# Safety Alert

**Vapor Lock on CTLS Aircraft Painted in JetGrey**
**SA-LTUL-CTLS-05**

## Repeating Symbols:

Please pay attention to the following symbols throughout this document emphasizing particular information.

- ▲ **Warning:** Identifies an instruction, which if not followed may cause serious injury or even death.
- ■ **Caution:** Denotes an instruction which if not followed, may severely damage the aircraft or could lead to suspension of warranty.
- ● **Note:** Information useful for better handling.

## 1 Planning Information

### 1.1 Affected Aircraft

| | |
|---|---|
| Type: | CT |
| Model: | CTLS |
| Serial Number: | F-20-02-52, F-20-05-01, F-20-07-04, F-20-07-05, F-20-09-01<br>F-20-11-01, F-21-01-04, F-21-05-03, F-21-06-51, F-21-09-04 |
| Applicable Countries: | Not limited |

### 1.2 Concurrent Documents

none

### 1.3 Reason

Possible engine failure.

### 1.4 Subject

The effects described in this Safety Alert seem to have occurred on specially painted CT aircraft equipped with ROTAX 912iS engines. However, it cannot be excluded that similar effects may occur on the carbureted engine as well. Therefore, this Service Alert is applicable for both engine options.

Aircraft listed in section 1.1 are painted “jet-grey”. This color is a little darker than the standard white paint. On hot days and in bright sunshine, this is causing slightly higher structural temperatures due to higher sun absorption. These higher temperatures are still far below any structural limitations. The fuel tank is inside the wings, which are also subject to higher temperatures, and therefore, the fuel is heated up more than on white aircraft as well.

The ROTAX 912iS engine has a fuel system that pumps a high fuel flow towards the engine and returns most of it. The fuel return flow is approximately 60ltr/h, depending on power setting. This return fuel has been pumped through the engine injection rail and has been heated up significantly.

An unfavorable combination of

- high outside air temperatures
- bright sunshine
- low ambient pressure or high altitude
- long flight time
- inappropriate fuel selection (winter fuel)
- switching on and off the aux fuel pump on 912iS installations

can cause the temperature of the fuel rise high enough that the vapor pressure of the fuel rises above pressure at the fuel pump inlet causing vapor lock.

### 1.5 Compliance

This Safety Alert requires immediate action.

▲**Warning:** Non-compliance with these instructions could result in further damages, personal injuries or death.

### 1.6 Approval

not applicable

### 1.7 Type of Maintenance

none

### 1.8 Personnel Qualifications

none

### 1.9 Release to Service

not applicable

### 1.10 Weight and Balance

not affected

### 1.11 References

none

### 1.12 Superseded Documents

None

### 1.13 Contact Details

For further information on conduct of this SA, or to report any Safety of Flight or Service Difficulty issues contact your Distributor responsible for your country. Your Distributor can be located via the Flight Design general aviation website: www.flightdesign.com under “Dealer Location”.

In cases where the local distributor is not known or available contact Flight Design general aviation GmbH directly: airworthiness@flightdesign.com.

### 1.14 Disclaimer

This Safety Alert has been generated with utmost care. Nevertheless, errors and misunderstandings can never be fully excluded. In case of any doubts, the applicant of this Safety Alert is requested to contact Flight Design immediately to clarify the issue.

## 2 Resources

none

### 2.1 Workshop Conditions

none

### 2.2 Parts

none

### 2.3 Materials

none

### 2.4 Tools

none

### 2.5 Special Tools

none

### 2.6 Manpower

none

### 2.7 Cost

none

## 3 Instructions

Until further instructions, operate the aircraft on following fuels only:

AVGAS 100LL

AVGAS UL91