

Human Factors (Resource Management) - HF(RM)

“The use and co-ordination of all skills and resources available to the crew to achieve the established goals of a safe, efficient and comfortable voyage”

HF(RM) has been known for many years as Crew Resource Management (CRM), and has been widely used to improve the operation of flight crews. The concept originated in 1979, in response to a NASA workshop that examined the role that human error plays in air crashes.

HF(RM) emphasises the role of human factors in high-stress, high-risk environments, and can be defined as "Using all available sources namely, information, equipment, and people to achieve safe and efficient operations". HF(RM) encompasses team training, as well as simulation, interactive group debriefings, and measurement and improvement of crew performance.

HF(RM) focuses on the elements of human performance. The three primary components of effective crew management are safety, efficiency, and team working. Specific factors related to crew performance are categorised, and serve as the basis for training and research. These factors include materials, organisation, individual, and group process variables associated with performance. Examples of outcomes that result from these input variables are safety, efficiency, and customer satisfaction.

From a practical standpoint, HF(RM) programmes typically include educating crews about the limitations of human performance. Trainees develop an understanding of cognitive errors, and how stressors such as fatigue, emergencies, and work overload contribute to the occurrence of errors.

HF(RM) training programmes typically require participants to assess both personal and peer behaviour. Operational concepts stress the inclusion of inquiry, seeking relevant operational information, advocacy, communicating proposed actions, conflict resolution and decision making.

The field of aviation has a substantial history of collecting and analysing safety-related data. Historically, human error has caused or contributed to over 75% of accidents. Root cause analyses by safety experts have found that errors frequently occur because crews fail to effectively manage the resources available to them, fail to verify information when uncertain about it and fail to plan for contingencies.

Maritime reports provide similar results, which are attributed to the human factor. These similar analyses are the catalyst for the introduction of tailored preventative strategies including HF(RM) for the Marine Industry.



HF(RM) has evolved in the airline industry for more than 20 years, and has been extensively applied during the past decade. Although no definitive data linking HF(RM) to decreased aviation error per se, the industry has accepted the face validity of the practice, and it is now an integral part of training.

With greater technical reliability, automation and quality control of component systems, we no longer have an alibi for normal human fallibility so that now the human element has been identified as being the weakest link in the chain. Shipping shares a similar environmental, cultural and operational ancestry as aviation and whereas aviation in its infancy drew on the example of ship's at sea, shipping is now learning from the experience of aviators by applying the same basic principles of sea-going operations in accident prevention.

Many participants in the Marine industry in the United Kingdom and abroad have been through HF(RM) training and the data indicates that most marine crew members readily accept HF(RM) training and find it both relevant and useful.

Training Objectives

- To gain a greater awareness of the concepts, philosophies and objectives of Human Factors Training and their relationship to accident prevention.
- To enable participants to utilise more resource management tools.
- To enhance participant's abilities to utilise their most valuable resource: **themselves**

