October, 1956.

CF-105 INSTRUMENTATION - ISSUE 7

STRUCTURAL INTEGRITY

Changes from Issue 5 are indicated by a vertical line in the margin.

Structural Strain Gauges. (Ref. Letter 3770/22/J)

Figs. 1 to 4 show the approximate positions of 52 channels of strain gauges to be installed in aircraft 1, 2 and 3:-

Fig. 1 -	One channel on each strut at stations 485, 591, 644 and 697	
	10 Channels on frame at Station 697	18
Fig. 2 -	6 Channels on lower longeron	6
Fig, 3 -	12 Channels on inner wing	
	4 Channels on aft box	16
Fig, 4	12 Channels on fin	12
	Total number of Channels	52

The frequency of sampling in each channel is provisionally 5/sec.

Strain gauges are not to be placed close to joints, doublers, rivet holes or bolts.

Final position of all strain gauges to be approved by F.P. Mitchell, Chief Stress Engineer.

Vibration Pick-Up Accelerometers (to be installed in aircraft 1 & 2 only)

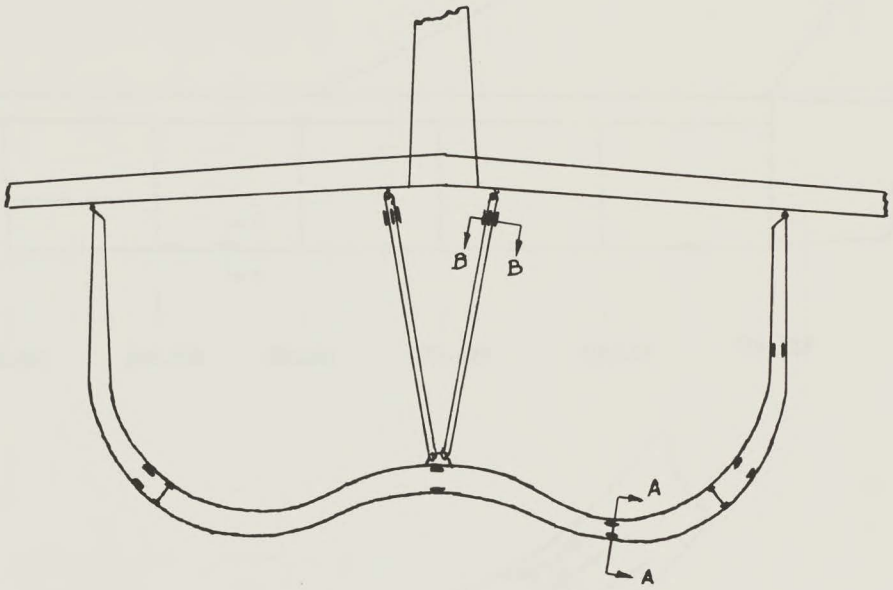
Figure 5 shows the approximate location of 57 vibration pick-up accelerometers; the precise location is to be obtained from J. McKillop of the Aerodynamics Department. The required range is -10 to +10 g with an accuracy of $\pm$ 0.25 g, and the instruments should be capable of recording frequencies up to 60 cycles/sec.

Airborne continuous trace recording of all accelerometers is required and telemetering of each should be possible (but not simultaneously). During normal flight testing, telemetering of only two accelerometers will be required, and then only if control surface characteristics are being telemetered for the stability programme; if this is not being done then the telemetering of two accelerometers only will provide no useful information and may be dispensed with.

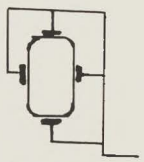
During a specific flutter programme, the requirement for telemetry of accelerometers may be greater, the number required being dependent on the availability of telemetry channels.

C/S FRAME & STRUTS AT STATION 697

ALSO STRAIN GAUGE STRUTS AT STATIONS - 485, 591, & 644



SECTION A-A

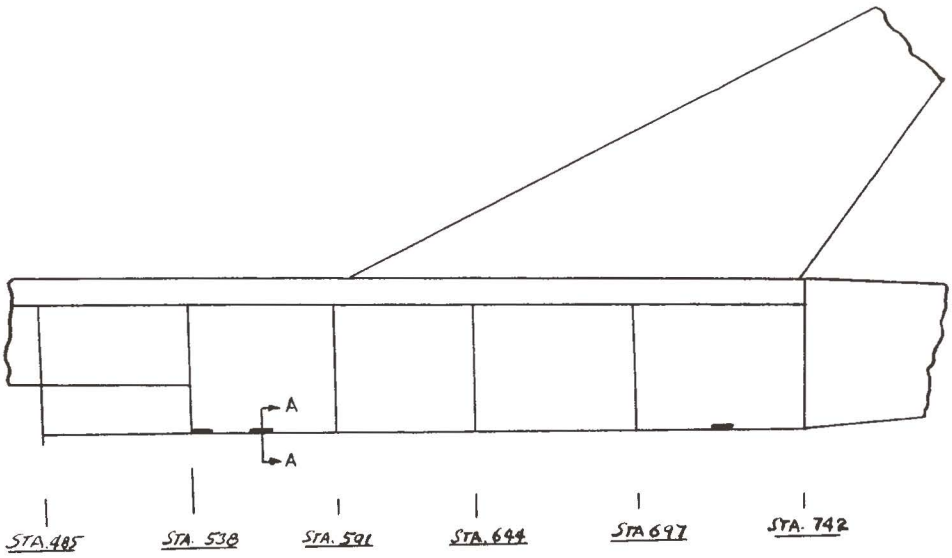


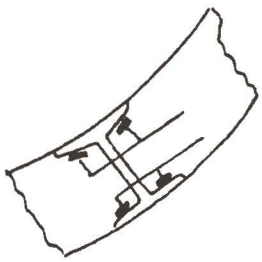
SECTION B-B

NUMBER OF CHANNELS ON FRAME - 10

TOTAL NUMBER OF CHANNELS ON STRUTS - 8

FIG. 1



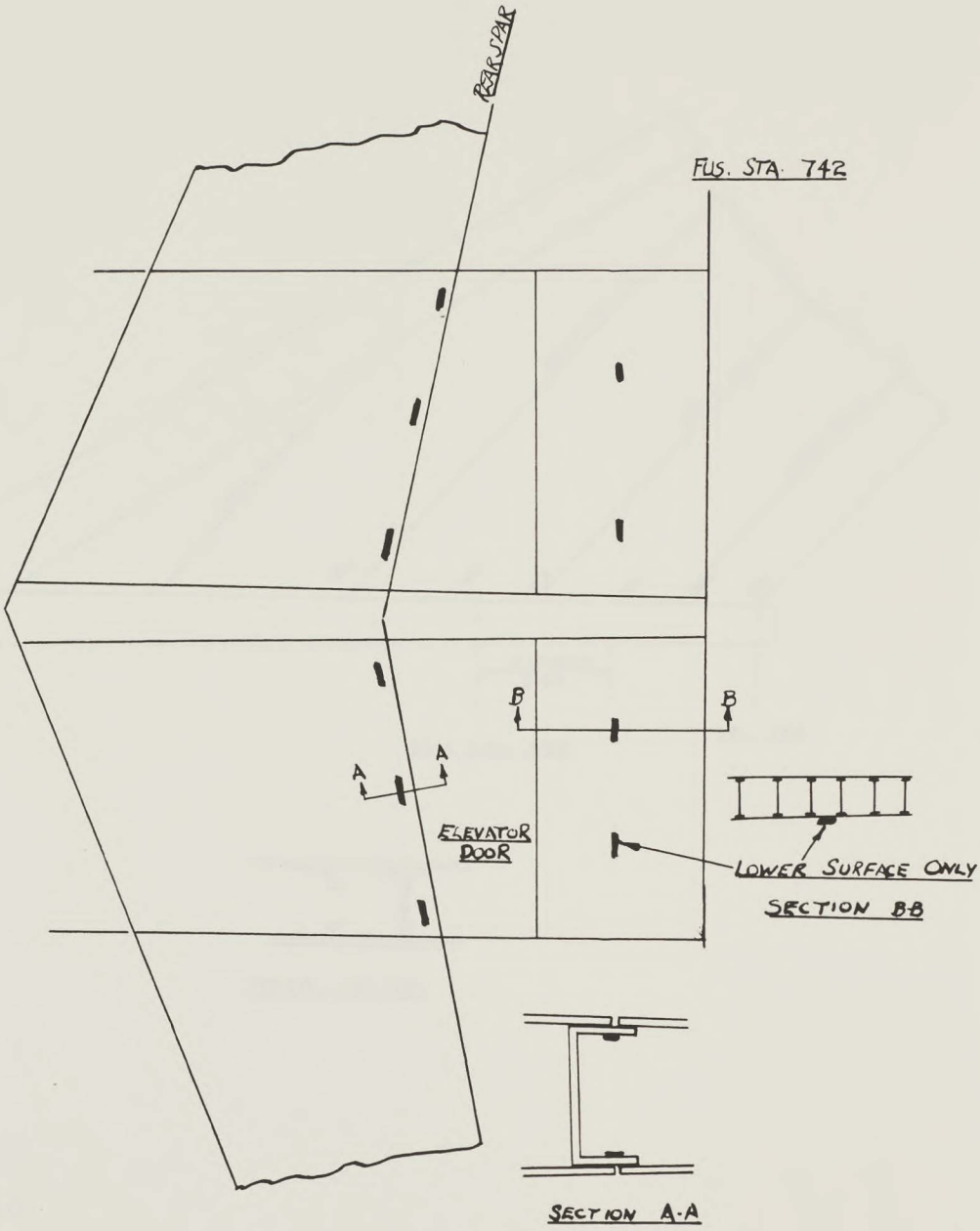


SECTION A-A

LOWER LONGERON - ONE SIDE ONLY

NUMBER OF CHANNELS - 6

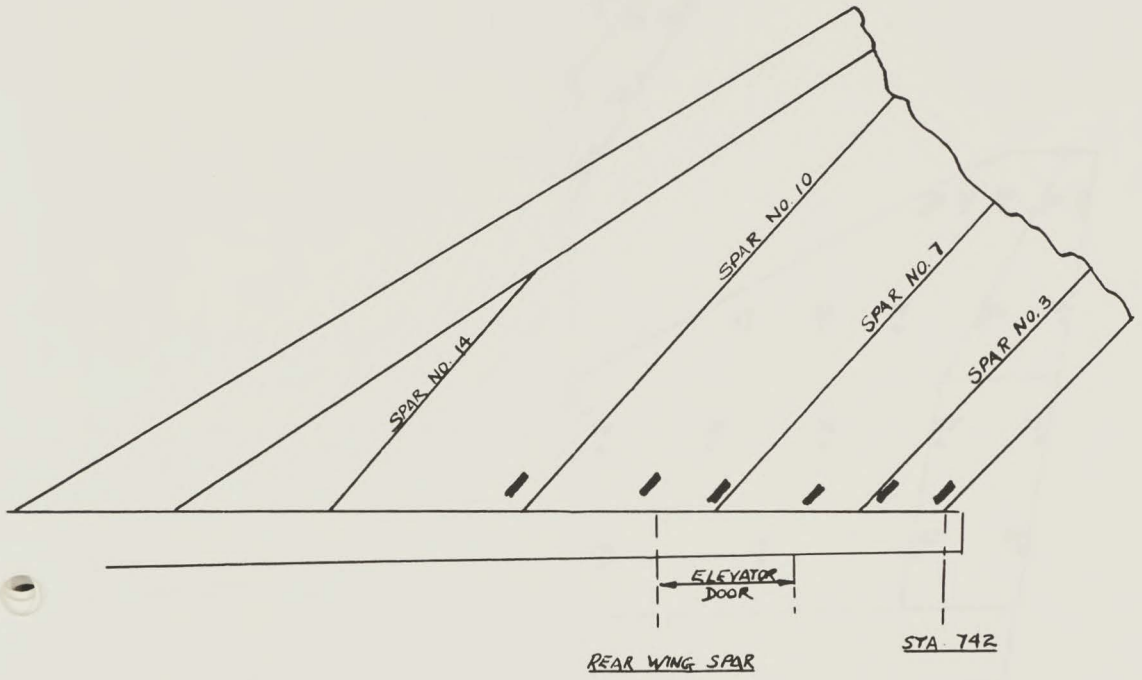
FIG. 2

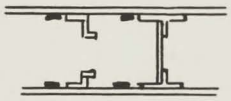


INNER WING & AFT BOX

TOTAL NUMBER OF CHANNELS - 16

FIG. 3



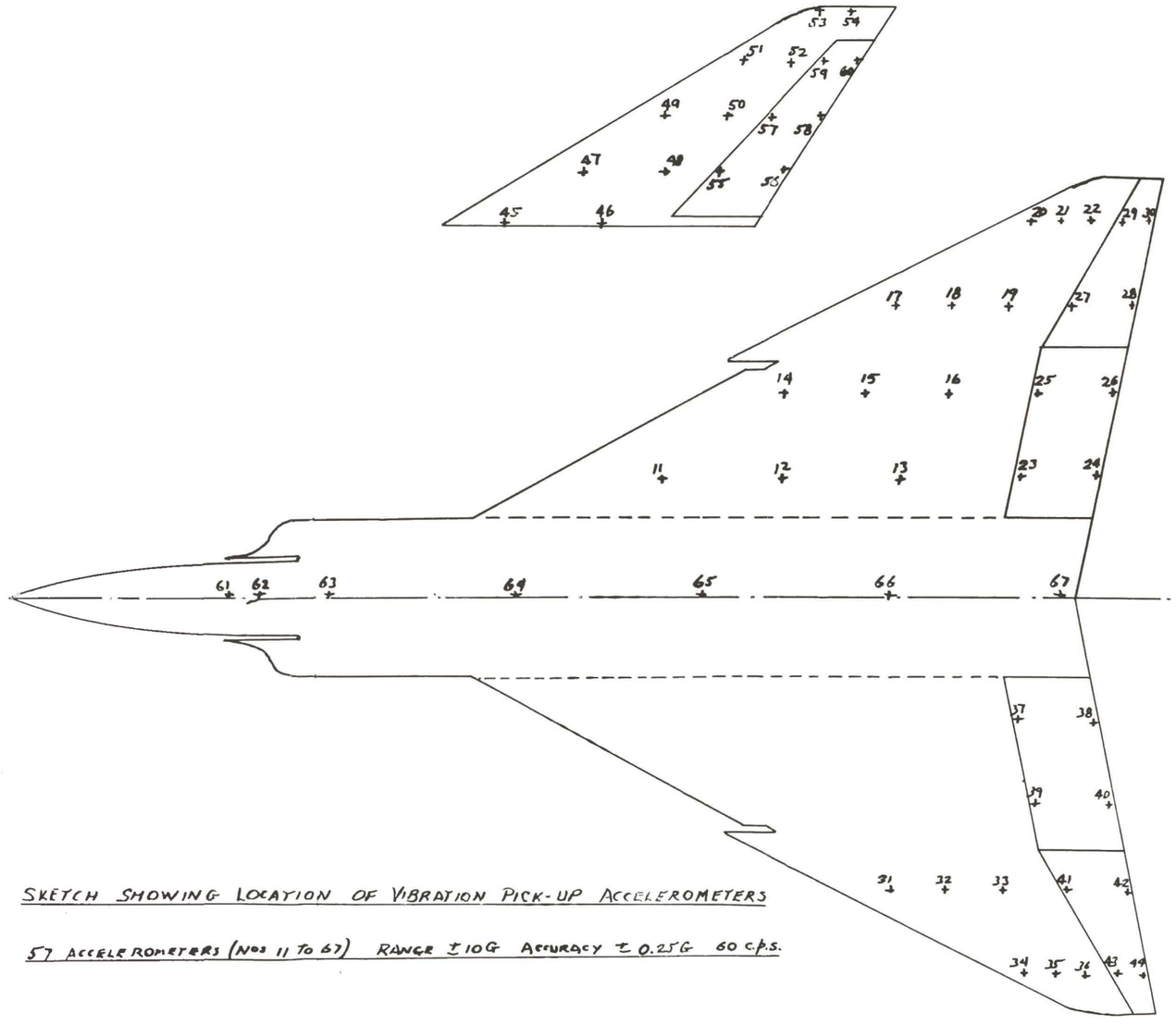


TYPICAL SECTION

FIN

NUMBER OF CHANNELS - 12

FIG. 4



SKETCH SHOWING LOCATION OF VIBRATION PICK-UP ACCELEROMETERS

57 ACCELEROMETERS (NOS 11 TO 67) RANGE ±10G ACCURACY ± 0.25G 60 C.P.S.

FIG. 5