

FOCUS ON MAINTENANCE

THE MEMS PROJECT

Maintenance Error Management Systems, MEMS, are being progressively introduced into maintenance organisations in the UK. The CAA declared its policy on such systems in Airworthiness Notice 71, published in March of 2000, giving its wholehearted support to MEMS. In particular the CAA encourages those organisations engaged in maintaining large transport aircraft to adopt these systems with the aim of improving safety and reducing incidents and accidents through maintenance error.

Whenever a maintenance error is discovered, and is considered significant, an investigation is conducted into all the circumstances surrounding the incident to try and discover underlying causes of the error. Because it is the nature of such events, errors are often repeated and it is this characteristic that MEMS seeks to eliminate, as far as practicable. By discovering the underlying causes of errors, steps are taken to try and eliminate the sources of error to avoid reoccurrences. Publicity is given to these events (but not the individuals involved) to staff involved in similar work, together with the reasons found; individuals are encouraged to report incidents themselves and participate in the investigations.

One drawback to the scheme is that, naturally, companies are reluctant to publicise their errors outside of the confines of their organisations. Thus, until now, valuable lessons learned and safety initiatives taken are not, by and large, passed on to other organisations.

A project is underway to overcome this drawback. Following an initiative in November 2000 by the UK Operators Technical Group (UKOTG), supported by the CAA and EIMG, CHIRP, the organisation responsible for the UK civil aviation confidential reporting Programme, has been asked to co-ordinate reports into maintenance error investigations into a centralised database. The objective is to disidentify the reports and then to make the disidentified data available to members of the participating group. In addition, it is proposed to produce a Newsletter periodically, aimed at licensed and non-licensed engineers and mechanics, highlighting some of the reported errors and the measures taken to prevent reoccurrence, together with some limited statistics - the objective is to be interesting, not boring!

Because of the anticipated volume of data likely to become available as more and more companies start MEMS schemes, and to try out some ideas first on a small scale, a Steering Group has been meeting about every quarter to exchange ideas and trial and vet initial outputs. There are representatives from seven organisations involved in maintenance of large transport aircraft together with the CAA and CHIRP. So far, progress has been made on the organisation of the database, reflecting the outputs the maintainers wish to see from the information being made available through the reports. One of the early points to be recognised is that the form of the reports and the investigations must be to the same format. This has been

greatly helped by the common use of the Boeing derived and Goodrich modified MEDA tool (Maintenance Error Decision Aid). Another potential source of difficulty has been the use of differing computer and manual systems to store the data. While it has been agreed that all inputs will eventually be in electronic format, some initial inputs have been in hard copy, in order to build up the database and to see the sort of data being generated. CHIRP has developed its own system for receiving electronically posted data such that most modern systems in use can be accommodated without the sender altering their format. The objective is to ensure that data transmission presents virtually no additional work for the subscribing organisation. Where possible, collection of information and entry into the database will be automated, only the analysis and commentary on the outputs will, it is hoped, require interpretation.

Combined statistics received so far, indicate that a significant source of errors is incorrect installation; more detailed analysis shows complacency and failure to use available information as two significant underlying causes for installation problems. Participants will, in the future, be able to access the disidentified database through a secure website, now in course of development, and be able to do their own searches and analyses.

The proposed Newsletter has been produced in a draft form, again to stimulate discussion and development ideas. It is planned to produce another developed version for limited circulation amongst the intended readership for their reactions and comments, by the third quarter of this year.

Having decided on the initial boundaries of the project, it is again proposed for later this year to start the process of gradually enlarging the Group to the point where all maintenance organisations will be welcome to participate. Others from outside the immediate circle of maintainers are known to be interested in participating, in particular the airframe manufacturers. The extent to which such participation will be invited will be a subject for future discussion and agreement by the Project Group, albeit the intention is to make this valuable safety information source available to the widest possible audience within the Industry.

END

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8/4/2002