



ESDU 04017

Issued June 2004

Issue 2 November 2010

Fatigue – Endurance Data

Series organisation:

preface

amendment record

ESDU Copyright material. For current status contact ESDU.

FATIGUE – ENDURANCE DATA SERIES ORGANISATION

CONTENTS

	Page
1. PREFACE TO FATIGUE – ENDURANCE DATA SERIES	1
2. AMENDMENT RECORD FOR FATIGUE – ENDURANCE DATA SERIES	3

FATIGUE – ENDURANCE DATA SERIES ORGANISATION

1. PREFACE TO FATIGUE – ENDURANCE DATA SERIES

The design engineer concerned with aircraft and their equipment faces an ever-increasing demand for products with a performance that must be substantiated under stringent conditions of cost and environment. Assuming the basic skill of the designer, no other single factor can contribute more to the economic preparation of a satisfactory, competitive engineering design than having to hand good reliable design data.

Data concerning fatigue of aerospace structures are widely scattered and, when located, are of variable quality and relevance to industrial applications. The task of collecting and evaluating all the relevant data available on a particular aspect of aircraft structures is time-consuming and therefore expensive. Even if such a task is performed it is often found that the customer will wish to view the design, not against some locally-derived data, but against what can be demonstrated to be the best data that can be ascertained and that are vouched for by a significant cross-section of the engineering and scientific community concerned with both the derivation and application of data on fatigue. Accordingly, the Fatigue Series has been prepared to meet design requirements with regard to fatigue of aircraft structures for both the designer and his customer and, by serving the needs of many, accomplishes the task at much lower cost and with higher reliability than could the individual.

A qualified staff, with the assistance of many establishments throughout the world in research, industry and academia, collects and evaluates the existing data. The staff discards that which is irrelevant or unreliable, correlating and distilling what remains into an authoritative working tool for engineering application. Throughout, the work of the staff is guided and monitored by an expert group and ad hoc working parties. This Series on fatigue of aerospace structures is prepared under the guidance of the Fatigue Committee which first met in 1955 and now has the following constitution:

Chairman

Dr S. Spence – BAE Systems, Warton

Members

Mr K.E. Cheverton	– Independent
Dr B. Crawford*	– Defence Science and Technology Organisation, Australia
Mr R.G. Eastin*	– Federal Aviation Administration, USA
Mr D. Furfari*	– Airbus, Germany
Dr C. Harris	– Messier-Dowty Ltd
Professor P.E. Irving	– Cranfield University
Dr M. Miller*	– Boeing Commercial Airplane Company, USA
Dr P.M. Powell	– Independent
Dr S. Reed	– DSTL, Porton Down.

* Corresponding Member

The members of staff of the Engineering Sciences Data Unit concerned are:

Mr A.C. Quilter – Head of Strength Analysis Group

The rate of growth of knowledge of fatigue is rapid. It follows that while the most recent information on a given aspect of fatigue may have considerable value and usefulness it may be subject to some modification in the light of further experience. The Committee has decided that, rather than hold back information of this type, it should be included in the Series in the form of Tentative Items. Such Data Items are distinguished by the inclusion of the word 'Tentative' in the title. Such distinction is not meant to imply that there is doubt

Issue 2 November 2010