The Time Is Now!

Human Factors Training for Aviation Technicians

A recent change by the International Civil Aviation Organization (ICAO) to Annex 6 Part I requires that "The training program established by the maintenance organization shall include training in knowledge and skills related to human performance, including coordination with other maintenance personnel and flight crew."

The impact of this change by ICAO is that within the next year, human factors training for aircraft technicians will become mandatory for all Canadian Approved Maintenance Organizations and JAA 145 organizations. In the United States, the FAA is still deciding how they are going to address this requirement. At the moment, they have filed a difference with ICAO. There are significant differences of opinion in the U.S. over whether this type of training for technicians should be mandatory, the extent of the training, and how it should be provided. In the meantime, aviation authorities in Canada, Europe, and at ICAO are already convinced of the benefits of providing human factors training to aviation technicians and are moving forward.

Benefits of training

A large amount of data is available showing an overwhelming benefit for having a human factors training or maintenance resource management (MRM) training program for aviation technicians. There are reports of 25 to 68 percent reductions of maintenance errors directly attributable to providing human factors training to aviation technicians. Some companies in the industry have been providing their employees with human factors training for the last six years without the regulations in place and have also provided them with multiple recurrency classes.

Other companies have resisted providing such training citing the lack of specific requirement that mandates human factors training. They have missed the whole point. In today's competitive environment, we cannot afford errors - especially human errors, which contribute to 80 percent of our incidents. Preventing one error in our environment is usually the only pay back we need to justify and embrace a good human factors training program.

Compliance measures

There are several ways of complying with this training requirement:

- CD-ROM program

- Pre-defined Presentation packages

- Internet program

CD's, available at $125 to $150 per copy, allow individuals to work through at their own pace and convenience. But, this type of training provides for no interaction with other employees or managers, including the exchange of ideas and personal experiences.

Pre-defined presentation packages (costing from $5500 to $15000) offer the ability for a person to open and use to facilitate a program for a group of technicians. The benefits of this type of program include employee interaction and exchange of ideas. But, the facilitator usually lacks

any special human factors training and is not equipped to provide any training of guidance not already included in the canned presentation package.

There also have been attempts made to provide this training over the Internet. This approach is similar to the CD approach and has the same benefits and problems.

The three methods identified above are available to comply with the new regulation. More is needed, however, to fully embrace the new requirement and position an organization to achieve the maximum benefits from human factors training programs.

Program set-up

Based on my experience, the following approach will provide the most benefits:

- Create a classroom environment to support intensive human factors training.

- Include specific examples tailored to the organization and the type of work the technicians perform.

- Provide information of the causes of human error and then proven safety nets (ways to prevent human errors) that the technicians can implement individually, as a group, and as a part of an organization.

- Expose management at all levels to the training so that they can embrace the behavioral change that has been created after the workshop and prepare for the paradigm shift.

- Use a customized, professionally facilitated program with an instructor who is capable of dealing with issues raised and able to do more than just read the words on an overhead transparency or have them train the in-house facilitators.

Professional facilitators have the knowledge and experience to address in real-time the issues and questions raised by participants and to provide additional examples and anecdotes that can clarify questions. This type of training must be scheduled in advance and requires commitment by management and employees to ensure attendance.

The manager's role

As managers of maintenance organizations, we have a choice to make. We can simply comply with this training requirement because the new regulation says we must, but give it no support. Or, we can look at what benefits this training can provide and embrace this requirement.

The manager's role in supporting human factors training is to listen to the technicians and address their comments and ideas. Determine what can be implemented immediately, what needs to be taken to a higher level, and what may not be appropriate based on the organization and its culture. The technicians will learn about maintenance error prevention and what they can do for themselves, but they will also be introduced to new and improved methods of doing their job.

Human reliability program?

If we support this new training requirement, the attitude change that will take place after the training will create a positive behavioral change. The changes will lead to maintenance error reduction resulting in better performance, improved customer satisfaction, improved employee morale and major reduction in maintenance error costs.

To support human factors training if and when further incidents occur, we must have a formal method of investigation and look for ways of preventing an incident from occurring again. We have to look at why the person made that specific decision leading to the error and what can be done to prevent it from occurring again.

Measurement of errors, through the creation of a database is essential in order to identify trends for recurrent training requirements to correct latent failures and also provides a means to monitor progress. When you think about it, we do this every day with aircraft parts that fail, known as a maintenance reliability program – what about a human reliability program?

Technicians learn a lot from each other in a workshop environment. A facilitator who can bring out the best in each of them can help to change the blame culture to a learning culture. This is tough to do alone sitting in front of a computer.

Regardless of the route you choose to provide human factors awareness training to your technicians, you can't afford not to in today's competitive environment.

About the author

Richard Komarniski is President of Grey Owl Aviation Consultants Inc. He has worked as an Aircraft Maintenance Technician for the last twenty-six years holding AME and A&P Ratings. Richard has been providing Human Factors Training to various aviation maintenance departments. For information on Human Factors training or assistance in setting up a MRM Program contact Grey Owl Aviation Consultants Inc., Box 233, Onanole, Manitoba ROJ 1NO Canada, telephone (204) 848-7353, or fax (204) 848-4605, www.greyowl.com or richard@greyowl.com.