

CABLE REMOVAL UNIT

HOGG-DAVIS

DESCRIPTION AND OPERATION

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1.02 This section is reissued to include a precaution related to removing lead sheath cable and to delete from this section cable removal information that is covered in other sections. Revision arrows are used to emphasize the more significant changes.

1.03 The cable removal unit is basically a 20,000-pound capacity, hydraulic loading type, cable reel trailer which is equipped with an engine-powered, reel winding device capable of 10,000 pounds maximum pull at the drum. The cable removal unit provides a means for pulling cable and storing it on a cable reel in a single operation.

1. GENERAL

1.01 This section covers the description and operation of the Hogg-Davis Cable Removal Unit which is intended for use in the removal of underground and aerial cable.

2. DESCRIPTION

2.01 The cable removal unit described in this section is a Hogg-Davis Model H13.5-30HE-CRV Cable Reel Unit which is made up of a power winding unit mounted on an open U-shaped trailer frame. (See Fig. 1.) The trailer incorporates

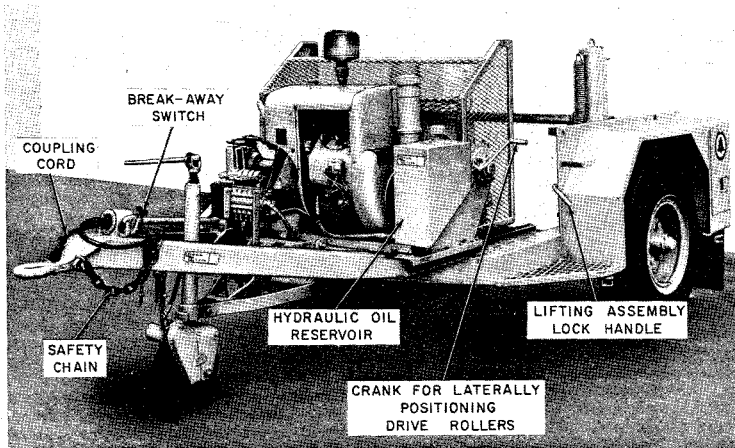


Fig. 1—Cable Removal Unit

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hydraulically operated lifting assemblies with spindle bar supports and mechanical locking devices, storage compartments, wheel chock racks, two quick-release rear ground props, and trailer tongue with hydraulically operated swivel caster assembly and heavy duty towing eye. The unit is 15 feet 4 inches long and 8 feet wide.

2.02 The lifting assemblies will accommodate one cable reel with a maximum diameter of 108 inches or a minimum diameter of 22 inches, and a maximum width of 56 inches. Reels weighing up to 13,500 pounds can be handled by the cable removal unit.

2.03 The trailer tongue is equipped with a safety chain or rope and a six-conductor coupling socket that provides a means of connecting the

trailer stop lights, directional turn signals, tail lights, and brakes, to the electrical system of the towing vehicle. A breakaway switch is provided to operate electric trailer brakes in case of towing hitch failure.

2.04 The pump for the hydraulic system is driven by a gasoline engine which is a part of the power winding unit. The hydraulic pump supplies hydraulic oil at 1300 psi to the valve bank assembly which includes control handles for raising and lowering the lift assemblies, raising and lowering the caster wheel assembly, driving the caster wheel forward or reverse, and moving the power winding unit forward or rearward on the trailer frame. Figure 2 illustrates the control handles on the valve bank assembly.

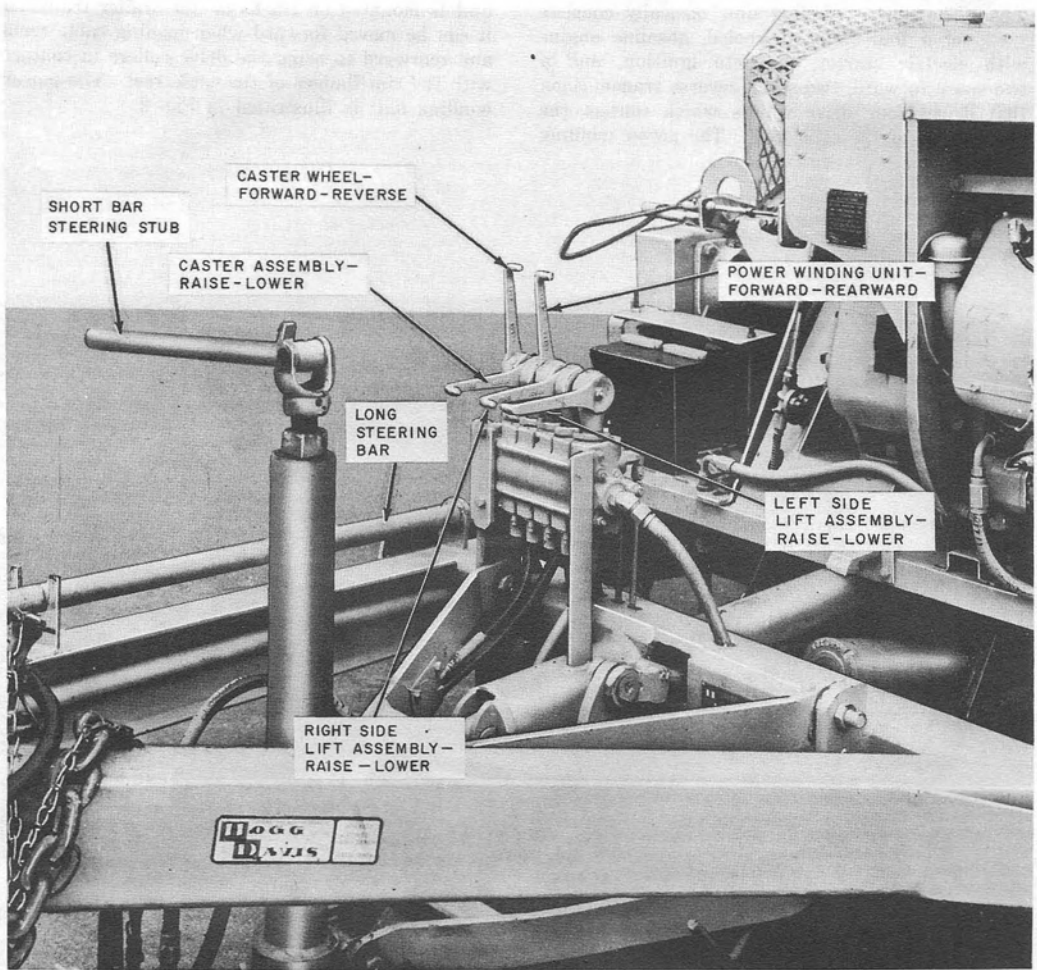


Fig. 2—Hydraulic System Control Handles

2.05 The power winding unit basically consists of a four-cycle, air-cooled, gasoline engine with electric starter, magneto ignition, and a two-speed forward, two-speed reverse transmission that drives four drive rollers which contact the rim flanges of the cable reel. The power winding

unit is mounted on tracks on the trailer frame so it can be moved forward when loading cable reels and rearward to bring the drive rollers in contact with the rim flanges of the cable reel. The power winding unit is illustrated in Fig. 3.

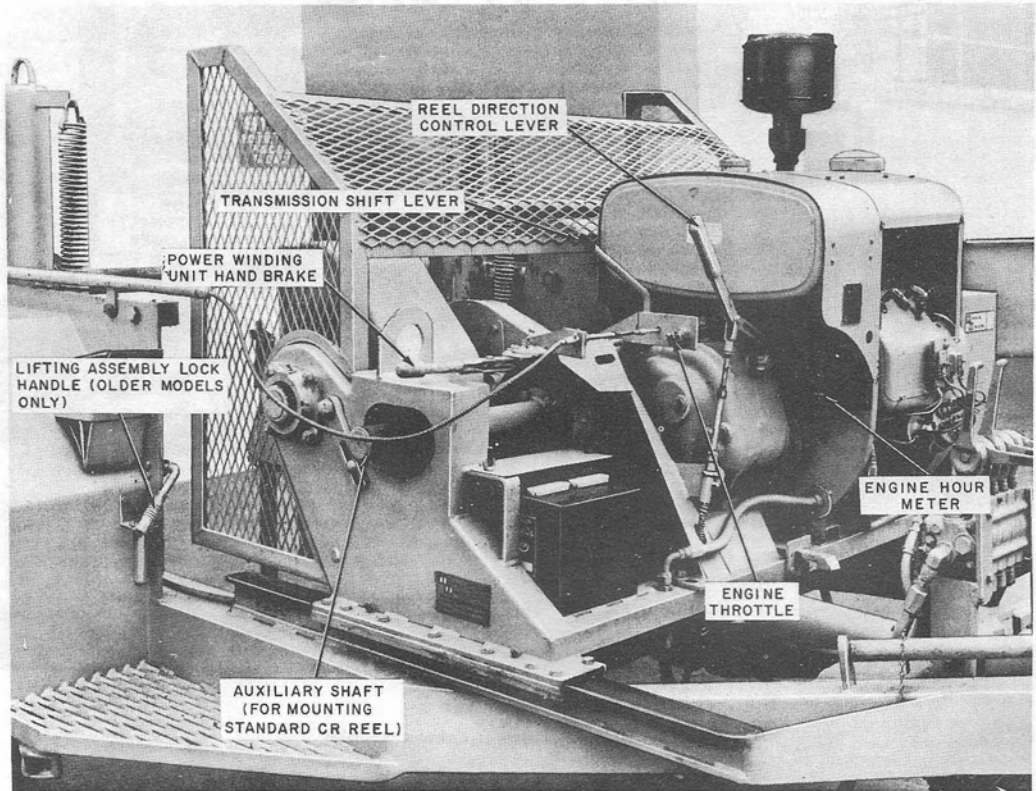


Fig. 3—Power Winding Unit

2.06 The four drive rollers, located at the rear of the power winding unit, as shown in Fig. 4, are of solid rubber and drive the cable reel through contact with cable reel rim flanges.

The position of the drive rollers may be adjusted by the hand-operated acme screw adjustment to assure proper contact on the flanges of reels of different widths.

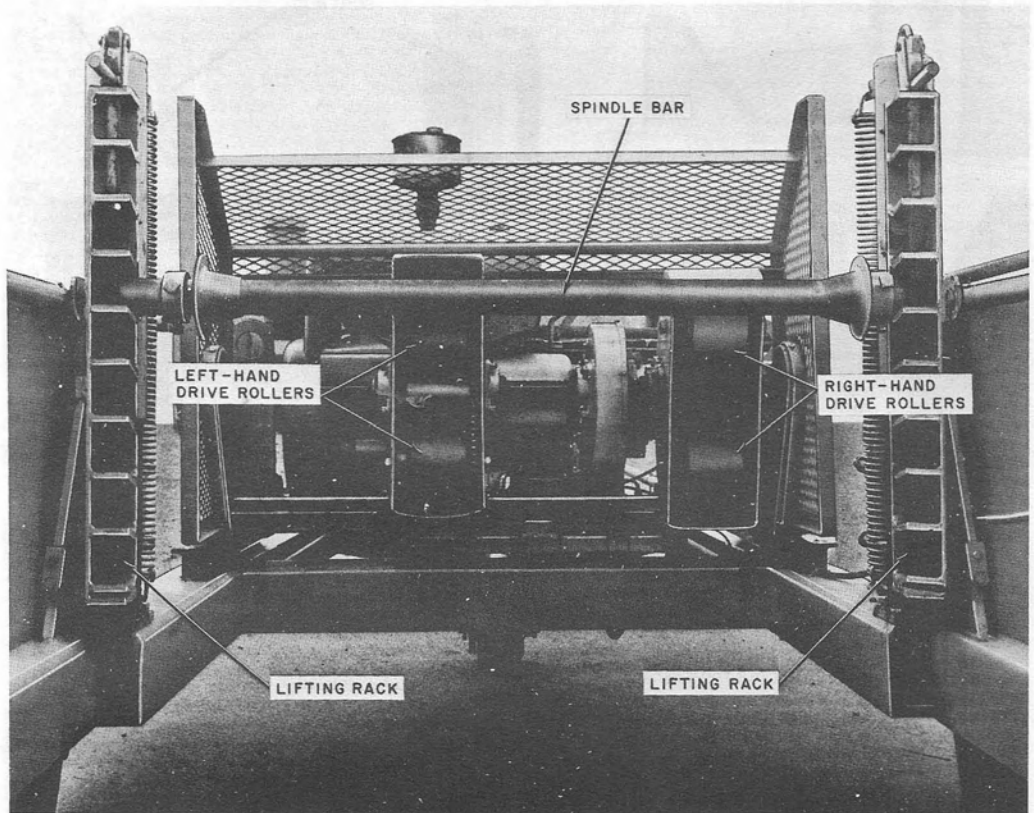


Fig. 4—Power Winding Unit—Rear View

2.07 Remote controls for reel direction and engine speed are located at the rear of the cable removal unit, as shown in Fig. 5, to allow the

operator to stand in a position that provides the best view of the operation when removing underground or aerial cable.

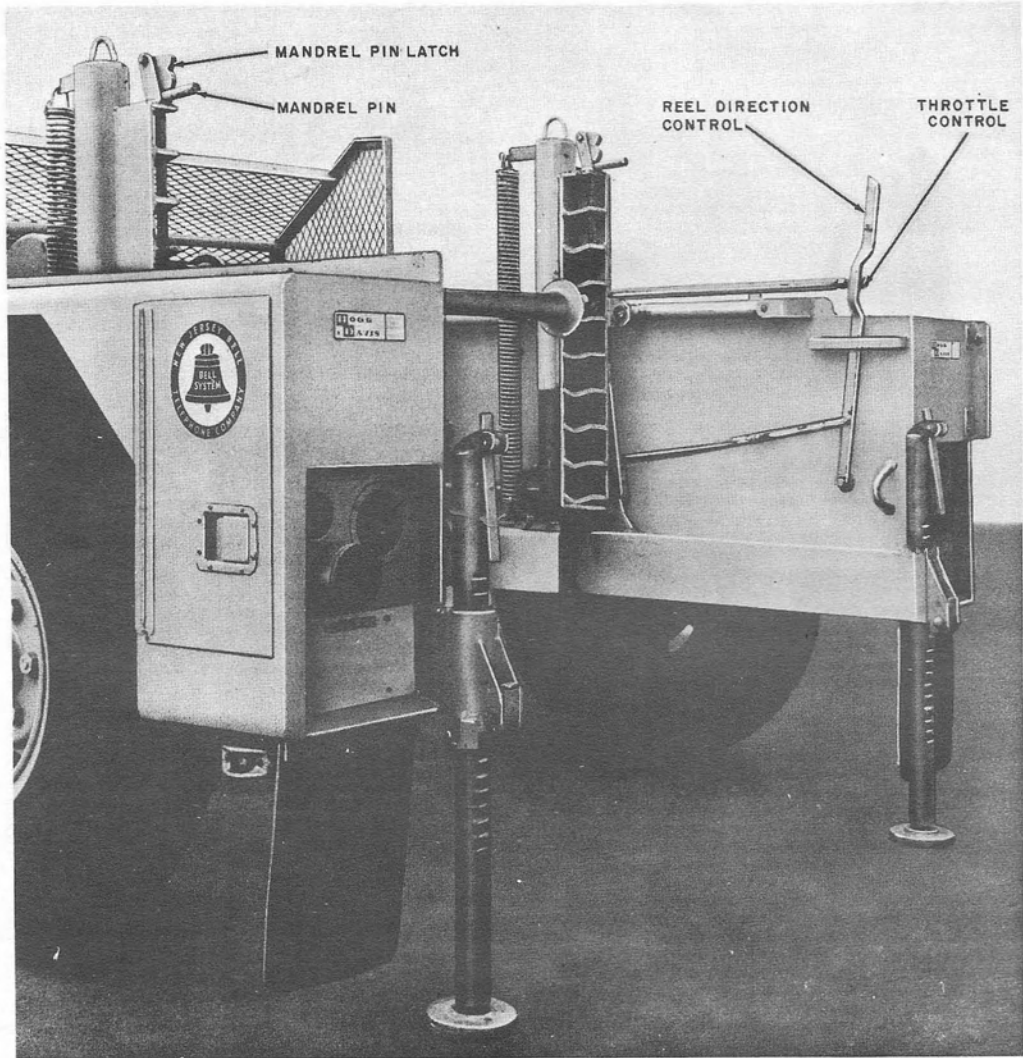


Fig. 5—Controls at Rear of Removal Unit

3. PRECAUTIONS

3.01 *Before starting any lead sheath cable removal operation, refer to Section 620-100-010. All requirements in the section for protection against occupational exposure to lead dust must be strictly observed.*

3.02 The truck used to tow the cable removal unit must be equipped with a heavy duty (BU) towing hook, and care must be exercised in the selection of the towing vehicle with regard to gross vehicle weight (GVW) and gross combination weight (GCW). For example: a line truck weighing 18,000 pounds with a GVW of 21,000 pounds will have a rated GCW of about 32,000 pounds. If a cable removal unit carrying a maximum load is pulled by this truck, the total weight of truck and removal unit will approach 40,000 pounds. This truck will be overloaded and should be operated at slow speeds with extreme care.

3.03 Before coupling the cable removal unit to the towing vehicle:

- (a) Check the lifting assembly locks to be sure they are engaged.
- (b) Check the mandrel pins and mandrel pin latches to be sure they are in place.
- (c) Inspect the trailer tires for proper inflation, excess wear, and any cuts or breaks.

3.04 After coupling the cable removal unit, be sure the latch on the towing hook is closed and locked and the safety chain or rope and the breakaway switch are properly connected. Do not attempt to tow the cable removal unit unless the rear ground props and the front caster wheel assembly are raised to the traveling position.

3.05 Before traveling, check the brake lights, turn signals, and brakes.

3.06 *Never use the powered idler wheel as a brake by reversing the direction of motor rotation.* This is likely to damage the motor as a result of shock loading.

3.07 After the cable removal unit has been positioned at the job site, chock the wheels. Do not use the breakaway switch to engage the brakes for parking purposes.

3.08 During loading, unloading, and removal operations, the cable removal unit wheels must be chocked and the rear ground props must be firmly in contact with the ground.

3.09 Before lowering aerial cable for removal, inspect the pole line for proper guying, pole condition, and overall job safety.

3.10 Do not attempt to level-wind the cable. If the cable requires leveling, stop the pull, obtain slack, and level the cable manually. Do not restart the pull until all persons are clear of the reel. Never reach into the reel while it is in motion.

3.11 *Do not overload cable reels.* Refer to 626 Division of Bell System Practices for cable and reel weight information.

3.12 Move the trailer by its own power only on paved or smooth surfaces and for relatively short distances. The support bearing in the caster wheel assembly may fail when attempting to move the trailer over rough terrain.

3.13 Be sure that cable, strand, etc, are securely attached to the reel before transporting.

3.14 In cold weather, operate the drive rollers lightly against the reel flanges to soften the rubber before operating under tension.

3.15 Do not adjust rollers from side to side when they are pressing against the reel flange.

3.16 Do not refuel the gasoline engine while the engine is operating.

3.17 Keep bystanders away from the cable removal unit and clear of all work operations. Work locations must be guarded in accordance with the 620 Division of the Bell System Practices.

3.18 Newer models are equipped with a safety kill switch located at the right rear of the trailer. This switch enables the operator to stop the prime mover in an emergency situation.

4. OPERATION

POWER WINDING UNIT ENGINE

4.01 Before starting the engine, it is advisable to make a general inspection of the engine

for any evidence of loose connections, fuel or oil leaks, etc. Be sure the engine crankcase is filled with oil.

4.02 To start the engine, follow the instructions given in the manual furnished by the engine manufacturer. Normally, the engine should be operated at about one-third throttle. Allow a few minutes warm-up time before the load is applied. Do not run the engine at high speeds to hurry the warm-up period.

LIFTING ASSEMBLIES

4.03 Two control handles on the valve bank assembly are used to raise and lower the lifting assemblies. The lifting assemblies may be raised or lowered individually or simultaneously by moving the appropriate handle or handles up or down.

4.04 With the lifting assemblies in the fully raised position, the locking devices on the lifting assembly housings should be engaged. Before the lifting assemblies can be lowered, the locking devices must be manually released. To release the locks, first momentarily operate the lift control handles to the RAISE position to relieve any down pressure on the locks. Then, rotate the lifting assembly lock handles to release the locks. After the lifting assemblies have been lowered, return the lock handles to the LOCK position. The locking devices will automatically engage when the lifting assemblies have been fully raised.

4.05 Raise the lifting assemblies by operating the control handles to the RAISE position. Operate the control handles in a manner that will keep the spindle bar as near horizontal as possible. When the lifting assemblies have been fully raised and the locks have engaged, momentarily operate the control handles to the LOWER position so load will be supported by the locking devices.

CASTER ASSEMBLY

4.06 The caster assembly is raised and lowered by operating the caster assembly control handle on the valve bank assembly to the RAISE or LOWER position. Before raising the caster assembly to the travel position, the caster wheel should be positioned for straight forward travel.

4.07 To move the trailer using the powered idler wheel, the following procedures are necessary

to prevent causing serious damage to the caster wheel drive components.

(a) **To place the trailer in motion:** Operate the idler wheel control handle to either the FORWARD or REVERSE position as desired.

(b) **To stop trailer motion:** Gradually decelerate using the electric trailer brakes. Do not stop by suddenly operating the control handle. To do so can result in a broken motor shaft or damage to the hydraulic motor.

POWER WINDING UNIT

4.08 The power winding unit is moved forward or rearward on the trailer frame by a double acting hydraulic cylinder which is activated by the power winding unit control handle on the valve bank assembly. The unit is moved forward to load or unload cable reels and rearward to bring the drive rollers in contact with the cable reel flanges.

4.09 The speed range in which the drive rollers will operate is selected by moving the transmission shift lever to either the low speed or high speed position. The exact speed of operation is controlled by the throttle setting. The direction of rotation of the drive rollers is selected by operating the reel direction control lever to either the FORWARD or REVERSE position. Backlash and free-spooling of the cable reel are prevented by the power winding unit handbrake.

5. USE

LOADING AND UNLOADING CABLE REELS

5.01 Position the trailer so the handling of reels being loaded or unloaded is kept to a minimum. Place wheel chocks and lower the rear ground props. Raise the trailer tongue slightly to bring the props in firm contact with the ground.

5.02 To load reels, move the power winding unit forward, release the lifting assembly locking devices, and lower the lifting assemblies. Reset the locking devices. Remove the mandrel pins and the spindle. Fit the spindle bar into the center holes in the reel spokes, center the reel on the spindle and position the reel so the ends of the spindle are in position in the lifting racks. Raise the lifting assembly slightly and check to be sure the spindle bar is properly seated in the lifting racks. Replace the mandrel pins, engage the

mandrel pin latches, and raise the lifting assemblies until the locking devices are engaged. Move the reel to the right on the spindle bar to align the right-hand reel flange with the right-hand drive rollers, and secure the reel in position by tightening

the centering cones. Adjust the left-hand reel flange and move the power winding unit toward the rear until the drive rollers contact the reel flanges as shown in Fig. 6. Check to be sure the reel flanges are centered on the drive rollers.

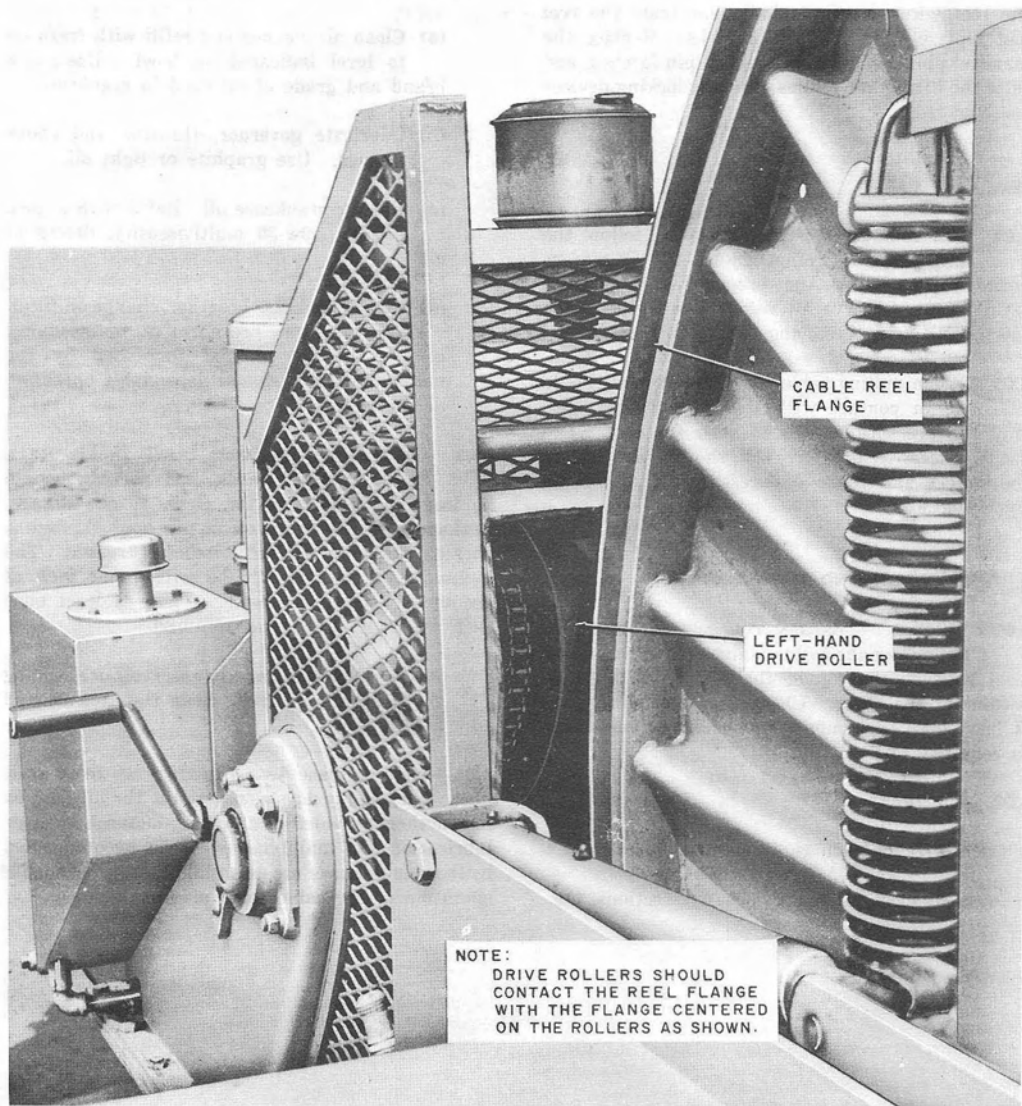


Fig. 6—Reel Flange in Contact With Drive Rollers

5.03 To unload reels, move the power winding unit forward, release the lifting assembly locking devices, and lower the lifting assemblies keeping the reel as near level as possible. Reset the locking devices and remove the mandrel pins. With a full reel resting on the ground and the reel chocked, the trailer may be moved away from the reel. Remove the spindle bar from the reel and replace it in the lifting racks. Replace the mandrel pins, engage the mandrel pin latches, and raise the lifting assemblies until the locking devices are engaged.

REMOVING CABLE

5.04 To remove underground cable, follow the procedures in Section 628-240-242. To remove aerial cable, follow the procedures in Section 627-380-240. Observe all requirements in Section 620-100-010 when removing lead sheath cable.

5.05 When pulling cable, the drive rollers should be in contact with the reel flanges with only the pressure needed to turn the reel. The use of excessive pressure will shorten the life of the rollers and cause unnecessary strain on the equipment.

6. LUBRICATION AND MAINTENANCE

6.01 Battery: Battery connections should be kept clean and tight. Maintain the electrolyte level between the top of the separators and the bottom of the cover. Check the electrolyte level at least once each month and add distilled water as required.

6.02 Engine:

- (1) **Daily** or each eight hours of operation:
 - (a) Inspect for leaks, loose connections, etc.

- (b) Check fuel supply. Do not fill gasoline tank while the engine is running.
- (c) Check oil level. Maintain the oil level at the FULL mark on the dipstick.

(2) **Weekly** or each 40 hours of operation:

- (a) Clean air cleaner and refill with fresh oil to level indicated on bowl. Use same brand and grade of oil used in crankcase.
- (b) Lubricate governor, throttle, and choke linkage. Use graphite or light oil.
- (c) Change crankcase oil. Refill with a good quality, 10w-30 multiviscosity, detergent oil.
- (d) Clean crankcase breather, change oil filter, and perform preventative maintenance covered in the manual furnished by the manufacturer to ensure dependable operation of the engine.

6.03 Hydraulic System: All visible lines, hoses, cylinder heads, and packing should be inspected each day for signs of oil leakage. Leakage of a few drops of oil per hour through a packing does not normally indicate trouble. The hydraulic oil level should be within one inch of the top of the oil reservoir. Check at least once each week and add oil as required.

Note: Before filling the reservoir or checking the hydraulic oil level, clean the area around the filler cap.

6.04 Apply grease to all fittings at least once each thirty days as covered in the lubrication instructions provided by the manufacturer. Proper lubrication and maintenance checks recommended by the manufacturer are essential for safe, dependable operation of the cable removal unit.