



AVIATION TECHNICAL BULLETIN

Champion Spark Plug Company

P. O. BOX 910, TOLEDO, OHIO 43601

November 26, 1973

NO. 73-11

ROUTE TO	
SERVICE MANAGER	
SALES MANAGER	
BULLETIN BOARD	

FAA CAUTIONS PILOTS ON USING AUTOMOTIVE GASOLINE IN AIRCRAFT

CONTROLLE
COPY

Owners and pilots of small airplanes have been cautioned by the Federal Aviation Administration of the Department of Transportation against using automotive gasoline in an effort to circumvent any spot shortages of aviation fuel that might develop in the future.

The FAA warns that aircraft engines were not designed for the use of automotive gasoline...that using automotive fuel in aircraft will not only damage the engine, but could cause an accident as well. Although a general aviation gasoline shortage is not expected, spot shortages could occur which might tempt a pilot to use automotive gasoline or a lower grade of "avgas" than is recommended by the engine manufacturer, however, FAA officials emphatically advise that these temptations be avoided.

In an effort to stress the reasons for not using automotive gasoline as a substitute for avgas, the FAA has published a leaflet entitled "Danger-Automotive Gasoline At Work". Some of these reasons are as follows:

- * "Automotive gasoline has a much higher vapor pressure. In high temperatures and/or altitude, it may form bubbles in the fuel lines, preventing fuel flow. In simple terms, this means vapor lock and engine failure".
- * "The octane numbers advertised for automotive fuels are not valid for rating as Aviation fuels. Consequently, automotive gasoline could cause pre-ignition and detonation if used in aircraft".
- * "The anti-knock additives are chemically different from those designed for aviation, and can cause corrosion and valve failure. At the same time, lead-free fuels are still not approved for aircraft engines because they lack, among other things, valve seat lubricating qualities. Automotive fuels also may form gum deposits because they are chemically less stable".
- * "Automotive gasoline has a lesser storage stability. Most aircraft are not operated as regularly as automobiles. Automotive fuel left in tanks for some time may suffer loss of octane rating and develop gum after evaporation".

This leaflet also contains tips on using alternate grades of avgas when the grade recommended by the manufacturer is not available, indicating that if the required fuel is unavailable for use, the next higher, rather than lower grade fuel should be used.

This leaflet is available from Accident Specialists in each FAA Flight Standards or General Aviation District Office.
