Wilde

Wilde Analysis at WFEL – Tactical Military Bridging

Wilde has worked with WFEL, a world leader in tactical military bridges, for a number of years, with engineer Greg Roney on permanent secondment since 1996. Other specialists from within the Wilde team are drafted in to WFEL as their business needs dictate.

Company

WFEL has supplied 39 armed forces across the world for over four decades. Greg Roney is responsible for all technical aspects of the organisation's products including modular bridging, such as the Medium Girder Bridge, Dry Support Bridge and other special products.

Challenge

WFEL was recently invited to design a demountable structure for use during the testing of the Short Take Off variant of the Joint Strike Fighter - F35B.

Fig 1: Demountable ski-jump structure (Courtesy: WFEL Ltd)

Solution

A two-man team was employed to work alongside the designers to provide technical support. Needs were met through structural analysis involving extensive finite element modelling, using both static and dynamic techniques.

> “We have been very happy with the way the project has been run and all time milestones have been achieved throughout the process.
> JSF Integrated Test Force

Fig 2: Testing with Static Loading (Courtesy: WFEL Ltd)

Greg and his colleague, Shakeel Chaudry, produced models and performed analysis to ensure the structure's integrity under the worst loading conditions; from both aircraft and environment.

This design work was initially presented through extensive reporting, subsequently followed by a full design review at the US Naval Airbase where the structure will be located. The review also addressed the proposed manufacturing methodology and a costing exercise, prior to developing a budgetary quote for production.

Business Benefits

WFEL successfully won the bid and was awarded the contract to manufacture the Ski Jump. Greg was heavily involved with the structural testing of all major components, writing of the test specifications, undertaking the tests and report writing. Once all of the components were manufactured and individually tested, the complete structure was erected.

Once built, the structure was loaded in many different positions. The testing successfully demonstrated that the structure is capable of withstanding all loads generated by the aircraft. The client (JSF Integrated Test Force) visited from the USA to witness the building and testing of their new hardware.