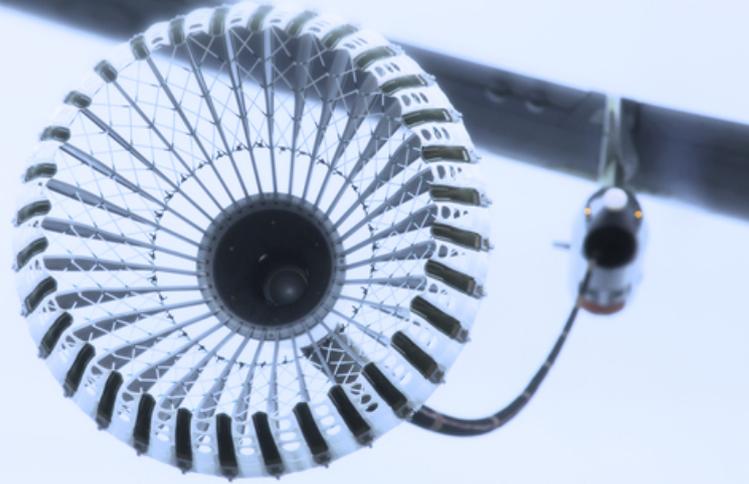


AIR-TO-AIR REFUELLING CONFERENCE IN EUROPE

Brussels 17 October 2019



AIR-TO-AIR REFUELLING (AAR) CONFERENCE PAPER 2019

“A tanker without a clearance, is not a tanker”

INTRODUCTION

Air-to-Air Refuelling (AAR) tankers are a force multiplier and critical enabler for the projection of air power. In coalition operations AAR tankers are a pooled asset meaning a tanker from one nation may be required to refuel aircraft from several other nations in the same mission; interoperability is therefore essential for success. During the Air Campaign over Libya in 2011 there were more than 25,000 missions of which approximately 6,000 were AAR tanker sorties. But, there were over 230 technical and political caveats on 15 tanker types and 30 types of receiver aircraft. As a result only 15 out of nearly 50 pairing configurations of tankers and receivers had zero restrictions. This had a direct impact on operational flexibility due to the complex AAR capability matrix that had to be reviewed by AAR planners on a daily basis. The changing security environment demands “day-zero ready forces” which means we need to develop an “interoperable by design” culture.

“Air-to-Air Refuelling is a force multiplier and critical enabler for the projection of air power”

CAPABILITY DEVELOPMENT

Capability Development is not just about buying equipment. It is about making sure we have the trained personnel to operate and maintain it; the infrastructure to support it; and the correct policies and procedures in place to allow us to use it. This requires close cooperation, standardisation and coordination across all the Lines of Development. For AAR this activity is coordinated by a cross-organisational team, known as the Global AAR Strategy (GAS) Team, consisting of representatives from the NATO International Staff Defence Investment (IS-DI), the Joint Air Power Competency Centre (JAPCC) and the European Defence Agency (EDA), which works in close cooperation with the Aerial Refuelling Systems Advisory Group (ARSAG).

AAR CLEARANCES

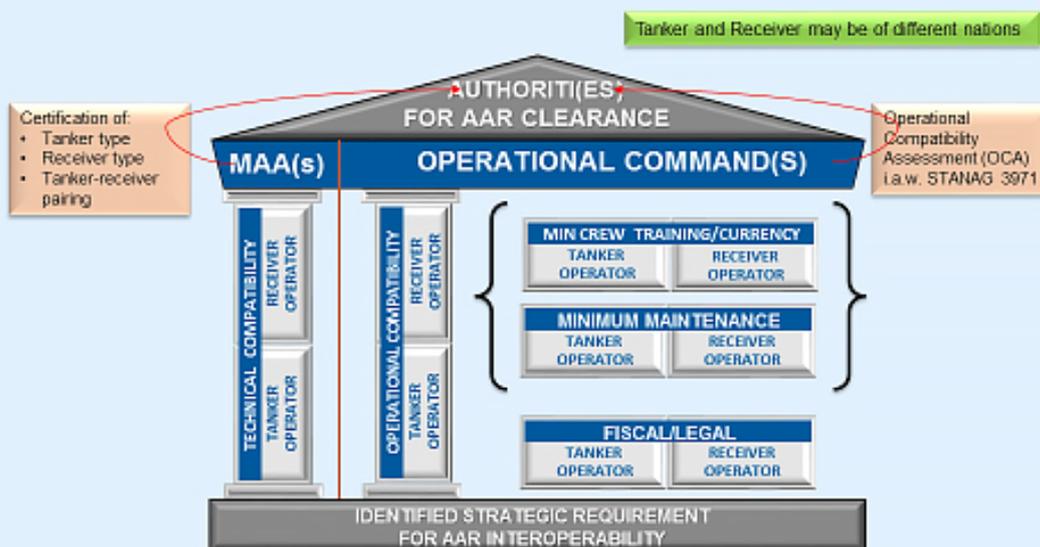
Lessons Identified from recent operations highlighted that the absence of AAR Clearances for pairings of tankers and receivers from different coalition nations hindered operational flexibility. Through the ARSAG Interoperability Panel the GAS Team started to address what became apparent was a highly complex issue. Different nations having different views on how to address the issue resulted in a variety of associated policies and practises that were not necessarily compatible. This led to the development of several food-for-thought papers and the AAR Clearances Standards Related Document (SRD), which has been developed, tested and reviewed through a series of AAR Table Top Exercises. These events have involved national AAR SMEs and AAR planners as well as representatives from flight test centres and regulatory authorities.

“The Technical Compatibility Assessment (TCA) as part of an AAR clearance is an airworthiness issue.”

Both the AAR Tanker and the Receiver are Certified and Qualified in their respective roles. However, in order to conduct AAR operations, an AAR Clearance is also required to allow the AAR Tankers and Receivers to connect whilst airborne. An AAR Clearance should be considered in terms of certification as a pairing rather than an individual aircraft i.e. how they influence one another when connected in flight. This is an **Airworthiness issue** in the same way that mounting external stores is an Airworthiness issue.

The aim is to standardise as much as possible the process for achieving an AAR Clearance. This has enabled cross-recognition of clearance work completed by other nations, thereby reducing the time taken to achieve a clearance. Engagement with industry and platform Original Equipment Manufacturers (OEM) has also allowed many aspects of AAR clearances to be completed before delivery of a new tanker aircraft.

The picture below depicts the full range of requirements for an AAR Clearance.



An AAR Clearance requires the completion of a Technical Compatibility Assessment (TCA) and an Operational Compatibility Assessment (OCA). The TCA is covered by airworthiness and testing personnel; the OCA covers crew competency and maintenance standards, which are the responsibility of national authorities. Overall, as Military Airworthiness Authorities evolve into Military Aviation Authorities (MAA) it should be considered that the OCA process becomes the responsibility of the respective MAA.

CONCLUSION

An AAR Clearance should be considered as a combination of a TCA and an OCA that requires certification as a pairing rather than an individual aircraft i.e. how they influence one another when connected in flight. The TCA is an **Airworthiness issue** in the same way that mounting external stores is an Airworthiness issue. The aim of this paper is therefore achieve a common understanding and to gain acceptance by National MAAs that an AAR Clearance is an Airworthiness issue. The upcoming AAR conference on 17 Oct 2019 in the premises of EUROCONTROL in Brussels, is an excellent opportunity to exchange views and ideas on this topic. AAR clearances will be discussed from the perspective of a military authority as well as from the operational view, with additional input from industry (OEMs).

“The importance of interoperability by design cannot be over emphasised.”