
**FPU® SYSTEMS OPERATION MANUAL
(INCLUDING REPAIR PARTS)
EXPEDITIONARY BULK STORAGE SYSTEM (EBSS)**



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WARNING SUMMARY

This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in serious injury or death to persons using equipment.



WARNING

Do not allow the system to swing if using an overhead lift. Always ensure an appropriate sling is used in the lift. Always use properly sized forklift, crane, or lifting device. Failure to comply could cause injury or damage to the equipment.



WARNING

Use extreme caution when loading or unloading the EBSS to or from a transport vehicle. Keep hands, fingers, and feet clear of the container and components during this operation. Forklift support is required. Make sure all container inserts are properly seated and locked secure. Failure to comply could cause serious injury. Failure to follow proper insert connection procedures may result in damage to the equipment.



Standard forklift principles apply when working with or on the EBSS container. Ground guides and the Material Handling Equipment (MHE) operators must insure that personnel are clear of the containers during this operation. When working with ground guides during the loading or unloading, never move the container while the ground guide is unseen. Serious injury could occur if the ground guide is pinned between the EBSS container and other objects. Forklift operators must maintain visual contact with their ground guides at all times.



Always follow standard forklift procedures. A tilt hazard exists when forklift operators try to lift the EBSS container from the wrong side. Always lift a container via the forklift pockets that are provided. This places the heavier part of the load back into the tines versus out on the tips. A tilt situation exists when the heaviest part of the load is out on the tips of the tines, on uneven ground, with forks fully extended, and while traveling. Operators should always keep loads low and close to the forklift carriage. Operators should never travel when the load is in the fork's extended position.

WARNING



Fall hazards exist when climbing onto or working from the top of the EBSS container. Always maintain three points of contact to the ladder and container when climbing onto the container. Never move, step, or walk backwards when working on top of the system. All movement should be in the forward direction. A fall can occur if personnel lose concentration and step backwards off of the edge. Stand erect only if necessary and only away from the edge. Working from a kneeling position helps reduce the threat of a fall.

The EBSS container may be used to store various forms of oils, lubricants, and other potentially slippery substances. Keeping the inside floor of the EBSS clean is important, nevertheless, always move with caution inside of the EBSS. Failure to maintain cleanliness and caution could cause a slip and injury.

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WARNING

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WARNING



The modules and their contents are heavy and could cause injury if they fall onto or strike personnel. A tilt hazard exists when the module is either outside of the EBSS container or inside the EBSS container, but not locked down. As a rule, always work on one pallet or drawer at a time. Never have more than one drawer extended in the full open position at a time, especially if loaded. Personnel should never stand on a drawer or pallet.

WARNING



The module drawers and pallets can be heavy and awkward to handle by a single person. This is especially true of the larger components. The adjustment of these items is a two-person operation. While a forklift is not essential MHE support to hold the pallets in position while the hardware is installed and secured, it simplifies the effort. Do not try to adjust the pallets or drawers without assistance or MHE support. Ensure that all modules are properly locked down before any movement or transport of the containers.

WARNING SUMMARY

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ISO Container Overhead Power Line Warning.



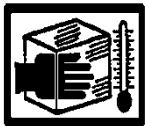
WARNING

Overhead power lines and obstructions can cause serious injury or damage to property. Forklift operators, truck drivers, and ground guides should always clear overhead when loading, unloading, moving the EBSS containers or when accessing the roof.



Protective gloves should be worn when handling metal parts in high temperatures. Failure to wear gloves may result in burning or blistering of the skin upon contact.

WARNING



Protective gloves should be worn when handling metal parts in below freezing temperatures. Failure to wear gloves may result in skin freezing to the metal upon contact and cause tearing of the flesh when attempting to pull away from the metal.

WARNING

WARNING



The EBSS is NOT designed to be operated in contaminated NBC Environments. Do not operate the EBSS in contaminated NBC environments. If possible cease operation of the EBSS prior to a NBC event and do the following:

1. Close and secure all doors. External surfaces of the EBSS are CARC painted and can be decontaminated, however, whenever possible avoid contamination of the internal areas of the EBSS.
2. Decontaminate the exterior surfaces of the EBSS in accordance with FM 3-5. Only Qualified NBC NCO's should check for residual contamination before opening the container.
3. Remain in MOPP 4 posture when opening the doors and have the NBC NCO check for contamination on interior surfaces. If thorough decontamination is required refer to NBC NCO and FM 3-5 for procedures.

GENERAL WARNINGS



HEAVY PARTS - heavy object on human figure shows that heavy parts present a danger to life or limb.



HEAVY PARTS - heavy object pinning human figure against wall shows that heavy, moving parts present a danger to life or limb.



HEAVY PARTS - hand with heavy object on top shows that heavy parts can crush and harm.



HEAVY PARTS - foot with heavy object on top shows that heavy parts can crush and harm.



SLICK FLOOR - wavy line on floor with legs prone shows that slick floor presents a danger for slipping or falling.



HEAVY OBJECT - human figure stooping over heavy object shows physical injury potential from improper lifting technique.



ELECTRICAL - electrical wire to arm with electricity symbol running through human body shows that shock hazard is present.



ELECTRICAL - electrical wire to hand with electricity symbol running through hand shows that shock hazard is present.



CRYOGENIC - hand in block of ice shows that the material is extremely cold and can injure human skin or tissue.



FIRE - flame shows that a material may ignite and cause burns.

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REPORTING ERRORS & IMPROVEMENTS

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. Please let us know if you find any mistakes or if you know of a way to improve the procedures. You may send in your recommended changes by E-mail directly to: dcresap@bohfpusystems.com. A reply will be furnished directly to you.

Approved for public release; distribution is unlimited.

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REAR MATTER

- BOH product Warranty
- Metric Conversion Chart

HOW TO USE THIS MANUAL

This manual contains general information, operating instructions, Preventative Maintenance Checks and Services (PMCS), and maintenance/repair instructions for the EBSS.

Front matter consists of front cover, warning summary, title block, table of contents, "how to use this manual" pages, and provides information on the EBSS and its associated equipment. Chapter 1 provides equipment description and data as well as the theory of operation. Chapter 2 provides instructions for operating under usual and unusual conditions. Chapter 3 contains troubleshooting procedures authorized at the Operator and Unit level. Chapter 4 contains Preventive Maintenance Checks and Services (PMCS) and Operator Maintenance Instructions. Chapter 5 contains Unit Maintenance Instructions. Chapter 6 contains the Maintenance Allocation Chart (MAC); it also includes the Repair Parts & Special Tools List (RPSTL) that identifies parts or tools unique to the operation and maintenance of the EBSS.

Manual Organization and Page Numbering

This manual is divided into six major chapters that detail the topics mentioned above. Within each chapter are work packages covering a wide range of topics. Each work package is numbered sequentially at page 1, and has its own page numbering scheme that is independent of the page numbering used by other work packages. Each page of a work package has a page number of the form "XXXX YY-ZZ", where "XXXX YY" is the work package number (e.g. 0010 00 is work package 10) and "ZZ" represents the number of the page within that work package. Blank pages will be labeled "This page was intentionally left blank".

Finding Information

The Table of Contents permits the reader to quickly find information in the manual. The reader should start here first when looking for a specific topic. The Table of Contents lists the topics contained within each chapter and the work package sequence number where it can be found.

Types of notations

Warnings - Warnings are posted immediately prior to text covering any area that would present a situation that may result in injury or death. Compliance is mandatory.

Cautions - Cautions will be found on the same page and preceding the text covering any area that would present a situation that may result in damage to equipment.

Notes - Notes will precede text covering an area with the intent to alter normal procedures for unique situations or equipment, or point out areas of special concern.

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**FPU® SYSTEMS OPERATION MANUAL
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EXPEDITIONARY BULK STORAGE SYSTEM (EBSS)**

CHAPTER 1

**INTRODUCTORY INFORMATION
WITH
THEORY OF OPERATION**

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INTRODUCTORY INFORMATION WITH THEORY OF OPERATION

FPU® SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS) EXPEDITIONARY BULK STORAGE SYSTEM (EBSS)

GENERAL INFORMATION

SCOPE

Equipment Covered

This technical manual contains instructions for the operation, preventative maintenance, Unit and Direct Support corrective maintenance for the EBSS Containers and its associated equipment.

Type of Manual

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

Equipment Name and Model Number

EBSS

Purpose of Equipment

The EBSS comes with 20 tie-down rings recessed into the container floor and two tie-down locations on each corner post for a total of 28 tie-down points to secure bulk material.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your EBSS needs improvement, let us know. Send us a description of the recommended change to dcresap@bohfpusystems.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)

It is our understanding that Corrosion Prevention and Control (CPC) is a continuing concern for the military. While corrosion is typically associated with rusting of metals, it can also include deterioration of other material, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

All units must adhere to their specific corrosion maintenance plan. At a minimum, equipment should be inspected for corrosion on a quarterly basis (monthly if equipment is operated/stored in a high salt air environment). If corrosion is discovered, consult your unit/installation corrosion control manager to schedule repair. It is important that any corrosion problem with the EBSS be reported so that the problem can be corrected and improvements can be made to prevent the problem in the future.

PREPARATION FOR STORAGE OR SHIPMENT

All preventative maintenance checks and services should be performed on the EBSS and its components prior to any storage or shipment. Review chapter 4 WP 0011 00 and 0012 00.

RECEIVING THE FPU INVENTORY

Unpacking and Inventory of EBSS Components upon Initial Receipt

With the EBSS containers downloaded, check the equipment. Report any deficiencies to your supervisor.

END OF WORK PACKAGE

INTRODUCTORY INFORMATION WITH THEORY OF OPERATION

FPU® SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS) EXPEDITIONARY BULK STORAGE SYSTEM (EBSS)

THEORY OF OPERATION

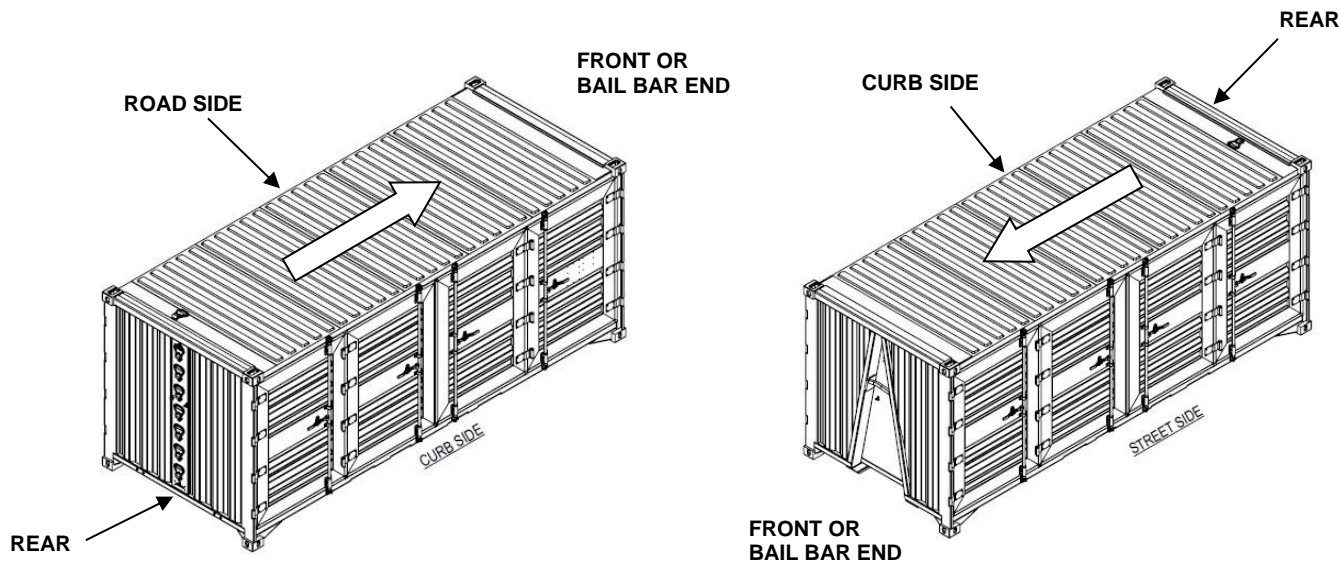
CONTAINER SYSTEM DESCRIPTION

EBSS Containers are a durable storage and transport system capable of rapidly mobilizing bulk floor-loaded material. They can also be configured to store and transport small, medium, large, palletized and bulk material. The EBSS containers (20'L x 8'W x 8'H) are side-load containers with bi-fold doors. The EBSS 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. The maximum gross weight is 37,000 lbs. Container tare weight is 7,700 lbs. The EBSS containers come in two color variations: Forest Green and Desert Sand.

CONTAINER ORIENTATION

When facing the side of the container and the bail bar is to your right, you are facing the curbside of the containers.



END OF WORK PACKAGE

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INTRODUCTORY INFORMATION WITH THEORY OF OPERATION

FPU® SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS) EXPEDITIONARY BULK STORAGE SYSTEM (EBSS)

EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES

EBSS STORAGE AID DESCRIPTION

The EBSS container can be configured with a variety of internal storage aids (see our web site at www.bohfpusystems.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.
- Bulk Module with 75% extension trays for large material, having a maximum payload weight of 1000 lb.
- Parts Racks with drawers for medium size material.
- Bulk Racks with pallets for palletized material.
- Tie down rings for additional tiedown capability for bulk material.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

The EBSS container consists of two bi-fold doors (on each side), retractable roof access steps, door restraint straps, forklift pockets and a convection type ventilation system. The EBSS also comes equipped with 20 tie-down rings recessed into the container floor and two tie-down locations on each corner post for a total of 28 tie-down points to secure bulk material.

EBSS CONTAINER ACCESSORIES

Rear Rollers

The rear rollers are detachable dual seven-inch rollers mounted at the rear of the EBSS container using two 3/4-inch pins. Once connected, 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 EBSS when not in use. For storage, removal, and installing the rear rollers, refer to chapter 2 WP 0005 00.

EQUIPMENT DATA

BOH-PM-16-1
Chapter 1 Rev. 0.00

EBSS

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

FPU CONTAINER WEIGHT TABLE (in lbs)

For Operations with HEMTT-LHS or PLS				
Container Type	Tare Weight	Max Gross Weight	Net (Cargo) Weight	MHE Recommended
FPU-20-3	7,700**	37,000*	29,300**	HEMTT-LHS, HEMTT-PLS or RTCH
* When operating EBSS on a HEMTT-LHS, Max Gross Weight loaded into EBSS must be calibrated to comply with 26,000lb maximum restriction.				

END OF WORK PACKAGE

INTRODUCTORY INFORMATION WITH THEORY OF OPERATION

FPU® SYSTEMS OPERATION MANUAL (INCLUDING REPAIR PARTS) EXPEDITIONARY BULK STORAGE SYSTEM (EBSS)

EQUIPMENT DATA LABELS, IDENTIFICATIONS, MARKINGS AND AIRLIFT CERTIFICATION

Internal Air Transport Certification for 20-ft containers

EBSS containers are approved for air transport aboard C-130, C-17 and C-5 USAF aircraft as “20-foot ISO Containers certified by the Convention for Safe Containers (CSC)”. See Internal Air Transport Certification issued by ATTLA dated 29 June 2016 (file number 2008.09.15 Rev 6).

BOH FPU CARGO CONTAINER and CSC Data Plates

The BOH ISO data plates are affixed to the curbside right-hand doors of each container, adjacent to the door handles. This plate identifies information required for transport aboard ship. The ABS data plate is located adjacent to the ISO data plate. This plate identifies special requirements information for use during transport aboard a ship. **NOTE:** Approved by ABS under the model name “FPU-20-5”.

FPU® SHIPPING / STORAGE CONTAINER SYSTEM	
MANUFACTURER ADVANCED CONTAINMENT SYSTEMS INC. 8720 LAMBRIGHT HOUSTON, TX 77075 TEL. (713) 967-6888 FAX. (713) 967-0385	PATENT HOLDER / PRIME CONTRACTOR BOH FPU SYSTEMS BOH ENVIRONMENTAL, LLC 148 TERRA BELLA BLVD COVINGTON, LA 70433 TEL. (985) 674-0726
NSN	
MODEL NO.	
MANUF. P/N	
PATENT NO.	BOHFPU SYSTEMS.COM/PATENTS
SERIAL NO.	
DATE MANUF.	
CONTRACT NO.	
DO NO.	
MAXIMUM GROSS WEIGHT	
GROUND	KG LB
AIR	KG LB

(Sample) EBSS Manufacturers Data Plate

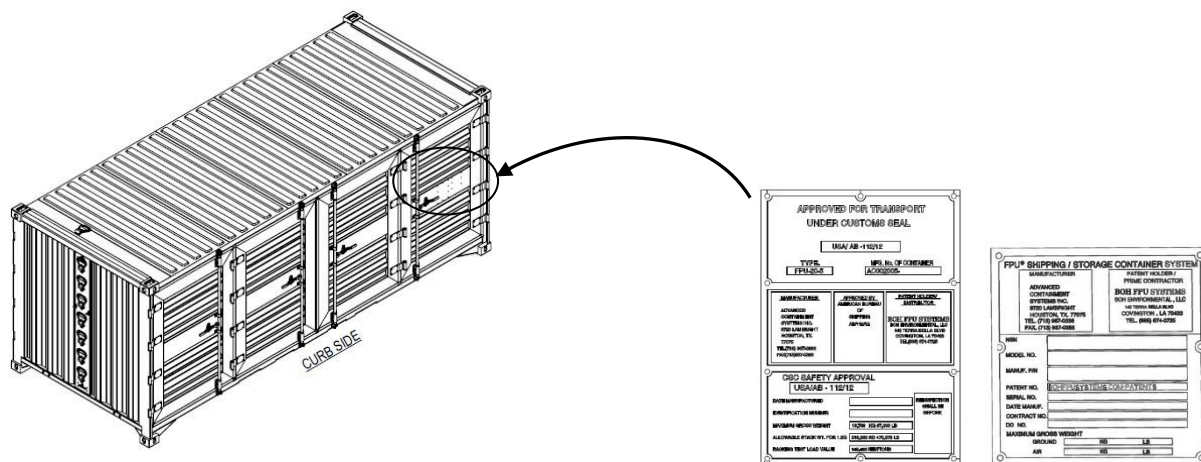
APPROVED FOR TRANSPORT UNDER CUSTOMS SEAL		
USA/AB - 112/12		
TYPE	MFG. No. OF CONTAINER	
FPU-20-5	AC002005	
MANUFACTURER	APPROVED BY	PATENT HOLDER / DISTRIBUTOR
ADVANCED CONTAINMENT SYSTEMS INC. 8720 LAMBRIGHT HOUSTON, TX 77075 TEL(713) 967-6888 FAX(713)967-0385	AMERICAN BUREAU OF SHIPPING AB/15/12	BOH FPU SYSTEMS BOH ENVIRONMENTAL, LLC 148 TERRA BELLA BLVD COVINGTON, LA 70433 TEL(985) 674-0726
CSC SAFETY APPROVAL		
USA/AB - 112/12		
DATE MANUFACTURED		INSPECTION SHALL BE BEFORE
IDENTIFICATION NUMBER		
MAXIMUM GROSS WEIGHT	16,200 KG 37,000 LB	
ALLOWABLE STACK WT. FOR 1.83	218,500 KG 470,570 LB	
RAISING TRAIL LOAD VALUE	140,453 NEWTONS	

(Sample) SPECIAL REQUIREMENTS PLATE CSC APPROVAL PLATE

EBSS containers are approved for transport as 20-foot ISO containers. These certifications do not supersede military policies by MTMC in the shipment of serialized containers of matched sets.

Location of Special Requirements CSC Approval and FPU Manufacturers Data Plates

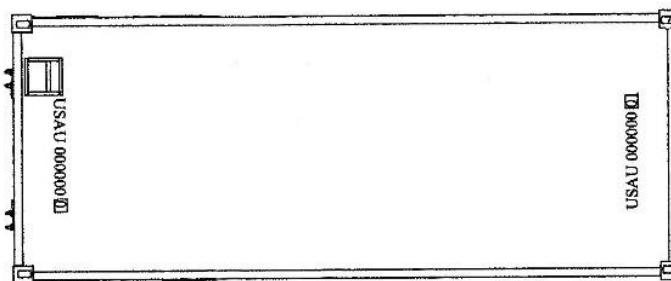
EBSS data plates identify the manufacturer's part number, serialization, contract and delivery order number and National Stock Number (NSN).



SIGNAGE ON THE ROOF

EBSS containers have a series of markings that provide information and identification for shipping containers when transported aboard ships.

TOP VIEW OF SIGNAGE EBSS



END OF WORK PACKAGE