

# CIVIL AVIATION DIRECTORATE

## Airworthiness Inspectorate

Luqa Airport, Luqa LQA3290, Malta Tel: +356 21222936 Fax: +356 25552334, [info.tm@transport.gov.mt](mailto:info.tm@transport.gov.mt),

[www.transport.gov.mt](http://www.transport.gov.mt)



Transport Malta

## Information and Advisory Notice No. 13

Issue No: 1 Dated: 13 July 2010

### Use of Motor Gasoline in Light Aircraft

#### 1 INTRODUCTION

Although the use of MOGAS fuel in civil aviation, both leaded and unleaded has been common in foreign countries, this has not been the case in Malta except for Microlight Aircraft.

This Information & Advisory Notice (IAN) is written to provide guidelines and instructions on the management and use of motor gas fuel in general aviation and certification requirements for certain single engine light aircraft connected with the use of MOGAS fuel.

The Airworthiness Inspectorate will be ensuring that the conditions and precautions listed hereunder in this IAN are met and taken care of by the owners and operators of Maltese registered aircraft as part of its remit to accomplish safety oversight for continuing airworthiness.

#### 2 GENERAL

Quality control and assurance of the storage, transport and the fuel quality itself, of AVGAS is regulated in the civil aviation industry. However the same strict controls are not applied for garage forecourt fuel. Aviation grade unleaded motor gasoline is not yet available for use.

The use of unleaded MOGAS could potentially increase the possibility of:

- a- Vapour lock in the fuel system due to fuel vapour pressure, the operating altitude and temperature.
- b- Carburettor Icing.

However, the operation of aircraft using MOGAS has proved to be adequately safe.

#### 3 CONDITIONS FOR USE OF UNLEADED MOTOR GASOLINE

- a. Only the use of unleaded MOGAS to specification MSA EN 228:2008 in aircraft powered by low compression piston engine is allowed.
- b. The use of unleaded MOGAS is restricted to single engine aircraft or rotorcraft of MTOM <2730 kg, with a certified aircraft/engine combination (Refer to paragraph 5 of this OSC).

- c. The end user of the fuel is solely responsible to ensure that the MOGAS fuel meets the MSA EN 228:2008 specification.
- d. Inspection programme of any specialized mobile or fixed fuel containers shall be in accordance with the manufacturers' instructions.
- e. Fuel Sampling Tests from the fuel supplier to check conformity of fuel supplied with EN specification, shall be requested by the end user at least every six months. These tests shall be carried out at an accredited laboratory and submitted to the Airworthiness Inspectorate.
- f. High temperatures of stored MOGAS shall be avoided.
- g. Records of fuel supply must be maintained by the end user (aircraft owner/operator).

#### **4 PRECAUTIONS**

- a. Long Storage of the fuel in the aircraft fuel tank or in any other container shall be avoided
- b. The fuel must be tested to ensure that it contains no alcohol.  
A method for determining the presence of alcohol in fuel is to thoroughly shake a test cylinder containing 90ml of the fuel to be tested and 10ml of water. If, after settling, the water volume has increased, then alcohol is probably present in the fuel and the fuel is, therefore, unsuitable for aviation use.
- c. Fuel storage tanks should be located as much as possible in a cool and protected environment. High fuel temperatures of stored fuel increases the possibility of vapour lock.
- d. Aircraft routine and preflight inspections shall include checking for any signs of leak and deterioration from flexible fuel pipes and seals.
- e. A full power run-up to the take off roll is accomplished.
- f. End user should maintain the same fuel supplier as much as possible.

#### **5 LIMITATIONS**

**Maximum operating altitude 6000 ft.**

**Operation of aircraft shall be limited to the Private Category and Aerial Work Category.**

#### **6 EASA APPROVED OR ACCEPTED AIRCRAFT AND ENGINE COMBINATION**

Any aircraft and engine combination shall be certified to be operated with MOGAS to spec MSA EN 228:2008.

This means that both the engine and the aircraft fuel system must be certified to operate with this fuel specification. This can be shown in the following manner:

The Type Certificate Data Sheet of both the engine and the aircraft shall specify the use of this fuel grade for the particular type of aircraft, or

The Pilot Operating Handbook or Aircraft Flight Manual of the aircraft permits the use of this fuel grade, or

Both the aircraft fuel system and the engine are modified in accordance with an EASA approved Supplemental Type Certificate which enables the aircraft to operate with this fuel grade.

**NOTE**

**FAA STC's have already been accepted by other EU member states meaning that these STC's have been automatically accepted by EASA. However the continued airworthiness issues associated with the embodiment of these STC's on the aircraft and engine fall under the responsibility of the Malta Department of Civil Aviation for Maltese Registered aircraft.**

**The following is a list of FAA STC's incorporated on aircraft and engine types on the Maltese Register.**

<b>TYPE OF AIRCRAFT AND ENGINE AIRCRAFT</b>	<b>FAA STC NO</b>	<b>STC HOLDER</b>
PA-28-140,-150,151 with Lycoming O-320-A2B,-E2A,E3D engines	SA1963CE	Petersen Aviation
Lycoming O-320-A2B,-E2A,E3D engines	SE800GL	Experimental Aircraft association
Cessna 152	SA2048CE	Petersen Aviation
TCM O-200-A	SE2031CE	Petersen Aviation
Lycoming O-320 engines	SE1931CE	Petersen Aviation
Textron Lycoming O-235-L2C	SE790GL	Experimental Aircraft Association
Cessna 172M with Lycoming O-320-E2D engine with STC SE800GL	STC SE801GL	Experimental Aircraft association
Lycoming O-320-E2D engine	STC SE800GL	Experimental Aircraft association