

FIX-N-FAX #23

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION

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Vehicle Towing

GMC Truck Service Bulletin #T-24-014 #2, dated October 7, 1959, has some very good recommendations for vehicle towing procedures. We would like to quote in part from the bulletin those instructions which pertain to any make vehicle that we believe should be followed we believe should be followed when towing state-owned cars and trucks.

To eliminate transmission and clutch difficulties caused by improper towing practices, it is suggested that the following procedures be applied when vehicles equipped with either synchromesh or automatic transmissions are towed.

RECOMMENDATIONS

Front end (either with front wheels raised or with all wheels on the road) and rear end towing (rear wheels raised) are the two (2) basic procedures. To prevent transmission difficulties from occurring on front end towing, the propeller shaft must be disconnected at the axle pinion or the rear axle shafts removed. To prevent oil from entering the clutch housing and saturating clutch discs on rear end towing, vehicles with synchromesh transmissions should have at least one pint of oil drained from the transmission. The transmission shift lever on both automatic and synchromesh transmissions should always be placed in the neutral position.

EXPLANATION OF POSSIBLE DIFFICULTIES RESULTING FROM IMPROPER TOWING PRACTICES

SYNCHROMESH TRANSMISSIONS

Front end towing of a truck with a synchromesh transmission will, in many cases, cause mainshaft gear seizures or bearing failures. These difficulties result from insufficient lubrication; the rear wheels become the driving force and spin the transmission mainshaft at a high rate of speed within the mainshaft gears. Since the mainshaft gears are not locked to the mainshaft, they do not turn the constant mesh countershaft gears which normally splash lubricate the bearings in the transmission.

AUTOMATIC TRANSMISSION

Improper front end towing of a vehicle equipped with either a Hydra-Matic or Torqmatic transmission is often the reason for band and clutch plate difficulties. This is because automatic transmission planetary gears, when driven from the rear wheels, turn at a very high rate of speed in an overdrive ratio. This causes oil in the clutch drums to be forced to the outer edges by centrifugal force, also tending to apply the clutches. Since the rear pump operates irregularly depending upon the towing speed, the bands and clutches tend to apply and retract intermittently, which will cause overheating and severe lining wear.

CLUTCHES

When rear end towing is used, oil often saturates the clutch discs because as the rear end is lifted, oil flows to the front of transmission and may seep past transmission main drive gear oil seal and into the clutch housing. Draining one pint of oil from the transmission reduces the possibility of this happening. After towing, the transmission should be refilled to the proper level before unit is placed back into service.

TOWING PROCEDURE FOR VEHICLES WITH INDEPENDENT FRONT SUSPENSION

When vehicle must be towed with front wheels elevated, the following procedure should be used:

1. Place blocks of wood (2" x 4") between upper control arms and upper bumpers.
2. Pass a chain around both lower control arms, one chain on each side. Chain should be close to inner ends of control arms.
3. If front bumper has not been damaged, a pair of tire carcass sections or wood blocks should be placed around lower corner of bumper to space chain away from bumper. Two by fours can be nailed together in an ell section block.
4. A stabilizer bar should be used between the rear of the tow truck and the towing bridle to prevent tractor from slamming into tow truck, as grille and radiator could easily be damaged.
5. Where possible, be sure to unload the apparatus (water, crew, etc.).

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