



KNKT
Komite Nasional Keselamatan Transportasi

FLYING SCHOOL ACCIDENT REVIEW FORUM

Base on KNKT Investigation

HUMAN FACTORS ISSUES ON FLYING SCHOOL AIRCRAFT ACCIDENTS





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This presentation consists of:

HUMAN FACTORS INTRODUCTION,



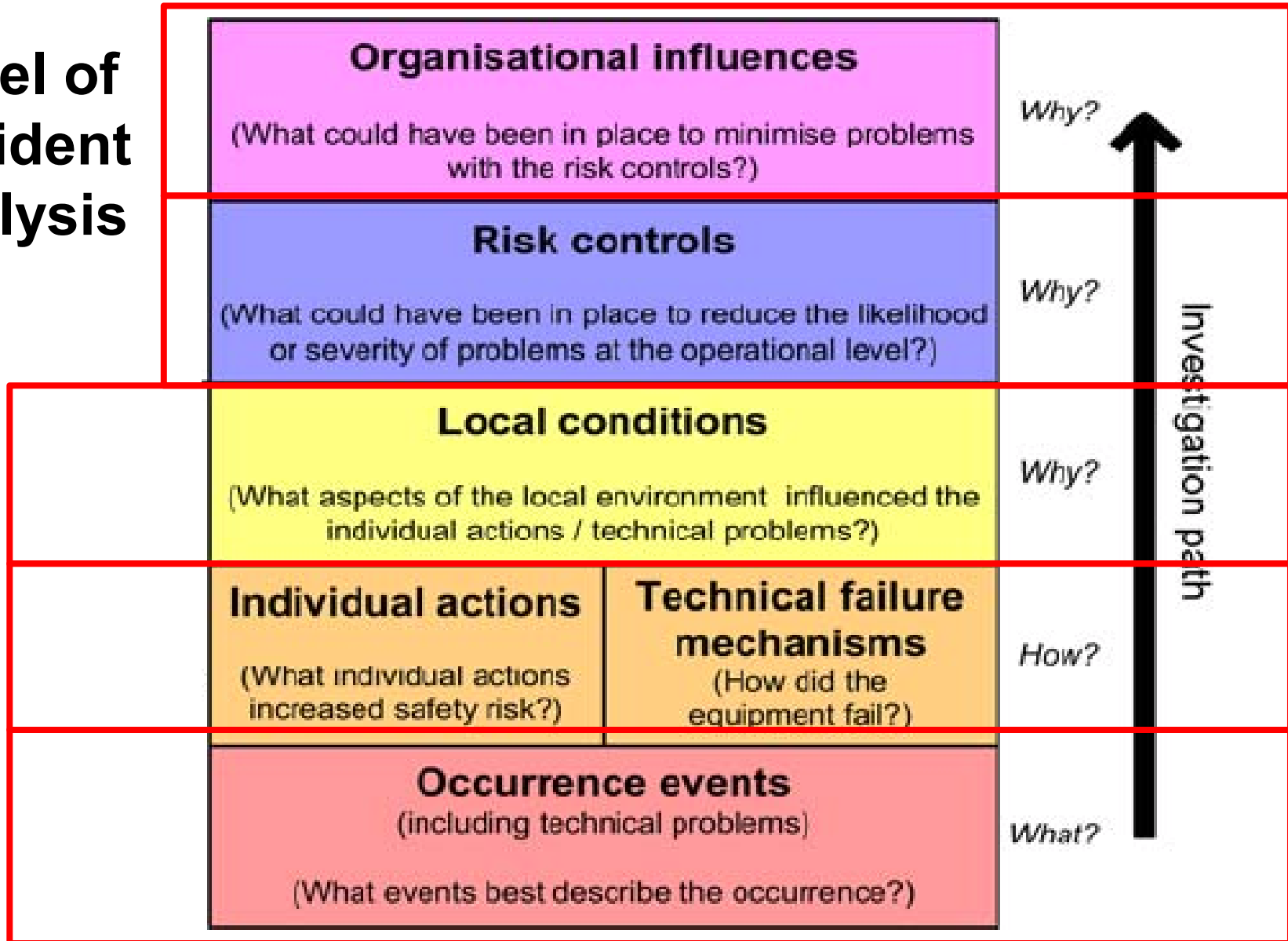
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Short brief of Human Factors

HUMAN FACTORS INTRODUCTION, SAFETY ISSUES AND SUGGESTION FOR IMPROVEMENT.



Level of Accident Analysis





Human Factors

The study of all the factors that make it easier to do the work in the right way, apply wherever humans work and also sometimes known as ergonomics

US Department of Veteran affairs

Is about people, about people in their working and living environment, relationship with machine and equipment, with procedure and environment about them, and also their relationship with other people. (Frank H)

HF, It is a quite long journey to understand but here are the elements related and affected to the Human Factors

Ergonomics

Perception

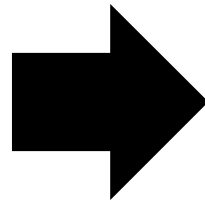
Workload

Memory

Stress

Fatigue

Automation



What he, she, they or
an organization going
to achieve

Resulting :

A Success

About Success

Failure

Situational Awareness

Crew Resource Management

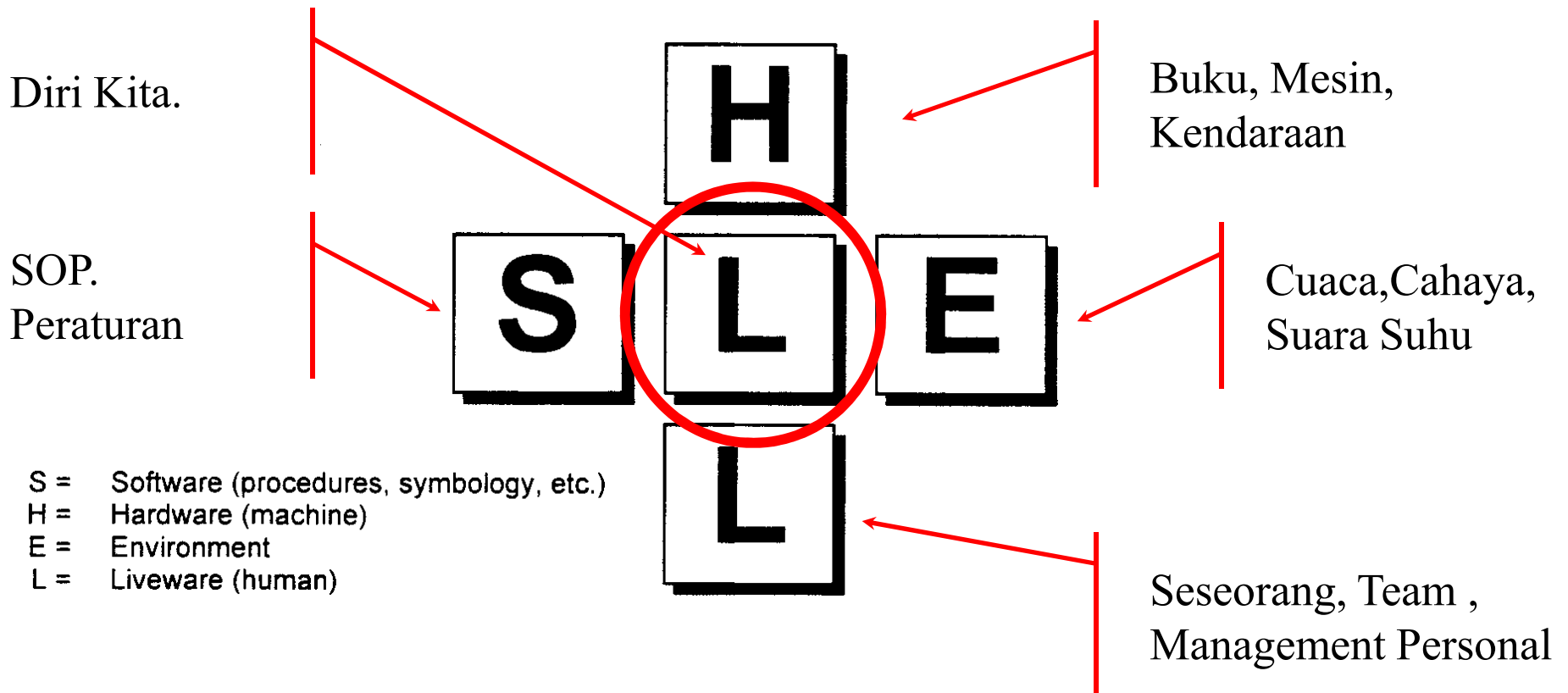
Decision Making



Human Factors basic concept

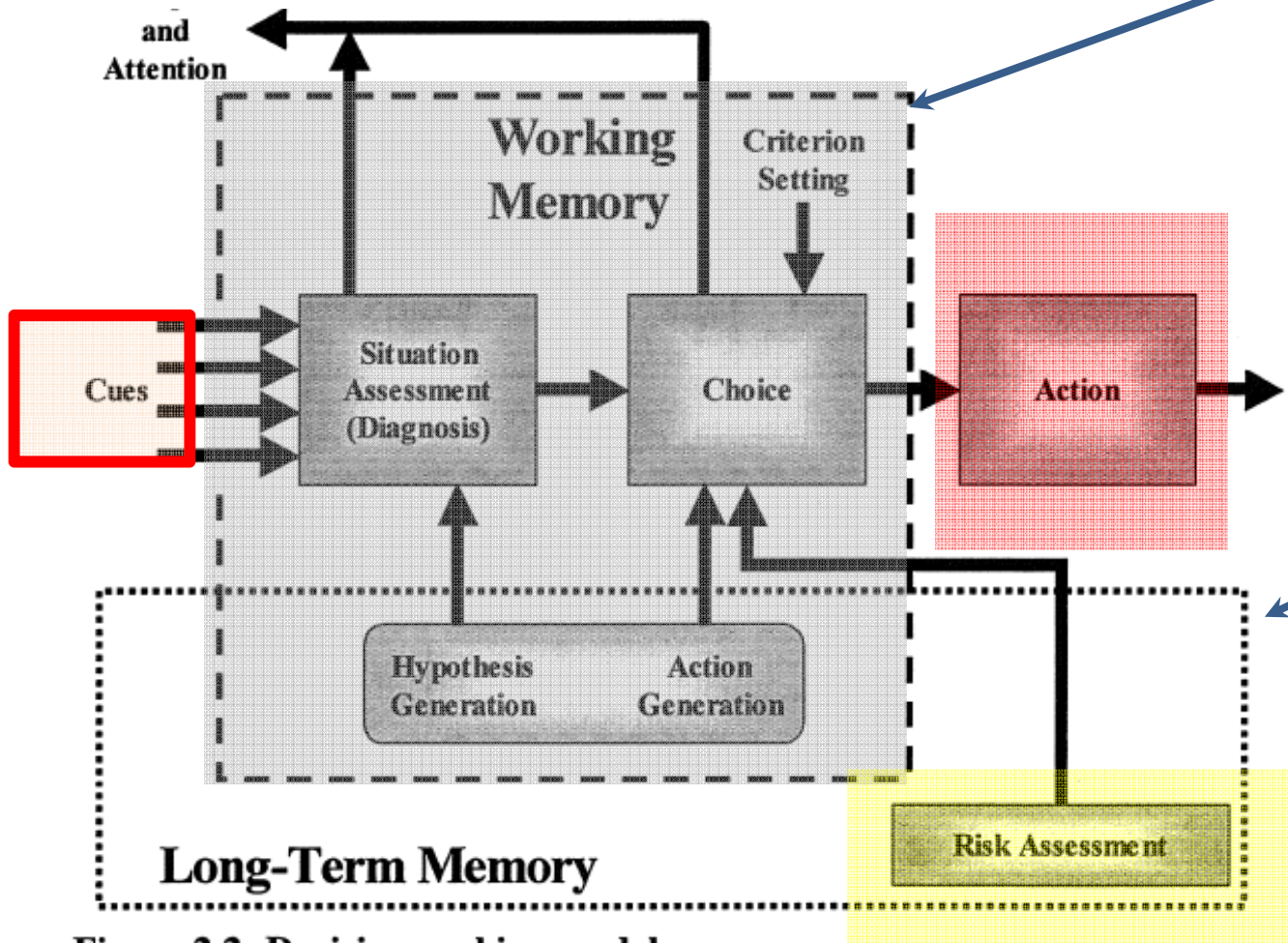
In this model the Match or Mismatch of the blocks (Interface) is just as importance as the characteristics of the block themselves.

A mismatch can be a source of human error





A Human Error Approach to Aviation Accident Analysis



- WORKING MEMORY**
- Crew Briefing
 - Discussions
 - Refreshing
 - Review

- LONG TERM MEMORY**
- Knowledge stored
 - Trainings
 - Seminars

Figure 2.2 Decision-making model
Source: Adapted from Wickens and Flach (1988)



Situational Awareness

Relates to

- Human Performance (conditional)
- Emotional Control (behavior)
- Working Culture (Organizational)
- Decision Making (Cognitive)



Situational Awareness

LOW S-A :

Is awareness that expected or predicted

HIGH S-A :

Is what situation or else that they expected
or predicted is really happening



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Relates to flight techniques, decision making and management policy

THE HUMAN FACTORS ISSUES FOR THE 5 YEARS ACCIDENT INVESTIGATION



Most Critical element findings that led to the flying school aircraft accidents

Un-Safe Act & Condition

In most of the investigations, it indicated that there were minimum of 3 of the Un-Safe Acts or Conditions appeared prior to the runway occurrences.

- Using an undocumented procedure.
- The reported weather condition differ with the actual.
- Departure from SOP.
- Complacency.
- Failure to meet targets.
- Violating limitations.
- Lack of communication.
- No one control the situation.
- No look out.
- Ambiguity.
- Confusion.
- Fixation / Preoccupation.
- Unresolved Discrepancy
- Runway Condition and Braking Action
- Lack of Leadership



The General Safety Issues

- The student has to make a decision in dynamic environment, such as election to go around or land....(**decision making**) **both Instructor & student responsibility.**
- The un achievement on force emergency landing while in dual flying was remarked, but no corrective action done by the instructor. (inconsistency with SOP and insufficient skill) **instructor responsibility**
- The engine was abnormal (early detonation indication) but was not write in the maintenance log.(insufficient knowledge, attention and responsibility) **both instructor and student responsibility**



The General Safety Issues

- Insufficient knowledge of the torque affects.
(the passed training and skill related)
Management and Instructor responsibility
- Approach & Landing Flight Technique in
dynamic wind velocity. (experience and skill
related) ...**Instructor responsibility**



The factors to be considered for improvement

- A special (cognitive) decision making training with a workshop (in simulator) in a dynamic environment. (this performs for both instructor and student) **Management responsibility**
- To review the current limitation and its criteria prior to released for Solo flight. (time limit) **Both Management & instructor responsibility**
- The student has knowing well aircraft system for normal, abnormal and emergency condition prior to released for Solo Flight. **Both Management & instructor responsibility**



The factors to be considered for improvement

- Flight management and crew coordination when flying two pilots in the cockpit.
- Additional of special knowledge on mix fuel operation.
- Make sure that the students had sufficient of CFIT acknowledgement and skill.
- Make sure that the students have known well in practices the CRM prior to solo flight.



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The KNKT is your friend who intends to help whoever that needs more information & discussion to improve their safety..



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THANK YOU