TECHNICAL MANUAL

TRANSPORTABILITY GUIDANCE

TRANSPORT OF CATERPILLAR, MODEL D8K-8S-8 TRACTOR, WITH RIPPER OR WINCH ON M870, 40-TON, LOWBED SEMITRAILER USING THE M920 TRUCK TRACTOR Technical Manual

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1. Purpose and Scope

This manual provides transportability guidance for movement, by highway mode only, of the Army D8K-8S-8 tractor on the M870 trailer. The text prescribes procedures and materials for the loading and tiedown of the D8K tractor.

2. Description

The model D8K-8S-8 is a full tracked, low-speed, drawbar pull tractor. It is powered by a four-stroke cycle, six-cylinder, diesel engine, Model D342. The planetary-type power shift is 21 inches (530 mm) in diameter and has high-torque-capacity oil clutches. A special valve permits unrestricted speed and direction changes under full load. Hydraulically actuated, multiple-disc oil clutches require no adjustments. The tractor is capable of performing all types of construction work including ripping, ditching and dozing.

3. Sectionalization

a. The overall height can be reduced from 134.25 inches (3.41 m) to 106 inches (2.69 m) by removing the exhaust stack and rollover protection system (ROPS).

b. With the D8K tractor on the M870 trailer, the total height from the ground to the top of the ROPS is 177.25 inches and from the top of the ROPS to the bottom of the trailer main frame is 164 inches. This height exceeds the vertical clearance of many bridges. Preplanned and selective routing is required.

4. Item Characteristics and Related Data

Data are based on item in unloaded condition plus fuel.

a. Materials.

(1) Four chain assemblies. Each assembly consists of two, 120-inch-long, 1/z-inch-diameter chains with hooks on each end (breaking strength, 45,000 pounds). (This type of chain is shown in the February 1983 General Catalog of The Crosby Group Inc., PO Box 3128, Tulsa, Oklahoma 74101; or, in the catalog of McMaster-Carr Supply Company, PO Box 4355, Chicago, Illinois 60683).

(2) Four load binders. Each binder is 1/2-inch in diameter (breaking strength, 45,000 pounds).

b. Procedures.

(1) Extend the outriggers and use extra timbers to raise the outrigger floor level with the trailer floor.

(2) With the M870 trailer gooseneck extended flat, drive the D8K tractor onto the M870 trailer as shown in figure 1. Park and brake the D8K tractor near the trailer's rear axles to keep the heavy load off the front of the trailer and trucktractor winch cable. Raise the M870 trailer gooseneck to the travel position and connect the semitrailer to the M920 truck tractor as shown in figure 2. Check contact between the outrigger plank

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and D8K tractor tracks. If there is no contact, correct.

Figure 1. D8K tractor driven onto the semitrailer, gooseneck extended.

Figure 2. M870 trailer being connected to the M920 truck tractor.

(3) Position the D8K tractor so that the center of the fourth roller (fig 3) is located 122 inches from the intersection of the gooseneck and the trailer deck, as shown in figure 4. Lower the ripper shank from the extreme up position until it contacts the trailer gooseneck.

Figure 3. D8K tractor center-of-balance location (fourth roller).

Figure 4. Position of D8K tractor on the M870 semitrailer.

(4) For the D8K tractor equipped with a winch, back the tractor until the bulldozer rests over the middle trailer axle, as shown in figure 5.

Figure 5. D8K tractor (with winch) positioned on M870 trailer with bul1ldozer over the trailer's middle axle.

(5) Apply tiedowns as shown in figure 6 and detailed below.

Figure 6. D8K tractor positioned and tied down on the M870 trailer.

(6) Connect all chains in complete loops to create double the breaking strength of the assemblies. Pass the two chain assemblies at the rear of the D8K around the top ripper pin, through the lower gooseneck fold gap in the trailer, and under the side chassis frame member. Then loop them through the number one tiedown ring. This threading is shown in figure 6.

(7) Pass the two chain assemblies at the front of the D8K around the tow hook and the trailer chassis member located between the two forward rear tires. This threading is shown in figure 6.

(8) When tying down a winch-equipped D8K, attach two tiedowns to the rear clevis on the winch; pass them through the lower gooseneck fold gap in the trailer and under the side chassis frame member; then loop them through the number one tiedown ring.

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Figure 1. D8K tractor driven onto the semitrailer, gooseneck extended.