

# The Emperor's new clothes... or what exactly is TRM?

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## So what exactly is TRM?

- A Technical Reference Model
- B Total Runway Modeller
- C Team Resource Management

Yes it is (c).

Still, Team Resource Management as a term does not immediately communicate what it is. Is it Team Building? Resource Management?

The word "resource" has many meanings as it is, let alone when accompanied with another word of similar ambiguity. For example, when looked at from the ANSP's budgetary department point of view "resources" are usually thought of as funds per fiscal year, expenditure and the like. Moreover, human beings are also seen as a 'resource' and valued in terms of money. And here is the first hint – TRM considers people as a resource based on the value of their team work, on the benefits of working together, on what we gain by helping each other.



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TRM has been around for many years and still there are many examples of misunderstandings. So to dispel any remaining confusion and for the purposes of this article it's my belief that TRM is about recognising the safety impact that the team performance of professionals has on OPS. More to the point, we analyse how individual and team actions, successes and errors make the human shield against incidents and accidents stronger or weaker. Thus, the goal of TRM is to prevent team related errors and manage the effect(s) of those errors that still occur.

## It is the controller's equivalent of Crew Resource Management for pilots

Do you remember Hans-Christian Andersen's tale about the Emperor who was promised a new suit of clothes that are invisible to those who are stupid or incompetent? When the Emperor parades proudly in his "new clothes" nobody dares to tell him the truth that he is naked, for then it would be said that he was unfit for his position or that he was stupid. Only a child says, "but he isn't wearing anything at all!" The analogy with seeing your col-

league naked and not giving some feedback may be exaggerated but here are the words of Captain Al Haynes, pilot of United Flight 232, which on 19 July 1989 suffered an un-contained engine failure which led to the loss of all three hydraulic systems, consequent loss of flight controls and a crash-landing at Sioux City, USA. Although still an accident, the event is considered to be an example of good crew resource management – communication, coordination and decision making. Captain Haynes commented:

*"Up until 1980, we kind of worked on the concept that the captain was THE authority on the aircraft. What he said, goes. And we lost a few airplanes because of that. Sometimes the captain isn't as smart as we thought he was. And we would listen to him, and do what he said, and we wouldn't know what he's talking about. And we had 103 years of flying experience there in the cockpit, trying to get that airplane on the ground, not one minute of which we had actually practised any one of us. So why would I know more about getting that airplane on the ground under those conditions than the other three. So if I hadn't used [CRM], if we had not let everybody put their input in, it's a cinch we wouldn't have made it."*



I'm just wearing what  
my boss told me to!

## Do you have TRM in your organisation?

*"Sure we do have it. I am absolutely sure because we have a TRM course during which we watch videos and play role games. Oh it was so much fun the last time - we were assembling a floor puzzle. A very simple puzzle of 20 pieces, each of us holding a piece or two, but we were all blindfolded. Man, it took us lots of talking to coordinate this simple task! I have a feeling that we are playing a similar game in aviation with the chaps from airlines and airports".*

Well, if all you can say about TRM at your place is that there was a course, even if it was a funny one, then I have some news for you. There is a great chance you do not have TRM.

To work, TRM must be applied in the operations room, not just in the classroom. It is not about being convinced of the importance of good team communication and decision making and leaving it there. It is rather about, on a regular basis, giving each other feedback, learning from each other's experience and keeping the two elements a part of our daily life. It is about building sustainable, reliable and consistently safe behaviour.

So far we have looked at the meaning of TRM, at its basis and we have questioned what "having a TRM" means. What follows is reflection - do we need it, what exactly is done during a possible TRM session and why not use a lecturing format for TRM.

**It is not all that natural to us – we do need time to reflect on our work and recognise the "good solutions" and the "not so good ones"**

For example, a question here might be: *"Why do I need training to communicate better with my colleagues? We are all professionals."*

Well, in stressful situations, and we do have some in aviation, our brain still follows the very ancient strategy of "fight or flight". The brain tends to sharpen the sensors, stop complex thought and triggers an automatic, 'knee-jerk' response that can have very negative wider effects on complex systems and the teamwork which

controls them. This ancient and automatic response is hard-wired into our brains and may have been very good for helping our ancestors to survive when unexpectedly crossing paths in the forest with proverbial sabre tooth tigers.

Today, especially in the aircraft flight deck or in the ATC centre, the sabre tooth tigers are extinct and besides keeping the traffic safe, we need to be able to effectively communicate and cooperate with our team mates when stress hormones flow into our bodies. This is not something we do naturally because the primordial instinct to "fight or flight" is still with us. So here we need reflection time, a dedicated and structured self-learning process to understand how to recognise in good time the signals of "fight or flight" in abnormal situations and to still be able to effectively communicate and make appropriate decisions. Even if it is only to ask for a brief break from duty in order to rebuild one's "mental picture".

## What do you TRMers\* do exactly?

What exactly happens in this "TRM World"? Well, we use a lot of "case studies" but the aim is not to find the guilty party. Also we watch films - but not to train as film critics. And we play games to have fun, of course, but not only that.

All the above will be our prompts to start discussions on topics that affect safety, such as situational awareness for example.



\*TRMer: person who embraces TRM in their work



### The Emperor's new clothes... or what exactly is TRM? (con'd)

#### A concrete example?

Within a team of ATCOs and/or assistants, hold a discussion on situational awareness or "having a mental picture". Here's a quick plan of how it might be done:

1. Play the funny video that many know as "USS Montana Battleship" (and have a good laugh).
2. Enable a short discussion on What just happened?!? Why did the Captain react the way he did? Was the real situation known to him?
3. Ask if something similar to what happened in this video happens in the OPS room? What exactly do I use to build my picture of what is going on around me? What helps me do that? (recognising what works well). What makes it difficult for me to build a realistic picture? (identifying error prone conditions).

#### Why do you do it this way – using self-learning rather than classic lectures?

In my opinion, this is one of the keys to a good TRM training programme – it is not meant as a tool to allow experts to lecture experienced controllers on how to be safe as there are many training courses available to teach/lecture different aspects of ATC including safety methodologies and the like. A TRM training programme delivered in the form of discussion sessions can unlock the existing expertise, experience and skills that ATCOs have and enable all the operational questions, doubts and uncertainties to surface and receive appropriate attention before they become an irreversible situation. The starting point of TRM is that someone who does the job "day in,

■ To prevent; verb (pre-vent) – to keep from happening. This can be a big problem at times, especially if one wants to measure effectiveness of preventive programmes. Have I not got the 'flu because I have been taking vitamin C for some time now, or is it because I was not exposed to the virus? ... And TRM is the prevention programme.

■ In aviation, once something like an incident or an accident happens, there is an established set of actions and procedures to be followed in order to understand what has happened and what caused it to happen. CISM support is made available to staff. Also, we keep all the findings carefully filed to be used to change/improve our environment. Now, if an incident does not happen, what are the procedures to understand why it did not happen? What worked well? This is exactly the problem of the visibility of TRM operational benefits because the ultimate OPS aspect of TRM is that error is prevented (or promptly controlled with no significant incident resulting) and so "nothing happened".

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4. And finally ask for (and log) lots of ideas and advice on what action exactly one can take to make sure one's situational awareness is maintained? Or rebuilt after it was initially lost? (developing a plan of actions for future use)

This was a very general example using a non-ATC video to discuss an ATC prerequisite of having and maintaining a "mental picture of the overall air traffic situation". Using documented cases or videos will focus the discussions even more and will enable very specific "advice" and possible solutions to be given by a panel of experts in their domain – in our case, air traffic control.

"day out" gains first-hand knowledge of whether they are safe or not as well as a very good idea of why that is so. TRM, in a structured way, then makes use of this expertise and experience in order to prevent errors or manage the effect(s) of errors which do occur.

OK, we have looked at the meaning of TRM, at its basis, we have questioned what "having a TRM" means, reflected on why we need it, what exactly is done during a possible TRM session and why we don't use a lecturing format for TRM? To round things off, I think it is only fair to also give some points on TRM programme pitfalls:

#### A little conclusion

It is interesting that the need for, let's say, voice communication system weekly/monthly/yearly preventive maintenance programmes is hardly ever questioned. But there are not many preventive or maintenance programmes for operational human systems in ATM, let alone weekly or monthly ones.

Finally, I would like to propose that since the TRM is a safety programme, it can also be seen as the opportunity to allow experts to give constructive feedback on our 'new clothes', hence we do not end up walking naked around the town.