

AIRCRAFT CARBURETOR SERVICE BULLETIN NO. 74

SUBJECT: RECOMMENDED MAINTENANCE PROCEDURE FOR STROMBERG NAS-SERIES FLOAT TYPE AIRCRAFT CARBURETORS, AND SPECIFIC REFERENCE TO OVERHAUL PROCEDURES APPLICABLE TO THESE MODELS.

REASON FOR BULLETIN: To provide information designed to reduce the possibility of carburetor trouble, or apparent fuel metering inconsistencies, which could result in engine stoppage during flight idling operation.

APPLICATION: All Stromberg NAS-Series carburetors, as used on Continental A- and C- Series engines.

COMPLIANCE: The information contained in this bulletin applies to both overhaul and operating activities.

GENERAL INFORMATION:

NOTE

The general information included in this bulletin is for brief theoretical purposes only. The engine and aircraft manufacturer's instructions must be adhered to at all times.

1. Maintenance of idling engine operation in flight, particularly under adverse conditions involving cold weather, extended un-interrupted use of idle during prolonged glide, and under conditions involving sudden throttle movement, is difficult if correct carburetor overhaul, adjustment and maintenance procedures are not closely adhered to at all times, and if recommended operating procedures for the engine and aircraft are not followed. The following general information should be helpful in promoting a better understanding of carburetor action under the above outlined conditions:

a. The primary cause of engine stoppage, on a normal engine, under the conditions referred to, is the inability of the engine to receive adequate operational fuel/air mixture ratios. This can occur under each or all of the following conditions:

(1) During idling in flight, propeller windmilling induces an engine rpm which is higher than the ground idling rpm for which the mixture adjustment of the carburetor was set. This will tend to produce a lean fuel/air mixture ratio, because the carburetor is conscious only of throttle position and does not directly respond to the mixture requirements of the increased air volume being pumped into the engine by the windmilling propeller.

(2) During a prolonged glide, at idle, the engine cools down somewhat, thus reducing the vaporization of available fuel; as a result, the effective fuel/air mixture ratio becomes more critical.

(3) Subsequently, if the engine is accelerated rapidly for power recovery (carburetor throttle opened suddenly) the fuel lag that accompanies the first onrush of air through the carburetor will further lean the available mixture as the subject carburetor does not incorporate an acceleration pump.

(4) Obviously, cold weather operation will further tend to retard fuel vaporization, resulting in additional fuel leaning, if not counteracted by proper use of carburetor air heat.

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