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AERONAUTICAL INFORMATION CIRCULAR

AIC B40/94 is hereby replaced.

Water contamination of aircraft fuel system

An accident involving a private aircraft was the result of the engine "cutting out" at 200 feet after take-off and was due to severe water contamination of the fuel system. In the landing that followed the occupants escaped injury but the aircraft was substantially damaged.

The contamination has been attributed to the following:

- a) Refuelling the aircraft from a drum, which contained water in the fuel.
- b) Using a chamois-leather which became saturated with water and which permitted the passage of water, as well as fuel, into the tanks.

Arising out of this accident, aircraft owners and/or pilots who refuel their aircraft from drums observe the following precautions:

- a) When received, ensure drums are clearly stencilled with product, grade, batch number, month and year filled. Seals must be intact.
- b) Before refuelling, a check must be made for the presence of water in the drums by use of water-detecting paste applied to a rod long enough to reach the bottom of the drum. If water is found (by a change of colour of the paste) the drum should be placed in quarantine and owner's normal supplier informed.
- c) Only chamois-leather in sound conditions must be used in funnels and must be soaked in fuel before use. The delivery of fuel should be interrupted every few minutes and the chamois examined for water globules. The drum, refuelling equipment and aircraft must be electrically bonded to reduce the risk of fire.
- d) After refuelling all water drains on the aircraft must be opened in turn and a generous amount of fuel from each collected in a glass jar so that any water may be readily detected. This check must be repeated before first flight of the day and must be regarded as important as the vital action required prior to take-off.

Where aircraft are not provided with tank drains, owners should make arrangements with an appropriately licenced aircraft maintenance engineer for this to be done as soon as possible. Drums should be stored on their sides, with the bungs horizontal, to eliminate "breathing". To avoid deterioration, fuel should not be kept in drums for longer than six months.

Water detecting paste may be obtained from the following company:
Protea Medical Service, 110 Kelvin Road South, Box 2766, Harare

The Standard identification colours of aviation gasoline are as follows:

80/87 octane – Red

100LL – Blue

100/130 Octane – Clear, dark green

115/145 Octane – Clear, purple.



K.Kaseke

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