Structured Safety Management – the response to future threats and risks in Fire and Rescue Services (Basics and examples)

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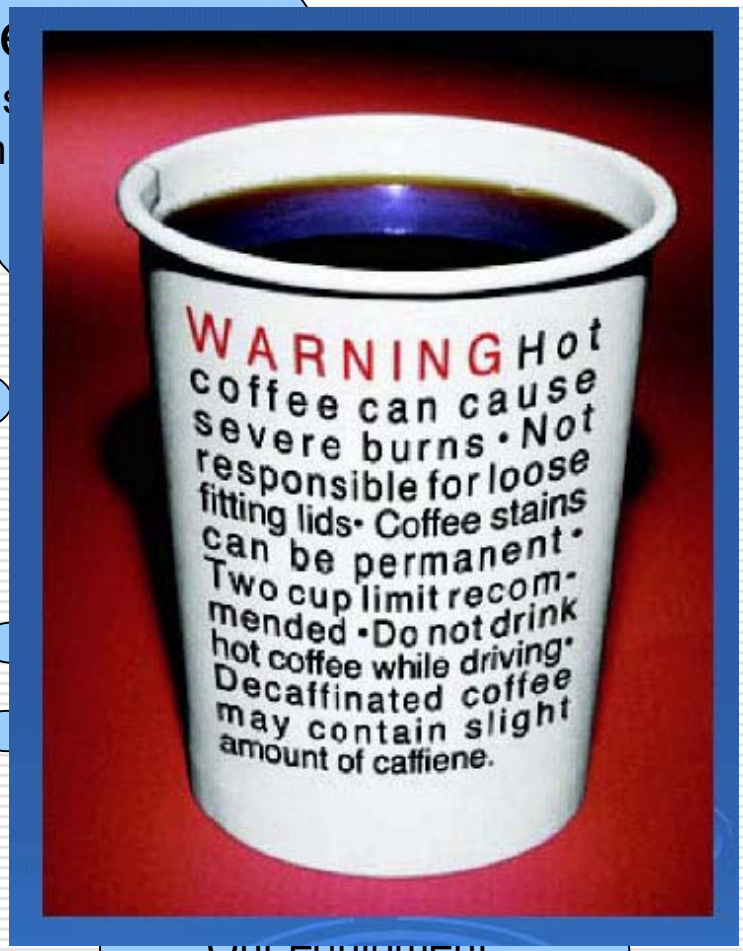
If you believe in these 5 theses,
Don't waste time with my presentation
and have a coffee outside
…

But be careful !
There are risks everywhere!



is always in good condition

Being ironic someone could state the following theses:

Thesis 1: FRS interventions are always perfect thanks to best education, training, procedures and incident management

Thesis 2: The FRS equipment is always in good condition, well maintained and periodically checked according to regulations.

Thesis 3: The members of FRS take all necessary attention to wear complete PPE according to the risks

Thesis 4: The FRS is a family: each member likes the other and sees always the interest of the group.

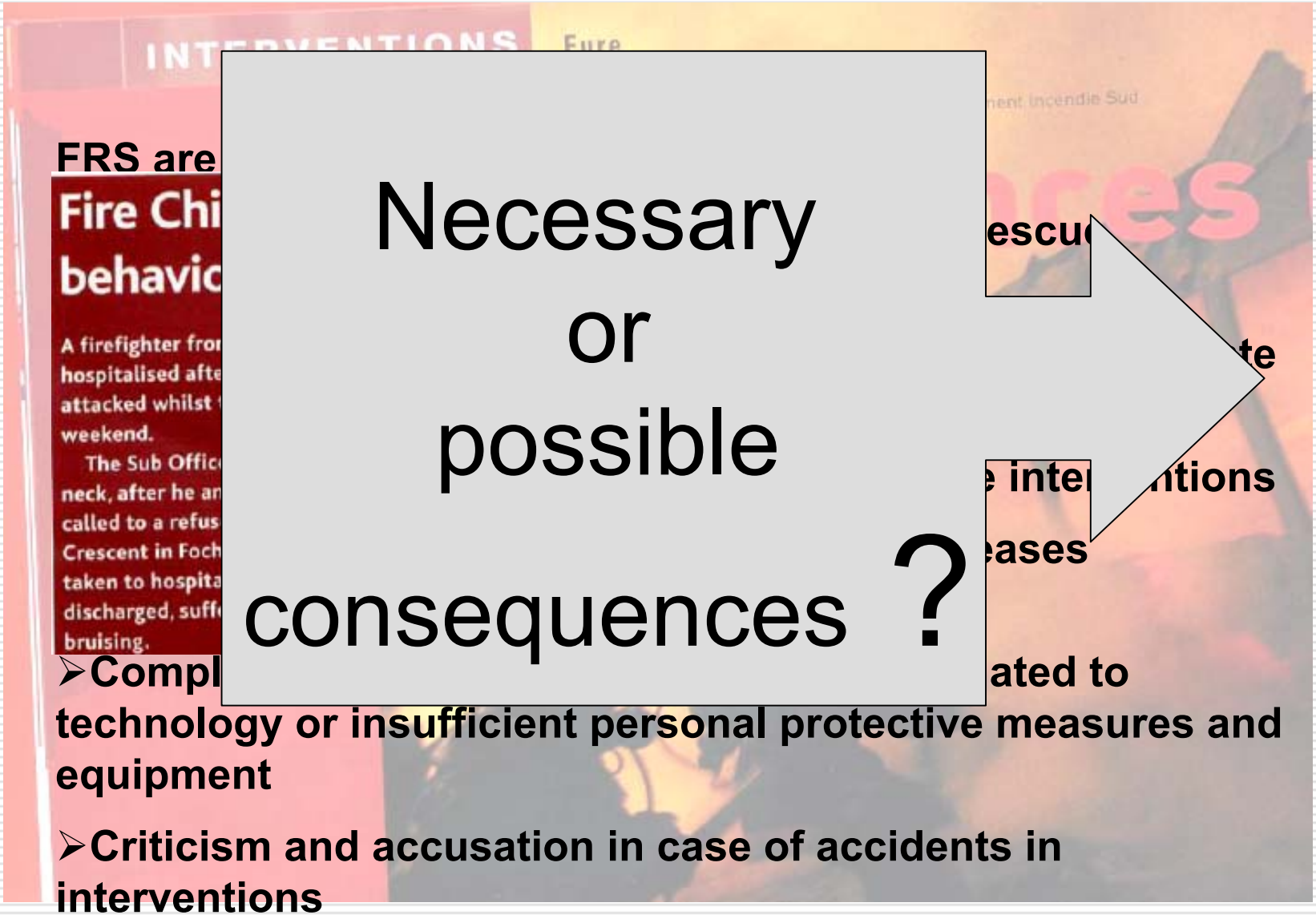
Thesis 5: The FRS is an untouchable Organization because we are always the “good ones”

But in reality Fire and Rescue Services face multiple risks related to these subjects.

Fire and Rescue Services are confronted by increasing cases of

- Defending the quality of work after fire and rescue interventions
- Media and press campaigns against FRS for being too late on the scene or having taken wrong decisions
- Complaints of damages due to inappropriate interventions
- Demands of recognition of professional diseases acknowledgement long time after exposure
- Complaints about professional accidents related to technology or insufficient personal protective measures and equipment
- Criticism and accusation in case of accidents in interventions

Future Threats and Risks



FRS are

Necessary
or
possible

consequences ?

➢Compl ated to technology or insufficient personal protective measures and equipment

➢Criticism and accusation in case of accidents in interventions

Improvements by TQM e.g. ISO 9000

"Planning, organization and hard work is the key to our success

in providing a fire and rescue service to the 124,265 people living, working and visiting County Limerick. I am proud of our team of retained firefighters and full time staff who work so hard ***to maintain a standard of service that complies with the international standard ISO 9001:2000 and particularly focuses on providing the services that are clearly needed and valued by our customers in County Limerick****."*

"By achieving ISO certification, Service staff ***commit to work smarter, reduce risks, meet customer requirements, reduce operational costs and improve efficiencies*** *through strategic goal-setting and the implementation of the eight quality management principles.,"*

Limerick Fire Service Awarded For Excellence In Service Delivery
ISO 9000-2001

Improvements by TQM e.g. ISO 9000

The QMS enables us define, ***monitor and improve our support to the Services front line operations and contribute towards the vision of "A Safer Shropshire****". In particular the QMS assists us in:*

-Better monitoring of our performance

-A structured approach to improving our performance through improved quality *or better use of time and resources*

-Consolidation of improvements and initiatives

-Documentation of existing processes

-Demonstrating systematic compliance with standards

-Greater consistency and traceability *of products and services*

-…

Shropshire Fire and Rescue Service

Certificate of Registration

QUALITY MANAGEMENT SYSTEM

This is to certify that:

Shropshire Fire & Rescue Service
Headquarters and Workshops
St Michael's Street
Shrewsbury
SY1 2HJ
United Kingdom

Holds Certificate No: FS 503705

and operates a Quality Management System which complies with the requirements of BS EN ISO 9001:2000 for the following scope:

Maintenance and repair of vehicles and equipment.
Management of assets including vehicles, equipment, hydrants and property.
Procurement and supplier management.
Design and modification of equipment and services.

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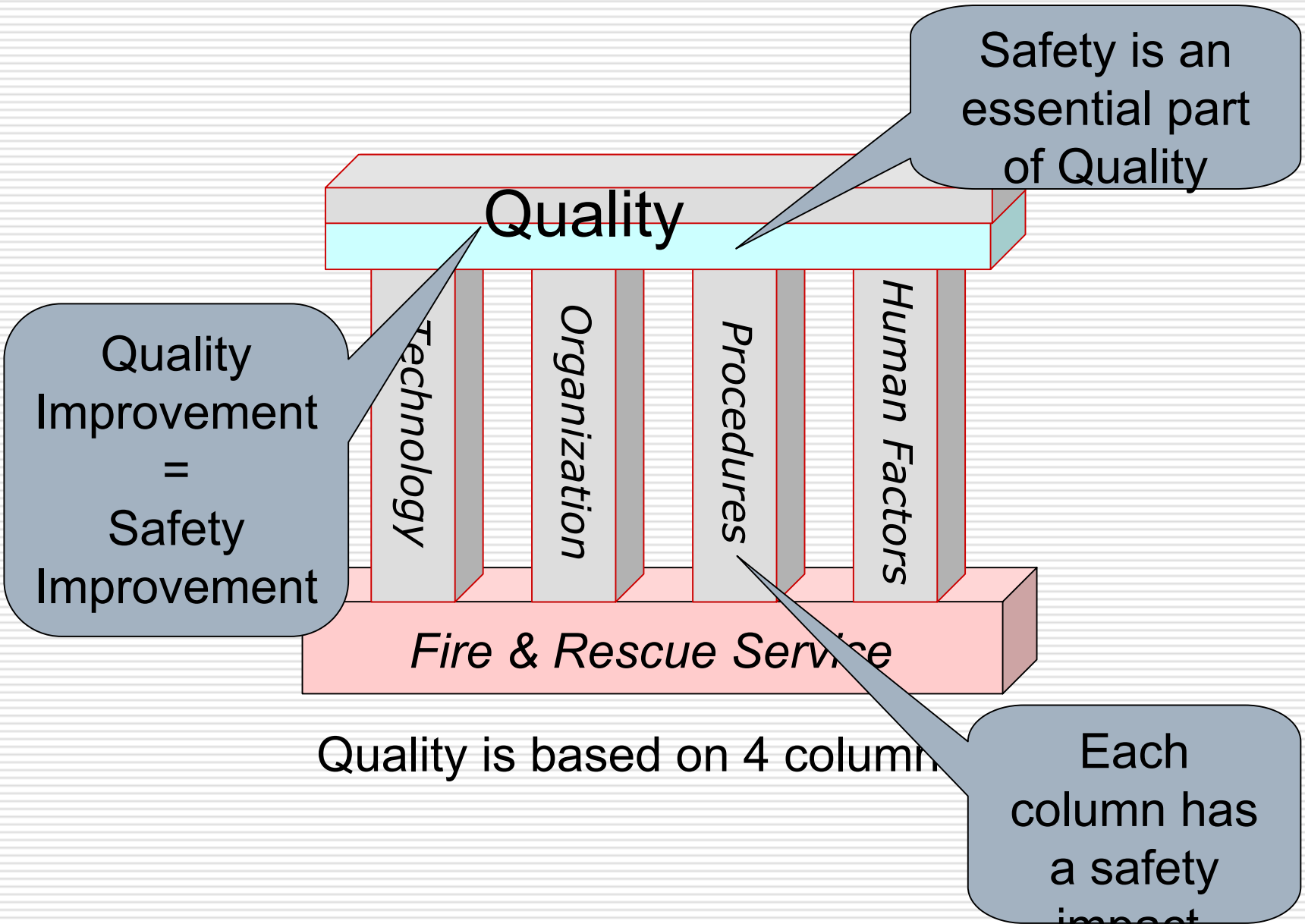
BSI Management Systems

Improvements by TQM e.g. ISO 9000



Risk and Safety Management has 7 successive elements.
In this way is possible to describe risk and safety as a systematic process.

"Risk" and "Risk management" defined in documents as for example

Risk can be defined as the combination of
the probability of an event and its consequences (ISO/IEC Guide 73).
In the safety field, it is generally recognized
that consequences are only negative and
therefore the management of safety risk is
focused on prevention and mitigat

Do Fire & Rescue Services learn and implement systematic risk management to avoid accidents?

Risk management is a central part of any organization's strategic management. It is the process whereby organizations methodically address the risks attaching to their activities with the goal of achieving sustained benefit within each activity and across the portfolio of all activities.

Management related
Lack of command and control
Wrong decision in incidents
Technical failure (*)
Incorrect procedures

Human related
Operational health
capacity
PTS syndrome
Human error / failure

In FRS risks can be related to 4 different sour
Management – Human – Incident - Society

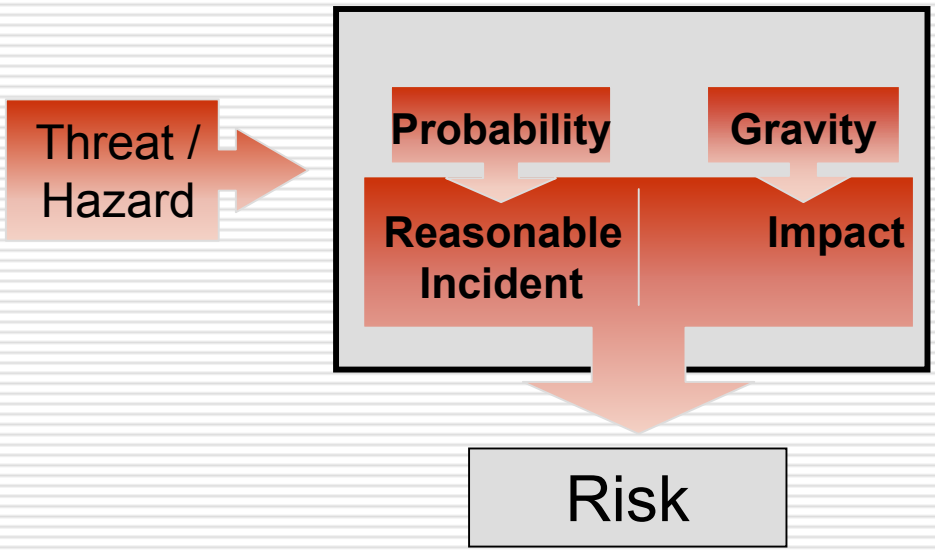
Incident related
Fire, accident
Chemical hazard
Flooding
Diseases
Natural, technical disasters
etc

Society related
Vulnerability of
infrastructure
Violence, Terror
Pandemics
Total Information society
etc.

* As far as purchasing, maintenance and control is concerned

"Threat" is not identical with "risk".

The risk is the outcome of correlating the threat with probability and gravity of impact.



Example: People are in very different way concerned by threats

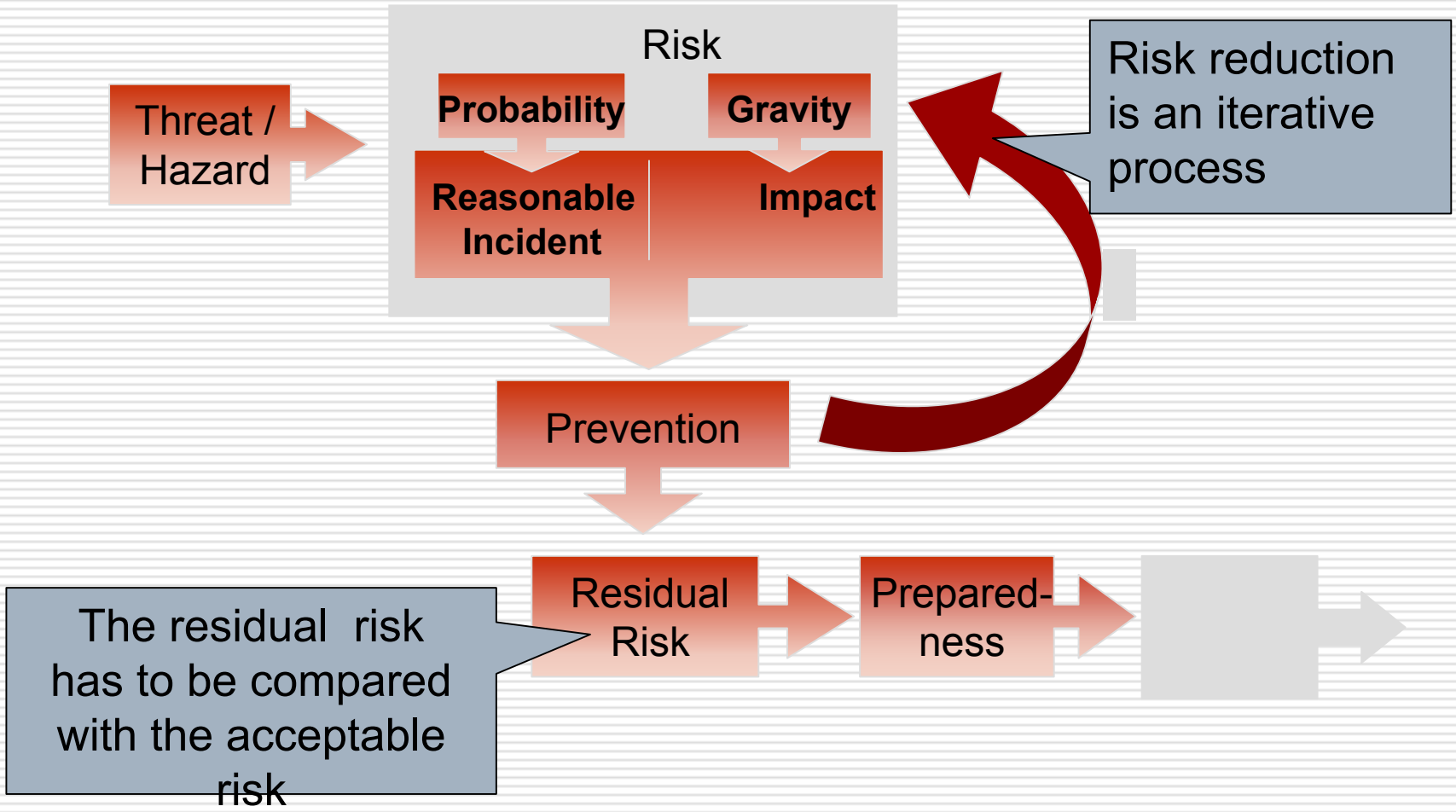
Threat:
Being attacked by the tiger

Only those who strongly belive in rebirth should risk going near

If you go in probability depends on A, B, C..
Attack can be deadly
Gravity is very high =
Risk high

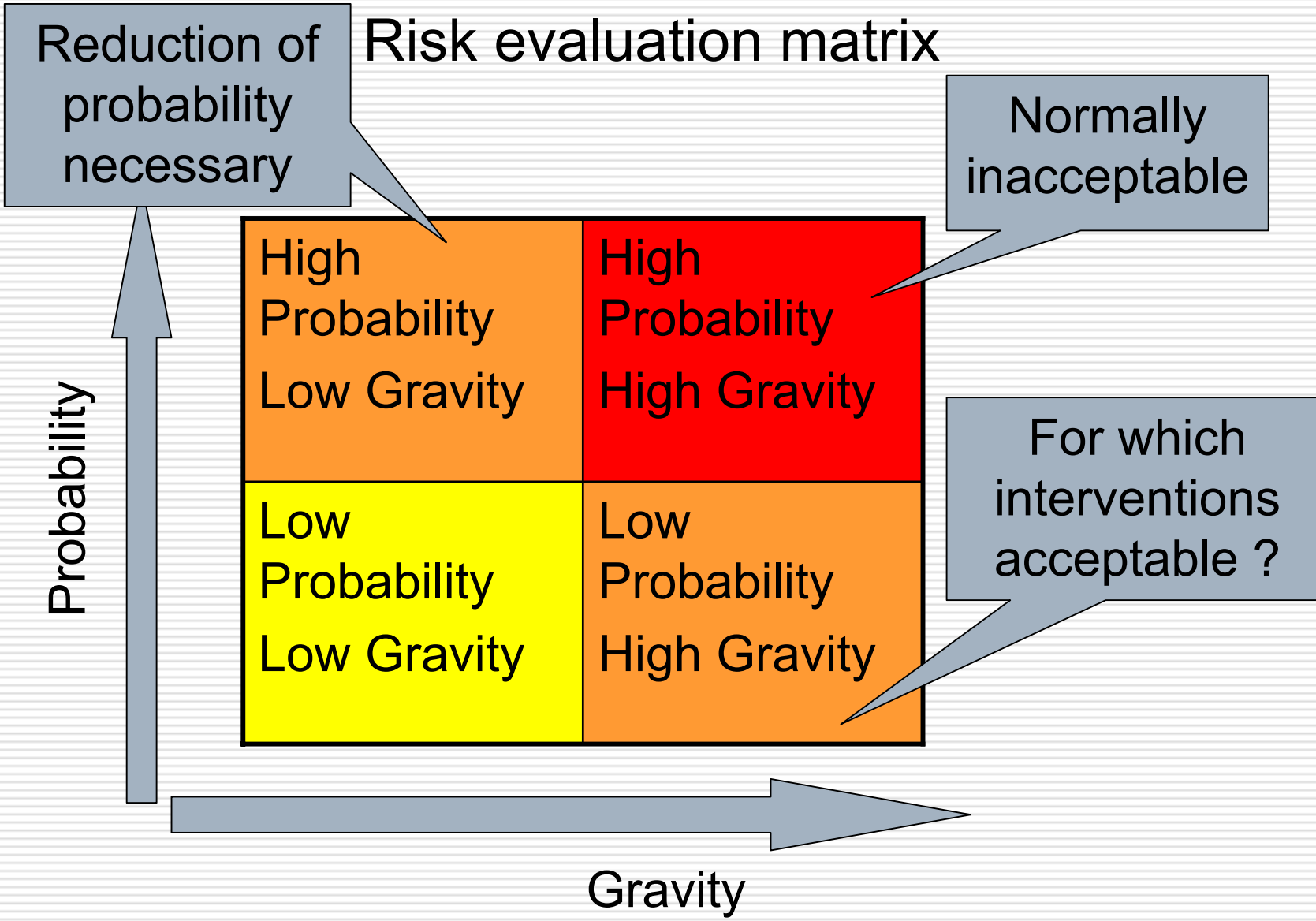
Threat and Risk Management

Risk assessment, risk evaluation, prevention and preparedness are elements of the structured risk and safety management process.

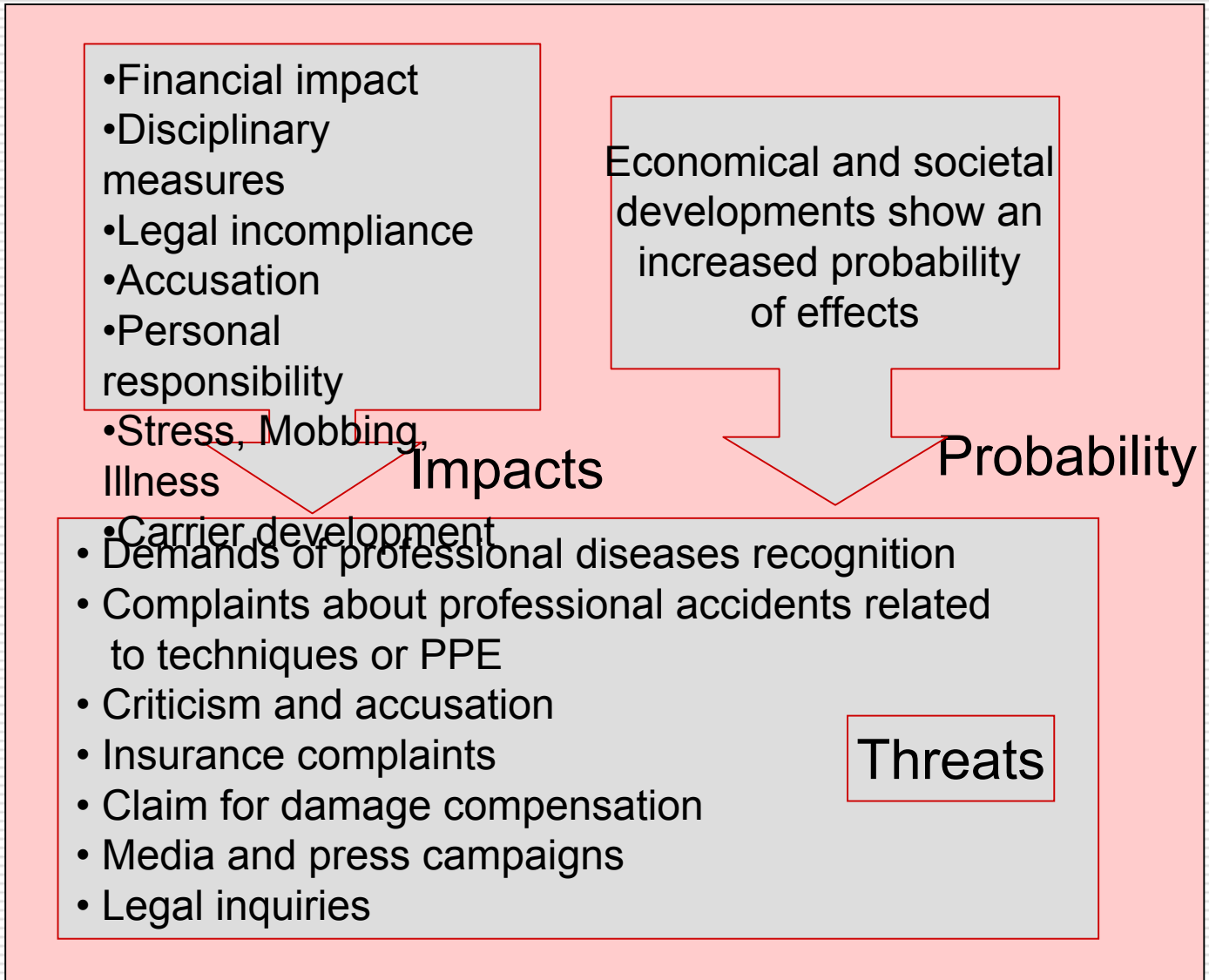


Example: Fire prevention and preparednes

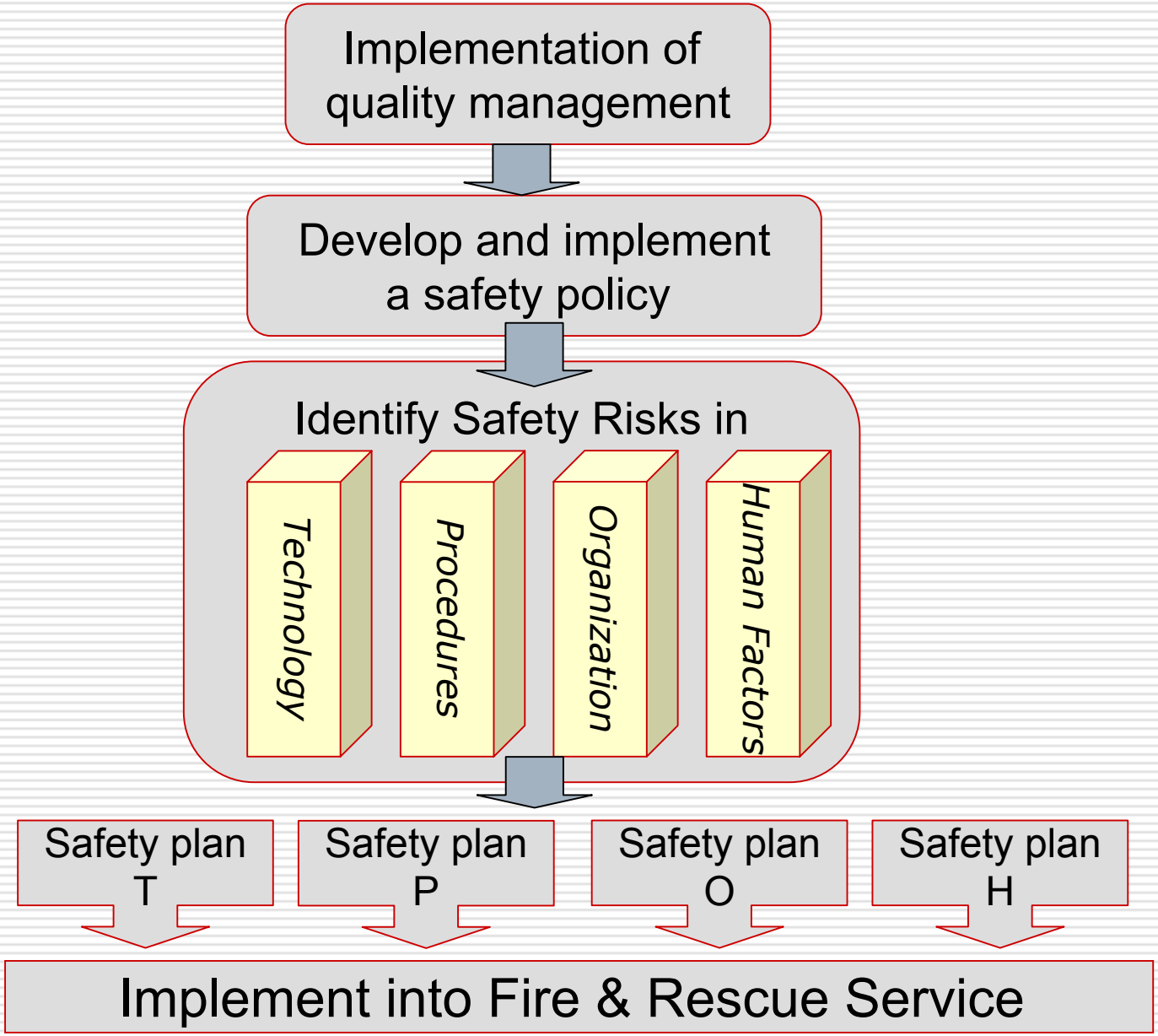
Risk evaluation matrix



Elements of structured risk analysis of FRS managerial risk



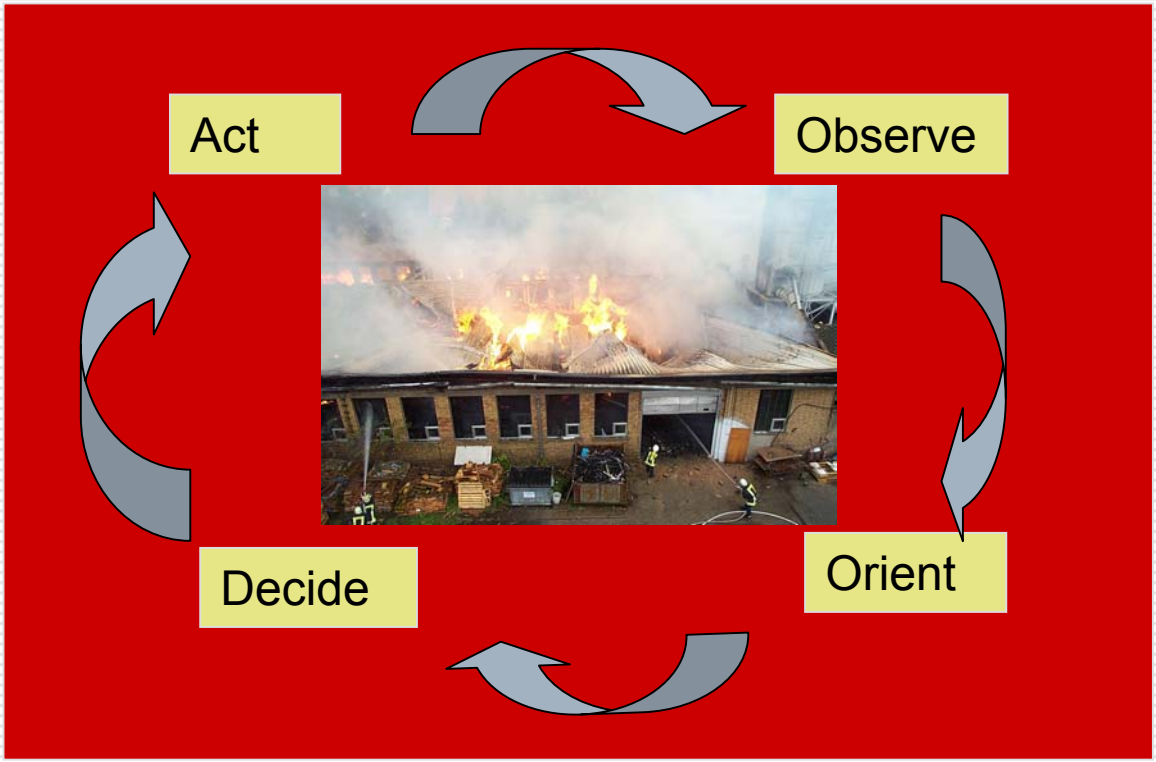
Risk management for managerial risks



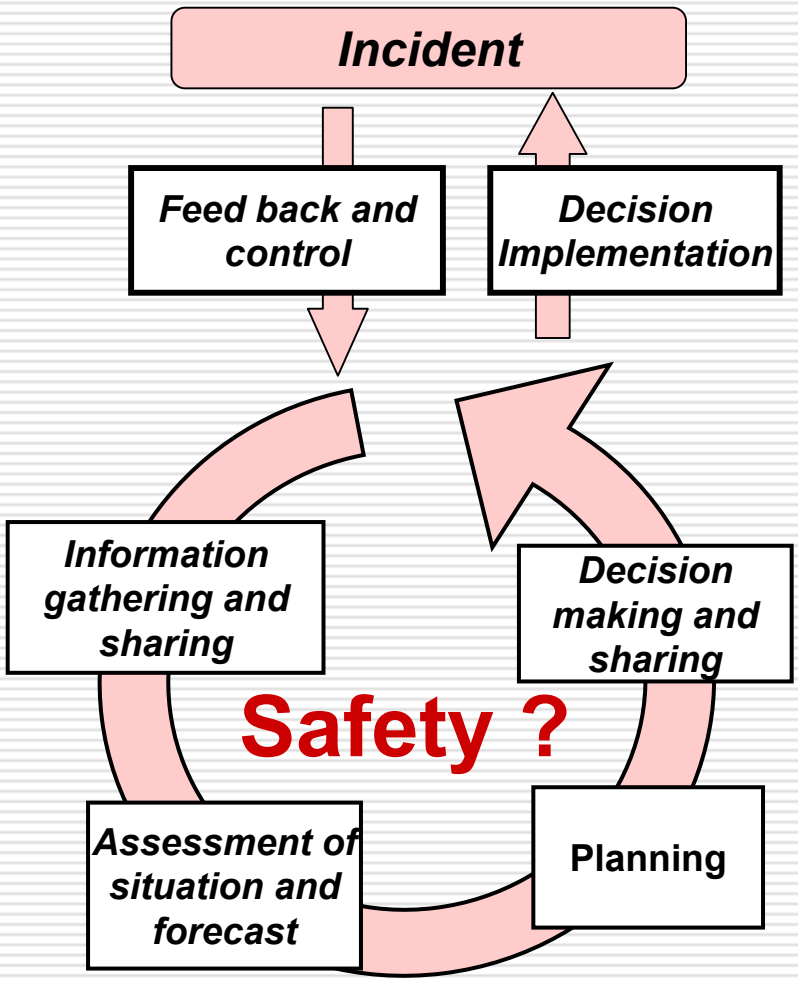
Risk assessment as part of the command and control process

The OODA loop is a general systematic approach to decision making.

"Quickly understand what's going on"



Example: Command and Control

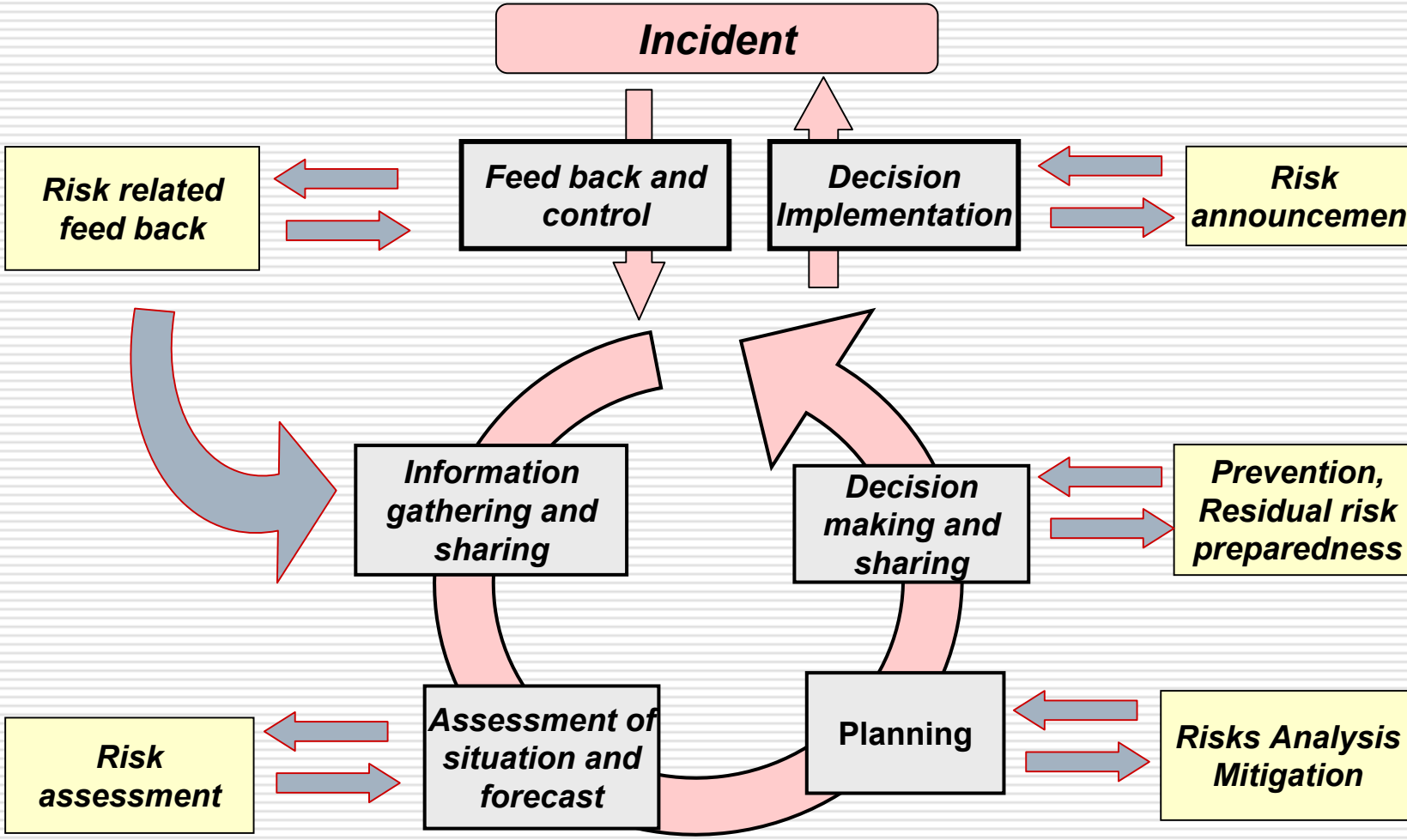


Each commander from fire engine team leader up to incident commander should reconsider, how many time he spends in intervention on safety in the decision making process.

Many intervention are routine and also safety is “business as usual”. The key element to improve safety is to brake the “routine thinking” and to evaluate in any intervention safety issues.

Safety should be included in each step
of the command and control process on any level of command.
Delegation of command should also delegate explicitly responsibility for safety.

Example: Command and Control



Which is the reasonable risks in fire interventions for the protection of values compared to that of rescue humans ?

Example : BA circuit in FRS

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Réalisation d'un manuel pour Appareils Respiratoires Isolants (ARI)

Maître de stage : Monsieur DOEBBELING
Tuteur de stage : Monsieur HUET

LEFFRAY EMILIE
IUT HSE
Année 2006/2007

CERN
Fire Service
BA Manual

Example : BA circuit in FRS

This example shows the application of the systematic and integrated safety approach for the Breathing Apparatus circle of a Fire and Rescue Service.

Normal approach:

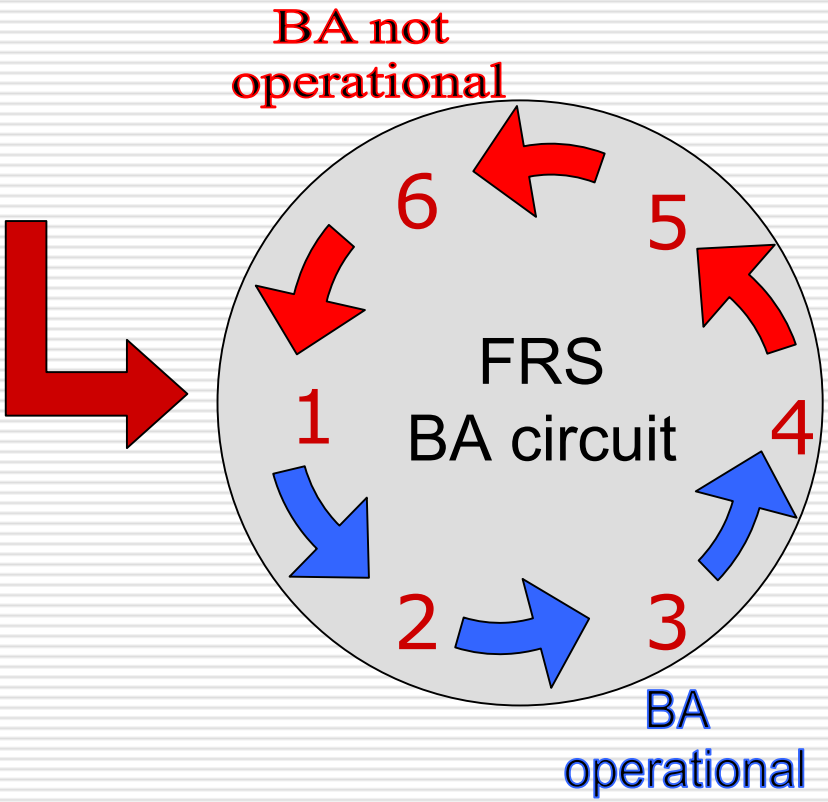
1. Technical procedure
2. PPE procedure
3. Safety procedure
4. Incident procedure
5. Training procedure
6. Legal obligations
7. Special training course regulations
8. Health surveillance procedure
9. …others

Systematic integrated safety approach:

Analysis of the BA processes
Starting from delivery of the components
to the end of their life cycle.
Mitigate safety risks in operational / not operational BA procedures by e.g. elaboration of a FRS BA-Manual

Not independent procedures of different departments and responsibilities give the rules for maintenance, training and intervention, but based a systematic risk analysis an BA manual describes all parts of the BA use and maintenance. In this way the safety risks can be minimized.

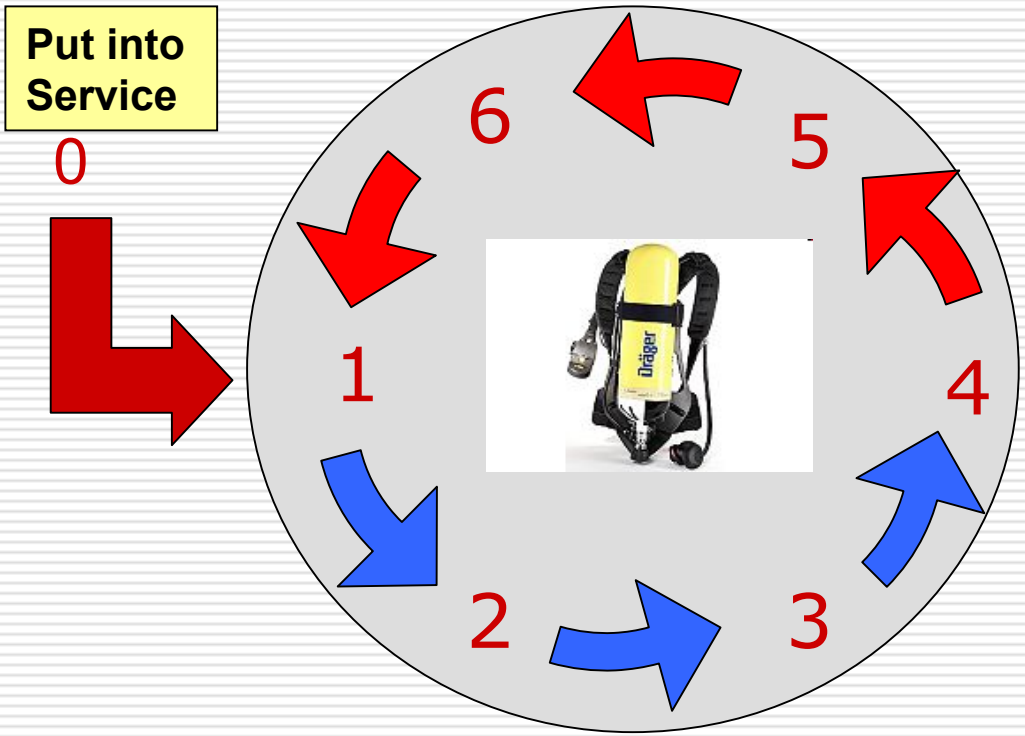
The BA circuit is as safe as the single step is safe



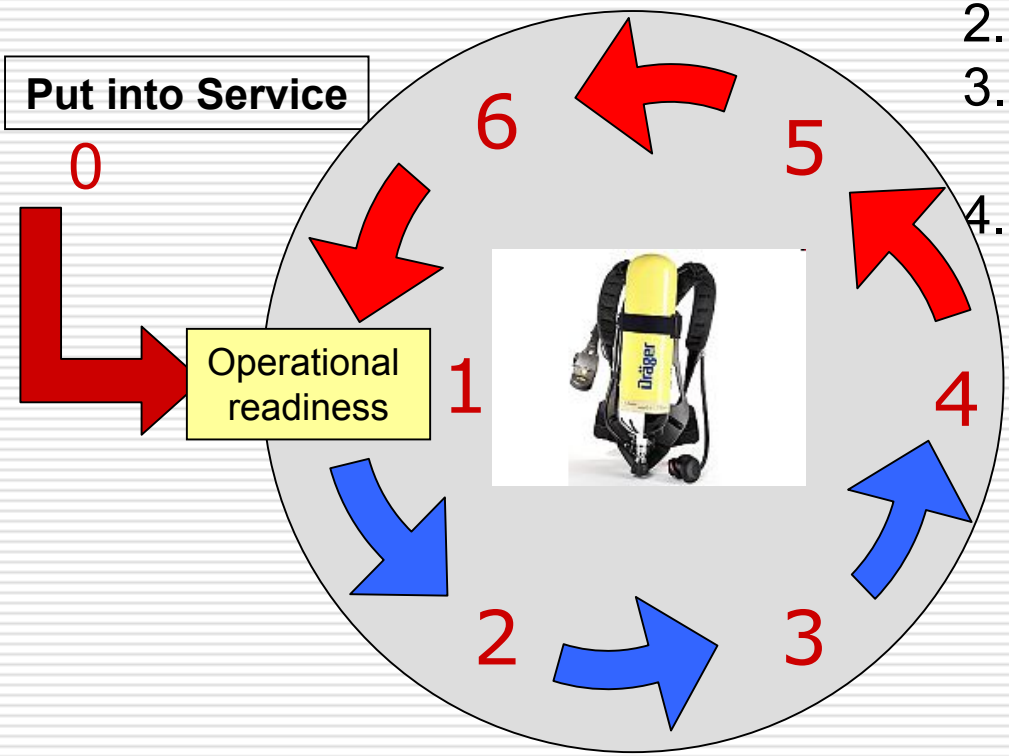
The 6 steps of the BA circuit are:

1. Operational readiness and Storage
2. Transport to exercise or intervention
3. BA intervention
4. Out of service after use
5. Return transport, storage for maintenance
6. Recondition and maintenance

Step 0: Put into service



1. New BA delivery
2. Reception and registration of all components
3. Verification of test and maintenance procedures
4. Functional test
5. Recorded confirmation of operational status
6. Initial training for users
7. Operational introduction of the BA system

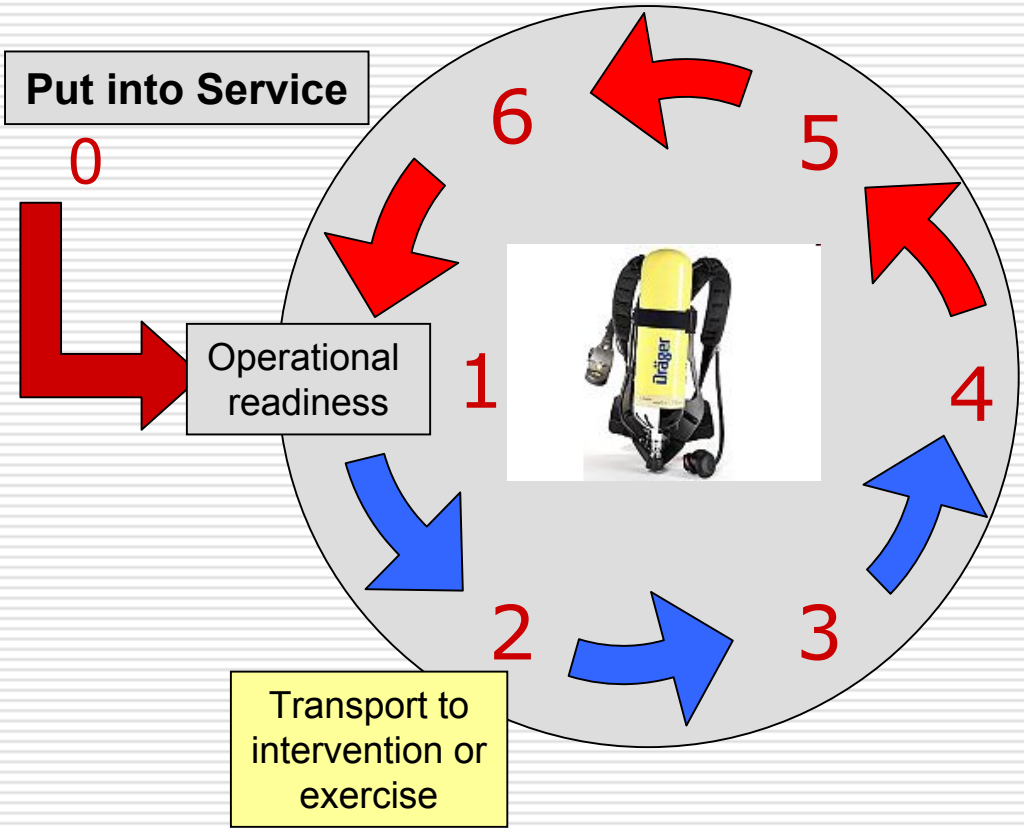


Regulations and procedures for:

1. Safety and security labeling
2. Appropriate storage area
3. Periodical checks and tests
4. C
   o

Security: Sealing of the box

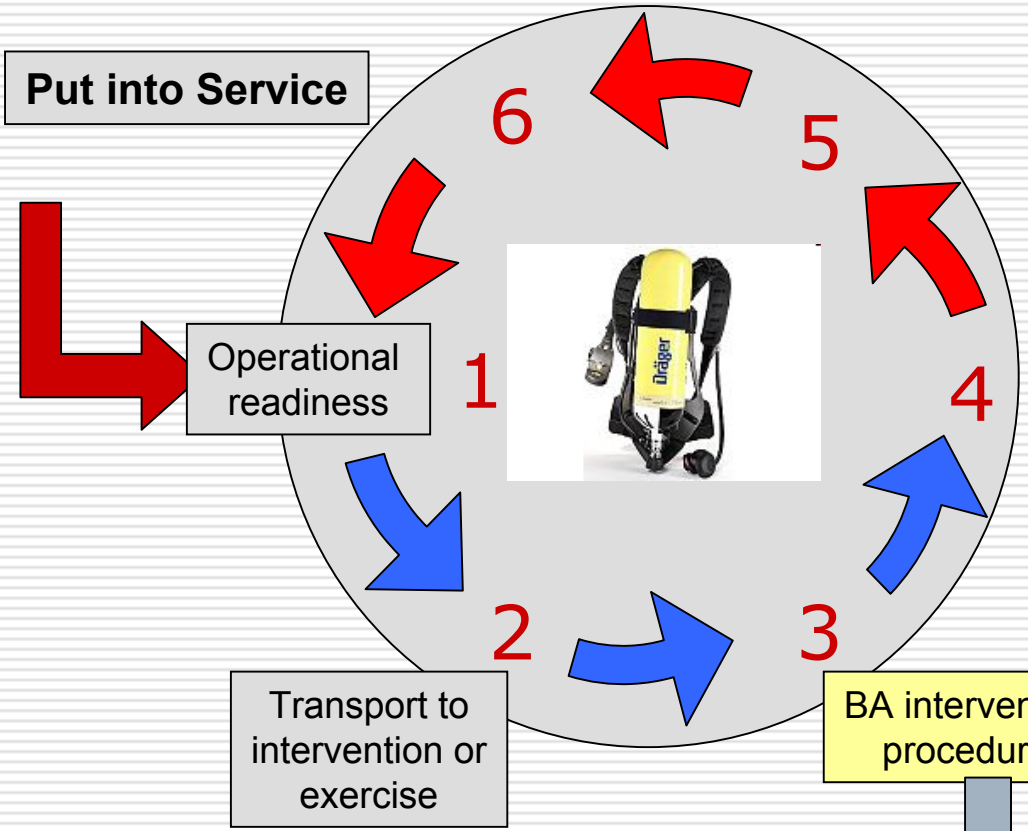
Step 2: Transport



Transport procedures

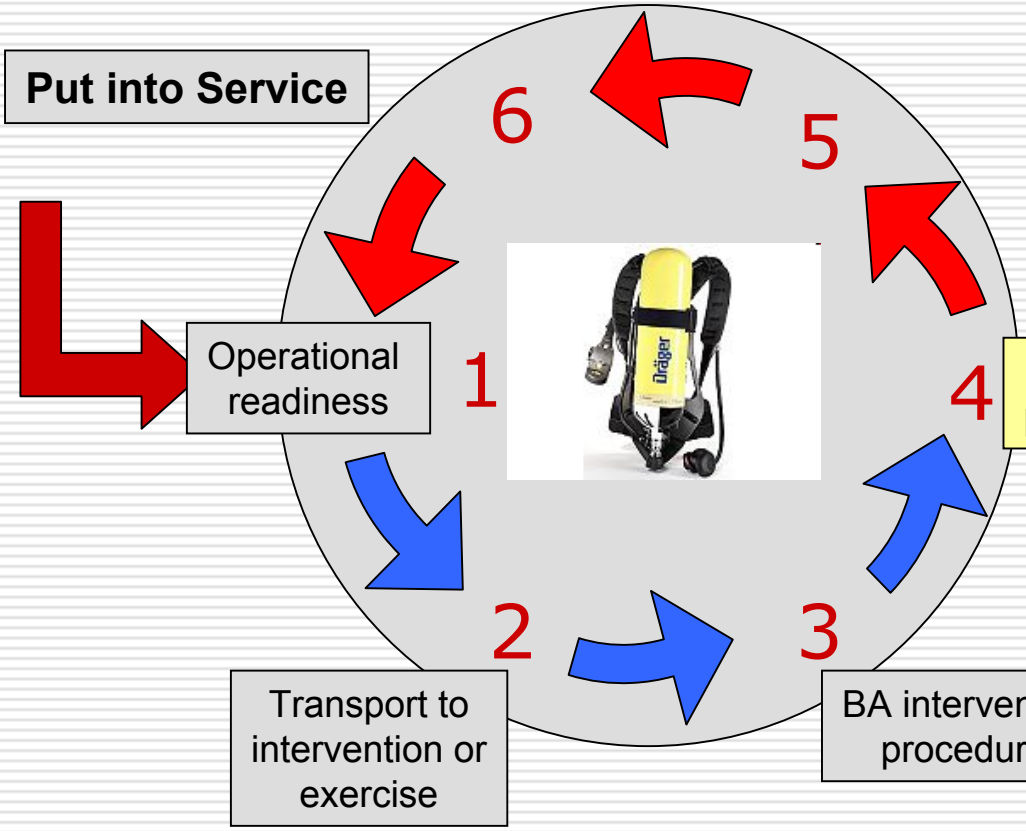
1. Compliance with legal transport requirements
2. Transport in Fire Engines
   (Cabin or cargo hold)
3. Transport in other cars
4. Transport of bottles under pressure
5. Use of transport

Step 3 Intervention / Exercise



BA intervention procedures:

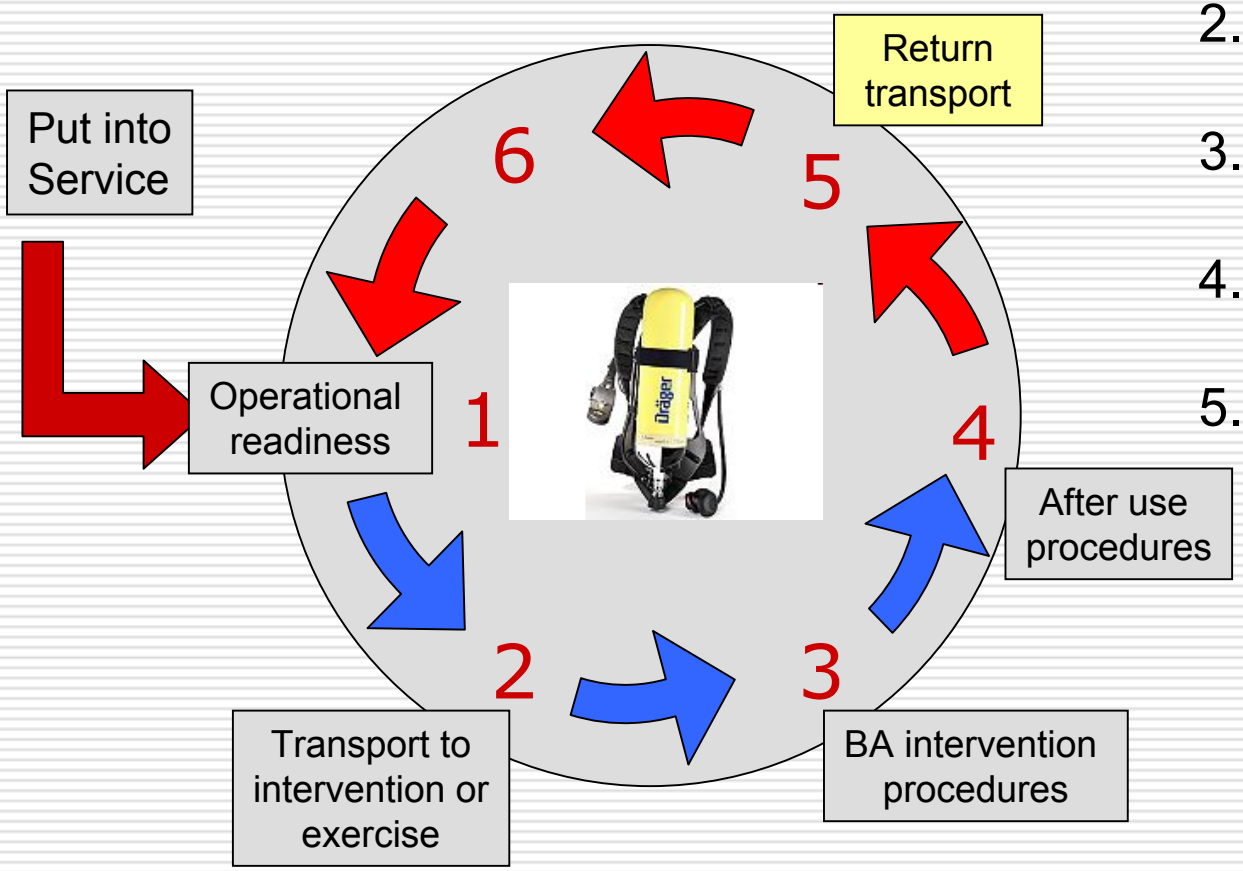
- Common basic intervention procedures
- BA intervention safety procedures
- Risk analysis procedure for special interventions
- Limits of BA use due to special risk (BA related risk analysis procedure)
- Accident procedure



After use procedures

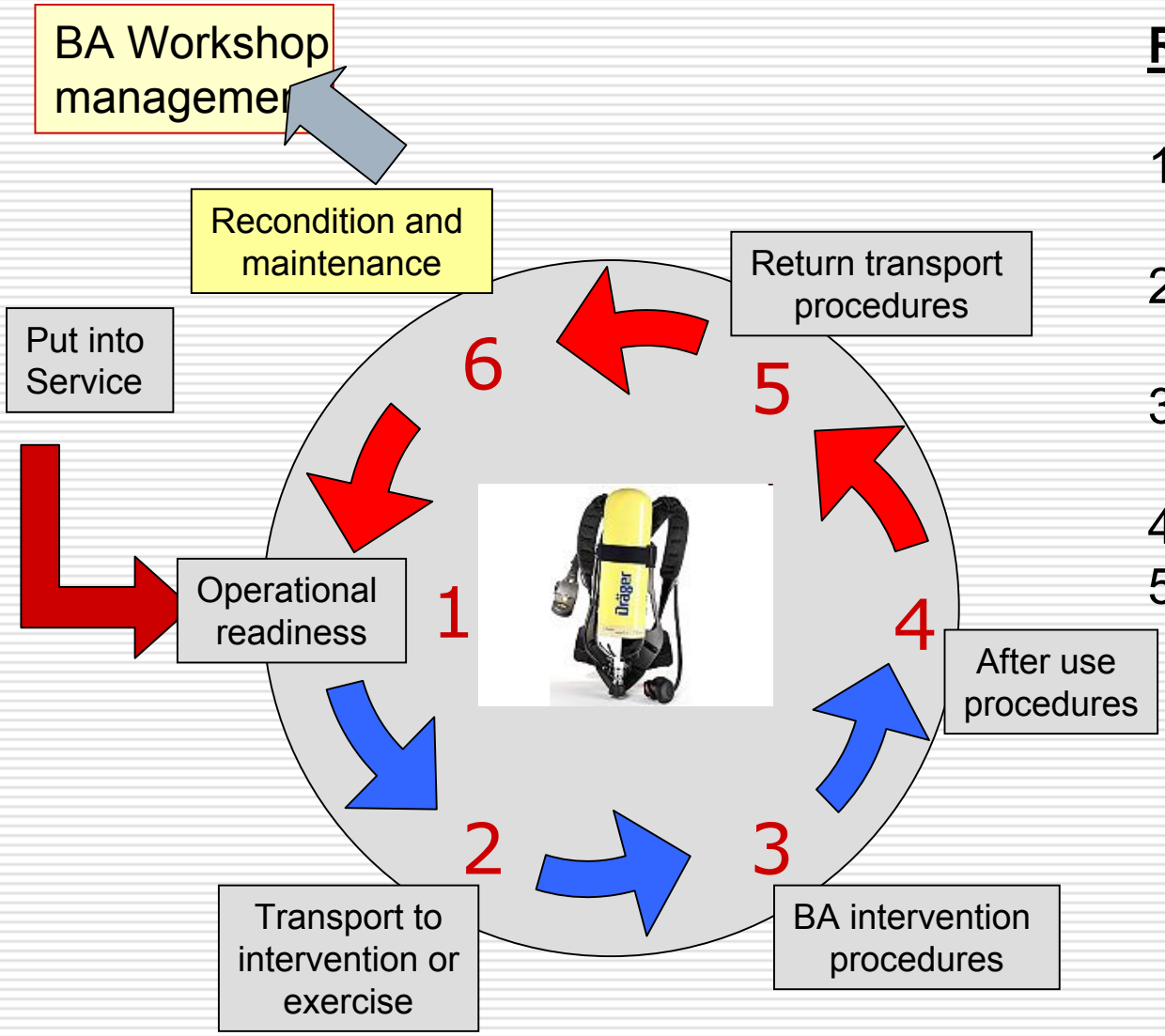
1. Black/white separation and labeling
2. Exceptional re-use with bottle change
3. Provisional decontamination
4. Accident follow up BA procedure

Step 5 Return transport - storage



Return transport

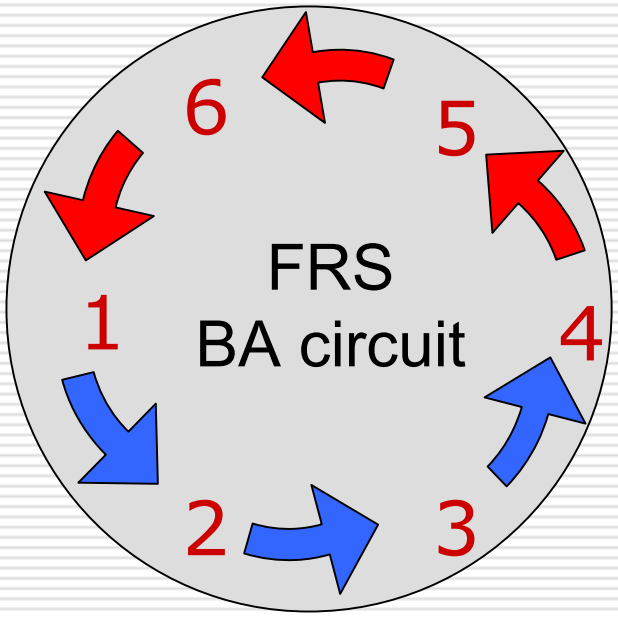
1. Transport in the fire engine
2. Transport in other cars
3. Transport incase of contamination
4. Compliance with legal obligations
5. Separated storage before maintenance



Recondition and maintenance

1. Decontamination and cleaning
2. Maintenance procedure
3. Periodical exchange of piece
4. Test procedure
5. Update BA record before start of a re-use cycle

The FRS BA circuit is an example for a safety managem approach in FRS.



If all procedures and quality descriptions have been evaluat and confirmed the BA process is safe

Summary

FRS officers are responsible for safety matters and face managerial and operational risks .
The Fire Services are not anymore out of critical questions and are confronted of enquiries after interventions and especially after accidents of fire service members

Without a structured risk management process within the general quality management FRS might run into more and more difficulties. Therefore a risk management Related to

- Organization
- Procedures
- Equipment and
- Human factors

carried out continuously and with dedicated resources before during and after