



SERVICE BULLETIN

AIRCOOLED MOTORS INC.

SYRACUSE 8, NEW YORK

DATE: 4/10/47

NO. FSB 51

**SUBJECT: FUEL CONSUMPTION CHART FOR FRANKLIN 6A8-215-B8F AND B9F
ENGINES AT a 75% POWER CRUISE CONDITION**

Following is information which may be of interest to you and which was developed from test data compiled by our Engineering Division.

Reference to the attached chart indicates the fuel consumption rates that may be expected at various altitudes and power settings. The upper cross-hatched portion of the chart labeled SAFE - ALL OPERATION represents the use of a full-rich mixture. The center portion of the chart labeled SAFE - CRUISE ONLY represents operation with the mixture leaned out manually. Fuel flows shown for this area should be obtained only within the range of cruise power settings indicated. The double cross-hatched portion at the bottom of the chart labeled DANGER indicates fuel flows at which it is dangerous to operate with any power setting.

The following example illustrates the use of the chart. Assume that it is desired to cruise at a manifold pressure of 25" Hg., an engine speed of 2200 rpm and at an altitude of 2000 feet. The horizontal scale across the bottom of the chart shows four combinations of manifold pressure and rpm that will give a normal recommended cruise condition which is approximately 75% of rated power. The power setting of 25" and 2200 rpm is found as one of the 75% power combinations on the bottom scale. From this point, follow the vertical line up until the 2000 foot mark is reached. The horizontal line through this point indicates the fuel consumption rate on the scale to the left. In this case it is 19 gallons per hour for full rich operation.

As this fuel flow is higher than is necessary for safe cruise operation, the mixture control may be moved out and in slowly until the maximum rpm is obtained. The throttle position remains fixed during this adjustment, but the slightly increased engine speed may be reduced to the original setting of 2200 rpm by use of the propeller control. The fuel-air mixture thus obtained will give the best engine power at the given altitude and throttle setting. This point is indicated by the horizontal line on the chart labeled NORMAL CRUISE and will give a fuel consumption of approximately 14.5 gallons per hour, as indicated on the scale to the left.

If maximum economy is desired, the mixture may be carefully leaned out further until the engine speed drops a maximum of 25 rpm from the best power speed. The fuel flow obtained at this setting is shown to be 13.5 gallons per hour.

It will be noted that the power settings which employ the highest manifold pressure and lowest rpm produce the highest full-rich fuel consumptions. However, the normal cruise fuel flow of 14.5 or the maximum economy fuel flow of 13.5 gallons per hour may be obtained with any power setting shown on the chart if the manual mixture control is employed as instructed.

CAUTION: The mixture control should always be in the full rich position at altitudes of less than 100 feet so that if full power is needed in an emergency near the ground, the engine will operate properly and will not overheat.

AIRCOOLED MOTORS, INC.



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FUEL CONSUMPTION CHART
 FOR
FRANKLIN 6A8-215-B8F ENGINE
 AND
FRANKLIN 6A8-215-B9F ENGINE
 AT 75% POWER CRUISE CONDITION

