



TRM – What are we looking for?

Overview



What

How

TRM Challenges

Overview



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TRM Challenges

ATCO

**Technical
Quotient**

Emotional Quotient

**Physical
Quotient**

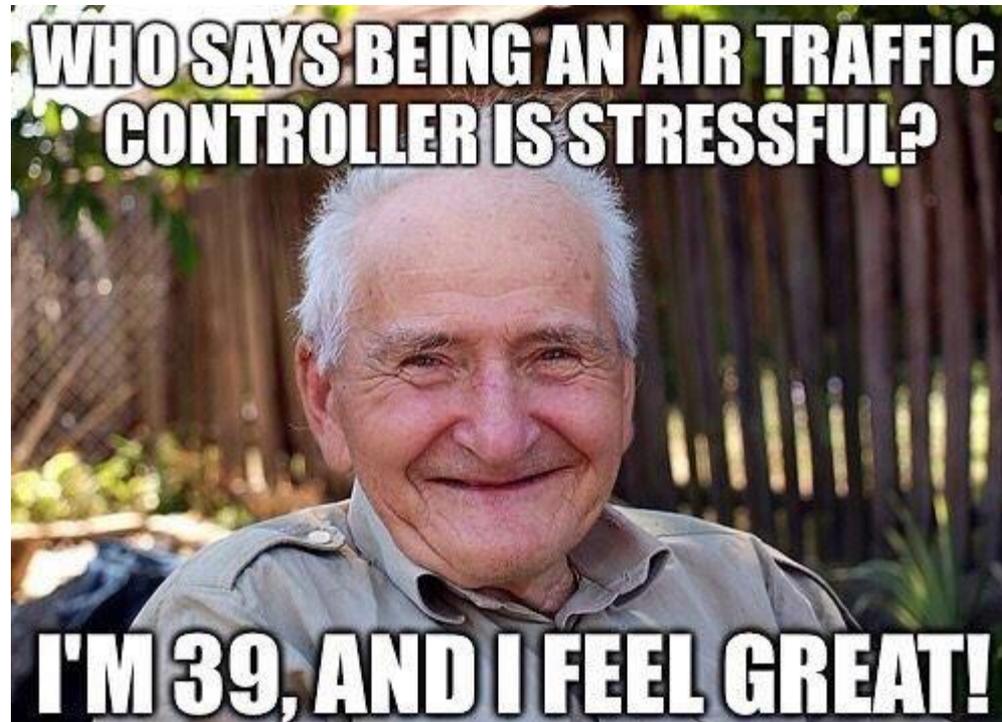
*Quotient - a degree to which the specific quality or characteristic exists



A close-up portrait of a man's face, looking directly at the camera with a serious expression. The image is overlaid with a complex technical diagram consisting of red and green lines, nodes, and various alphanumeric labels. The labels include "T89 AMT", "030 V 000", "ATA ATO", "030 V 180", "STAC-JTL", "081 V 000", "081 V 180", and "081 V 180". The diagram also features several circular nodes, some of which are highlighted in green. The overall aesthetic is that of a high-tech or scientific visualization.

Technical Quotient

Physical Quotient



Emotional Quotient

Is kind,
patient,
supportive,
decisive but cautious,
team player but works on his own,
listens to others but focuses on traffic,
easygoing but serious ...



Overview



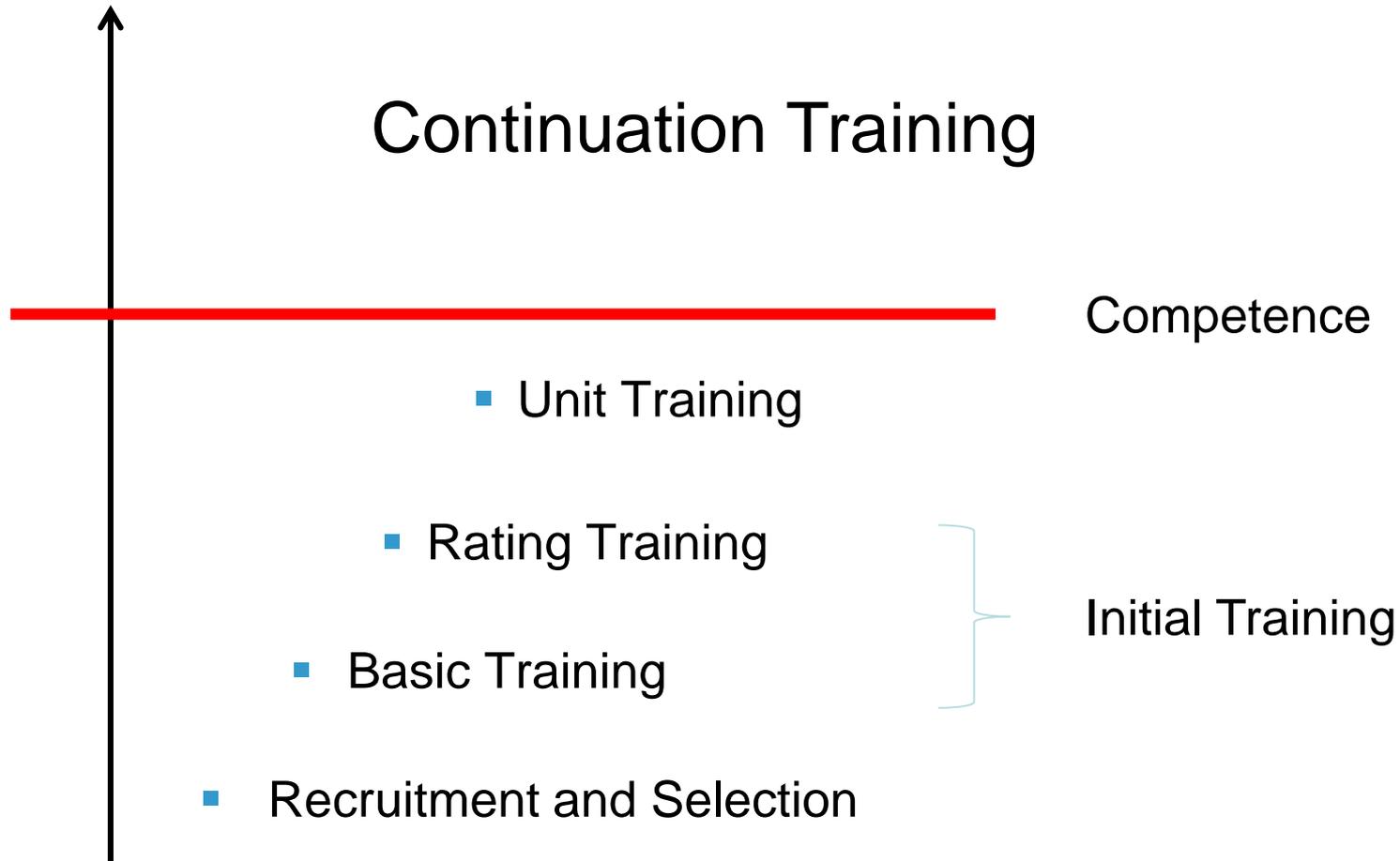
What

How

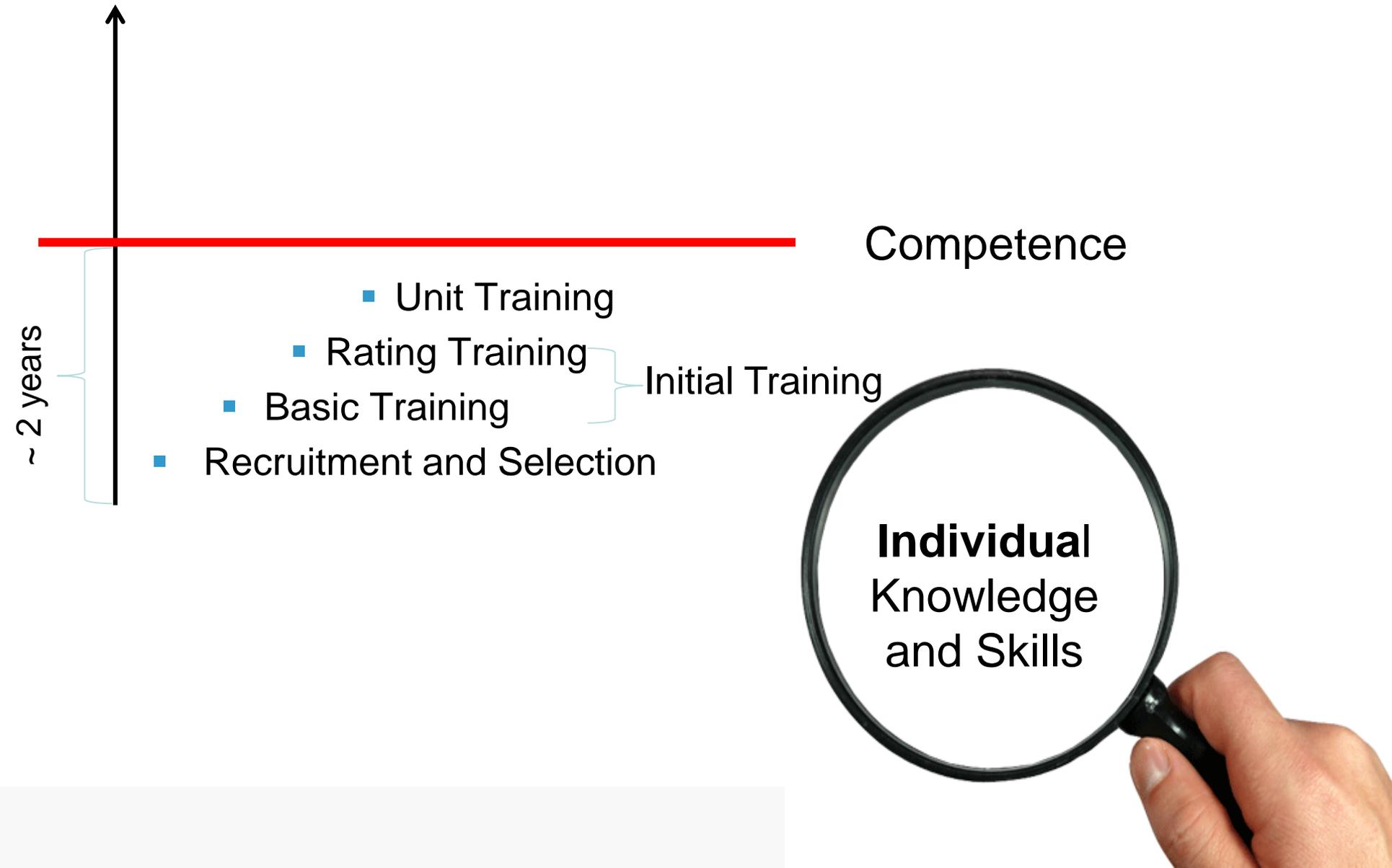
TRM Challenges

How are we getting the profile required

Continuation Training



How are we getting the profile required



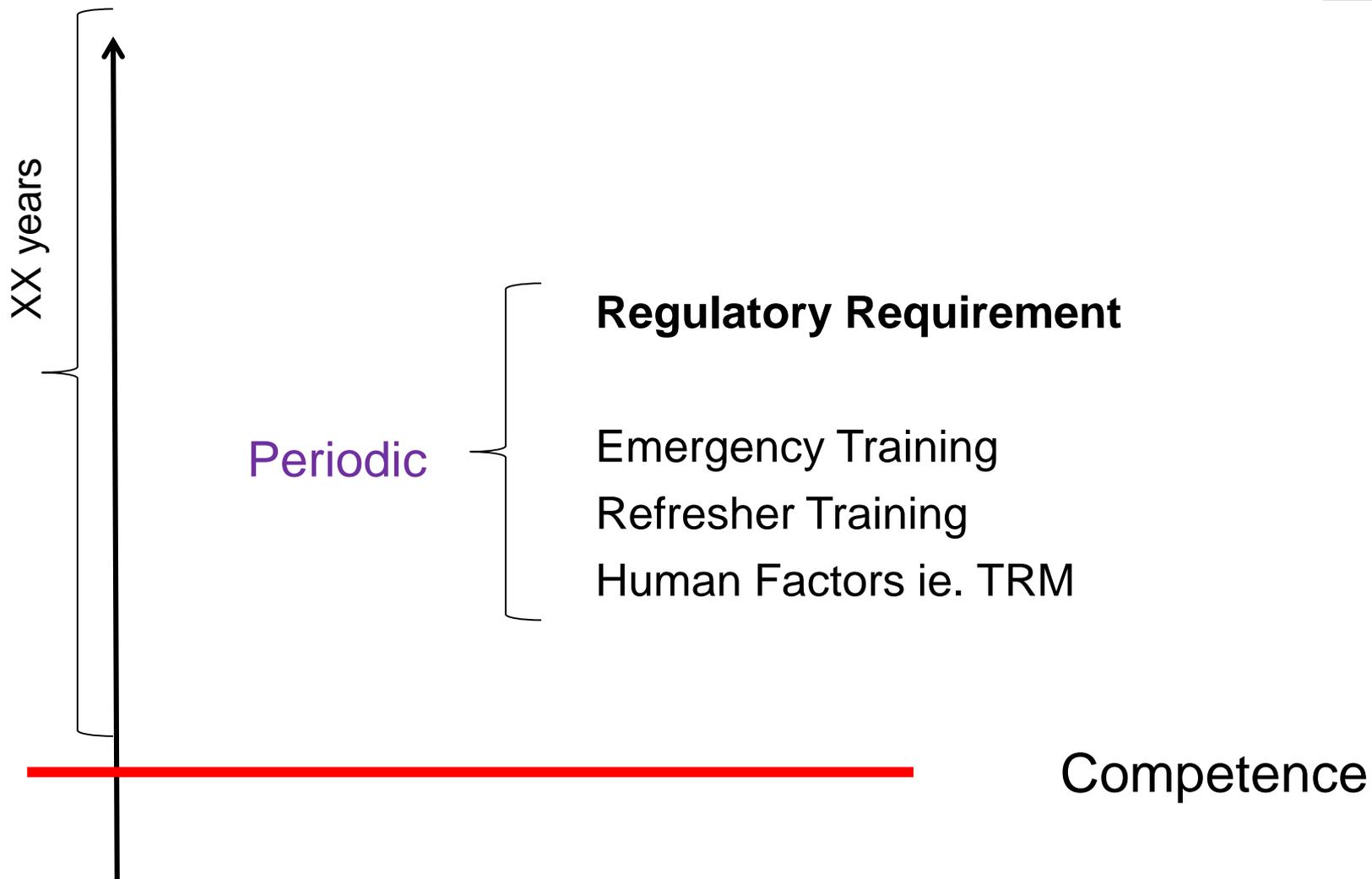
Human Factors Subject Training - Initial

Power Point slides with a lot of text ..

- Human Error
- Communication
- Stress
- Conflicts
- CISM
- Fatigue
- People and Automation
- TRM
- ...

Lectures delivered.

How are we getting the profile required



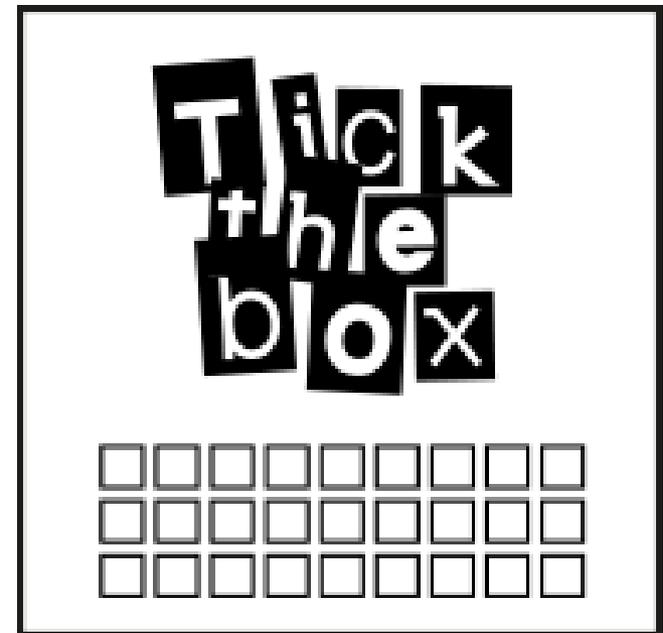
Power Point slides with a lot of text ..

- Frontal Cortex
- Amygdala
- Medulla
- Lobe
- Ash Experiment
- Bystander Effect Experiment
- Milgram Experiment
- Belbin's team roles
- Myers Briggs type indicator
- Stanford Prison Experiment
- Confirmation Bias
- Pseudocertainty effect
- Outcome bias
- Ostrich effect ...

Lectures delivered again.

Benefits

- Straight forward to define contents
- Can be done on-line
- KPIs clear
- Exams easy to design and mark
- Less time consuming



Cost

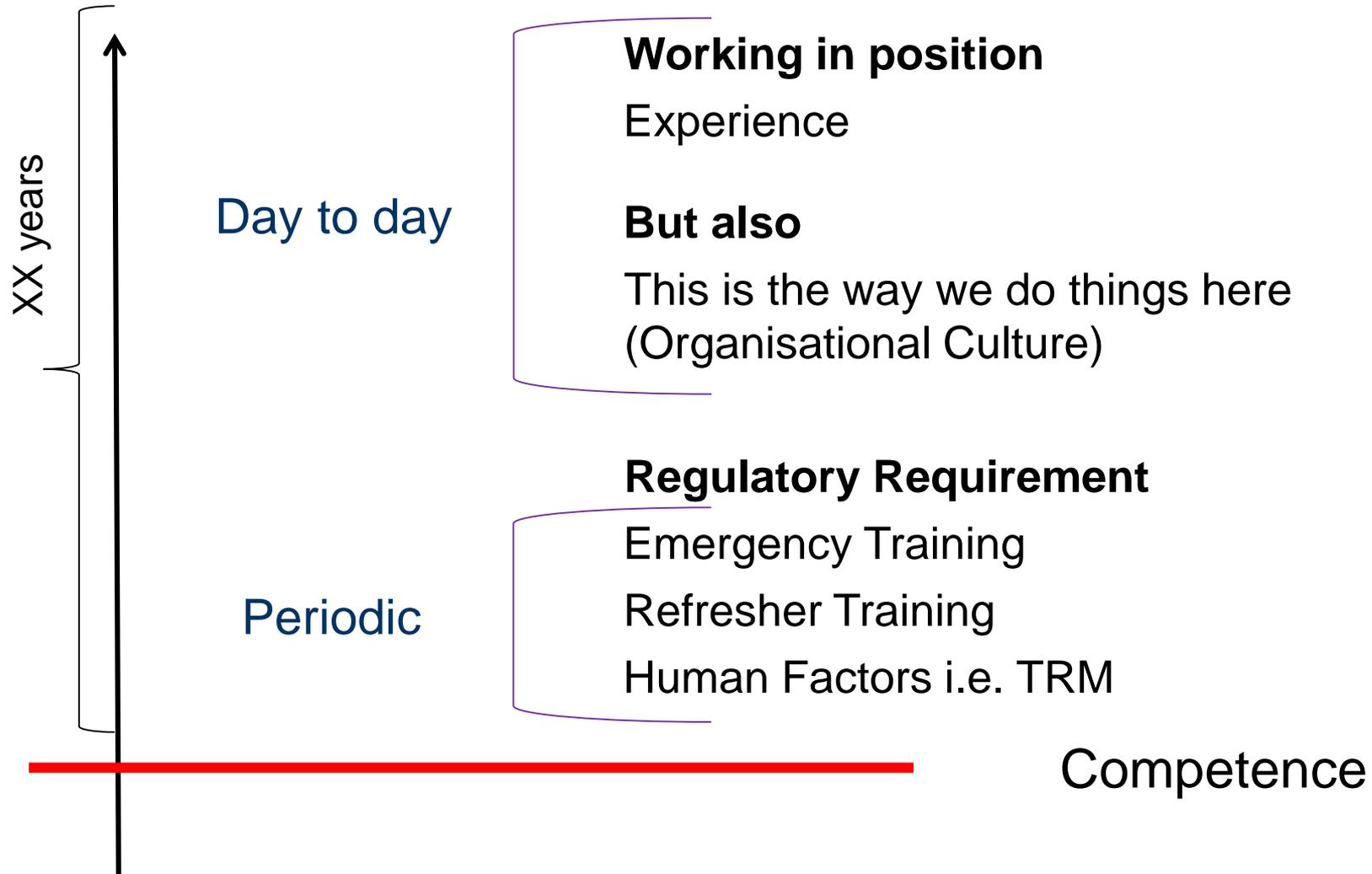
- Repetition of contents
- Lecturing vs Learning
- Thinking process not challenged
- TRM/HF topics not contributing to the actual air traffic controller work



Outcome



Day to day



HF continuation training



Overview



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TRM Challenges

Safety in ATM



Safety in ATM

1 event/10,000 flights

Continue looking at
what went wrong but ...

9,999 safe
flights/10,000 flights

.. look at what
happens every
day



The hard ones:

- “Culture cannot be changed.”
- “ATCOs dislike change.”
- “TRM and HF are not tangible topics.”
- “I’m too old; it’s too late for me to change my ways.”
- “The conventional methods brought me great results in the past; are you being serious with what you propose now?”

And ..



“If you ask 5 ATCOs a question, you will get 10 different answers.”

.. implying this is a bad idea.

In reality – 10 different answers we get are the 10 different ways of solving a critical situation and possible ways to save the day.

More solutions available – less single points of failure in existence.

Feedback loop

ATCO involved, good TRM done, we get very excited to discover an HF aspect, we embark on researching it and then ..

NO

Feedback

Work, No Feedback
No Work, No Feedback
Good, No Response
Bad, No Caution
No Hi
No Hello
Am I Alive?



AMC/GM to IR 2015/340

Acceptable Means of Compliance and Guidance Material to Part-ATCO, to Part-ATCO.AR and to Part-ATCO.OR

SECTION 4 CONTINUATION TRAINING REQUIREMENTS

AMC1 ATCO.D.080(b)(3) Human factors training

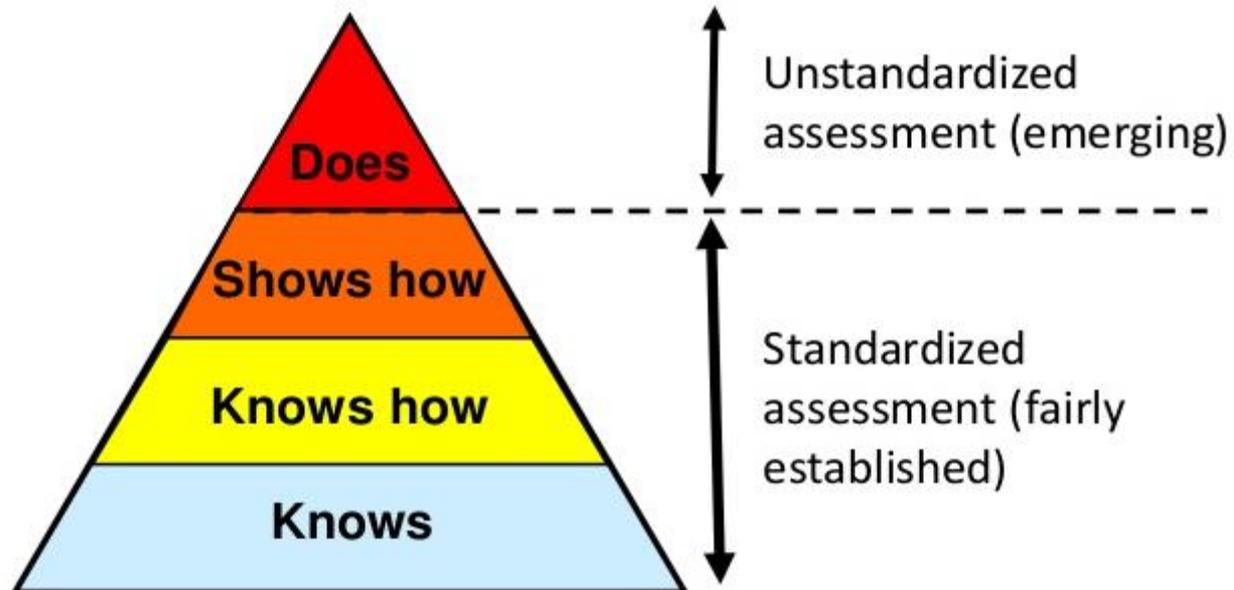
- a) Training organisations should train air traffic controllers at least in **team resource management**, fatigue management and stress management.
- b) The team resource management training may also make use of STD and/or occurrence case studies.



Measuring TRM success



Measuring TRM success – assessments



Overview



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In conclusion

Human Factors training mandated by the IR 2015/340 has improved the awareness of importance of the subject and of TRM programme.

Regulating common activities essential to define and maintain acceptable level of performance; but no amount of regulation will compensate for the lack of thinking.

Wider recognition of the aim of HF in continuation training – facilitating critical thinking.

Safety and Human Performance



EUROCONTROL TRM Survey

41 Member States + 2 Associate Member States

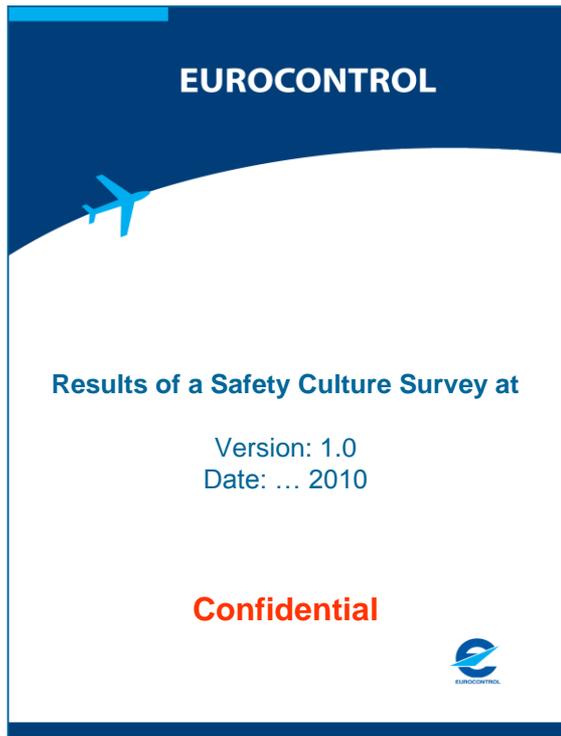
30,000 flight/day – peaks of 34,000 flights

73 En-route Centres

560 Control Towers

Top 5 issues

(identified in 50%+ of safety culture surveys)



- 1. Ineffective vertical communications**
- 2. Ineffective operational involvement in changes to systems/ procedures**
- 3. Ineffective Lesson Learning**
- 4. Under-reporting**
- 5. Staffing issues**

TRM Benefits (survey)

- Increase of safety awareness
- Awareness of incident trends
- Enhancement of safety/just culture
- TRM has lead to an improvement of procedures
- The results from the TRM sessions are used as inputs to ATCO refresher courses. We also use the results to feedback to the airlines where appropriate
- We identify areas that need to be clarified: at the last TRM session, we identified that stress and handling of stress is an area we need to work with
- During the session we try to come to an understanding which includes action for departments/management to commit to. These actions are also published, mentioning the fact that they were derived from TRM sessions
- TRM is seen as way to implement Safety II because it could be used to enhance and transmit positive behaviours and attitudes
- Cross sector open forum (meeting controllers from other sector groups)
- Peer support (understanding others' needs and perceptions).



Insight (survey)



- TRM has significant benefits but this can only be proved qualitatively and not quantitatively. The case studies/risk areas can be traced to incident investigation, but it is difficult to prove the effect of TRM because there are also other (positive) changes happening in the system. TRM is part of a recipe that leads to enhanced performance.
- TRM assists greatly in realigning WAI and WAD because it improves the quality of information about WAD and helps greatly in passing enhanced information to management who are 'designing' the system. At the same time TRM encourage mindfulness at the sharp end where the effect of something going wrong will have an immediate impact of safety.