Section VIII

# RELEASE ASSEMBLIES

## 2-20. Use

The cargo parachute release assembly separates the parachute from the load when the load touches the ground and the proper tilt angle is reached. This separation reduces the chance of the wind dragging or overturning the load.

## 2-21. Description

One of three releases is used when a platform load is rigged for a low-velocity airdrop. The three releases are given below.

***a. The M-1 Airdrop Cargo Parachute Release.*** This release is used with loads rigged with one to four G-11A cargo parachutes or one to three G-11B cargo parachutes.

**Note: The M-1 release will not be used with four G-11B cargo parachutes.**

***b. The M-2 Airdrop Cargo Parachute Release.*** The M-2 release is similar to the M-1 release. The M-2 release (modified) is used for 42,000-pound loads. It includes these strengthened items: one high strength toggle shaft (identified by a drilled hole in one end), four hardened sleeve bolts (with increased threadlength and full height nuts), four 2 3/8-inch-diameter steel spacers, two clevis steel sleeves, two clevis bolts with full height nuts, and four sling guides with large holes to mate with the stepped area of the steel spacers.

***c. The 5,000-Pound-Capacity Cargo Parachute Release Assembly.*** The 5,000-pound-capacity release can be used on all platform loads rigged for low-velocity airdrop. One release is used with two or three G-12D cargo parachutes. One release is used with each G-11A cargo parachute rigged as a part of the load. An 8- or 12-spool load coupler is required when—

**(1)** The load is rigged with more than one G-11A cargo parachute.

**(2)** The number of suspension slings on the load is greater than the number of releases to be used.

**Note:The 5,000-pound-capacity cargo parachute release assembly will not be used with G-11B or G-11C cargo parachutes.**

## 2-22. Inspection and Maintenance

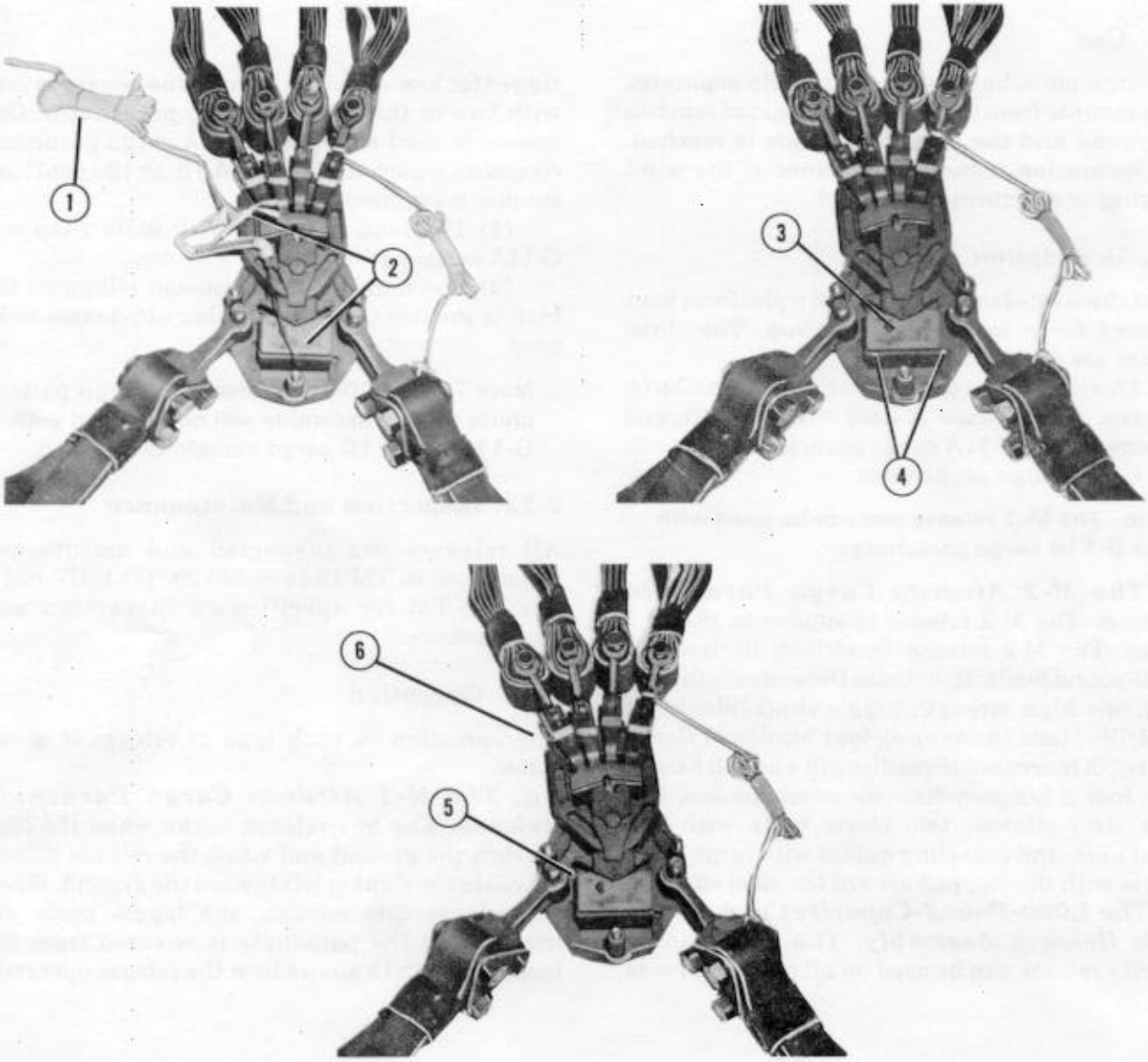
All releases are inspected and maintained as outlined in TM 10-1670-240-20/TO 13C7-49-11. See the TM for specifics on inspection and maintenance.

## 2-23. Operation

The operation of each type of release is given below.

***a. The M-1 Airdrop Cargo Parachute Release.*** The M-1 release works when the load touches the ground and when the release tilts or moves to the right or left toward the ground. When the release tilts enough, the toggle parts are tripped and the parachute is released from the load. Figure 2-12 shows how the release operates.

Note: The face side plate has been removed so that the inner parts can be seen.




(1) As the cargo parachute deploys, the arming wire lanyard is pulled.

(2) The safety tie is broken and the arming wire is pulled from the timer.

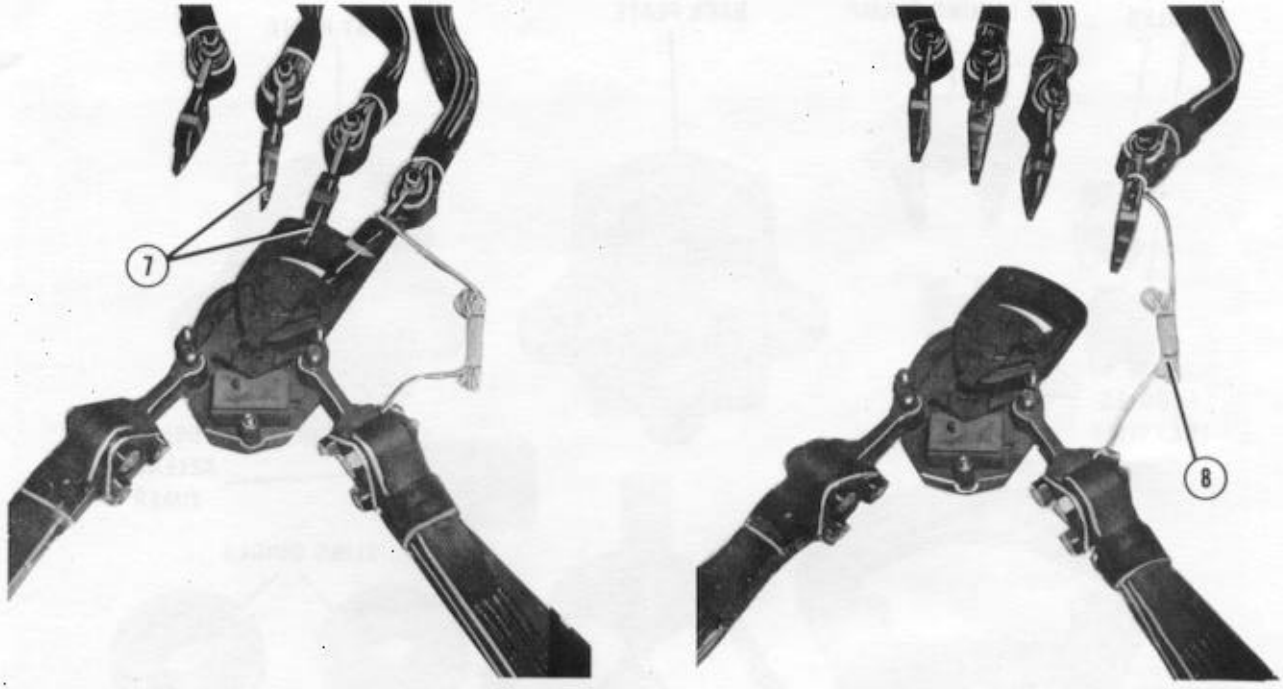
(3) The timer delays from 12 to 16 seconds. This delay allows the load to straighten itself under the parachute.

(4) When the timer winds down, it pulls its keys from the slots in the release.

(5) When the keys are pulled from their slots, the timer is free to fall within the release.

(6) As the timer falls, it frees the toggle and upper suspension link.

*Figure 2-12. Operation of the M-1 airdrop cargo parachute release*




(7) When the load descends, the normal upright position of the M-1 release keeps the parachute connectors in place. As the load touches the ground, the release tilts and allows the connectors to pull free of the upper suspension link.

(8) The released parachute stretches the dragline until the release drags to one side of the load. Then the dragline breaks.

*Figure 2-12. Operation of the M-1 airdrop cargo parachute release (continued)*

*b. The M-2 Airdrop Cargo Parachute Release (Modified).* The modified M-2 release, as shown in Figure 2-13, works in the same manner as the M-1 release.

Note: The modified M-2 release uses a dragline made from 1/2-inch tubular nylon webbing.

**CAUTION**

**When using the modified M-2 release, secure the suspension sling keepers with 1/2-inch tubular nylon webbing (see Figure 3-112).**

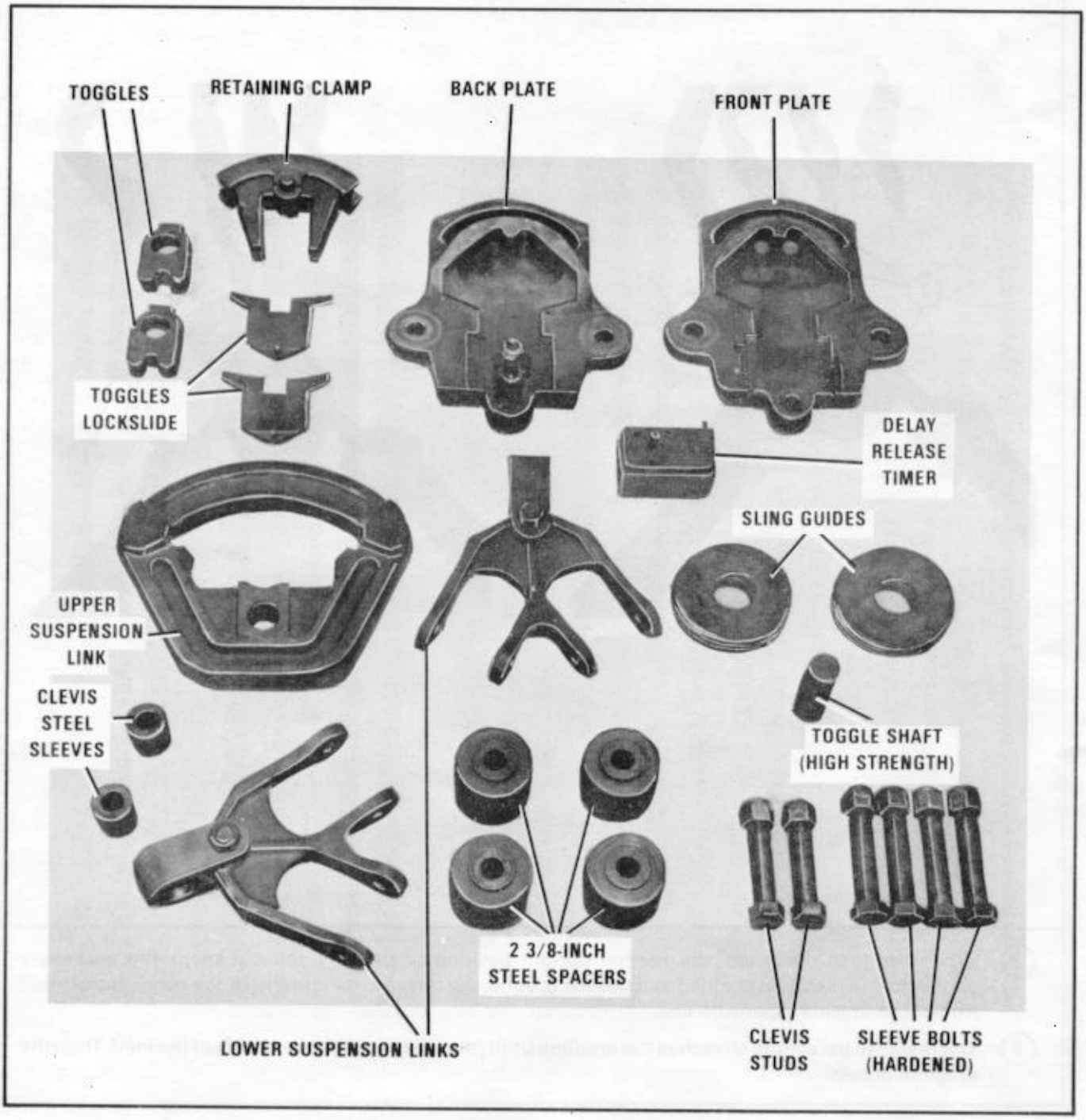
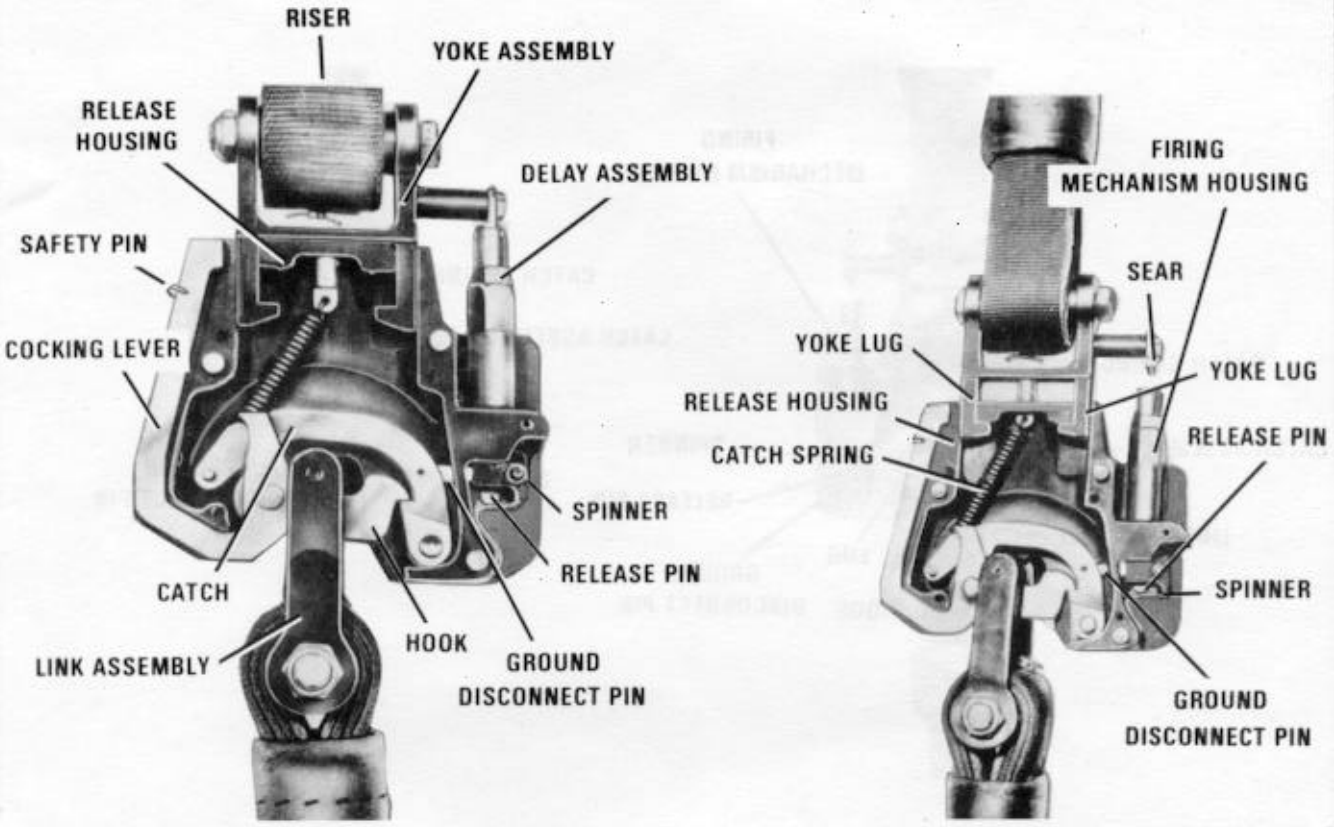



*Figure 2-13. Components of the modified M-2 airdrop cargo parachute release*

*c. The 5,000-Pound-Capacity Cargo Parachute Release.* Figure 2-14 shows how the 5,000-pound release operates.

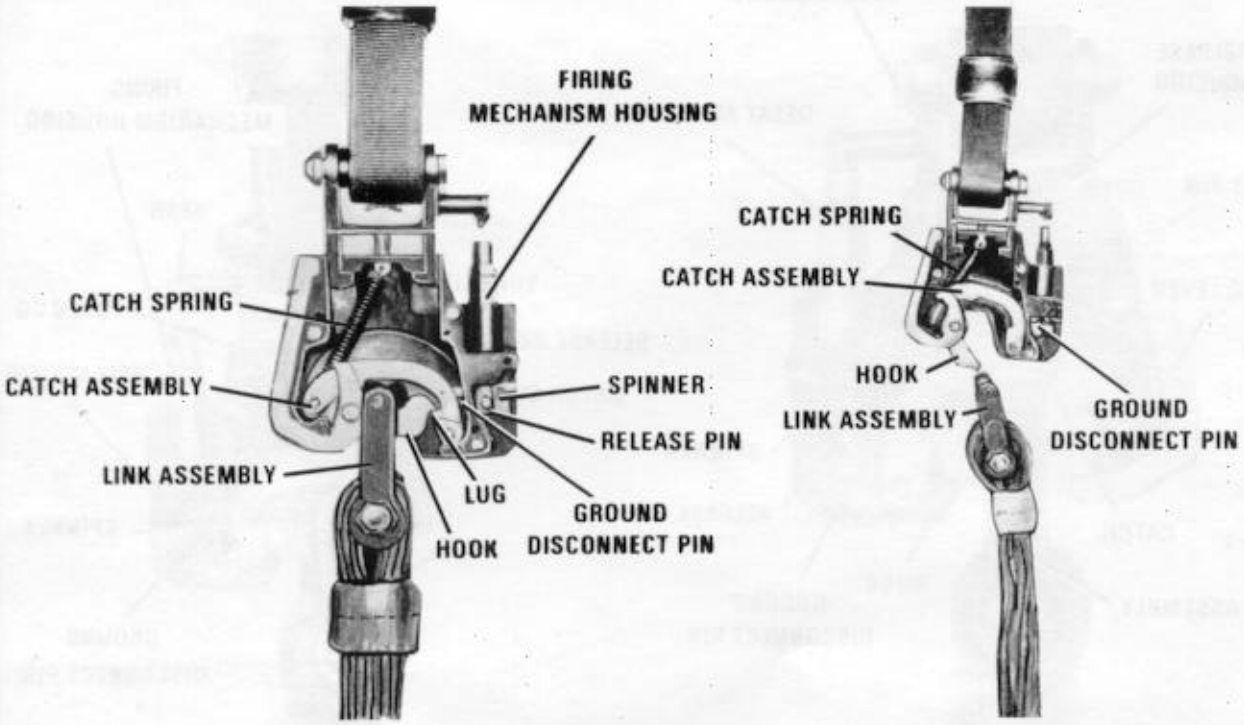



**Step:**

1. As the parachute deploys, the riser pulls on the yoke assembly.
2. The yoke is pulled up until it is stopped by the yoke lugs hitting the release housing.
3. The pull on the yoke also pulls on the sear and separates the sear from the firing pin.
4. The firing pin is pushed by the firing pin spring and strikes the time-delay cartridge.
5. The pull on the yoke also puts tension on the catch spring.

**Note: The time-delay cartridge allows the load 20 seconds to stabilize itself under the parachutes after the firing pin strikes the primer of the 20-second-delay cartridge.**

*Figure 2-14. Operation of the 5,000-pound-capacity cargo parachute release*




6. When the time-delay cartridge fires, it pushes against the spinner and moves the spinner out and away from the ground disconnect pin attached to the catch assembly.
7. The weight of the load pulls down on the link assembly and the link pulls on the hook.
8. The lug on the hook keeps the catch from moving and stops further action of the release.
9. As the load touches the ground and a no-load condition exists on the hook, the catch spring lifts the catch up.
10. When the catch is lifted up, it frees the hook. The hook falls and releases the parachute.

*Figure 2-14. Operation of the 5,000-pound-capacity cargo parachute release (continued)*