



Simulations are much more than imagination.

But imagine what you could do with them in your training, if you are not already using them.

* Adapted from a presentation by Heleen ter Pelkwijk (2015)

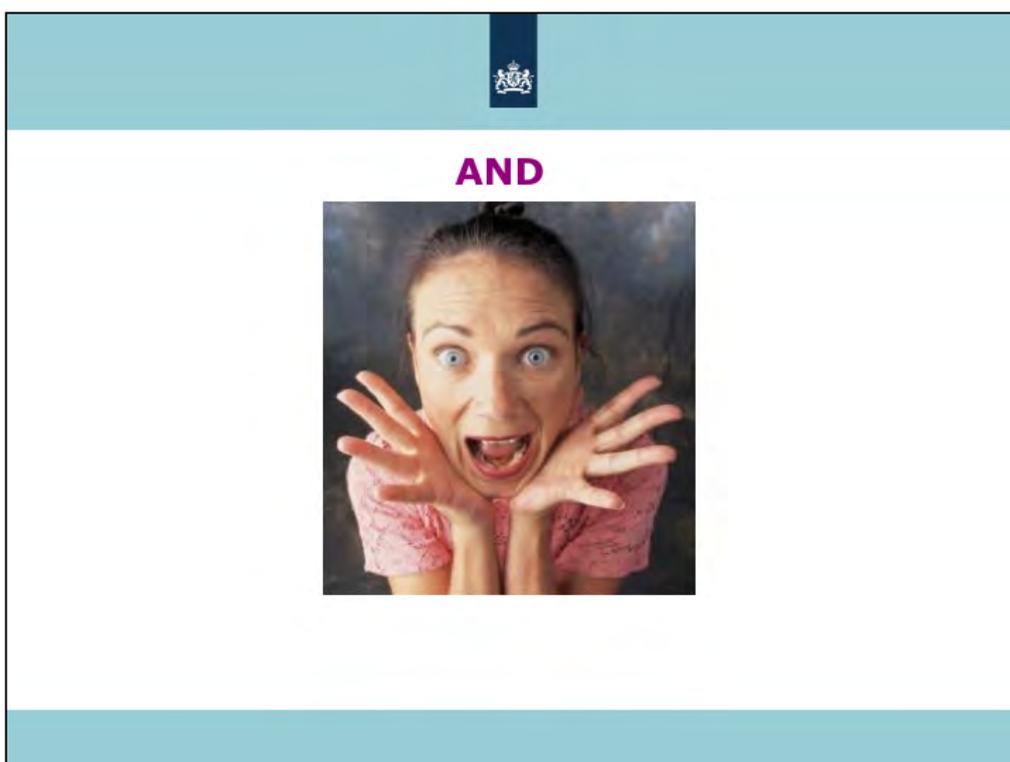


Here you see the Netherlands and as you see we are surrounded by water

An other fact you should know is that a large part of the country is situated below sea level and protected by dunes and dikes.

Imagine!

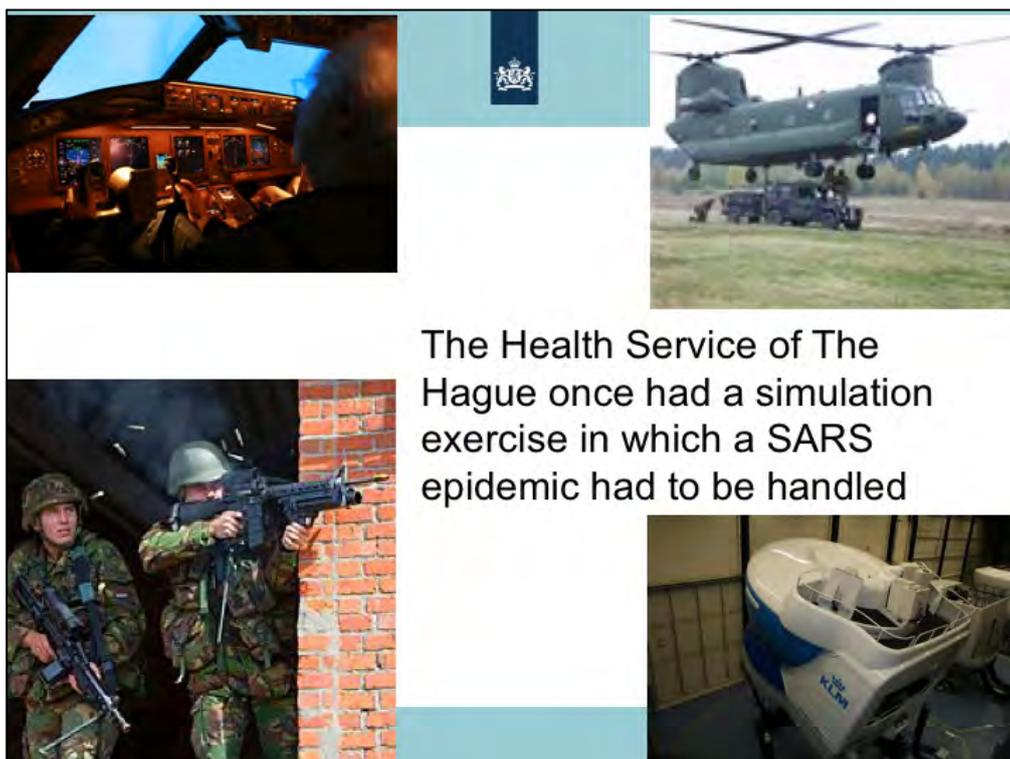
Springtide is expected due to the position of the moon and the sun. We have a North Westerly gale blowing pushing a lot of the water into the North sea and In case of high water we can be treated by the water coming by the rivers from Central Europe and with a strong north-westerly flow we have a nice long fetch over the North sea which can cause extreme high tides especially during spring tides



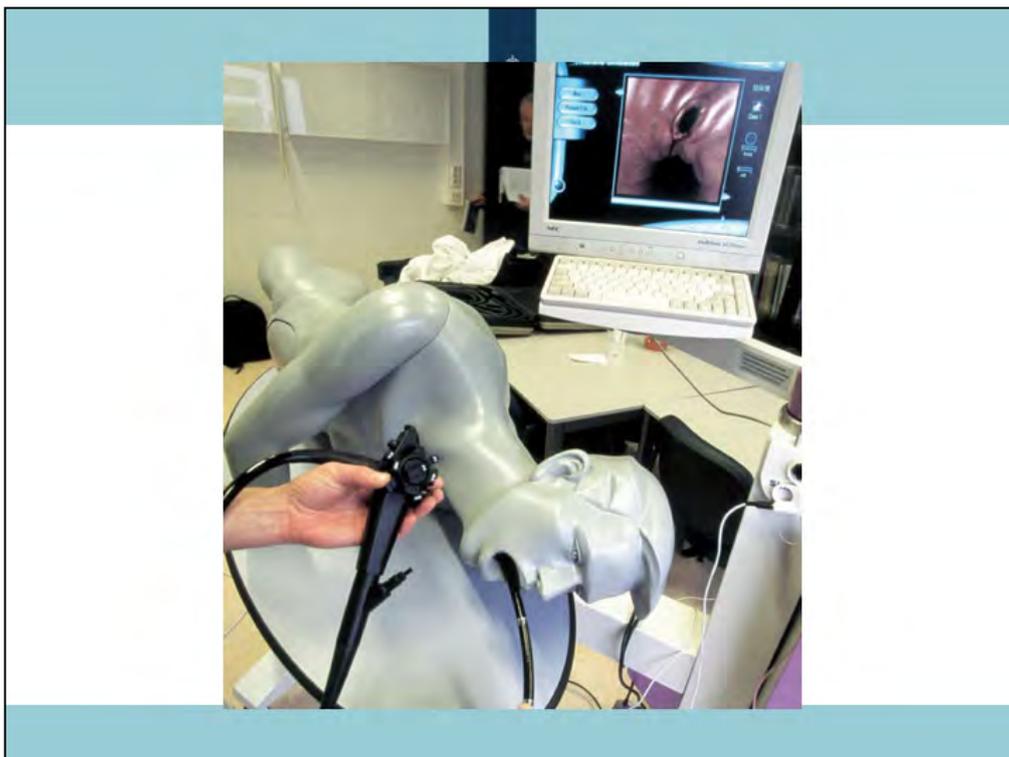
Next to that you have a forecaster who has only a little to no experience in these extreme circumstances and can't remember where to find telephone numbers of key players, procedures how to handle in these circumstances or even worse freezes



How do other sectors prepare their people for difficult situations you can't train in reality, situations who doesn't happen very often or emergency situations?



Pilots are trained in a simulator. At the KLM 5 times training and 2 exams in a simulator
We had a large simulation exercise where the army had to concur and airport in the Netherlands...
of all the parts of our army were working together in this simulation .
The Health service The Hague had a simulation exercise

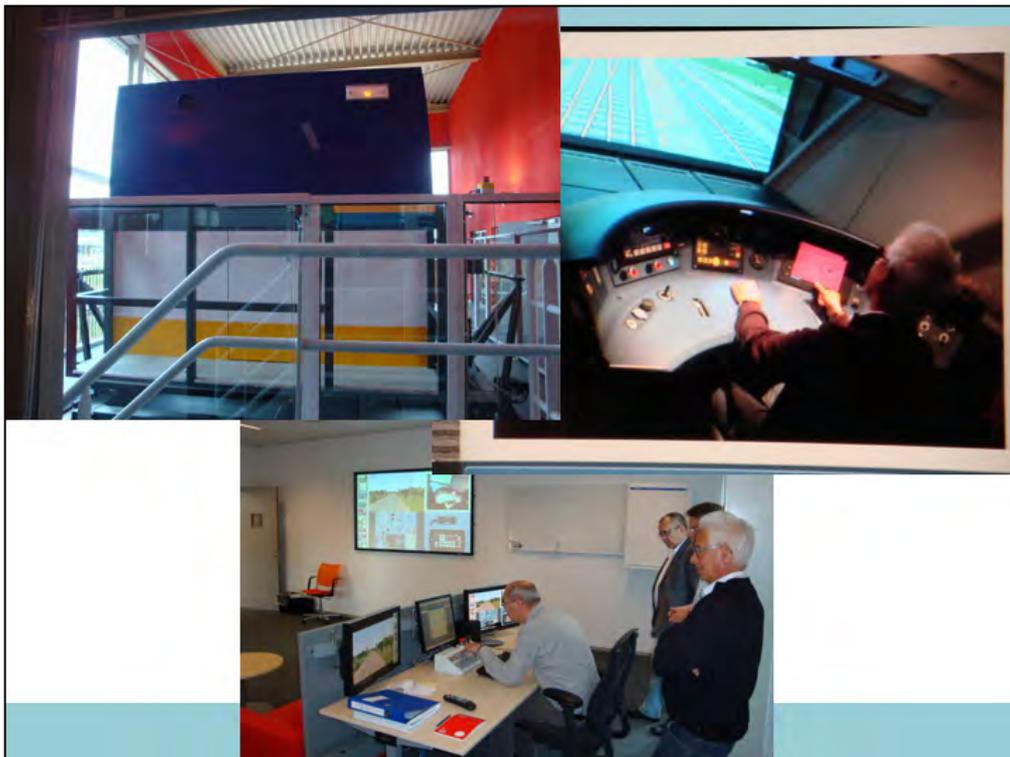


Doctors use simulate people to practice medical procedure, like this one used for the SARS simulation.



Air traffic control and the people of the ground control from our Airport used a simulation exercise to be prepared for snow situations in winter...

WMO Resources for Trainers



Even our train drivers have their own simulator where they train twice a year!



So why do we not use simulator training more often in the Meteorology?
Are they scary? Too expensive?



What benefit can simulators bring to our organisations?



Theory 1

Daily life sometimes gives too little opportunity to gain relevant experience

- ✓ extreme, high-impact situations
- ✓ awareness on possibilities
- ✓ realise the risks and develop competences to deal with them
- ✓ better cooperation

Forecasters need to be prepared for infrequent but high-impact events.



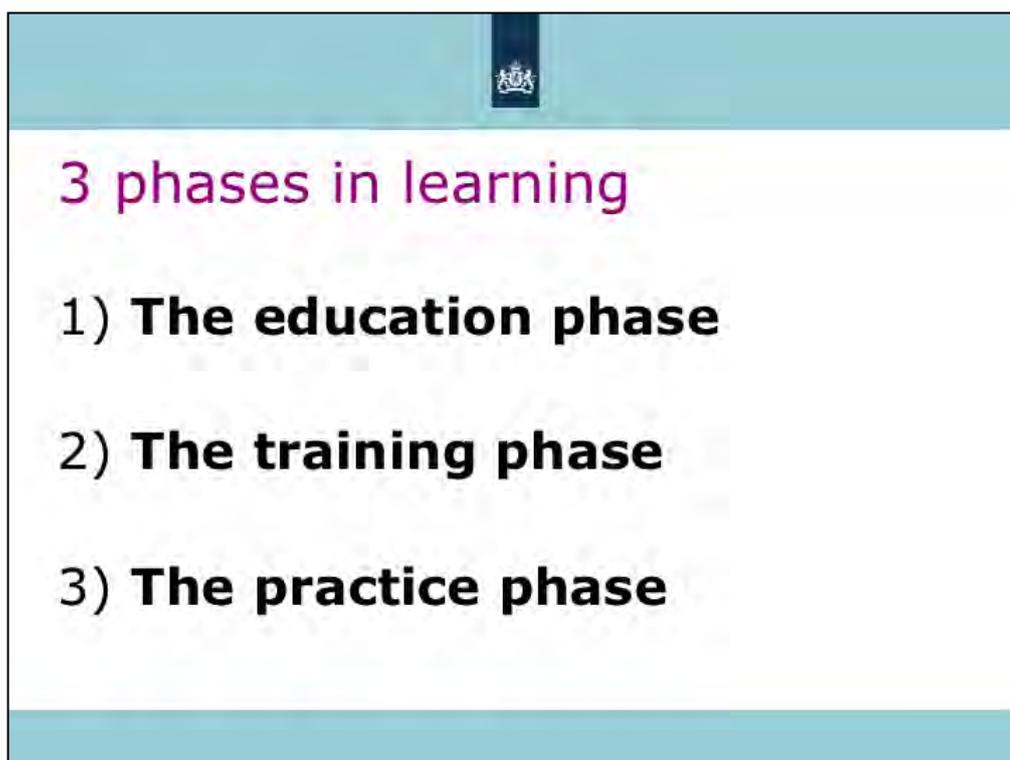
Theory 2

Experience is learning!

When exercising:

- ✓ experience the process
- ✓ get insights:
 - how procedures work
 - how collaboration/communication work (what can you do better)
 - better decision making

Learning by doing is the best way to ensure retention.



There are 3 phases in learning where you have to go through to get your people competent to do their job:

- 1) **The education phase:** A phase in which you gain background knowledge
- 2) **The training phase:** In this phase you make knowledge to skills
- 3) **The practice phase:** A phase to secure skills also in situations with a lot of pressure

Simulation exercises can be used in different way in the last two phases of learning to learn tasks and competences to preform adequate in case of trouble.

However, they can also add to the education phase to provide context for learning.



My idea

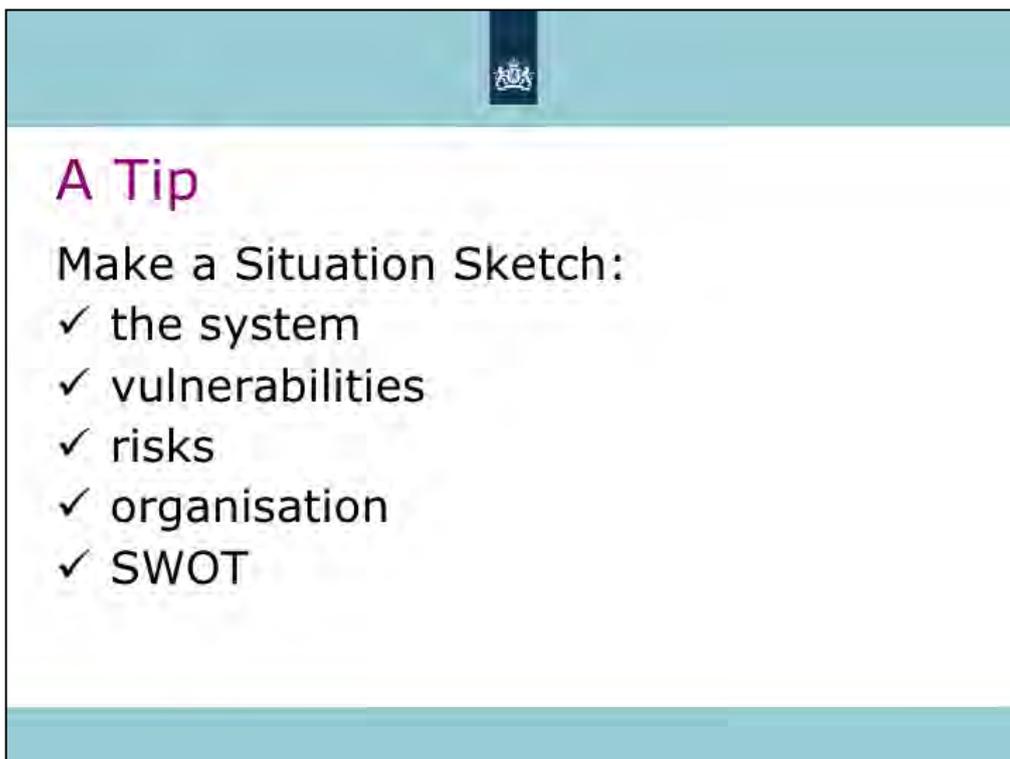
Excellent for:

- ✓ Determining gaps
- ✓ Training
- ✓ Assessment



My idea is that training your people (or at least mine) with a simulator is an excellent way of

- ✓ finding the gaps in the training programmes.....where does it go wrong? ... meteorological background? following procedures? or communicating with customers?
- ✓ training your people for normal AND extreme situations....because in extreme situations people act differently from what you expect in normal situations...think of a little girl drowning in a pool...how many people are watching and not doing anything... That sort of thing happens in your weather service too if you don't train your people for extreme situations!
- ✓ last but not least.....I think training with a simulator is an excellent way to check out whether your people are competent to do their job



A Tip

Make a Situation Sketch:

- ✓ the system
- ✓ vulnerabilities
- ✓ risks
- ✓ organisation
- ✓ SWOT

A tip to help your managers work with you to develop good simulations....go through the situation sketch below.... it helps him/her to get their strategic views on training clear.

- ✓ What does the system look like? make a list of
 - What products are made
 - What kind circumstances are possible (for instance weather types)
 - What actions/ procedures are available for what kind of situations
 - What customers
 - What production platforms are available
 -
- ✓ What are the vulnerabilities? What can go wrong in the process
 - No data
 - No production platform
 - No personnel
 - Communication: the telephone numbers to use are not correct
 - Procedures are not followed
- ✓ A risk analyses: What is the chance that something goes wrong and what will be the consequences when things go wrong?
 - what calamity situations can we expect?
 - consequences for the office.

You can also ask the head of the forecasting office or account managers what went wrong and can be done better next time → very valuable information when you want to organise an exercise!

- ✓ What did your organisation already do to have the people prepared for such situations? How well are the people and your organisation prepared for extreme situations.
- ✓ Last but not least, you can use a SWOT analyses (strengths, weaknesses, opportunities threats) to set the priorities and goals of the training programme together with your boss.



Questions or ideas to share? Please use the CALMet Commons forum.