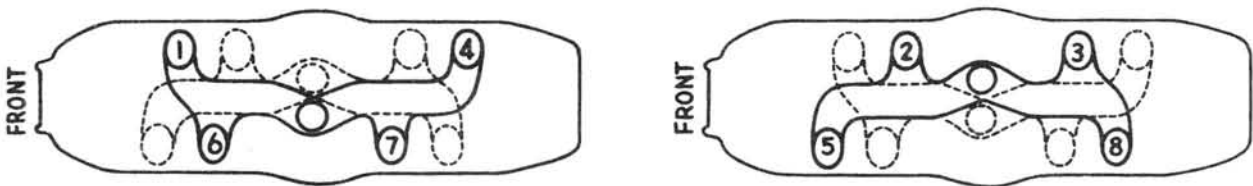


ENGINE

The carrier motor is a four-stroke, L-Head, 8-cylinder gasoline engine. The cylinders are in two banks of four, set at an angle of 90° to each other, and the crankshaft is of 90° design. The cylinder exhaust passages, water jackets, flywheel housing and crankcase are all cast en bloc. The engine has a rated brake horse-power of 85, and a compression ratio of 6.15 to 1.

Intake Manifold

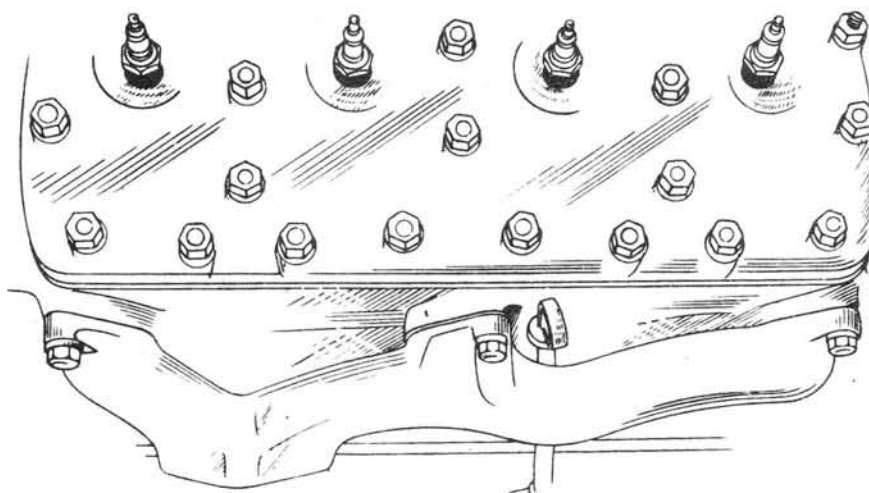


Valve Chamber Cover
Fig. 9

The intake manifold, Fig. 9, is of the dual down-draft design. Each throat feeds a group of four cylinders whose suction periods succeed each other at 180° intervals of crankshaft rotation. Consequently, simultaneous suction of two cylinders on the same manifold is prevented and the uniform fuel distribution to all cylinders is assured. This ensures a full charge of fuel being drawn into each cylinder and results in a uniformly high power output from all cylinders.

The opening or throat on the right-hand side of the manifold feeds Nos. 2, 3, 5 and 8 cylinders. The throat on the left-hand side feeds Nos. 1, 4, 6 and 7 cylinders.

Exhaust Manifold



Exhaust Manifold
Fig. 10

INSTRUMENT PANEL

The several instruments with which operators should be familiar are dealt with individually in the following paragraphs, and all the instruments are illustrated in Fig. 6.

Trouble Lamp Socket

Located directly to the side of the map lamp. The plug-in socket for trouble lamp is supplied in tool kit with lamp.

Dash Lamp

Situated above speedometer dial. The light is controlled by the toggle switch marked "Dash Lamp" and the "On" position is with the toggle moved up.

Speedometer

The speedometer indicates the speed up to 45 m.p.h. Total mileage is recorded on the top indicator, and trip mileage on the bottom indicator.

The speedometer is operated by a spiral driving gear on the short shaft of the coupling, which meshes with a driven gear connected to the speedometer flexible shaft.

Temperature Gauge

The temperature gauge is of the electric type. This gauge operates only when the ignition switch is "On" and will not record accurately with insufficient cooling fluid in the radiator. The indicator hand points at the "Hot" end of the gauge when the ignition switch is off.

Engines operated at low temperatures waste gasoline and do not receive proper lubrication. Engines permitted to overheat may be damaged by the oil becoming too thin.

Fuel Gauge and Fuel Gauge Switch

The fuel gauge is of the electric type and indicates the amount of fuel in either tank, depending on the position of the fuel gauge switch. It operates only when the ignition switch is in the "On" position.

Speedometer Trip Set

The speedometer trip set is located to the side of the ammeter gauge and is connected to the speedometer by a flexible shaft. Push the control to reset. Pull the control out after setting. When changing the trip mileage make sure line of numbers is set in centre of opening in dial.

CLUTCH

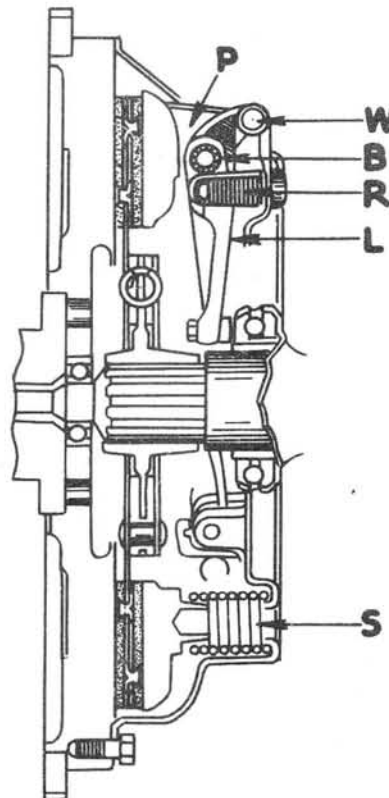
The clutch serves as a means of engaging or disengaging power from the engine to the transmission. These Carriers are equipped with a semi-centrifugal, dry, single plate clutch, Fig. 20. The centrifugal force principle is utilized to supplement the pressure exerted by the clutch springs to clamp the clutch disc more tightly between the pressure plate and the rear face of the flywheel.

Because pressure on the clutch plate is automatically increased, the pressure of the clutch springs is relatively low. This makes it possible to have easy pedal action. The clutch pedal can be depressed with little effort at gear shifting speeds.

Freedom in release lever action is assured by mounting the pressure plate levers on needle roller bearings. Flywheel and pressure plate surfaces which come into contact with clutch facings are extremely smooth and finished to minimize facing wear.

Clutch pilot bearing is of the pre-lubricated type to provide long service and low maintenance.

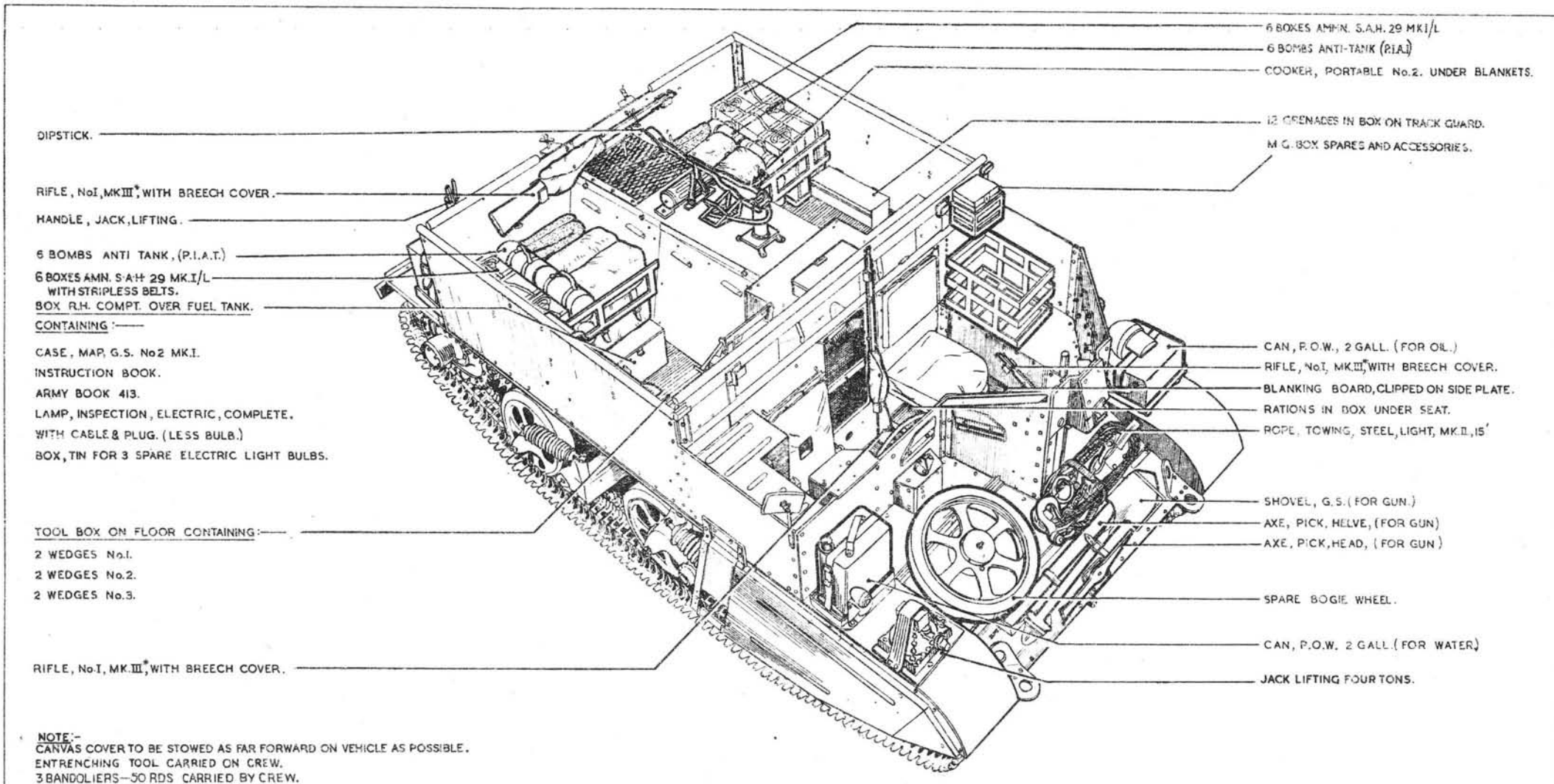
The clutch release bearing is lubricated through an external fitting on the clutch housing.



Clutch Assembly

Fig. 20

"L" is one of the three release levers with weighted outer end "W". Each lever is mounted on the pressure plate with needle roller bearings as illustrated at "B".



23-12-43	17 4 44					CARRIER, UNIVERSAL, MK II, MOTOR M/C. GUN	DRAWN:—N.G.	TRACED:—K.B.	9 SHEETS.	SHEET 3
						PLATOON SERGEANTS CARRIER.	FOR:— <i>H. Walker</i>		I.F.V. (P.D) S.14.	
						STOWAGE SKETCH:— FRONT AND INTERIOR.	CHIEF INSPECTOR OF FIGHTING VEHICLES			

TRANSMISSION

The purpose of a transmission is to transmit power from the engine to the driving members at different ratios, in order to provide a wide range of power.

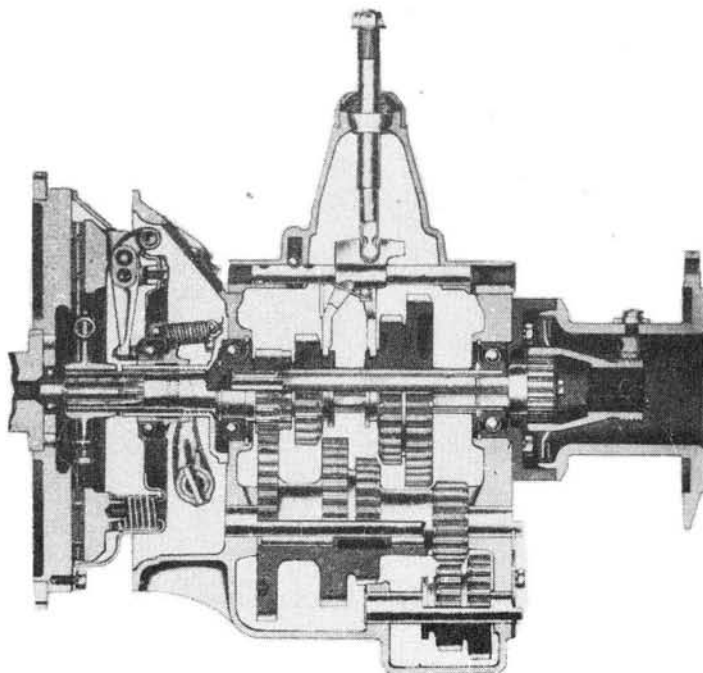
The transmission is of the spur gear type and incorporates four forward speeds and one reverse.

The transmission main shaft carries the sliding gears for the first, second, third and fourth speeds. It is positioned with one end in a roller bearing in the constant mesh gear on the clutch main shaft and the other end in a ball bearing secured by a retaining ring in the rear wall of the transmission case. The combined third and fourth gears slide at the forward end of the main shaft. The combined first and second gears slide at the rear end of the shaft. The countershaft gears are formed in one assembly to mesh with the sliding gears on the main shaft and are in constant mesh with the transmission main drive gear. The countershaft and the reverse shaft are held in position with a lock plate which is bolted to the outer rear face of the transmission case.

The transmission gear shifting is accomplished by extended controls leading from the front compartment of the vehicle.

The gearshift is controlled by a hand lever carried in a ball socket bolted to the hull bottom plate.

The front actuating rod is riveted at one end to the plate attached to the hand lever and at the other end to the actuating rod tube, which in turn is connected to the rear actuating rod. The rear actuating rod is in the form of a lever, fitting into a socket



Transmission Cross Section

Fig. 24