

Cost effective flight testing and certification in a small but ambitious Air Force

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The motto of the Royal Netherlands Air Force (RNLAf) is “Parvus numero - Magnus merito” meaning “Small in number - Great in merit”. This motto implies that it’s the ambition of the RNLAf to incorporate new developments and modifications on their aircraft in a cost and time effective manner. The introduction of the Military Airworthiness Regulations (MAR-21) in the past decade marks the beginning of a new era. In order to support several F-16 certification programmes the RNLAf has a small and efficient Flight Test Organization (FTO), which operates an instrumented F-16BM test aircraft, called the “Orange Jumper”.

- From the design of the instrumentation system, strict configuration control rules were applied. This enabled the team to complete the modification of the aircraft and the airworthiness certification as scheduled, and produce a complete certification data package and maintenance procedures. The result is a state of the art test aircraft, which fully maintains its operational capabilities. When not participating in a test programme, the test aircraft is operated by 323 Sqn by regular pilots and maintenance personnel.
- The flight test team consists of a small number of people from the air staff, DMO, Air Base Leeuwarden and NLR. Within the preparation and execution of flight test programmes this team closely cooperates with the Military Airworthiness Authority (MAA) in the approval of the design changes and flight test plans. Within this group, consisting out of approximately 10 people, each member has its own task, responsibility and clear mandate. Resulting in a quick, safe and efficient decision making process. Using this methodology the team was able to cooperate successfully with the USAF Seek Eagle Office in several joint test programmes.
- The multidisciplinary team is able to discuss all new test requirements with an open mind. At the same time the team is very much aware of the risks, technical and financial boundaries of a programme. For instance, “flight envelope expansion” for the F-16 will not be considered. But certification of new stores within the F-16 flight envelope has been demonstrated numerous times and sometimes surprising results were found in an already cleared flight envelope.

This paper will:

- describe the introduction of airworthiness regulations in the RNLAf
- describe the F-16 flight test organization (FTO) in the RNLAf
- describe, as an example, the certification process of the RecceLite system for the RNLAf

This paper will present you a methodology how a small air force is able to realise its ambitious goals in a cost effective way and fulfill its long term mission:

“Flight test and certification programmes within the Royal Netherlands Air Force (RNLAf) are primarily intended to support the RNLAf main objective: safe and cost effective Air Power”.