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SERVICE LETTER # 27

DATE: May 1, 1994
SUBJECT: Airspeed Indicators, Pitot/Static System
TO: All Kitfox Owners
FROM: SkyStar Aircraft, Engineering Division

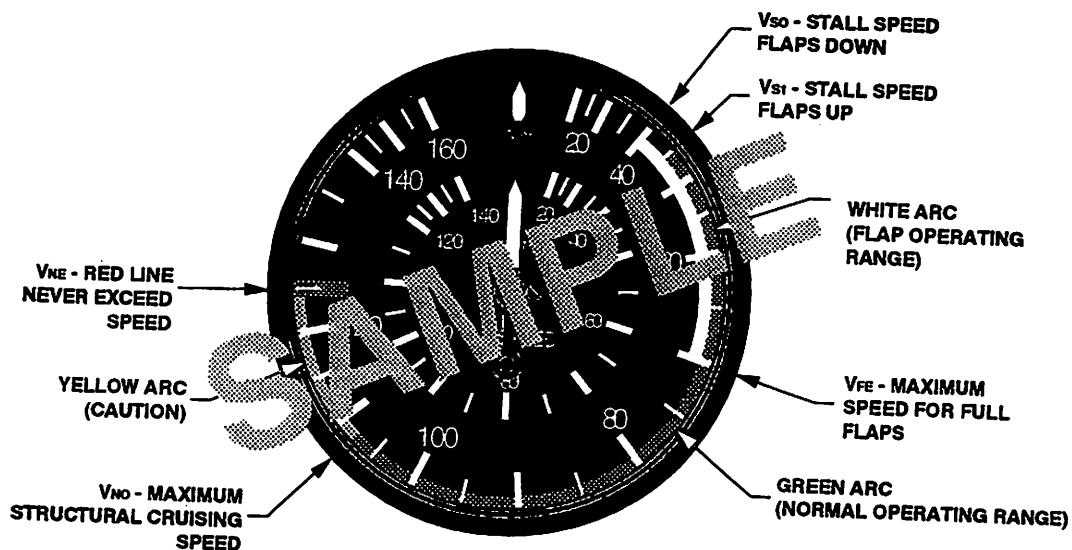
The engineering department at SkyStar has been conducting flight tests on various Kitfox models using a pitot/static test boom. We have found that there is a broad variation in the atmospheric pressure differences between those measured by the test boom and those inside the cabin. This is important in that many Kitfoxes are flying with their flight instrument static ports open to cabin air pressure. These pressure differences vary with changing conditions such as cabin air vents being open or closed, the effectiveness of the door seals, amount and installation of the upholstery, varying airspeeds, etc. All of these factors represent certain degrees of inaccuracy of the primary flight instruments; airspeed indicator, altimeter, and vertical speed indicator, and the transponder altitude encoder, if installed.

To reduce or eliminate these inaccuracies, we have developed and are strongly recommending the installation of a fuselage mounted static port.

Other factors can result in instrument inaccuracies, and you should try to eliminate these as well: long term storage; improper handling; improper installation; defective components; and general wear and tear.

We recommend that you have your pitot/static system tested by a qualified technician, using standard shop test equipment. This is required by FAR 91.411 every 24 calendar months if you fly IFR or if you have installed a transponder with altitude encoder.

AIRSPEED INDICATOR MARKINGS



V_{NE} Never exceed speed is the speed limit that may not be exceeded at any time. It is indicated by the red line on the airspeed indicator.

V_{NO} Maximum structural cruising speed is the speed that should not be exceeded except in smooth air, and then only with caution. It is indicated at the junction of the green and yellow arcs.

V_{FE} Maximum flap extension speed is the highest speed permissible with the wing flaps in the prescribed extended position. It is indicated by the top of the white arc.

V_{SI} Stalling speed is the minimum steady flight speed at which the aircraft is controllable with the flaps up, and the power off at gross weight. It is indicated by the bottom of the green arc.

V_{SO} Stalling speed (landing configuration) is the minimum flight speed at which the aircraft is controllable with flaps in the landing configuration, power off and at gross weight. It is indicated by the bottom of the white arc.

NOTE: THE TWO STALLING SPEEDS, V_{SI} AND V_{SO} , CAN ONLY BE DETERMINED BY ACTUAL FLIGHT TEST OF EACH INDIVIDUAL AIRCRAFT.

FAR 91.205 requires that an airspeed indicating system be installed in your aircraft. This means an operational system that is calibrated, properly marked, and properly maintained.

You, as the builder/manufacturer, are responsible for determining the flight envelope of your aircraft. The flight test phase for your aircraft is where this is determined. AC90-89 (Amateur-Built Aircraft Flight Testing Handbook) will guide you through these steps. This book can be obtained through SkyStar. The flight testing will give you the information you need to mark your airspeed indicator properly. Below are the airspeeds for a Kitfox, built per the manual. Stall speeds and rate of climb speeds are not given and can only be determined by actual flight testing.

	I, II, III, XL	M4, M4-1200	Speedster and Vixen
V_{NE}	95*	125	140
V_{NO}	76 82	95 108	108 121
V_{FE}	70	70	70

*NOTE: V_{NE} may be extended to 100 MIAS if the flaperon mass balance weights are installed. All speeds are given in Miles per hour Indicated Air Speed (MIAS).

You can have your airspeed indicator marked on the dial face by an aircraft instrument repair shop or mark the glass face with colored decals.

Please remember that instruments can fail or become inaccurate at any time, anywhere. Knowing how your aircraft feels and handles at various speeds and configurations is a powerful tool to be used in addition to your airspeed indicator.

SkyStar has put together a Static Port Kit P/N 69175.000 that can be purchased through our Customer Service Department, at 208-466-1711. Also, be sure to call us if you have any questions.