# ATTACHMENT 22

## AIRWORTHINESS GROUP CHAIRMAN'S FACTUAL REPORT

## LAX-02-GA-201

## 5.4 SERVICE LIFE DERIVATION

### 5.4.1 C-130A

Center Wing

The center wing on the C-130A series aircraft has seven (7) locations that were considered in this analysis. These seven locations are located on four structural parts on the center wing (the upper aft spar cap, the upper forward spar cap, the upper surface skin panels, and the lower surface skin panels). The equations① used to sum the total number of cracks expected on each of these structural parts are as follows:

① Upper forward spar cap = (CWS 61)

② Upper aft spar cap = (CWS 20) + .464 (CWS 61)

③ Upper skin panels = (CWS 192) + .500 (CWS 214)

④ Lower skin panels = (CWS 180) + .500 (CWS 61)

The results of these summations are shown in Figure 5.6 for each of the four structural parts. The combined average for the center wing is shown also. From this curve the Service Life Endurance Point and the Structural Action Point are defined as 19,384 and 11,910 flight hours respectively.

Outer Wing

The outer wing on the C-130A series aircraft has nine locations that were considered in this analysis. These are located on three structural components on the outer wing, the upper surface skin panels, the lower surface skin panels, and the lower forward spar cap. The equations① used to sum the total number of cracks predicted on each of the structural components are as follows:

① Equations derived using in-service crack experience (Ref pg 5.16)

FIGURE 5.6
C-130A CENTER WING
CUMULATIVE PERCENT CRACKS PREDICTED