

**ASSOCIATION EUROPEENNE  
DES CONSTRUCTEURS  
DE MATERIEL AEROSPATIAL**

**Guide sur l'Echange des Données  
de Fiabilité  
dans le Domaine Militaire**

**Reliability Military  
Data Exchange Guide**

**Richtlinie für den Austausch  
von Zuverlässigkeitsdaten  
über militärisches Luftfahrtgerät**

**RECOMMANDATION N° DEC/77/7461**

## PREFACE/PREFACE/VORBEMERKUNG

Cette recommandation relative à l'échange des données de fiabilité dans le domaine militaire constitue un guide; elle n'est pas obligatoire. Elle ne concerne que l'échange des données de fiabilité à caractère technique.

This recommendation on Reliability Military Data Exchange is a guide and is not mandatory. It only relates to the exchange of technical reliability information.

Diese Richtlinie für den Austausch von Zuverlässigkeitsdaten über militärisches Luftfahrtgerät ist eine Empfehlung und somit nicht verbindlich. Sie bezieht sich nur auf den Austausch von technischen Zuverlässigkeitsinformationen.

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## 1. Introduction

AECMA has already issued recommendation no. DEC/74/3217 "Guide for data exchange between aviation industry and airlines" which aims at a uniform definition of parameters that are to serve as a basis for data exchange programs between civil aircraft users and aircraft manufacturers.

A considerable portion of the basic data used for the preparation of reliability and maintainability figures is also obtained from the operation of military aircraft.

This present recommendation therefore is intended to provide a similar basis for the exchange of this data in the military field. However, it is intended that any national security requirements should not be contravened.

When monitoring the performance of equipment in service, numerical data can be used to compare the in-service reliability of aircraft, systems and components with targets established in the design stage. Where the comparison is adverse, engineering data is used as a guide in determining why this situation exists in order that corrective action can be taken. Similarly, the reliability performance of one aircraft type with a number of individual operators may be compared, and relative successes and failures can be investigated, to the mutual benefit of all operators of that type.

In the longer term, design input data for new types of aircraft, engines and equipment is required to improve reliability on a quantitative basis. Numerical data will be used to establish reliability targets with more confidence than has been possible in the past, and engineering data identifies the effectiveness or otherwise of detail design features.

## 2. Scope

Based upon the preparation of recommendations for data exchange between the aviation industry and air transport companies, this paper specifies a standard to be applied to data exchange between military operators, i.e. airforces and their prime contractors. Although this paper specifies a standard which may be generally applied, it is expected that the detailed list of data parameters to be reported in the context of a particular operator, manufacturer and aircraft type would be the subject of negotiation in each individual case.

Moreover, this study is to give information on the availability of such data with a number of Air Forces of countries of the Western Europe.

## 3. Data

The data which is taken into consideration is divided into the following five groups:

- Group 1: Aircraft utilization data
  - Group 2: Numerical data relating to reliability
  - Group 3: Air safety data
  - Group 4: Engineering data
  - Group 5: Workshop data
- (see Annex 1)

The terms used to describe the data elements are defined in annex 3. These definitions are taken from the Airline industry standard "World Airlines Technical Operations Glossary" (WATOG) issue 7, published by ATA, IATA, and ICCAIA.

### 3.1 Aircraft Utilisation Data

This data groups all information relative to the activity of a fleet during a reporting period. It is needed for determining age distribution, and for calculating the relevant rates from information contained in data group 3 to 5.

### 3.2 Numerical Data relating to Reliability

This numerical data allows the assessments of reliability and of the intrinsic availability of aircraft, engines and components. It is given in form of rates or factors, so that these data elements can be used independently of the Utilisation Data listed in group 1.

### 3.3 Air Safety Data

This data is used in safety assessments, from information collected following accidents and incidents, in order to initiate remedial action, and to advise other operators of potential safety hazards.

### 3.4 Engineering Data

This data permits identification of symptom, circumstance and effect of a technical occurrence, using parameters which are generally known at the time of occurrence. The data enables reliability parameters to be computed in more detail.

### 3.5 Workshop Data

This data is needed by design organisations, as a technical follow-up to Group 4, Engineering Data, in order to identify cause and effect, and to assist engineering action.

## 4. Availability of data

Most airforces have introduced some kind of operational data acquisition systems, from which relevant data can be extracted.

Following an AECMA investigation shown in Annex 2 it can be seen that most of the recommended data elements are in existence in most of the Airforce systems.

Consequently it is concluded, that the data elements recommended by this paper can be made available.

## 5. Data flow

The data of groups 1 to 4 will normally be supplied by the operator to the prime contractor. The relevant parts of this total data will be forwarded to equipment suppliers by the prime contractor. The data of group 5 will be supplied by the repair facility to the prime contractor, who will forward it as appropriate, to the operator (if it originates from the equipment supplier) or to the supplier (if it originates from the operator) or to both parties (if an outside repair facility is used).

There will also be a direct interchange of data between operator and equipment supplier whenever circumstances suggest that this is desirable, but in this case, the prime contractor should be informed that this has occurred.