

Module 7

Human Factors

Module Objectives

- ▶ Know the human factor concept in civil aviation security
- ▶ Understand the importance of the team leader and team work in the passenger screening checkpoint



Module Objectives

- ▶ Understand the effects and consequences of human errors on civil aviation security.
- ▶ Identify the limitations and capabilities of the personnel *vis-a-vis* passenger and luggage screening technologies.

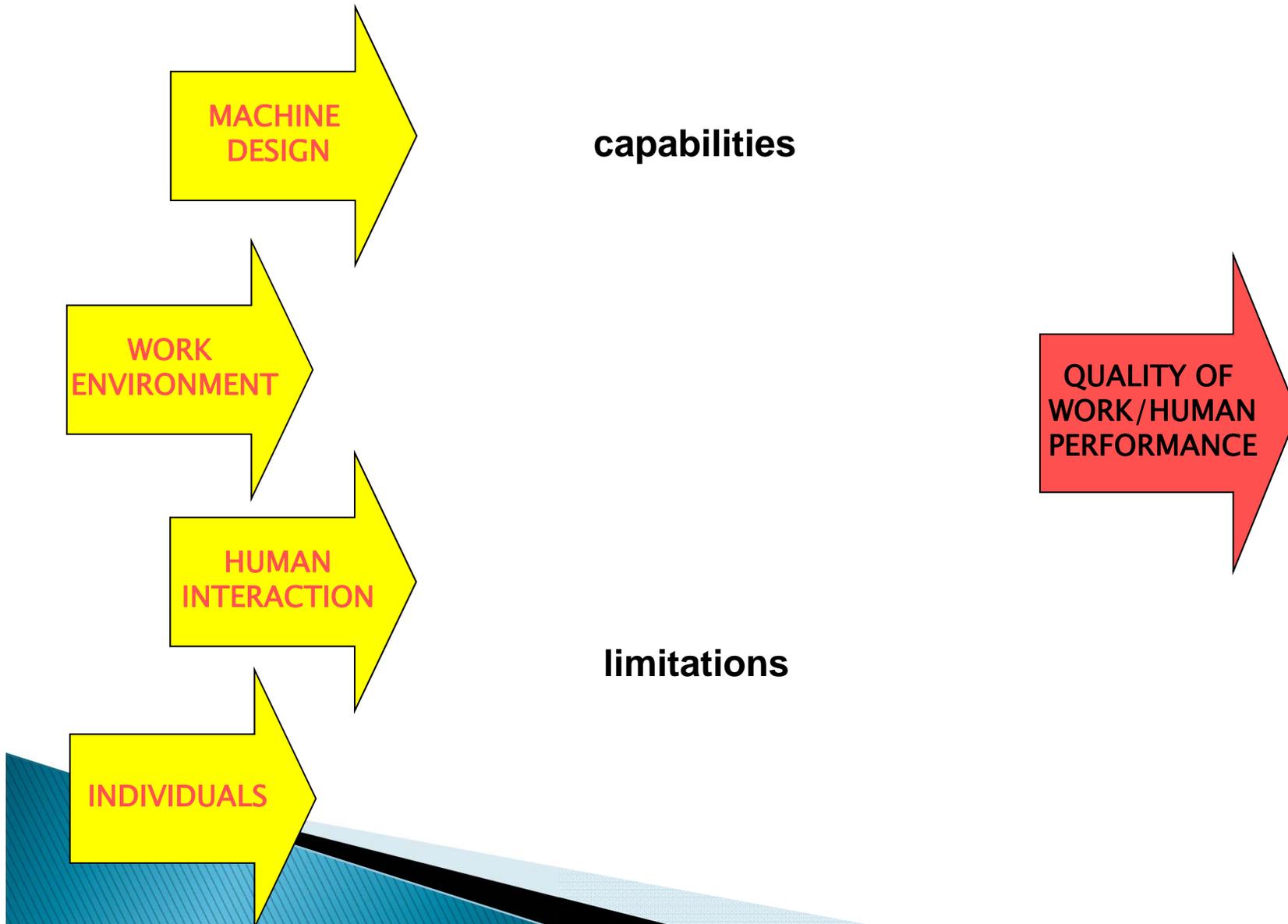


Human Factors

- ▶ Concerns individuals in their personal and work environment; their relations with other individuals, machines, procedures, and instructions, and with the surrounding environment.



What are Human Factors?



Human Factors Conceptual Model

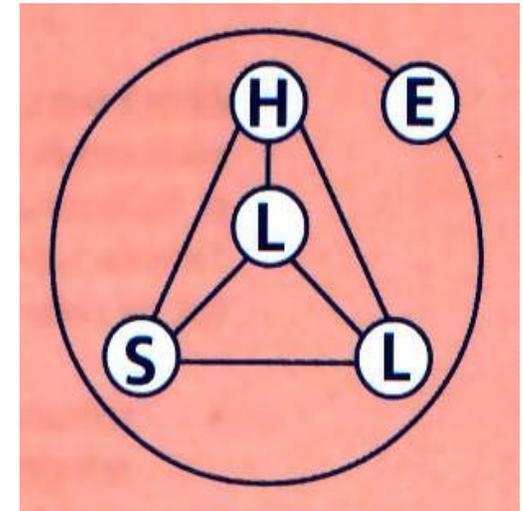
Software: information, data, procedures, documents used in the workstation.

Environment: the setting where individuals carry out their activities. It may be physical, social, or psychological, and is affected by the organisation, regulations, policies, etc.

Hardware: equipment, tools, and machinery.

Liveware: personal elements or items related to the individual.

Liveware: individual elements of other persons related to the individual.



Human Error

Human error is inevitable and ubiquitous. Therefore, defences need to be created to tolerate it and to generate competencies to detect, trap and mitigate it...





- An error is made when the action deviates from the intention, or when the intention is inappropriate.
- Error is not intentional.

- An offence is committed through an intentional deviation from regulations, standards, or procedures.
- An offence is intentional and may become routine or an inappropriate standard.

Competencies

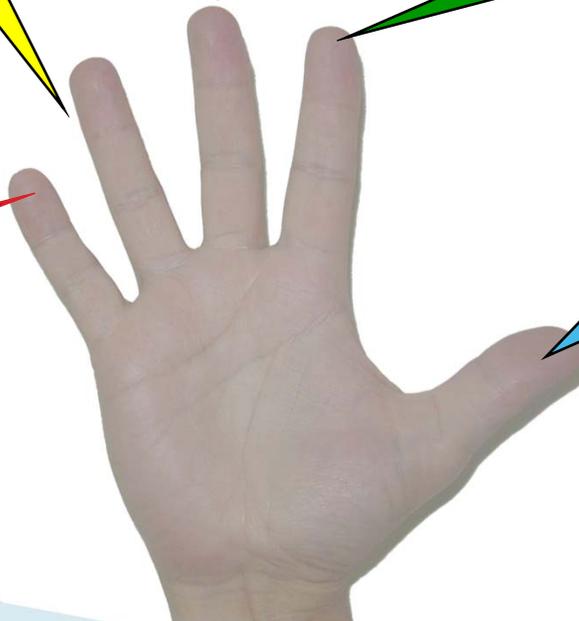
Resources
people
equipment

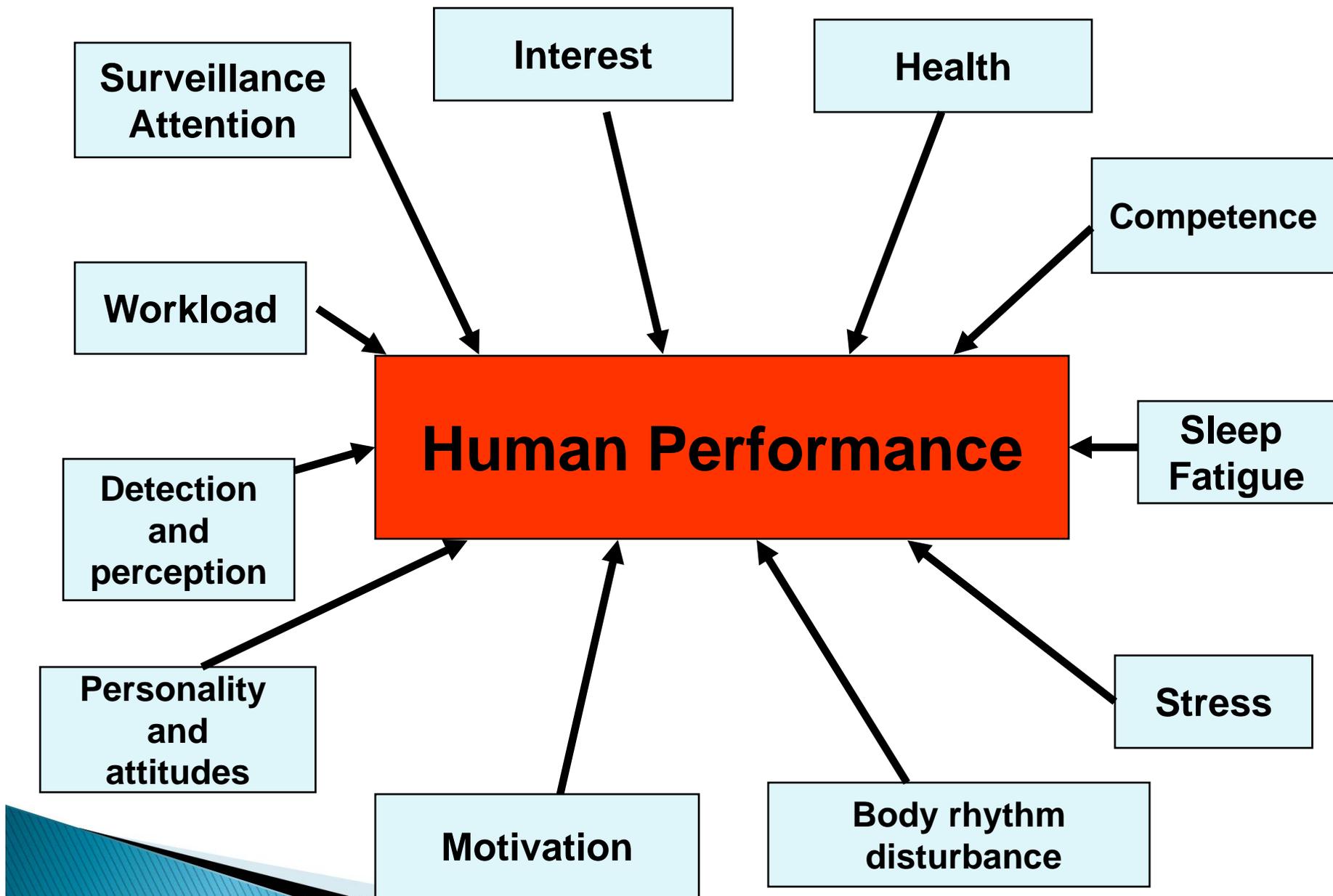
My role, mission
My process and
procedures

Work:
Product or service

Solutions

Documentation,
legislation,
Standards and
regulations





Cognitive Component

Cognition is related to the way the mind works



Remember.....

02 eyes →

02 ears →

01 mouth →



Use them in that order....



Teamwork

The group of individuals with complementary skills and experiences who are committed to a common goal and a series of specific outcomes.



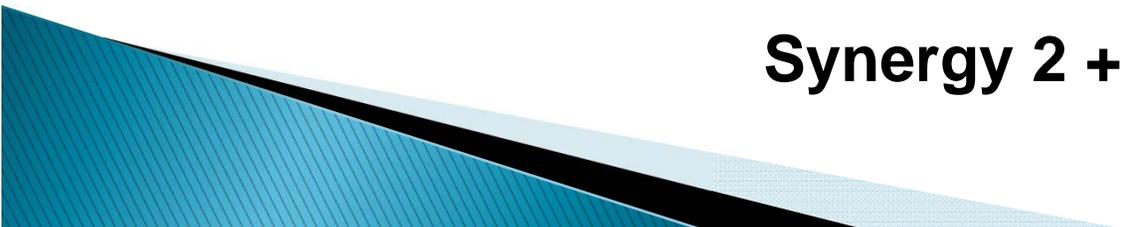
Teamwork

- ▶ Ability to participate in work teams, putting professional objectives above personal interests.



Some Benefits of Teamwork

- ▶ The capacity of a team is greater than the sum of individual capabilities.
- ▶ Objectives are attained more easily.
- ▶ Possibility of learning from the skills and capabilities of other team members.
- ▶ Each team member is especially important, since each has part of the information or knowledge that is fundamental for attaining the objectives.



Synergy $2 + 3 = 6$

Work in Harmony

- ▶ Rotation of positions
- ▶ Information and clear instructions
- ▶ Backup in case of conflict
- ▶ Constant motivation
- ▶ Mitigation in case of disagreement
- ▶ Know the capabilities and limitations of the personnel



Individual Requirements for Working in a Team

- ▶ Assertiveness
- ▶ Positive attitude, willingness to collaborate
- ▶ Responsibility and maturity
- ▶ Positive role in the team: organise, encourage, connect, etc..



Leadership

- ▶ “The art of influencing people to work with enthusiasm towards common good objectives”



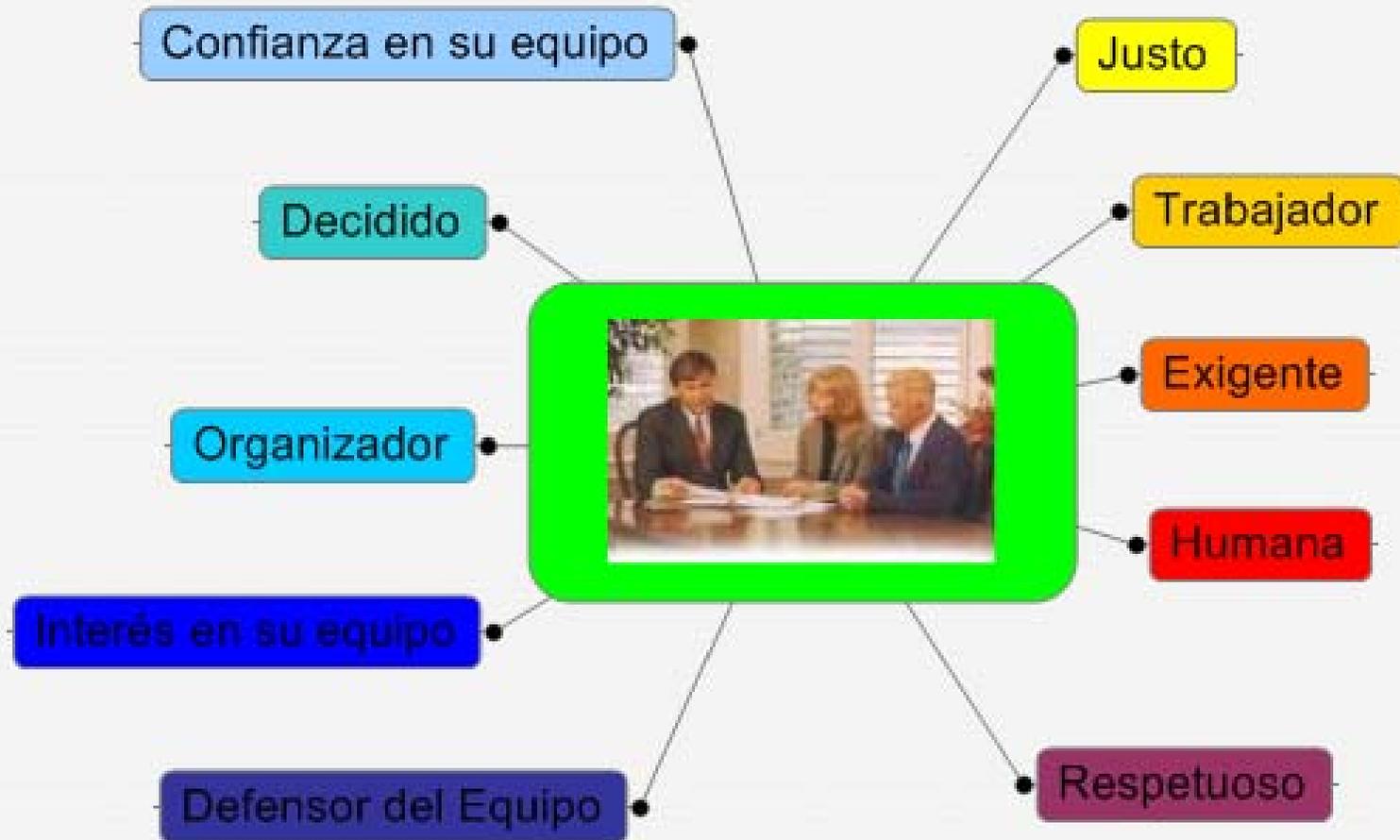
Leading Role of the Supervisor

The supervisor must know:

- ▶ The team members
- ▶ The rules and procedures
- ▶ His/her duties
- ▶ Stress to the team the importance of the work to be done



Team Leader (Supervisor)



Supervisor or Leader

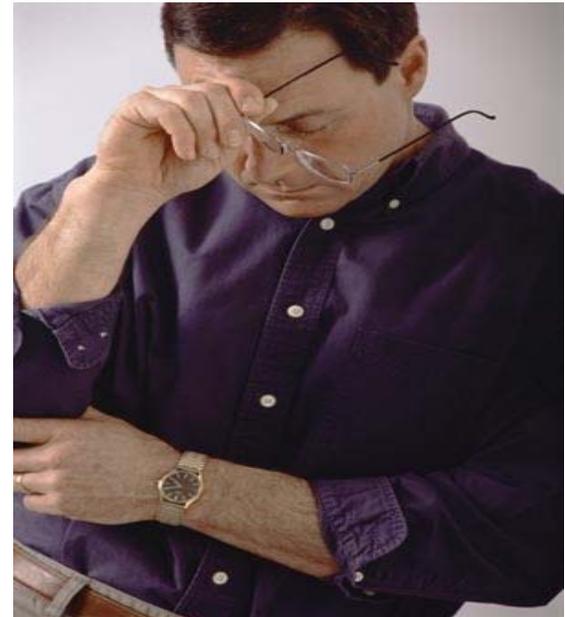
Must understand that both leader and personnel are exposed to:

- Error and infringement of rules and procedures.
- Impaired human performance
- Communication problems



Ergonomics

- ▶ Operators must be able to easily read displays
- ▶ Operators must be able to easily interpret alarms
- ▶ The organisation must design an appropriate work setting
- ▶ Operators are the ones who identify the threat and decide



Operational Environment

- ▶ Take into account the physical aspects of the workplace, such as noise, air conditioning, lighting, temperature, and humidity.
- ▶ Brief the work team.
- ▶ Duration of the work shift.
- ▶ Teams must report security occurrences in their shift.
- ▶ Provide continuous training to the team.



X-Ray Detection

- ▶ Evaluate team competencies
- ▶ Conduct psychological evaluations
- ▶ Use training images (TIP)



Tools

- ▶ The equipment is a tool that does not replace individuals
- ▶ Equipment fails, depends on electric power and constant maintenance
- ▶ Equipment limitations and capabilities must be known



Quality Control

- ▶ Audits
- ▶ Inspections
- ▶ Tests
- ▶ Incident investigation



Mitigation

- ▶ Technological
- ▶ Regulatory (rules and procedures)
- ▶ Training
- ▶ Supervision



Summary of the Module

- ▶ Human factor concept
- ▶ Competencies and human performance...
- ▶ Teamwork



Summary of the Module

- ▶ Leadership and supervision
- ▶ Ergonomics and operational environment
- ▶ Quality control and mitigation



End of Module 7

