TOMARK, s.r.o.
Strojnícka 5, 080 01 Prešov

MANDATORY BULLETIN

Number: **ZB SD4-04-2013**

Name/Subject: **Location of the sensing of the static pressure inside the rear of the fuselage**

Models affected: Viper SD-4 aircraft with serial numbers:
003, 006, from 010 to 012 inclusive, 014, 015, from 017 to 019 inclusive, 022, 023, 025, 029

Reason of issuance: **Elimination of an excessive airspeed indication error in the area of stall speeds**

Time of compliance: immediately

To be done by: operator or TOMARK, s.r.o. – Aero Division after an agreement

Work procedure: in the appendix

Costs covered by: materials: operator or TOMARK, s.r.o. – Aero Division after an agreement
work at the manufacturer: TOMARK, s.r.o. – Aero Division
work at the operator: operator

Required material supplied by: TOMARK, s.r.o. – Aero Division

Date of issuance: 5.8.2013

Date of approval: 5.8.2013

Approved by: Slavomír Dobrovič, Eng.
Chief Designer – Head of the Design Department of the Aero Division

Number of pages: 1 + 2

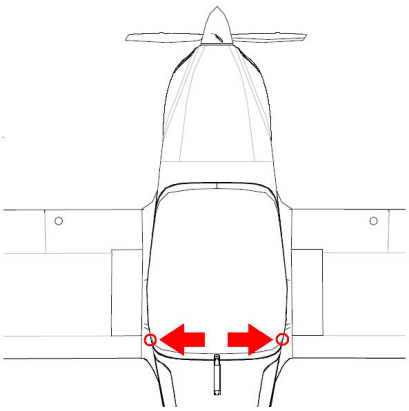
Note: In some of the above-mentioned Viper SD-4 aircraft, the static pressure sensing may have been moved to the inside of the rear fuselage within a 100-hour service inspection done by TOMARK, s.r.o. That is possible to verify by the checking of the disconnection of the static pressure ports located on the sides of the fuselage in the baggage area behind the seats.

Ing. Slavomír Dobrovič
Chief Designer of Aero Division, TOMARK, s.r.o.

WORK PROCEDURE

1. Disconnection of tubes from static pressure ports on the sides of the fuselage.

The original static pressure ports are located symmetrically on the sides of the fuselage, below the cockpit windows, as it is shown in the picture on the right.



The static pressure ports have a round shape and are riveted to the insides of the side fuselage skins in the upper part of the baggage area.

The static pressure ports are connected to plastic tubes Ø6 x 1 mm, leading to the flight instruments located on the instrument panel. The tubes are secured on the static pressure ports by locking clips.

With the help of pliers remove the locking clips and disconnect both tubes from the static pressure ports.

NOTE: *The tubes may first be cut off, if necessary, close to the ports.*

2. Blinding of the end of the tube on the right side

Blind the tube on the right side of the cockpit with a suitable plug, e.g. silicon sealant, a peg or a screwed-in screw, sealed with suitable glue or sealant.

Then push the tube into the opening in the reinforcement piece from which it sticks out, so that it sticks out just about 5 cm and does not pose as an obstacle in the baggage area.

3 Lengthening of the tube on the left side and its insertion into the area of the rear fuselage

Fit a suitable lengthening tube with the inner diameter 5 to 6 mm and about 25 cm long on the tube on the left side.

NOTE: *The fitting of the lengthening tube must be tight and along a sufficient length, so that is does not disconnect accidentally as a result of shocks and vibrations.*

Insert the free end of the lengthening tube into the small hole in the upper corner of the baggage area at the side fuselage skin, so that the tube is straightened along the side fuselage skin.

After its insertion, the tube does not require any additional attachment.

4 Removal of the “STATIC PRESSURE” stickers from the sides of the fuselage

Remove the “STATIC PRESSURE” stickers from around the original static pressure ports.

REQUIRED TOOLS

– Pliers

REQUIRED MATERIAL

– Lengthening elastic (e.g. silicon) tube, about 25 cm long, with the internal diameter 5 to 6 mm

– Material for the sealing of the end of the tube (e.g. silicon sealant, a peg, a screw, suitable glue).

WEIGHT OF THE AIRCRAFT

Without a substantial influence on the weight of the aircraft.

RECORD IN THE AIRCRAFT LOGBOOK

The performance of this mandatory bulletin should be recorded in the aircraft logbook.

ADDITIONAL INFORMATION

Information about the accuracy of the airspeed indication in the case of the sensing of the static pressure inside the rear of the fuselage

The original static pressure ports, located symmetrically on the sides of the fuselage below the rear window of the cockpit, cause an airspeed indication error in the critical area of stall speeds that is higher than 10 km/h, which may lead to dangerous situations.

The sensing of the static pressure in the rear of the fuselage significantly increases the accuracy of the airspeed indication in the area of stall speeds when compared with the original sensing on the sides of the fuselage.

At the indicated airspeed of (IAS) 75 km/h the indication error (while not taking into the account the error of the airspeed indicator itself) is less than 1 km/h. That error increases with the increasing speed in an approximately linear way as follows:

IAS [km/h]	70	80	100	120	140	160	180	200	220	240
Error [km/h]	0	+1	+3	+6	+8	+10	+13	+15	+17	+20
CAS [km/h]	70	79	97	114	132	150	167	185	203	220

NOTE: *A precise calibration of the whole airspeed indication system requires flight tests.*

NOTE: *In newer Viper SD-4 aircraft the static pressure is sensed by means of a precise static pressure sensor, located at the top of the vertical stabiliser, which ensures the airspeed indication error lower than 1 km/h in the whole range of operational speeds. In the case of interest in its additional installation, which requires more extensive service work, please contact TOMARK, s.r.o.*