ATTACHMENT 23

AIRWORTHINESS GROUP CHAIRMAN'S FACTUAL REPORT

LAX-02-GA-201

B3.0 MODEL C-130A CENTER WING LOWER SURFACE WS 61

During hydrostatic fatigue test of the model C-130A fuselage, the catastrophic failure of the wing occurred at 13,203 cycles at an applied wing upbending moment of 16.0×10^6 in.lb. at WS 61 (16.0/25.6 = 62.5 percent of limit design moment). The lower surface of the center wing failed in tension at BL 59 and the failure extended from FS 517R to FS 597R (from front beam to rear beam). (See Figures 4.360 and 4.361, ER 1735).

The inspection of the failed wing showed a large number of fatigue crack indications in the vicinity of the lower surface at WS 61 left and 61 right. The largest concentration of cracks were in the lower surface skin panels adjacent to the front and rear beam.

The USAF C-130A fleet is approaching an average of 11,000 flight hours with a high time aircraft having 16,000 flight hours. Analysis shows that at ultimate load the calculated tension stress at WS 61 lower surface is 54.3 ksi (54.3/1.5 = 36.2 ksi at limit load). In view of this relatively high operating stress level and accumulated flight hours in C-130A fleet, it is recommended that the C-130A fleet be inspected for cracks in the vicinity of WS 61 center wing lower surface. The recommended inspection intervals are:

Initial: 12,000
Recurring: 2,500

Inspection procedures for this area are shown as inspection items CW2 thru CW4 in Section IV of TO 1C-130A-36. (Technical Manual Non Destructive Inspection Procedures USAF Series C-130A Airplanes). This procedure suggests that in order to maintain the integrity of the wing, it must be supported in neutral stress position prior to removal of attaching bolts. In order to enhance the chances of detection of existence of a crack, it is recommended that the wing be jacked so as to have tension in the lower surface. The jacking procedure to be used for the inspection of the lower surface is shown in TO 1C-130A-3 (Figure 2.3, Change 14, dated 15 Jan 1973). The amount of the required jacking is shown on the following page.

B3.0 MODEL C-130A CENTER WING LOWER SURFACE WS 61 (cont'd)

STRUCTURAL CONFIGURATION	JACKING LOCATION WS 220	JACKING LOCATION WS 589
Center Wing	0.06	-
Center Wing + Outer Wing (No outb'd or inb'd nacelles)	0.40 ± 0.10	4.0 ± 0.20
Center Wing + Outer Wing + Inb'd and Outb'd nacelles	0.80 ± 0.10	8.0 ± 0.20
Center Wing + Outer Wing + Inb'd Nacelle Only	0.50 ± 0.10	5.0 ± 0.20
Center Wing + Outer Wing + Outb'd Nacelle Only	0.65 ± 0.10	6.70 ± 0.20

LOCKHEED AIRCRAFT CORPORATION
GEORGIA DIVISION

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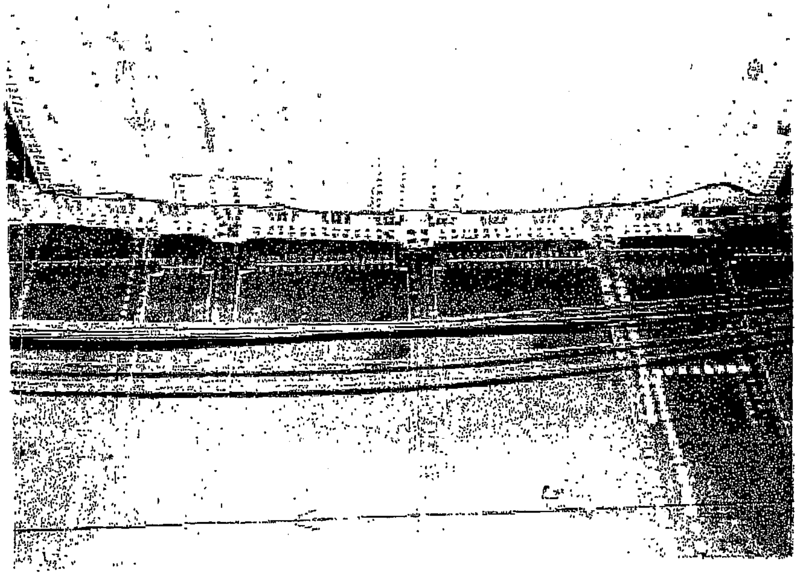

[illegible] 51-3

Figure 4.36[illegible] - View looking up, center wing section, [illegible] 17 - [illegible] 51in. Broken skin panels and stringers

[illegible] 366[illegible]-7

Figure 4.361 - View looking aft [illegible] center wing section Failure [illegible] cycles

FORM 415-B 4 - Georgia Division