FRANKLIN SERVICE BULLETIN

No. 46
Date: 1/14/47

Subject: SUGGESTIONS FOR COLD WEATHER OPERATION ON FRANKLIN ENGINES MODEL 6A4-150-B3 AND 6A4-150-B31

1. Our Engineering Department has investigated stumbling apparent in some engines when operating on single magnetos at temperatures at or below 30 degrees F. Application of carburetor heat has been found to correct this condition. It is, therefore, recommended that at least a small amount of heat be used during cold weather operation. Tests also indicate that some heat is desirable in flight when operating in low temperatures.

2. Damage caused by too heavy a lubricant or lubricants badly contaminated unfortunately are not observed until major repairs are required earlier than normal.

   Changing oil should be accomplished at 25 hours of operation or less, depending on operating conditions or change in weather conditions. Following this procedure insures economical operation since the cost of an oil change using the proper grade of good quality Heavy Duty oil is less than repair bills.

   To reduce the number of grades of oil required, we recommend a good grade of S.A.E. 40 Heavy Duty oil when free air temperature is 40 degrees F. or above and S.A.E. 20 or 20 W at temperatures below 40 degrees F. Note: In extremely cold weather -- zero or below -- it may be advisable to use S.A.E. 10 W lubricant to insure best lubrication of the rotating parts of the engine.

3. For cold weather operation below 30 degrees F., partially blocking off the oil cooler has been found satisfactory and is recommended where low temperatures are experienced.

   On the Fedders type cooler, which has two reinforcing bands around the core assembly, an aluminum baffle at the front of the core can be installed. This baffle should be the full length of the core section of the cooler and should be approximately 2¼" wide. The baffle can be held in position at the ends, using wire passing through drilled holes in the baffle and being fastened around the cooler. The baffle should be located at the bottom section of the core.

On the Heat Exchangers type cooler, without reinforcing bands, an aluminum baffle approximately 4½" wide and running the full height of the core at the front may be installed. It should be located at the center section of the core. The baffle may be fastened to the cooler with wires through holes at the top and bottom of the baffle and fastened at the cooler frame.

In extreme conditions below zero degrees F., lagging of the manifold pipes which attach to the manifold itself at both front and rear sections may be desirable.

5. The 6A4-150-B3 and B31 engines are specified at 230 degrees F. maximum oil temperature and operating within this range should in no manner be detrimental. Care must be used in seeing that necessary changes are made for summer operation in the event the aircraft is flown to a warmer climate.

6. To control loss of oil through the breather, use oil S.A.E. 20 or 20 W grade below 40 degrees F., as specified in item 2 and do not run the engine over 1500 rpm for at least the first five minutes of operation, when starting cold.

7. Pulling the engine through two or three revolutions by hand will assist in cold weather starting and will reduce the battery drain.

Battery specific gravity should be maintained above 1250 for good starting.

The above is for your information.

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