

Chapter 1 – TERMS OF REFERENCE

1.1 ORIGIN

1.1.1 Background

Corrosion of military platforms or their components is an enormous matter for all NATO countries, that affects both economic and safety issues. Nevertheless prevention and corrective procedures seems too often to be designed from the single Nations, developing their own maintenance procedures even when they are operating common platforms.

In the nineties, the Tri-national (RAF, GAF and IAF) Tornado Corrosion Working Group (WG) had been operating for six years to make up and fix the lack of common management standard procedures on this fleet, up to budgetary constraints caused the ending of the WG. The results of this experience were found of a basic importance for each of the Air Forces involved in promoting the introduction of a corrosion control register based on common principles. Furthermore, these results were considered as fundamentals to assess aging effects and to support the Tornado IDS Mid Life Fatigue Package.

Taking into account the many common or very similar platforms operated by all NATO countries, an information exchange based on the experience and expertise developed along the following years in each country was considered would be useful in helping NATO Nations to gain background information on the most effective maintenance procedures.

1.1.2 Justification (Relevance for NATO)

Reduction of military budget is a general trend common to all the NATO countries that slows down the introduction of new platforms, building the need to operate increasingly aging platforms. Taking into consideration the exacerbating effect of aging on corrosion phenomena, the task of enhancing the standard of readiness and worthiness justified the creation of a NATO TG focused on the evaluation of the most adequate maintenance procedures.

A Task Group was needed to:

- 1) Evaluate case histories and maintenance data availability on the most diffused vehicles among NATO countries prone to aging;
- 2) To share the national experiences and expertise; and
- 3) To assess common approaches to failure analysis.

1.2 EXPLORATORY ACTIVITY

Exploratory Team AVT-061 ran during 2004 AVT Spring and Fall Meetings.

The participating Nations were: CAN, DEU, GBR, ITA, NLD and USA.

Each participating Nation in the Task Group gave at least one briefing on the national willing on the matter, supporting the proposal of the TG TAP and ToR.

1.3 CONGRESSIONAL ACTIVITY

A speech was given by the Chair at the 2nd World Congress on Corrosion in the military, held in Naples, Italy, on September 2007:

Title: NATO Efforts on Corrosion and Maintenance Data Sharing – *RTO AVT-137 Task Group*

Abstract: Corrosion of military platforms is a huge matter for all NATO countries that affects both economic and safety issues, especially when associated to the continuous trend in budgetary reductions that exacerbates the effects of aging. Nevertheless, prevention and corrective procedures seems too often to be designed from the single Nations, developing their own maintenance procedures even when they are operating common platforms.

In 2006 a Task Group within the Applied Vehicle Technology Panel of NATO – Research and Technology Organisation was originated in order to share, among the experts of that community, information about the policies adopted by the different countries and to promote an effective debate on the effectiveness of the solutions introduced.

Main objective of the TG, called to operate on the base of a 3 years activity, is to identify the NATO needs and develop a plan for information exchange in agreement with the general requirement for devising common approaches to corrosion prevention and maintenance procedures used on military vehicles.

In this context the TG, moving from the evaluation of case histories and maintenance data availability on the most diffused vehicles among NATO countries prone to aging, is working on tasks.

This paper presents the architecture of the activity as well as the main up-to-date achievements.

1.4 OBJECTIVES

The TG was established to identify the NATO needs and to develop a plan for information exchange in agreement with the general requirement for devising common approaches to corrosion prevention and maintenance procedures used on military vehicles.

The TG set up the following goals:

- 1) Develop a mechanism for corrosion maintenance data information exchange on selected commonly held platforms;
- 2) Measure the efficacy of the various NATO Nation procedures (including coatings, CPCs, dehumidification, etc.) and identify a common best practice approach for corrosion prevention and maintenance procedures for use on common military vehicles; and
- 3) Develop an understanding for a common failure analysis approach.

This final report has been prospected as a review of the corrosion maintenance practices used on selected common platforms in NATO countries, containing best advice on best practice and recommending the most effective solutions to be adopted.