



CIVIL AVIATION AUTHORITY CZECH REPUBLIC

TECHNICAL DIVISION

Ref.: 000590-19-401

Your ref.: not applicable

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INFORMATION RELATED TO SAFETY

Inaccurate Altitude Information Reported by Mode C

Manufacturer:

AERO Vodochody AEROSPACE a.s.

Group:

L-39 aeroplanes (all models) with installed pitot-static probes type LUN 1153-7 (primary) and type LUN 1150 (backup).

Note 1: This information concerns only aircraft that have the Special Certificate of Airworthiness issued by the competent Civil Aviation Authority (in EU member states operated as (EC) 2018/1139, Annex I Aircraft). This information is not intended to military aircraft.

Description:

The Civil aviation authority Czech Republic received a notification about inaccurate information transmitted by the altitude reporting system of the subject aircraft, provided by Air Navigation Services of the Czech Republic.

The technical investigation conducted by the aircraft manufacturer showed that this in-service issue is caused by the aircraft's pitot-static system characteristics which were meeting a military operation requirements at the time of aircraft certification, however, do not meet the current requirements applicable to the civil operations.

The pitot-static probe type LUN 1153-7 and the backup pitot-static probe type LUN 1150 as installed in these aircraft cause an static pressure source position error that has a negative impact on the accuracy of the altitude indicated to the pilot as well as the altitude reported by the reporting system by means of the ATC transponder Mode C.

The aircraft manufacturer prepared a report analysing inaccuracy of the altitude source used for altitude reporting in the civil operations of the subject aircraft.

Recommendation:

Based on the analysis of the aircraft manufacturer we recommend to establish following operational limitation for meeting acceptable altitude reporting accuracy:

Recommended limitation:

	Altitude (Ft)	Max. KIAS \leq	Altitude (m)	Max. IAS (km/h) \leq
Non RVSM	0	313	0	580
	6562	292	2000	540
	13123	259	4000	480
	19685	238	6000	440
	26247	211	8000	390
RVSM	Operation is not allowed			

Note 2: All the above-stated values are intended for the aeroplane configurations without external tanks and other external equipment installed.

Note 3: This limitation is not intended for those aircraft MSNs with the static pressure source position error resolved by an approved type design change.

Conclusions:

1. Implementation of any specific operational limitation on the base of this above mentioned recommendation is under the responsibility of the competent Civil Aviation Authority of the State of the registry/operator of the aircraft, as applicable.
2. The Civil Aviation Authority Czech Republic has decided to apply above mentioned operational limitation to all L-39 aeroplanes operated in the airspace of the Czech Republic, including their flights through this airspace.
3. Questions concerning further details on operational limitation of the subject aircraft may be addressed to the Civil Aviation Authority Czech Republic.
4. For more technical details concerning installed pitot-static probes please contact the aircraft manufacturer.



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