

## CHAPTER 4

### HATCH REPAIR

#### 4-1. HATCH REPAIR.

If routine maintenance is not sufficient to restore a watertight hatch to watertight or operating condition, repair or replace defective parts. (Refer to [chapter 2](#) for inspection and maintenance procedures.) Refer to the Afloat Shopping Guide and to [appendix B](#) and [appendix C](#) for information to help identify and procure replacement parts. If the answer to the problem is not covered in the [appendices](#), consult the appropriate technical point of contact at Naval Surface Warfare Center, Carderock Division - Ship Systems Engineering Station (NSWCCD-SSES), or a commercial point of contact.

#### 4-2. HINGE PIN REPLACEMENT.

Hinge assemblies for hatches tend to be more wobbly than door hinges, even in new construction. For this reason, inspecting the hinge assembly by operating the hatch does not necessarily reveal hinge pin wear. It is good practice to periodically remove the hinge pins and visually inspect for damage. To remove a hinge pin, first remove the cotter pin that holds it in place. Remove the hinge washer and slide the hinge pin out of the hinge pad. See [figure 4-1](#). Replace all worn hinge pins and hinge washers.

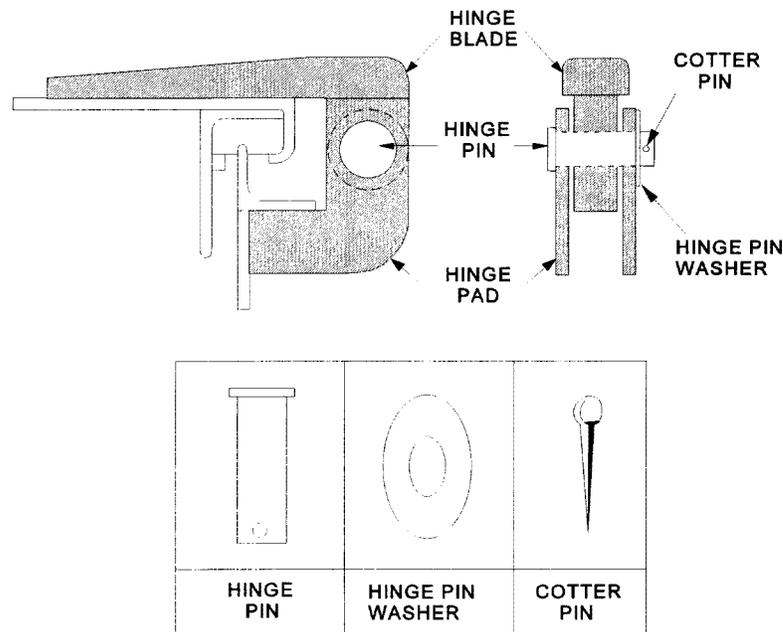


Figure 4-1. Watertight Hatch Hinge Assembly

#### 4-3. DOG BOLT REPAIR.

**4-3.1 DOG BOLT NUT REPLACEMENT.** The dog bolt (drop bolt) nut must be replaced if it is damaged or missing. The nut may be out-of-round from being hit by heavy equipment, or the threads may be bad.

- a. Using a 1/8-inch drive pin punch, drive out the collar retaining pin from the top of the dog bolt.
- b. Remove the collar and nut by backing off the nut all the way. The nut will push the collar off the dog bolt.

c. Attach a new nut, boss side down. Reinstall the collar and retaining pin. See [figure 4-2](#).

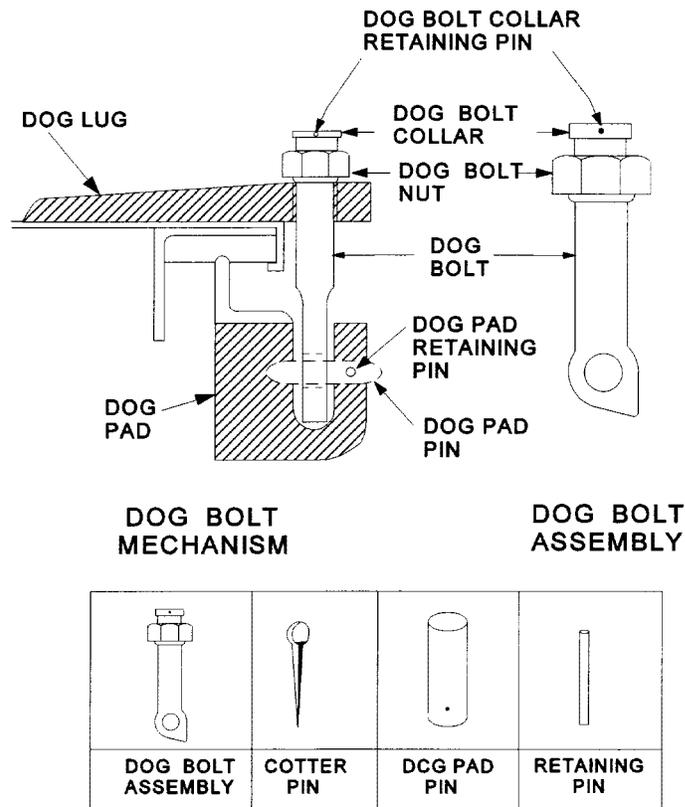


Figure 4-2. Watertight Hatch Dog Bolt Mechanism

#### NOTE

A retaining pin can be fabricated by using 1/8-inch diameter brazing rod. Cut the rod approximately 1/8-inch longer than required length. Insert the rod andpeen over the ends with a hammer to hold in place.

**4-3.2 DOG BOLT REPLACEMENT.** Dog bolts can become bent if all are not loosened sufficiently when the hatch is raised. Replace dog bolts which are bent or which have an elongated hole or stripped threads.

Hatch dog bolts are either shipped from the factory or ordered as replacements through the Federal Stock System, are made of mild steel. Mild steel dog bolts are sufficient for use on hatches located within the weather envelope. However, these bolts rust and corrode. For hatches located on weather decks, use replacement dog bolts made of stainless steel. Stainless steel dog bolts are available from commercial watertight fitting parts suppliers. (Refer to [appendix C](#).) To replace a dog bolt:

- Using a 3/32- or 1/8-inch drive pin punch, remove the retaining pin from the dog pad pin.
- With a combination square or rule, locate and center punch the inside of the hatch coaming at a point over the approximate center of the end of the dog pad pin.
- Drill a 1/8-inch diameter hole through the coaming. Insert a 1/8-inch diameter punch, and drive out the dog pad pin. See [figure 4-3](#).

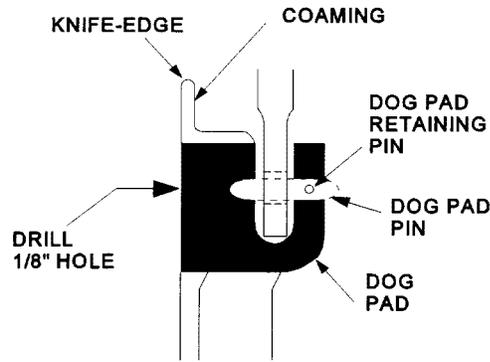


Figure 4-3. Removing Dog Pad Pin

- d. Remove the damaged dog bolt.
- e. Install the new dog bolt into the slot in the dog pad. Ensure the protrusion or bulge that is cast into one side of the bottom of the bolt faces towards the back of the slot in the hatch cover. If the bolt is installed backward, the dog bolt will not swing fully away from the dog pad when the hatch is lifted.
- f. Replace the dog pad pin. Align the holes for the retaining pin with the holes in the dog pad pin. Install the retaining pin.

### CAUTION

**Do not grind the weld flush.**

- g. Weld up the 1/8-inch hole previously drilled in the hatch coaming with a 1/8-inch diameter E6010 or E6011 electrode.
- h. Coat the dog bolt threads with a thin coat of grease.

#### 4-4. QUICK-ACTING HATCH REPAIR.

Quick-acting hatches have a handwheel assembly similar to those on scuttles. For instructions on handwheel disassembly and repair, refer to [chapter 5, paragraph 5-2](#). For information on hatch brace assemblies, refer to [chapter 2, paragraph 2-1.7](#), for steel assemblies or to [chapter 2, paragraph 2-2.7](#), for aluminum assemblies.

