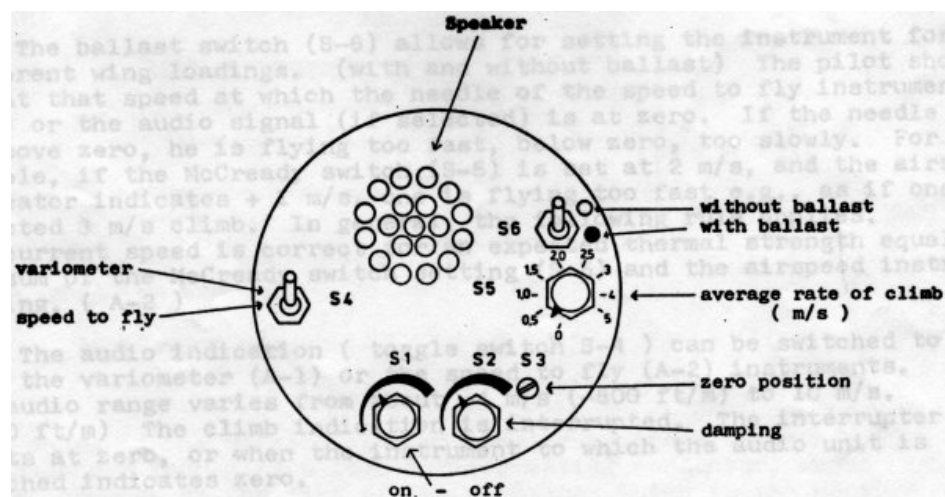


LS-4 Speed-to-Fly Computer

The LS-4 electronic speed-to-fly computer in the aircraft is the efa 1/3 Variometer/Speed-to-Fly/Integrator System manufactured by Blumenauer. The system is comprised of three displays and one control unit. The three 2.25" displays are left to right across the top of the instrument cluster. They are labeled "V", "I", and "S" and are the Variometer, Integrator (30 second averager) and Speed-to-Fly (between thermals). The control unit is centered near the bottom of the instrument cluster just above the radio.

The operation of the system is simple and straight forward, the manual recommends approximately 10 to 20 minutes to warm up depending on current air temperature. The system warms to an internal temperature of 55°C. The displays are self explanatory with the Integrator (center display) showing the average over the last 30 seconds. The instruments are calibrated from -5 to +5 m/s or -10 to +10 knots. The audio vario works from ranges of -8 knots to +20 knots.

The Speed-to-Fly indicator recommends increases or decreases in airspeed dependent on current air conditions and selected McCready setting. Aural tones can be either from the variometer or the speed-to-fly as desired from the pilot.



The control unit comprises of three knobs and two switches. Two knobs at the lower or 6 o'clock position on the unit are Volume On/Off (left) and Dampening (right). The volume controls the aural indication from either the Vario or speed-to-fly display.

The dampening control reduces the sensitivity of the vario or "dampens" it and also affects the speed-to-fly indications. It can be set to a varying time lag coefficient of the variometer between 0.6 and 4.0 seconds. During recent flights in strong turbulent thermals, maximum damping seemed to work the best and allow good response to the indicators and removed the windshield wiper effect of the display.

The toggle switch at the 9 o'clock position on the control unit (easy access for left hand, it's not doing anything for right handed fliers) selects the aural output of either the vario or speed-to-fly. When thermaling, select the vario option for an audio vario, when cruising, select speed-to-fly for an audio speed-to-fly tone. I select speed-to-fly when leaving a thermal and then reselect audio vario when completing that first turn into the next thermal.

The toggle switch at the 2 o'clock position to set the computer for the wet (water loaded) or dry condition of the aircraft.

The last item is the McCready selector located at the 3 o'clock position on the control unit. A rotating switch to select the McCready value desired for the expected climb rate of the next thermal. Changing the setting is the same as rotating a speed-to-fly ring on a conventional mechanical vario. The switch positions are set to meters per second. For those of us that are used to variometers calibrated in knots, use a factor of 2. Two (2) m/s is equal to four (4) knots, so if you want to set a McCready value of 4 knots, then set the switch to 2.0m/s, 5 knots would be a switch position of 2.5m/s

Speed to Fly Indicator A-2

The expected rate of climb in the next thermal should be set using the McCready switch. The following settings are possible:

m/s	ft/m	kts
0	0	0
.5	100	1
1.0	200	2
1.5	300	3
2.0	400	4
2.5	500	5
3.0	600	6
4.0	800	8
5.0	1000	10

Experiment with the McCready setting and on a straight ahead glide, the speed-to-fly indicator will change with each value of McCready selected. The speed-to-fly will request speeds in excess of Va or below stall, be careful on turbulent days of blindly following the speed-to-fly to increased speeds or below stall.