RUGGED STARLIFTER: FATIGUE-RESISTANT, FAIL-SAFE

The design philosophy of the C-141, fan-jet cargo-troop carrier and commercial airfreighter which flies later this year, calls for the highest level of structural integrity, Lockheed-Georgia Company engineers say. The plane will meet fatigue-resistant qualifications of the U. S. Air Force plus the fail-safe qualifications of the Federal Aviation Agency. The airframe will be certified fail-safe for pressurization and flight loads combined. Four main forged rings, among the largest ever built, will carry wing and landing gear loads into the fuselage. The wing and horizontal stabilizer are two-spar box beam construction. The vertical fin structure consists of three main beams, skin and stringers forming a two-cell structural torque box to carry loads from the T-tail into the fuselage. The C-141's response to a wide variety of gust, maneuver and flutter conditions was established by comprehensive computer analysis backed by elaborate low and high speed wind tunnel tests. The proven-reliable structural configuration and special attention to detail design assures the C-141 a service life goal of 30,000 flight hours, 12,000 landings and 20,000 pressure cycles, Lockheed says. The Air Force Systems Command's Aeronautical Systems Division, is directing acquisition of the C-141 for use by the Military Air Transport Service.

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