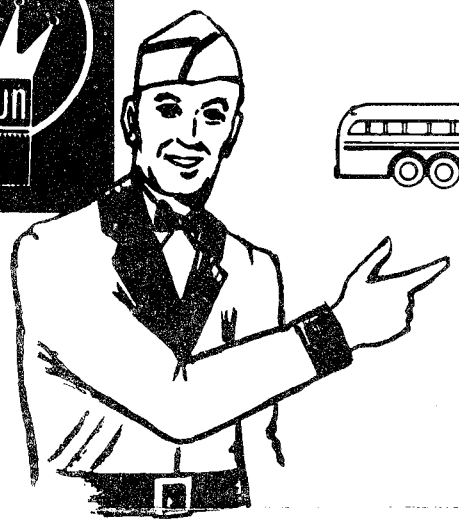
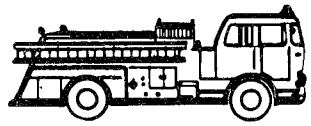
CROWN TIP SHEET





"YOUR CROWN COACH DESERVES THE BEST POSSIBLE CARE

MAY WE HELP YOU?"

THE CLUTCH "FACTS OF LIFE"

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Unfortunately, the "facts of life" are that even in cases where the clutch and other drive train components are properly specified, the operator may experience unsatisfactory vehicle performance. The record shows that all too often the lack of driver education and training plays a *major* role in reducing clutch life and raising clutch maintenance problems to a prohibitive level.

The following "tips" can play a significant part in prolonging clutch life and reducing maintenance costs:

1. **Starting The Vehicle In The Proper Gear:**
Naturally, an empty truck can be started satisfactorily in a higher transmission gear ratio than when partially or fully loaded. Drivers should be shown or taught what ratios can be used for safe starts under various load conditions. Don't let the driver experiment to find out for himself, as he can burn up the clutch by this experimentation.

2. **Gear Shifting Techniques:**
Many drivers upshift into the next gear — or even skip-shift into a higher gear — before the vehicle has reached the proper speed. This type of shifting is almost as bad as starting off in a gear that is too high, since the engine speed and vehicle speeds are too far apart, requiring the clutch to absorb the speed difference as heat.

3. **Excessive Vehicle Overload Or Overloading The Clutch:**
Clutches are designed and recommended for specific vehicle applications and loads. These limitations should not be exceeded. Excessive or extreme overloading is not only injurious to the clutch but to the entire vehicle power train as well. If the total gear reduction in the power train is not sufficient to handle excessive overloads, the clutch will suffer, since it is forced to pick up the load at a high speed differential as outlined in Paragraph 2.

4. **Riding The Clutch Pedal:**
This common fault is very destructive to the clutch. A partial clutch engagement permits slippage and excessive heat. Riding the clutch pedal also puts a constant thrust load on the release bearing which causes it to overheat and thin out the lubricant.

5. **Using The Clutch To "Inch" The Vehicle Along & Holding The Vehicle On An Incline With A Slipping Clutch:**
This procedure is asking the clutch to do the job normally expected of a fluid coupling. A slipping clutch accumulates heat faster than it can be dissipated, resulting in early failures.

6. **Coasting With The Clutch Released And Transmission In Gear:**
This procedure can cause high clutch R.P.M. through multiplication of ratios from the final drive and transmission. It can result in "throwing" the facing off the clutch discs. While ample safety factor is provided for normal operation, the burst of strength of the facing is limited.

7. **Engaging Clutch While Coasting:**
This procedure can result in tremendous shock loads and possible damage to the clutch, as well as to the drive line.

8. **Reporting Erratic Clutch Operation Promptly:**
Drivers reporting erratic clutch operation, loss of free pedal, etc., will give the maintenance personnel a chance to make the necessary inspection, internal clutch adjustments, linkage adjustments, lubrication, etc., thereby avoiding possible clutch failures and breakdowns while on the road.

PROPER HYDRAULIC FLUID LEVEL

It is good practice to refill the hydraulic system with clean hydraulic oil only.

NOTE

Precautions must be taken not to over-fill the system. There is a difference between leakage oil and oil which is expelled due to over-filling.

Hydraulic oil will expand at the approximate rate of one cubic inch per gallon for each ten degrees of temperature rise. Due to this expansion and the volume of oil displaced by the steering cylinder rod, an air space must be allowed at the top of the reservoir. The oil level should never reach the reservoir top on filling.

The reservoir should be filled to the reservoir oil level mark when the wheels are in the straight ahead position. Start the engine and let the hydraulic oil temperature rise to operating temperature. Then turn the wheels slowly to the extreme right and to the extreme left to purge air from the system. Turn the wheels back to the straight a head position and replenish oil lost through this air bleeding operation. Do not fill the reservoir past the oil level mark.

CUMMINS FUEL FILTER CHANGE

Due to internal fuel system component wear, Cummins Engine Company made changes in the fuel filter design in 1960. As a result of these changes, the fuel level on the outer side of the filtering paper will be from 3 to 4 inches below the housing top under normal operating conditions.

The low fuel level is due to reduced filter element paper pore openings, which do not allow the fuel to pass as freely as the paper with larger pore openings. To compensate for this lower flow rate, the filter length was increased to maintain the proper amount of fuel needed to supply the engine at all speeds. The low fuel level in no way effects the engine operation and, therefore, better fuel filtration will result from its use.

It should also be noted that a filter housing which is full when the engine is in operation is either defective or has the larger size filter paper pore openings.

APPROVED ANTI-FREEZE

With the coming of colder weather it is time to plan for the use of an anti-freeze in the cooling system. In the past the change to anti-freeze required a water filter element change also to the permanent anti-freeze type element. This is no longer necessary due to improvements in ethylene glycol base anti-freezes. A list of anti-freezes which have been tested and found to be chemically compatible with the chromate inhibiter type elments are:

Dow Chemical Co.	No. 209 Dowtherm Formula D588-100 Formula D570-100
E. I. Dupont	Zerex Telar
Houston Chemical Co.	Formula No. 400 Formula No. 701
Jefferson Chemical Inc.	JC - 30
Olin Mathison Chemical Corp.	All Commercial Formulas
Union Carbide	1965 Winter-Flo Formula G375 UCAR (Canada)
Western Solvents Co., Ansco Solvents & Chemical Co.	Perma-Sta
Wyandotte Chemical Corp.	Code - 241-0 Code - 230-0