



Mr. Robert "Bob" J. Burt

Lockheed Martin Aeronautics (Retired)

Bob's first assignment upon hiring into the Fort Worth Division of General Dynamics was assisting in developing the original Loads, Environment and Spectra Survey program for the F-16 aircraft. He was immediately introduced to MIL-STD-1530 and the five pillars of ASIP. Upon retiring in August of this year Bob has spent his entire career in the various structures disciplines supporting the ASIP; including design loads analysis, stress analysis, fatigue and fracture analyses, material

allowable development, static and durability test planning and execution, structural flight test planning and execution, finite element analysis and test correlation, structural dynamics, acoustic and vibration analysis and structural certification planning.

Bob was a stress analyst on the F-111 program when he first met Bill Sutherland and Dr. Jack Lincoln, concerning fatigue failures in compression structures, occurring during cold proof testing the aircraft at design limit load while at -40 degrees Fahrenheit. Bob performed stress analysis on the EF-111A Pave Tack installation which was later used extensively during the air attack on Libya in 1986. During the period when Bob was the F-111 lead stress analyst, the team accomplished the required carriage strength analysis for delivery of the "bunker buster" weapon and performed residual strength analyses to allow an F-111 to safely ferry from the UK back to the US with failed primary airframe structure. In 1994 Bob monitored a number of strain gauges on an EF-111A which had a buckled carry through box front spar during successful cold proof testing at McClellan Air Force Base in Sacramento, California. During the late 1990s under Bob's direction a team of structure engineers developed a new F-111C aircraft level coarse grid finite element model which was solved and correlated to test data for the Royal Australian Air Force.

During the late 1980s Bob was the lead structures engineer supporting the development of the General Dynamics Antenna Test Facility at Meridian, Texas. These tasks involved the structural analysis, structural testing and manufacturing of an 80 foot long large pylon support system capable of testing full scale aircraft concepts. Large precision gearboxes were developed and tested in order to pitch and yaw full scale aircraft concepts at the very top of the pylon support system. Also during this time Bob was the lead structures engineer

supervising the strength analyses for wind tunnel and radar models to be tested at various facilities across the US.

Bob spent two years on the A-12 program as a lead structures engineer in charge of strength and fatigue analysis of the engine mounts, all in flight operating doors, (i.e., the strike weapons bay doors, landing gear and arresting hook doors, self-protect bay doors and more), the arresting hook and spin chute installations, the external pylon and various armament installations. He was also tasked with the development of a fire suppression system which required extensive structural testing due to the impulsive high pressure release of the suppression gases. After the A-12 program he was assigned to the F-16 program as the lead stress analyst in charge of stress analysis and reports for the Taiwan Block 20 aircraft. Bob was in charge of a team of structures engineers that developed and correlated all of the fine grid finite element analysis for the F-16 Falcon UP program. He also led the test plan and execution of a series of strain surveys on a modified F-16 Block 40 which were used to correlate the analytical predictions.

As the chief structures engineer, Bob executed and developed the F-16 ASIP program which included the development and correlation of new aircraft level finite element models and the development and correlation of fine grid finite element models for primary structure, such as the wing carry through bulkheads, the fuel shelf joints in these bulkheads, the vertical tail support bulkheads and eventually the main and nose landing gears and airframe support structures for the landing gears. During this time the team executed the FMS Block 52 program where the conformal fuel tanks were successfully added to the F-16 aircraft. This involved drawing sign-out for the aircraft back-up structure as well as oversight to the vendor designing and building the tanks and a flight test program to verify the applied loads. A strain survey was performed on a Block 52 F-16 which correlated and validated the analytical finite element predictions.

For the past 12 years Bob has been directing the technical, cost and schedule for the structures, structures design, mechanical design and materials and processes tasks associated to the development of the F-35A, B and C Joint Strike Fighter program. Under Bob's direction a robust corrosion control plan has been developed and is implemented, static testing on all three aircraft type version has been completed and durability testing for all three type versions have successfully completed 16,000 hours of maneuver and buffet testing.

After receiving his BS degree in Aeronautical Engineering in 1979 from the State University of New York at Buffalo, Bob earned his MS degree in Engineering Mechanics from the University of Texas at Arlington in 1983. Bob has earned multiple Special Recognition Awards, multiple Aero Star awards, a Nova Award and the President's Award during his

career at LM Aeronautics. Bob is an avid student and researcher in the history of airplane structures, design and testing. He and his college sweetheart Vicki have been married for 38 years and have a grown son, a grown daughter and one granddaughter.