

## CHAPTER 14

# MULTI-PLACE LIFERAFT (MPLR), LRU-33/A (20-MAN)

## (C-130J WING CONFIGURATION ONLY)

### Section 14-1. Description

#### 14-1. GENERAL.

14-2. The MPLR are multi-place liferafts intended for use by aircrewmembers and passengers forced down at sea. The liferafts come in three sizes: 8-man, 12-man, and 20-man. The only MPLR authorized for C-130J wing installation is the LRU-33/A (20-man). The Air Cruisers 46-man, P/N 63880-103/104, is also authorized for use. Other MPLR: LRU-30A/A (8-man), LRU-31A/A (12-man), and the LRU-32A/A (20-man) may be stowed in the fuselage of the C-130J if required. The MPLR are replacement liferafts for the older LRU-13/14/15 series liferafts.

#### 14-3. CONFIGURATION.

14-4. The LRU-33/A 20-Man Liferaft System (figure 14-1) consists of a dual tube non-reversible raft with a self-erecting canopy, an accessory container and liferaft carrying case. A foam block with cable guides and cables for left and right wing installation are also provided. Two retaining straps with frangible links, which break when the liferaft is actuated, help maintain the form of the folded liferaft. The liferaft is constructed of urethane-coated nylon with thermo-bonded seams. The liferaft design incorporates a self-erecting canopy, an inflation system with a non-shatterable gas cylinder, an insulated floor, self-inflating boarding ramps, and two water-activated lights (one inside and one outside). Other features include attached ballast bags, sea anchor, and rain water collector.

14-5. The accessory container does not include survival items when received from the manufacturer. Survival items will be placed in the container during the Place-In-Service Inspection. The accessory container is not folded inside the raft, it is placed on top of the raft in the carrying case (figure 14-2). The accessory container is secured to the liferaft using a

white nylon retaining line. The accessory container must be pulled into the liferaft after boarding.

14-6. The liferaft carrying case is constructed using urethane coated nylon cloth. With the liferaft and accessory container installed, the carrying case is held securely closed with hook and pile fasteners and a series of snap fasteners. There are three foam blocks installed in the bottom of the carrying case to prevent excess movement of the liferaft and the actuation valve assembly. The outside of the carrying case has four D-rings for use in hoisting the liferaft. There is also a pocket for the manufacturer's maintenance record, which must be kept with the liferaft. This card is only used by the vendor and must be returned with the raft for maintenance.

#### 14-7. APPLICATION.

14-8. The LRU-33/A is only authorized for use in C-130J wing stowage compartment.

#### 14-9. FUNCTION.

##### NOTE

Instructions for installing the LRU-33/A into C-130J wing compartments are located in the applicable aircraft MIMS.

14-10. The LRU-33/A is inflated by pulling on one of the actuation handles at one of the aircraft flight stations. The handle is attached to the aircraft cable, which is connected to the fairlead assembly in the wing. The opposite end of the fairlead is attached to the liferaft actuation cable. This actuation cable is routed through the cable guide in the foam block assembly mounted in the cylinder cradle. After passing through the cable guide it is attached to the valve assembly via a quick disconnect link.

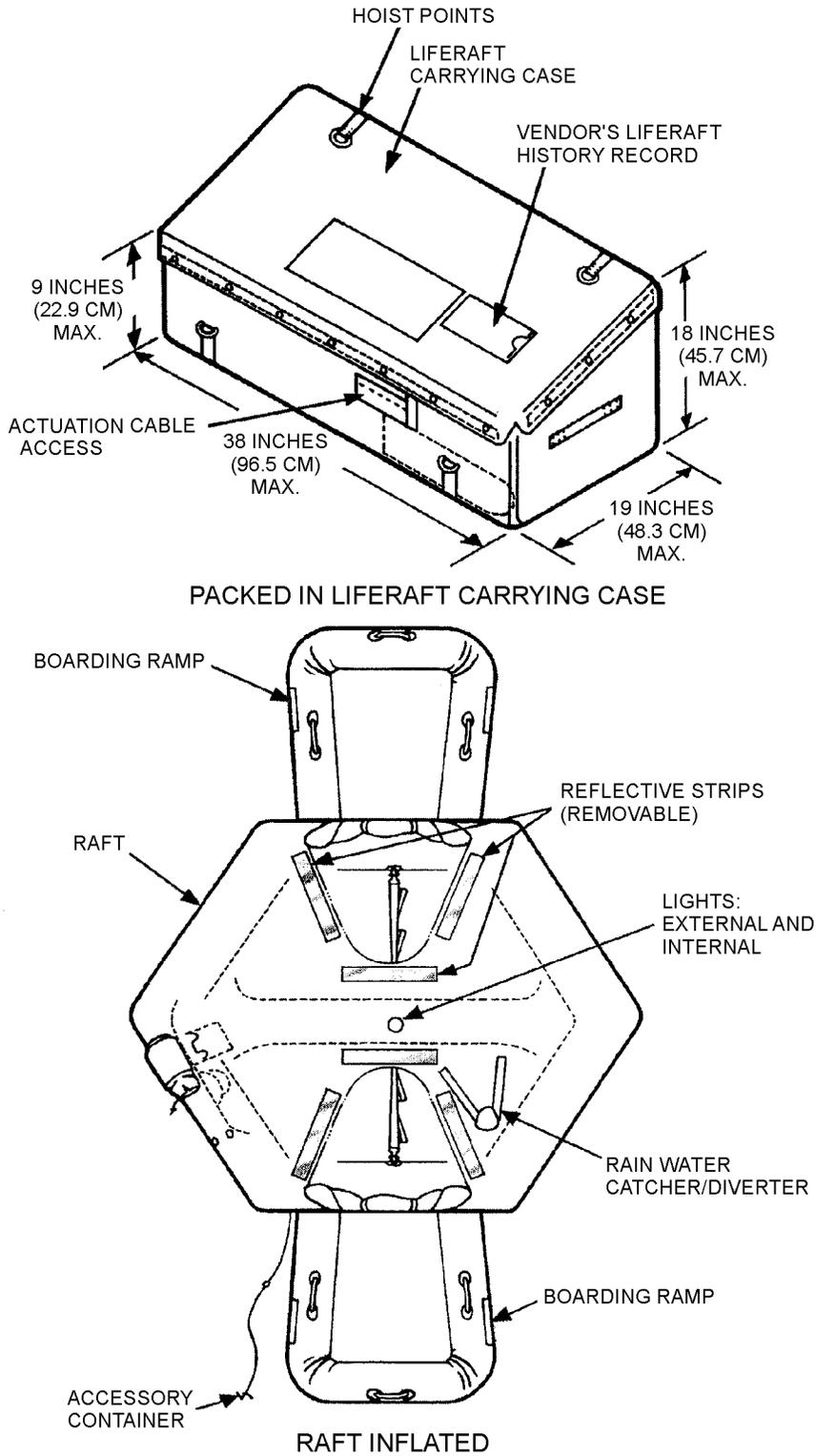


Figure 14-1. LRU-33/A Liferaft

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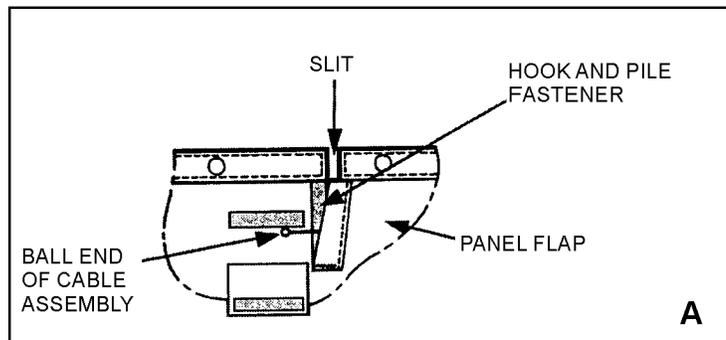
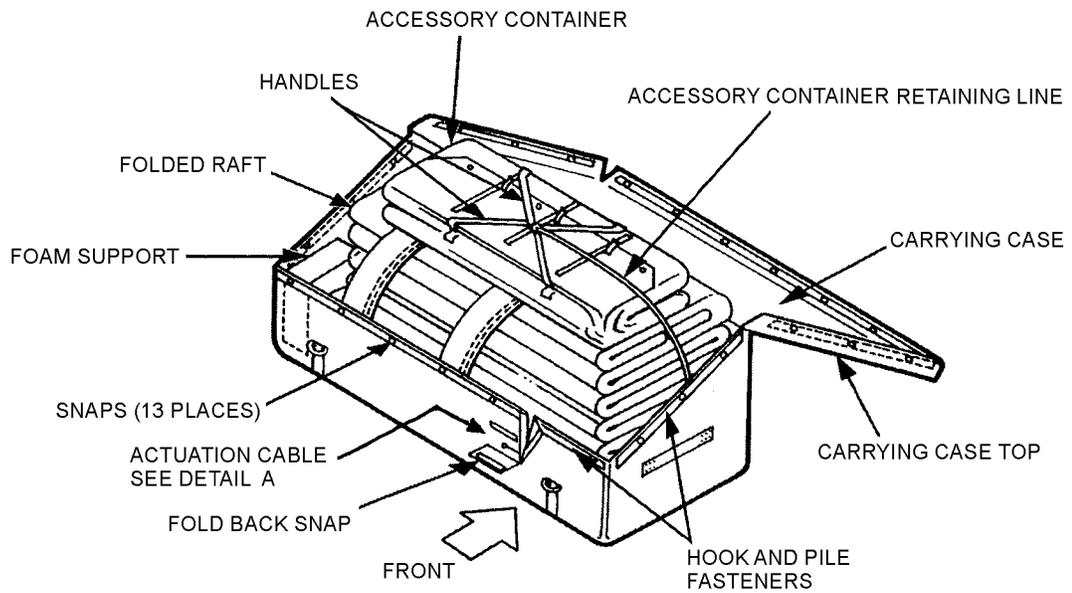


Figure 14-2. LRU-33/A Packed in Liferaft Carrying Case

014002

## Section 14-2. Modifications

### 14-11. GENERAL.

14-12. There are no authorized modifications to the LRU-33/A at this time.

## Section 14-3. Maintenance

### 14-13. GENERAL.

14-14. This section contains information on inspection, packing, cleaning, and repair/replacement of the LRU-33/A.

### 14-15. INSPECTION.

14-16. All LRU-33/A assemblies shall be subjected to Place-In-Service, Daily/Pre-Flight, Isochronal Scheduled Inspection System (ISIS), Acceptance, and Three-Year Vendor Repack Inspections.

14-17. The Place-In-Service Inspection shall be performed on all new assemblies or assemblies being returned from vendor repair or repack. The Aircraft Intermediate Maintenance Department shall perform this inspection.

14-18. The Daily/Pre-flight shall be performed prior to the first flight of the day. For wing installed liferafts this inspection shall be performed in accordance with applicable aircraft MIMS.

#### NOTE

The inspection cycle of the LRU-33/A is limited by the installed survival equipment. The inspection cycle may be adjusted, however it shall not exceed the service life of the installed radio batteries or 448 days which ever occurs first.

14-19. The ISIS inspection shall be performed at the AIMD. The interval for the LRU-33/A shall not exceed 448 days and in no case shall the cycle go beyond the service life of the installed radio batteries.

14-20. The Acceptance Inspection shall be performed in accordance with applicable MIMS and as directed during aircraft transfer.

14-21. Three Year Vendor Repack Inspection shall be performed every three years. The AIMD and designated vendor perform this inspection.

**14-22. QUALITY ASSURANCE.** The procedures detailed present a logical sequence for proper inspection. Quality assurance steps are provided for critical operations. When a step is underlined, the Aircrew Survival Equipmentmen shall perform the operation, then have performance verified by a Quality Assurance Representative (CDI, CDQAR, or QAR) prior to proceeding to the next operation. Work center supervisors are primarily responsible for quality assurance and in accordance with OPNAVINST 4790.2 Series may nominate experienced personnel in their work center to be screened and examined by the Quality Assurance Officer prior to their designation by the Commanding Officer as a Collateral Duty Inspector. In no case shall an Aircrew Survival Equipmentman perform his own quality assurance inspection. Procedures for quality assurance are listed following major operations.

**14-23. PLACE-IN-SERVICE INSPECTION.** To perform the Place-In-Service Inspection, proceed as follows:



The actuation cable for the LRU-33/A is not secured during shipment/transport. Use care when handling the carrying case. Locate the actuation cable (figure 14-2) prior to handling to prevent inadvertent actuation.

1. Carefully remove liferaft from shipping container, ensure the actuation cable is not pulled. Place the liferaft on a clean, flat surface. Save the shipping container, if possible, for future use. Should the life-raft have to be returned for warranty repairs or three-year repack, the original container provides excellent form fit protection.

2. Inspect the outer carrying case and attached hardware for wear, cuts, tears, attachment and defects.

3. Open the carrying case by unsnapping the snaps and separating the hook and pile closures.

4. Locate the accessory container on top of the liferaft assembly. It has a white nylon retaining line. Set the accessory container on the flat surface next to the liferaft assembly.

5. Locate the yellow mooring line near the valve end of the carbon dioxide cylinder. Verify that it is not wrapped around the inflation cable guide tube at the valve end of the carbon dioxide cylinder. The organizational level will secure this line to the aircraft when the raft is installed in the wing bucket.

6. Verify the charge in the carbon dioxide cylinder by checking the sight gage located on the valve. The indicator should be in the green. If the indicator is in the red on the gage, submit a QDR in accordance with OPNAVINST 4790.2 Series.

7. Untie and remove the white nylon retaining line from the accessory container. Obtain the required survival items listed in [table 14-1](#) and inspect items in accordance with [paragraph 14-28](#). Pack items in the accessory container in accordance with [paragraph 14-30](#).

8. Verify the serial number of the raft against the manufacturer's maintenance record card located in the pocket found on the top of the carrying case. Ensure that the manufacturer's record remains with the raft at all times.

9. Locate the two liferaft retaining straps that encircle the raft ([figure 14-3](#)). The straps have urethane coated nylon covers secured with hook and pile fasteners, open the covers and inspect the frangible links. Close the covers by securing the hook and pile fasteners. If the frangible links are damaged or broken, submit a QDR in accordance with the OPNAVINST 4790.2 Series.

10. Pack accessory container and close carrying case in accordance with [paragraph 14-31](#). Use caution when handling case to ensure the liferaft inflation cable is not pulled.

**14-24. DAILY/PRE-FLIGHT INSPECTION.** The Daily/Pre-Flight Inspection on wing-installed rafts

shall be accomplished in accordance with applicable aircraft MIMS.

**14-25. PHASE/ISIS INSPECTION.** To perform a Phase/ISIS Inspection, proceed as follows:

**CAUTION**

The actuation cable for the LRU-33/A is not secured during shipment/transport. Use care when handling the liferaft and carrying case. Locate the actuation cable ([figure 14-2](#)) prior to handling to prevent inadvertent actuation.

**NOTE**

The inspection cycle of the LRU-33/A is limited by the installed survival equipment. The inspection cycle may be adjusted, however it shall not exceed the service life of the installed radio batteries or 448 days which ever occurs first.

1. Place liferaft assembly on clean flat surface. Open the carrying case by unsnapping snaps and separating hook and pile closures.

2. Locate accessory container on top of liferaft. Untie and remove the white nylon retaining line from the accessory container. Place accessory container on clean, flat surface. Inventory items contained in the accessory container using [table 14-1](#). Inspect the survival items contained in the accessory container in accordance with [paragraph 14-28](#). Pack items in accessory container in accordance with [paragraph 14-30](#).

**CAUTION**

The actuation cable for the LRU-33/A is not secured during shipment/transport. Use care when handling the liferaft and carrying case. Locate the actuation cable ([figure 14-2](#)) prior to handling to prevent inadvertent actuation.

3. Ensure the liferaft inflation cable is clear of the access flap on the front of the carrying case, then lift the raft out of the carrying case and place on a flat surface.

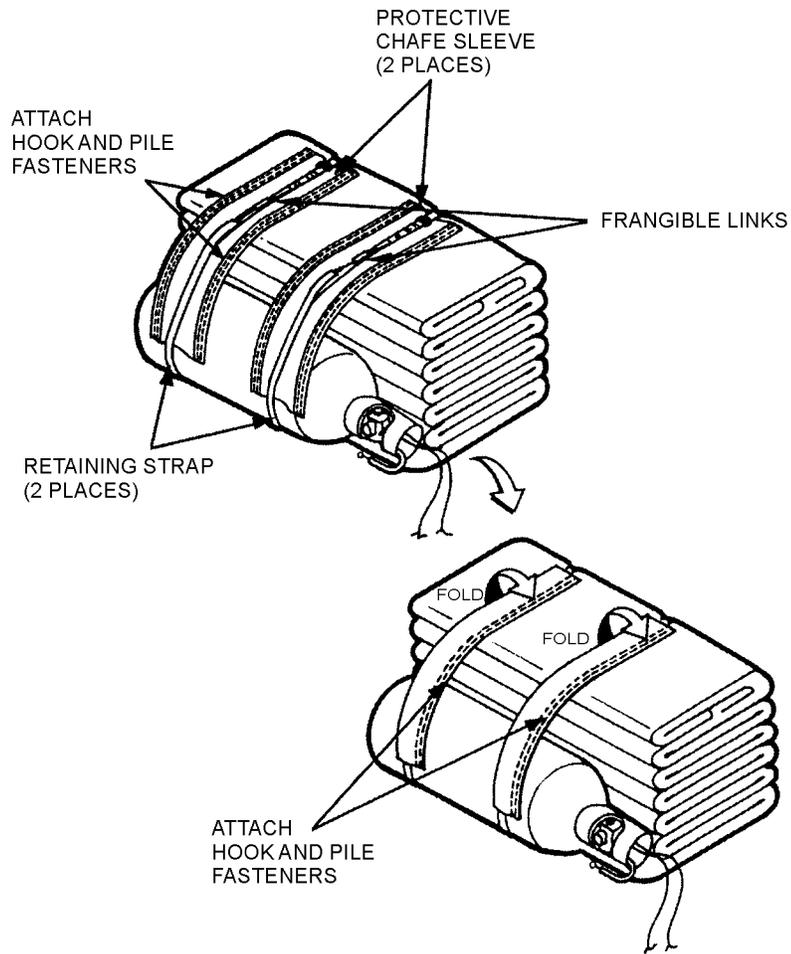


Figure 14-3. Liferaft Retaining Straps

014003

Table 14-1. LRU-33/A Survival Items

Description	Quantity Required	Reference Number	NIIN	SM&R Code
Sea Dye Marker	8	MIL-S-17980	00-270-9986	PAOZZ
Distress Signal MK-124 MOD 0 or Signal Kit, MK-189 MOD 0 (Not 8)	10 1	DL 313734 —	01-030-8330 L564-1370-01- 418-2657	— —
Water Storage Bag	7	MIL-B-8571	00-485-3034	PAOZZ
Water, Drinking, Bagged, Emergency (Not 7)		—	01-124-4543	PAOZZ
w/ MROD	20			
w/o MROD	50			
First Aid Kit	2	SC-C-6545-IL	00-922-1200	—
Desalinator, Manual Reverse Osmosis	1	—	01-313-6086	—
Sunburn Preventative Preparation	3	MIL-S-37800	01-121-2336	PAOZZ
Food Packet, Liferaft	20	MIL-F-15281	01-028-9406	PAOZZ
Bailing Sponge	6	L-S-626	00-240-2555	PAOZZ
Combat Casualty Blanket Type I	3	MIL-B-36964	00-935-6665	PAOZZ
Hand Generated Flashlight A-9 (Not 2)	1	MIL-F-8209	00-283-9806	PAOZZ
Flare Gun MK-79 MOD 0 (Note 8)	2	—	00-866-9788	PAOZZ
Signal Light (Strobe) SDU-5/E or SDU-39/N	1	MIL-L-38217	00-067-5209 00-411-8535	PAOZZ PAOZZ
Light, Chemical	2	95277-80	01-334-4274	PAOZZ
Signal Mirror, Type I (Not 3) or Signal Mirror, Type II	1	MIL-M-18371	00-105-1252 01-455-6695 01-455-6671	PAOZZ PAOZZ PAOZZ
Survival Radio (Notes 4 and 6) and/or Radio Beacon AN/URT-33A (Not 4)	1	MIL-B-38401	00-160-2136	PAOGG
Code Card (Not 3)	1	—	—	—
Whistle Type II	1	MIL-W-1053	00-254-8803	PAOZZ
Compass, Pocket, Type MC-1 (Note 1) or Compass, Wrist	1	MIL-C-17850 WCC-100	00-515-5637 00-809-5252	PAOZZ PAOZZ
Pocket Knife	1	MIL-K-818	00-162-2205	PAOZZ
Cord, Nylon, Utility, 50 feet	1	MIL-C-5040	00-240-2154	PAOZZ

**Table 14-1. LRU-33/A Survival Items (Cont)**

Description	Quantity Required	Reference Number	NIIN	SM&R Code
<p>Notes:</p> <ol style="list-style-type: none"> <li>1. Use MIL-C-17850 until stock is depleted, then use WCC-100.</li> <li>2. Required for Arctic missions; optional otherwise.</li> <li>3. The Type II mirror (large) shall be utilized in lieu of the Type I mirror (small) until stock of the Type II mirror is depleted.</li> <li>4. Survival Radio or Radio Beacon requirements shall be in accordance with OPNAVINST 3710.7 Series. Following radios apply: Voice-Beacon: AN/PRC-90, AN/PRC-90-2, and AN/PRC-149, Beacon only: AN/URT-33, AN/PRT-5, and AN/PRC-140. The AN/PRC-149 will become the preferred radio when available.</li> <li>5. Refer to NAVAIR 13-1-6.5.</li> <li>6. Ensure battery service life does not expire prior to the next scheduled special inspection. Refer to applicable radio maintenance publication for battery service life.</li> <li>7. MROD shall be installed if available. MPLR is considered RFI without MROD provided bagged water is increased. MROD should not be used where water temperatures are below 36°F.</li> <li>8. MK-189 MOD 0 Signal Kit contains 6 MK-124 Day/Night flares and 2 MK-79 MOD 0 flare guns. If used, it fills flare requirements.</li> </ol>				

4. Inspect carrying case for wear, cuts, tears, and security of attached hardware. Repairs are limited to minor stitching and patching of carrying case. See [paragraph 14-34](#) for authorized repairs.

5. Inspect carrying case for dirt/soot, and lubricants. To clean raft and carrying case, see [paragraph 14-33](#).

6. Verify the charge in the carbon dioxide cylinder by checking the sight gage located on the valve. The indicator should be in the green. If the indicator is in the red on the gage, submit NAMDRP report in accordance with OPNAVINST 4790.2 Series.

7. Inspect inflation valve for corrosion and defects. Inspect actuation cable routing “U-Tube” for kinks or bends.

8. Locate the two liferaft retaining straps that encircle the raft (figure 14-3). The straps have urethane-coated nylon covers secured with hook and pile fasteners. Open the covers and inspect the frangible links. Close the covers by securing the hook and pile fasteners. If the frangible links are damaged or broken, submit an NAMDRP report in accordance with the OPNAVINST 4790.2 Series.

9. Pack liferaft assembly and accessory container back in the carrying case in accordance with [paragraph 14-31](#). Use caution when handling to ensure the liferaft inflation cable is not pulled.

**14-26. ACCEPTANCE INSPECTION.** To perform an Acceptance Inspection, proceed as follows:

**NOTE**

Acceptance Inspections may consist of checking history records and performing a visual inspection of the raft. The raft may be inducted to AIMD for further inspection if directed.

1. Locate history records for raft assembly. Verify expiration dates for installed equipment.

2. Visually inspect raft assembly and verify serial numbers that are visible without opening raft. Ensure vendor’s liferaft history record is located in the pocket on top of the carrying case.

3. If directed or if record and visual inspections detect errors, induct raft to AIMD for Phase/ISIS level inspection.

**14-27. THREE-YEAR VENDOR REPACK INSPECTION.** To perform a Three-Year Vendor Repack Inspection, proceed as follows:



The actuation cable for the LRU-33/A is not secured during shipment/transport. Use care when handling the carrying case. Locate the actuation cable (figure 4-1) prior to handling to prevent inadvertent actuation.

1. Organizational:

a. Remove the liferaft assembly from the aircraft in accordance with applicable aircraft MIMS and induct to the AIMD for processing.

2. AIMD:

a. Place liferaft on clean flat surface. Open container by unsnapping snaps and separating hook and pile fasteners.

b. Locate and remove accessory container. Remove retaining line from accessory container handles by untying bowline knot. Inspect survival items in accordance with paragraph 14-28.

c. Verify liferaft serial number against vendor's maintenance record card located in pocket on carrying case.

d. Close carrying case and secure snaps and hook and pile fasteners. Place liferaft in shipping container. Preferred container is type used by vendor for shipping. If no vendor type shipping containers are available, package liferaft to ensure that no damage will occur in shipping. If liferaft is damaged in shipping, vendor will add repair charges to repack inspection.

e. Order vendor repack on VIDS MAF using stock number provided in Illustrated Parts Breakdown.

f. AIMD shall issue spare raft from ALSS pool while liferaft undergoes repack inspection.

g. Liferafts returned from Vendor Repack Inspection shall receive a Place-In-Service Inspection prior to re-issue.

**14-28. SURVIVAL ITEMS AND ACCESSORIES INSPECTION.** To inspect survival items and accessories, proceed as follows:

**NOTE**

Refer to NAVAIR 13-1-6.5 for information on inspection/replacement and modification of survival items.

With exception of batteries, items reaching over-age while packed in survival kits and liferafts shall remain in service until the next inspection cycle of the completed assembly.

1. Inventory all accessory and survival items by checking items against table 14-1. Replace missing or unsatisfactory items.

**NOTE**

Ensure radio battery service life does not expire prior to the next scheduled calendar inspection. Refer to applicable radio maintenance publication for battery service life. Batteries which do not meet service life requirements must not be utilized and must be turned into supply for disposal via local instructions.

2. Inspect all items for damage, spent contents, and expired service life. Replace as necessary.

3. Operate all items which are not expended in use. Replace as necessary.

**14-29. PACKING.**

**14-30. PACKING OF SURVIVAL ITEMS IN ACCESSORY CONTAINER.** The survival items shall be packed into the accessory container at the Place-In-Service Inspection or after removal for Phase/ISIS Inspection by the intermediate level of maintenance. The procedures shall be as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Cord, Nylon, Type III	NIIN 00-240-2146
As Required	Wrap, Cushioning	NIIN 00-142-9008
As Required	Tape, Pressure Sensitive	NIIN 00-266-5016

1. Inventory survival items. Refer to table 14-1 for items used and quantity.

## NAVAIR 13-1-6.1-1

### NOTE

NAVAIR 13-1-6.5 contains information on inspection/replacement and modifications to survival items.

2. Wrap breakable survival items with either rubber-coated cloth or cushioning wrap and secure with rubber bands.

3. Stow accessories and survival items in accessory container. Pack items evenly to keep the container as flat as possible.

4. Tie MROD (if used) and radios to accessory container tie down loops with 48-inch length of Type III nylon cord, using a bowline knot.

5. Secure latches on first aid kit with several layers of pressure sensitive tape. Using an eight-foot length of Type III nylon cord tie an overhand knot in both ends. Wrap one end of cord two turns twice around the first aid kit, on the inside of the latches and tie with a surgeon's knot. Route opposite end of cord to accessory container tie down loop and secure with a bowline knot. Stow first aid kit in accessory container.

**14-31. PACKING CARRYING CASE.** To pack life-raft and accessory container in carrying case, proceed as follows:

1. Place carrying case on a clean, flat surface, oriented so the end with two foam blocks is on the right as you face the carrying case.

2. Ensure the bottom of the carrying case is free of FOD and sharp objects.

### CAUTION

Locate the end of the actuation cable on the liferaft prior to moving to ensure it is not inadvertently pulled. The actuation cable exits the liferaft at the U-Tube cable guide.

3. Place the liferaft assembly in the carrying case (figure 14-4). Ensure the inflation valve is placed between the two foam blocks on the right. The end of the carbon dioxide cylinder should be resting against the single foam block at the opposite end of the carrying case.

4. Route the mooring line (yellow) behind cable guide and position on the right side of the carrying

case. Ensure the mooring line (yellow) is not wrapped around the U-Tube cable guide.

5. Tie the white nylon retaining line to the handles of the accessory container using a bowline knot. Secure around the center handles of the accessory container. Tack bowline knot with size "E" thread, one turn, secure with a surgeon's and a square knot.

6. Place the accessory container on top of raft assembly and stow the retaining line by faking line at end of the container by the carbon dioxide cylinder inflation valve. Ensure the accessory line is not directly on top of the yellow mooring line or wrapped around the U-Tube cable guide.

7. Close the carrying case by securing hook and pile fasteners and snaps. Ensure the actuation cable is routed through the actuation cable access flap located on the front of the carrying case (figure 14-5).

8. Make necessary entries on appropriate form(s) in accordance with the OPNAVINST 4790.2 series.

## 14-32. CLEANING AND SERVICING.

**14-33. CLEANING OF LRU-33/A.** To clean the LRU-33/A, proceed as follows:

### Materials Required

Quantity	Description	Reference Number
As Required	Detergent, General Purpose	MIL-D-16791 NIIN 00-282-9699
As Required	Cloth, Lint Free, Type II	MIL-C-85043 NIIN 00-044-9281

### CAUTION

Solvents are not to be used in cleaning the LRU-33/A liferaft. Use extreme care when cleaning around the area surrounding inflation valve and cable guide.

1. Dab or blot excess oil, fluid or dirt off of area being cleaned. Do not rub into material.

2. Prepare solution of detergent (MIL-D-16791) consisting of 1/4 to 1/2 ounce of detergent per gallon of water.

3. Clean affected area with lint-free cloth or sponge.

4. Dry with lint-free cloth.

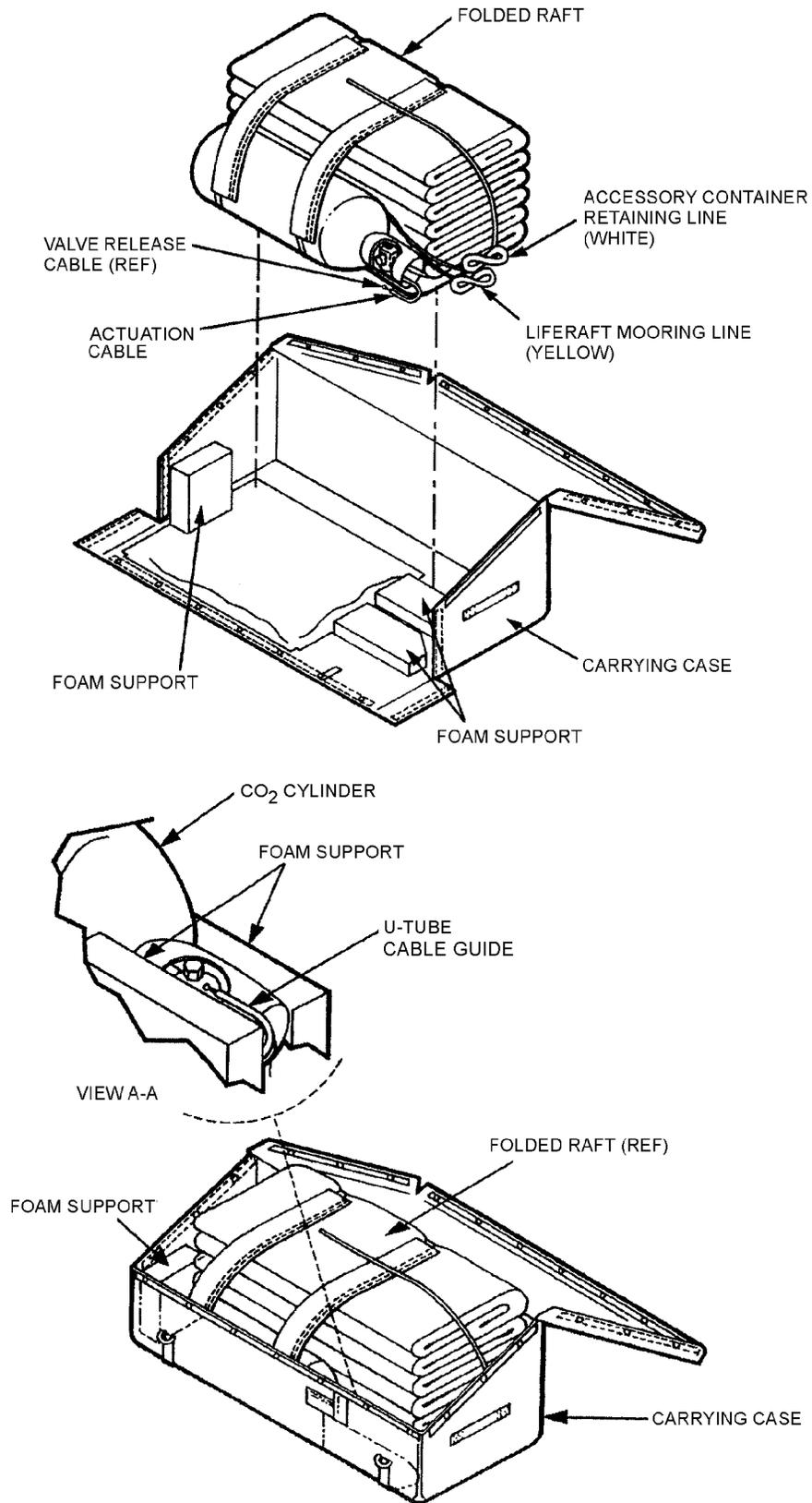


Figure 14-4. Packing Liferaft Assembly in Carrying Case

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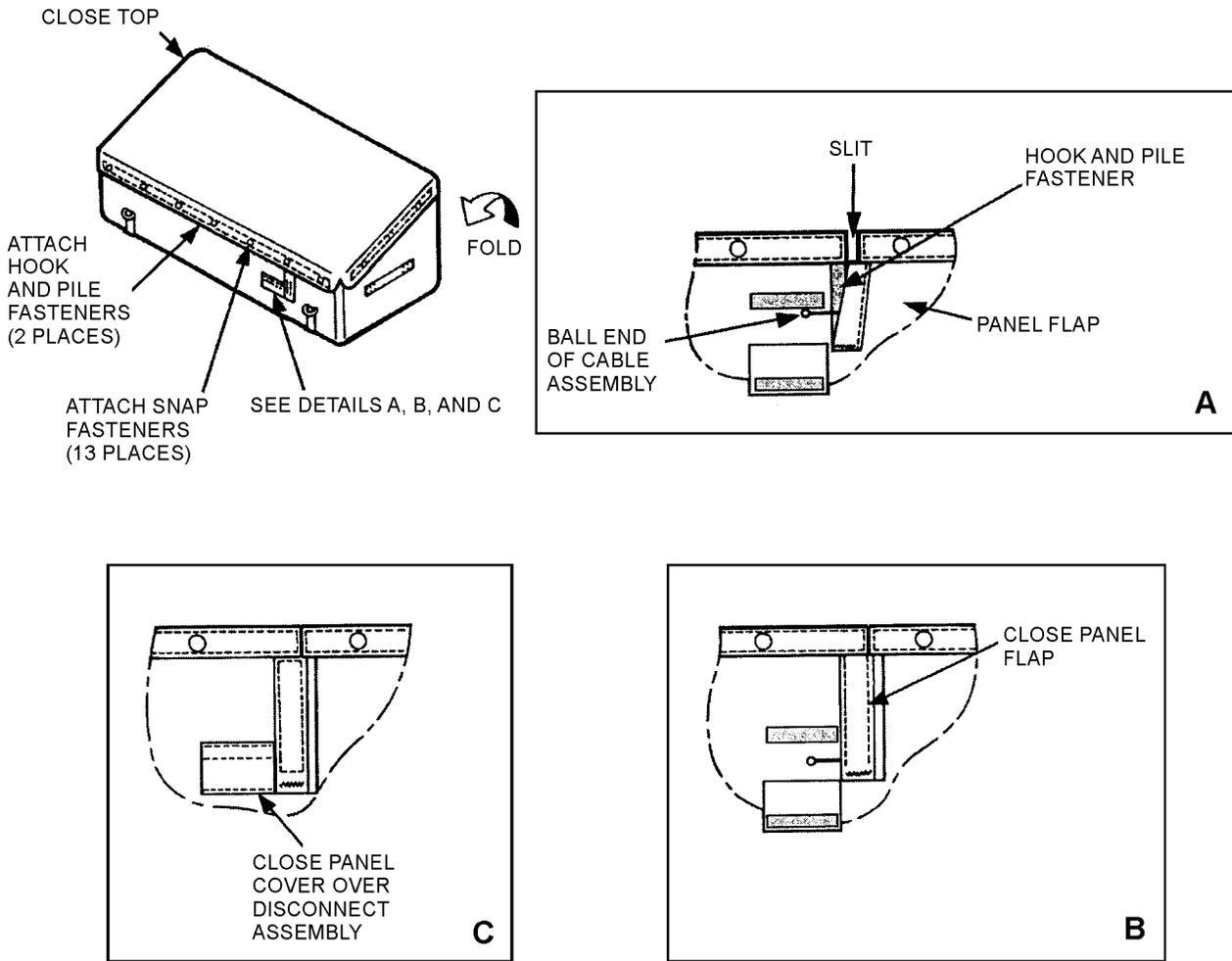


Figure 14-5. Closing the Liferaft Carrying Case

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**14-34. REPAIR/REPLACEMENT.**

14-35. Repair of the LRU-33/A is limited to the carrying case and accessory container. No attempt shall be made to repair the liferaft. Repair of the carrying case and accessory container are limited to replacing loose or broken stitching, and repair of minor cuts

using standard shop repair practices. All repairs shall be documented by making necessary entries on appropriate forms in accordance with OPNAVINST 4790.2 Series. If the liferaft requires repair, it must be returned to the vendor. If the damage was not caused by neglect or abuse, submit a NAMDRP report in accordance with the OPNAVINST 4790.2 Series.

**Section 14-4. Illustrated Parts Breakdown**

**14-36. GENERAL.**

14-37. This section lists and illustrates the assemblies and parts of the LRU-33/A 20-Man Liferaft System (Wing Configuration).

14-38. The illustrated parts breakdown should be used during maintenance when requisitioning and identifying parts.

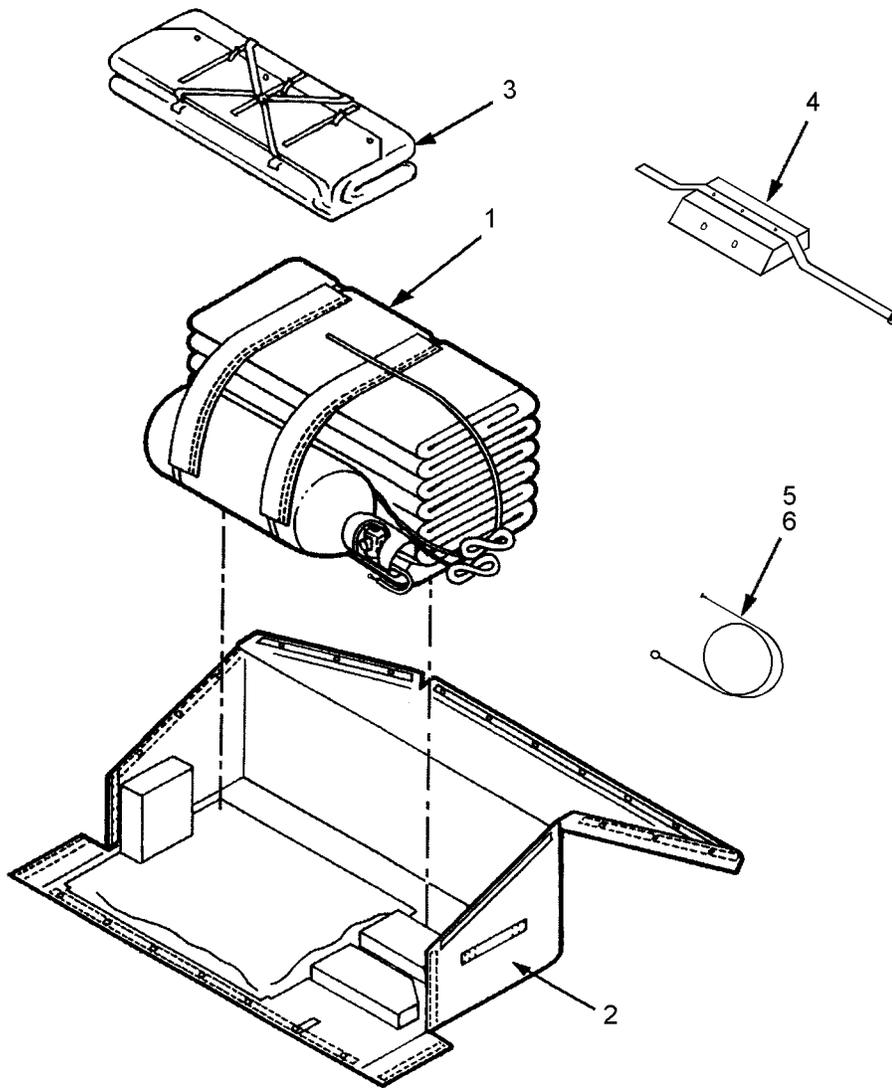


Figure 14-6. LRU-33/A 20-Man Liferaft System

014006

Figure and Index Number	Part Number	Description	Units Per Assembly	Usable On Code
		1 2 3 4 5 6 7		
14-6	65260-103	LRU-33/A 20-MAN LIFERAFT ASSEMBLY ..... (Not [1])	REF	
-1	65134-101	. LIFERAFT, 20-Man, Inflatable .....	1	
-2	65129-101	. CARRYING CASE, 20-Man .....	1	
-3	65130-101	. ACCESSORY CONTAINER, C-130 .....	1	
-4	65246-101	BLOCK, Foam, C-130J (Not [2]) .....	2	
-5	65267-101	. CABLE ASSEMBLY, Left (Red) (Note [3]) .....	1	
-6	65267-102	. CABLE ASSEMBLY, Right (Green) (Note [3]) .....	1	
	—	Three Year Vendor Repack .....	—	
		(NSN to be provided) (Not [4])		

- Notes:
1. Assembly includes Liferaft, Carrying Case, and Accessory Bag. Foam Blocks and cable assemblies must be ordered separately.
  2. Foam block assembly comes with 1 left and 1 right wing cable.
  3. Cable assemblies do not include foam block.
  4. Order Three Year Vendor Repack on VIDS/MAF OPNAVFORM 4790/66.

## NUMERICAL INDEX

Part Number	Figure and Index Number	SM&R Code
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65129-101	14-6-2	
65130-101	14-6-3	
65134-101	14-6-1	
65246-101	14-6-4	

Part Number	Figure and Index Number	SM&R Code
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65247-101	14-6-4	
65260-103	14-6	
65267-101	14-6-5	
65267-102	14-6-6	