937) 255-9647. The email address is caroline.buckey@wpafb.af.mil. Please refer to project file 2001.09.17.

*Caroline J. Buckey*

cc:  
LCDR Wm. Johnson MSC, USN  
Plans and Operations,  
Naval Environmental Health Center  
AMC/DOV

CAROLINE J. BUCKEY  
Aerial Delivery Group  
Crew Systems Branch

## 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	
<b>MANUFACTURER</b> ADVANCED CONTAINMENT SYSTEMS INC. 8720 LAMBRIGHT HOUSTON, TX 77075 TEL(713) 987-0335 FAX(713)987-0355	<b>PATENT HOLDER / DISTRIBUTOR</b> BOH FPU SYSTEMS BOH ENVIRONMENTAL, LLC 14820 AVON PARKWAY, SUITE 200 CHANTILLY, VA 20151 TEL(703) 448-8020
<b>NSN</b> <b>MODEL NO.</b> <b>MANUFACTURER'S P/N</b> <b>PATENT NUMBER</b> <b>SERIAL NUMBER</b> <b>DATE MANUFACTURED</b> <b>CONTRACT NUMBER</b> <b>MAXIMUM GROSS WEIGHT</b>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
<b>GROUND</b> <b>AIR</b>	<input type="text"/> KG <input type="text"/> LB <input type="text"/> KG <input type="text"/> LB

(Sample) FPU Manufacturers Data Plate

APPROVED FOR TRANSPORT UNDER CUSTOMS SEAL		
USA174-AB/03-01		
TYPE FPU 8-3	MFG. No. OF CONTAINER AC000903	
<b>MANUFACTURER</b> ADVANCED CONTAINMENT SYSTEMS INC. 8720 LAMBRIGHT HOUSTON, TX 77075 TEL(713) 987-0335 FAX(713)987-0355	<b>APPROVED BY</b> AMERICAN BUREAU OF SHIPPING AB17403	<b>PATENT HOLDER / DISTRIBUTOR</b> 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	<input type="text"/>	INSPECTION SHALL BE BEFORE
IDENTIFICATION NUMBER	<input type="text"/>	
MAXIMUM GROSS WEIGHT	<input type="text"/> 9,101 KG <input type="text"/> 19,999 LB	
ALLOWABLE STACK WT. FOR 1.00	<input type="text"/> 190,000 KG <input type="text"/> 420,400 LB	
STACKING TEST LOAD VALUE	<input type="text"/> 10,000 KG <input type="text"/> 22,000 LB	
SIDE WALL STRENGTH 3 Pg		

(Sample) SPECIAL REQUIREMENTS PLATE CSC APPROVAL PLATE

Both the FPU-8-2/BOH-CARGO-12-1 and the FPU-20-3 are approved for transport as 20-foot ISO containers. Also the BOH FPU-8-2 and the BOH-CARGO-12-1 are approved independently when they are disconnected from each other. The FPU-8-2/BOH-CARGO-12-1 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).

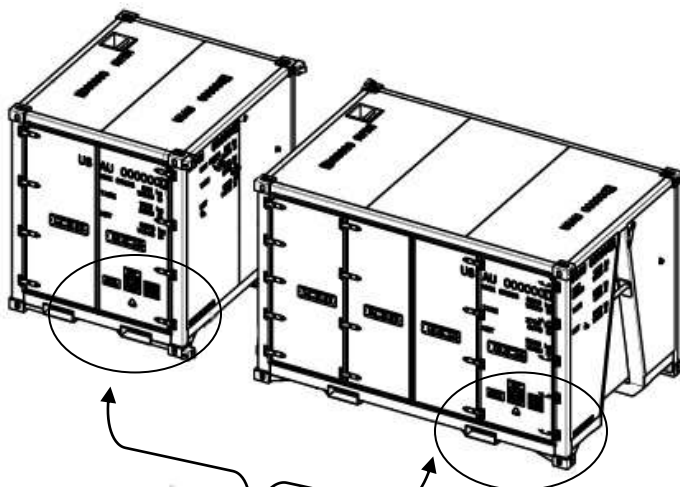
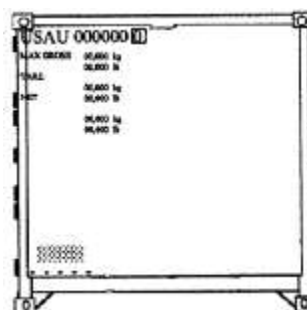
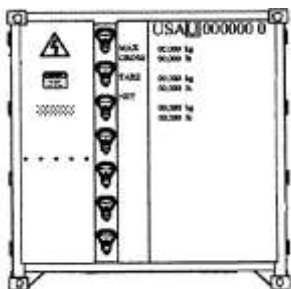
These certifications do not supersede military policies by MTMC in the shipment of serialized containers of matched sets.

**FPU Manufacturers Data Plate**

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.

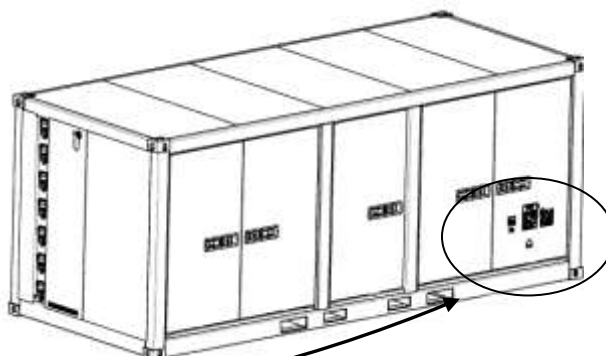
**SIGNAGE FPU-8-2, BOH-CARGO-12-1, FPU-20-1 & FPU-20-2 STEP END**

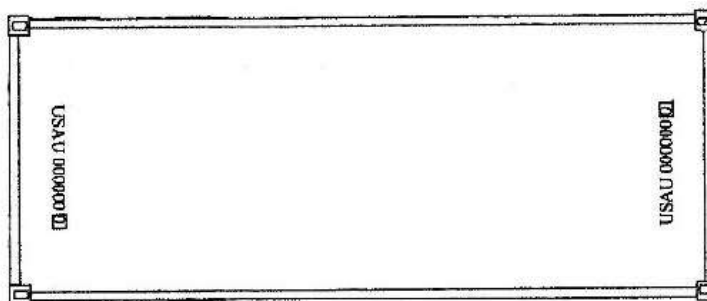
**SIGNAGE BOH-CARGO-12-1 END**



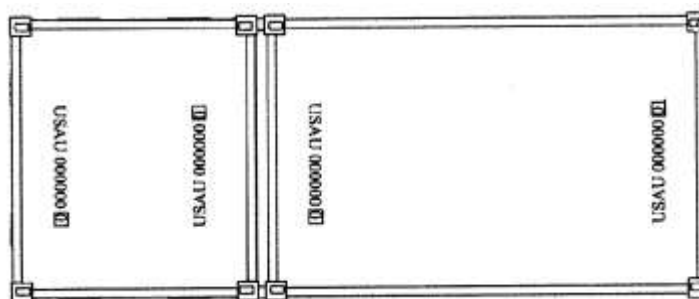
APPROVED FOR TRANSPORT UNDER CUSTOMS SEAL	
USAIT4-AB02-01	
TYPE: FPU-8-2	SERIAL NO. OF CONTAINER: A000000
MANUFACTURER: ADVANCED CONTAINMENT SYSTEMS INC. 8700 LAMAR BLVD. HOUSTON, TX 77075 TEL: 281-897-0386 FAX: 281-897-0387	APPROVED BY: SHIPPER'S SIGNATURE DATE
CSC SAFETY APPROVAL USAIT4-AB02-01	
DATE MANUFACTURED	INSPECTOR'S SIGNATURE
IDENTIFICATION NUMBER	SCALE IN KILOGRAMS
MAXIMUM GROSS WEIGHT	SCALE IN KILOGRAMS
ALLOWABLE STACK WT FOR LASH	SCALE IN KILOGRAMS
MAXIMUM TARE LOAD VALUE	SCALE IN KILOGRAMS
SEE SHELL FOR DETAILS & P.N.	

FPU <sup>SM</sup> SHIPPING/STORAGE CONTAINER SYSTEM	
MANUFACTURER: ADVANCED CONTAINMENT SYSTEMS INC. 8700 LAMAR BLVD. HOUSTON, TX 77075 TEL: 281-897-0386 FAX: 281-897-0387	PATENT HOLDER: DISTRIBUTOR: BOE FPU SYSTEMS BOE ENVIRONMENTAL LLC 1400 SOUTH PARKWAY, SUITE 200 CHATELAIN, VA 20151 TEL: 540-448-8000
MIN. MODEL NO.	
MANUFACTURER'S P.N.	
PATENT NUMBER	
SERIAL NUMBER	
DATE MANUFACTURED	
CONTRACT NUMBER	
MAXIMUM GROSS WEIGHT	
GROUND	KG LB
AIR	KG LB





TOP VIEW OF SIGNAGE FPU-20-1 &amp; 2



TOP VIEW OF SIGNAGE FPU-8-2/BOH-CARGO-12-1

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**