



factors tending to reduce icing may be considered appropriate and may be applied when substantiated by temperature measurements.

(c) *Other Means* A pre-heater need not be provided if the intake air is continuously heated with air taken from the rear of the cylinder(s) or an equivalent temperature rise is provided. Intake air heat may be provided by directing cylinder cooling air into a carburettor plenum intake. A substantial heat rise is available at the inlet to the carburettor by this means. Actual temperature measurements showing the equivalence may be required to ensure that carburettor throat temperature remains high enough to preclude icing. Means should be available to supply fresh unheated air to the carburettor inlet for normal operation if the performance loss due to increased charge temperature is significant. The possibility of fuel vapour lock as a result of the excess carburettor heat must also be considered.

## **5. Operational Information.**

Carburettor heat should be used in all suspected icing conditions. As a rule, total power loss will not occur below 65% relative humidity and/or -1°C (30°F) unless moisture is visible. Ice formation is most likely to occur at low power settings, when the throttle is almost closed. When the engine has been operated above idle for several minutes, there is generally sufficient heat to prevent ice formation, if the icing protection procedures have been satisfied.

## **6. Reference Material.**

The following reference material is provided as an example for the builder's convenience.

- (a) AC20-113 Reciprocating Engine Induction System and Fuel System Icing Problems. (October 22, 1981)
- (b) NACA, TR 982, Icing Protection Requirements (1950)
- (c) "The Fair-Weather Fiends" FAA General Aviation News, March-April (1982)
- (d) "Ice Can Clog Carburettor..." W.P. Dugan, H.A. Toulmin; SAE Journal (March 1955)

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