**Elements in a TRM Prototype Course:**



- Stress Management
- Decision Making
- Team Work
- **TEAM RESOURCE MANAGEMENT**
- Error
- Team Roles
- Communictation
- Impact of New Automation
- Situation Awareness
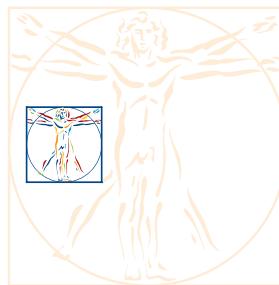
## What has been developed

- Guidelines for Development & Implementation of Team Resource Management (HF 2) reflects the work of the Team Resource Management (TRM) Task Force of the EATCHIP Human Resources Domain and provide management and operational staff with relevant information when considering the development and implementation of TRM.

- Team Resource Management Test and Evaluation (HF 15) reflects the work done by the Team Resource Management Task Force II (TRMTFII) who introduced, tested and evaluated Team Resource Management (TRM) in a number of European States.

- 'Team Resource Management – A promising future' is a A5 size promotional brochure, addressing operational and managerial staff.

- Team Resource Management Prototype Course is the material produced for the operational staff, facilitated by controllers in TRM sessions.

- Proceedings of the fourth EUROCONTROL Human Factors Workshop – TRM in European ATM CD rom.
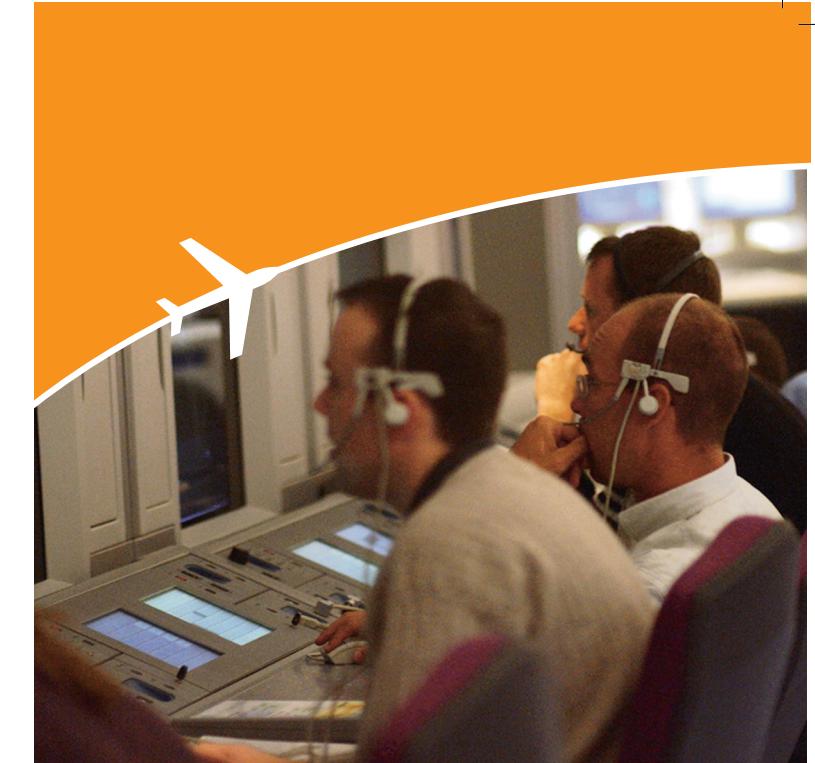


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## Human Factors

## TRM

## Team Resource Management

*Human Factors*



**EUROCONTROL**
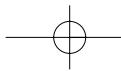
# TRM
## Team Resource Management

With world aviation experts estimating that each air traffic controller makes several errors every hour, there are literally hundreds of errors per day but very few serious incidents per week, month or even per year where ATC contributes to the outcome. Millions of errors are therefore made before a serious incident or an accident occurs. Suppressing millions of errors to prevent all incidents and accidents is not feasible. What we must learn to do is positively influence the conditions under which these errors occur or decrease the impact the errors have.

To this end a concept for operational staff was developed, called Team Resource Management (TRM). The declared aims of TRM are to develop positive attitudes and behaviours towards teamwork skills and human performance in ATC helping to reduce the number or minimise the impact of teamwork related errors within the ATM system. Educational material for Air Traffic Controllers was designed, together with a prototype course that can be customised by every organisation for their own environment. The Institute of Air Navigation Services in Luxembourg trains facilitators to run TRM courses.

*"TRM is a philosophy which helps us realise that we humans are error prone; a philosophy which will help us put in place more and better safety nets; a philosophy which will help each one of us play a better and more constructive part in our own team and the larger aviation team of which we are part."*

IAA – Irish Aviation Authority

# WHAT
## What it is

TRM objectives are defined as: Strategies for the best use of all available resources - people, equipment and information to optimise the safety and efficiency of Air Traffic Services operations.

The development of the TRM concepts was based on the following principles:

- Joint development by operational staff and human factors experts
- linked to human factors incident and accident investigations
- the operational staff know their working environment in detail, and where the safety weaknesses exist
- methods based on best practice from airline Crew Resource Management (CRM)

TRM is a safety management intervention that protects ATM systems from a common cause of system failure. The main objective of TRM is to reduce or minimise the impact of teamwork related errors within the ATM system.

Over the last 20 years, airlines have been very successful in promoting the ideas of enhanced team working practices. Nearly every airline around the world applies the principles of Crew Resource Management (CRM) for pilots and other operational airline staff. Regulators like the JAA have made the regular training compulsory. This raised the question of whether a comparable concept for operational staff would benefit the ATS/ATM system.

In July 1994, a Study Group was created by a small number of European ANSPs, to investigate the possible benefits of and requirements for a Team Resources Management (TRM) programme. Within its scope the TRM Study Group carried out the following activities:

- a literature survey concerning relevant CRM/TRM publications (Eissfeldt, 1994)
- a teamwork related ATC incident survey

- a questionnaire survey to determine the attitude of controllers to teamwork in ATC
- a TRM training survey to identify current team training activities in the ECAC states

The results of these studies clearly indicated that failures in teamwork function contribute to incidents and often have a negative effect on the performance of controllers. This pointed to a definite need for a TRM training programme. In 1995, a European TRM Task Force was initiated in EUROCONTROL to continue and expand the work, culminating in training material, guidelines and promotion material. The members of the TRM Task Force had operational, educational or human factors background to ensure the relevance and accuracy of the material.

Since 1998, numerous European ANSPs have undertaken TRM training successfully. The training is mainly facilitated by trained operational staff, who guarantee a confidential environment for controllers to decide on safety improvements they can apply in the operational environment.

TRM is becoming increasingly part of the controller culture and EUROCONTROL continues to promote the concepts and material. It has established a TRM Users Group for national TRM co-ordinators and facilitators, improving and developing the material, designing promotion material and discussing the expansion of the TRM concepts to other professional staff such as engineers and etechnicians.

To summarise, the main benefits of TRM are considered to be

- Reduced number of teamwork related incidents
- Reduced consequences to unavoidable errors
- Enhanced continuity and stability of team work in ATM

*All in all, to increase the safety level in the operations room*