



STAMINA HF Training at Swiss International Air Lines Ltd.

The Partnership



Trinity College Dublin

NLR Amsterdam

FLS Aerospace (IRL)

SAS



In collaboration with the
EU Joint Research Centre, Ispra



The STAMINA project has been carried out with
the support of the European Community within
the framework of the Leonardo Da Vinci programme



Going beyond awareness and knowledge

Human Factors training needs to impact:

- Skills
- Attitudes & Values
- The way in which work is done

How can this be done?

Impacting the entire organisation

- Human Factors problems are not restricted to “hands-on” personnel; solutions cannot be restricted to them
- Other personnel set the context for the work of the technicians.
- Three critical roles: supervisors, managers, trainers
- They need training which addresses their particular roles.

Addressing the operational realities

- Barriers to safe performance
 - time pressure, unclear procedures, etc.
- Operational double standards
 - The role of procedures
 - “Black books”
- Management’s role
 - training message must reflect the actual core values of the company as expressed by managers
 - Cynicism the major danger

Structure of the Core Course

Introduction plus four modules:



Training Methodology

- Active learning
- Group & individual exercises
- Games
- Videos
- Group discussions
- Role plays
- Presentations

The STAMINA approach

- Focus beyond awareness
- Training for the entire organisation
- Addressing operational realities
- Integration with HCM
- Integration with technical training
- High level competence for human factors facilitators

Background

STAMINA at Swiss:

- In use since spring 2003.
- An integral part of JAR-145 Initial and Continuation training program.
- Customised for Swiss working environment using real world examples.



JAR-145 Initial Training

- Full Swiss introduction (SwissIntro) course is 5 days of which 2.5 days are dedicated to Human Factors.
- Full STAMINA program is used in order to fulfil Appendix 9 Initial Training requirements, but there remain some gaps.
- Used as an introduction to human factors for non-technical staff working in the JAR-145 organisation (planners, logistics etc.).



JAR-145 Continuation Training

- Allotment of 2 days every 24 months for CT. (Based on JAR-145 requirements and recommendations).
- Briefings from QA and engineering are imbedded in HF training (searching for context).
- Selected parts of the STAMINA program are used:
 - DAY ONE: task module.
 - DAY TWO: customised team (written communication) and organisation modules.

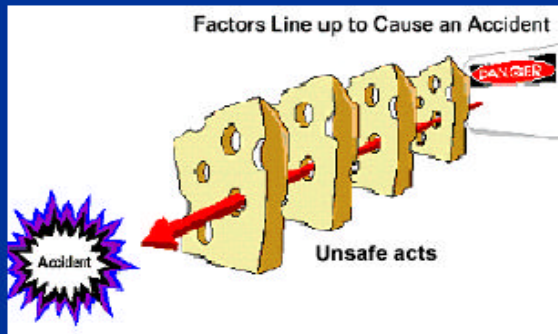


How STAMINA Is Customised

In the TASK module, a company model of fleet expansion is used as the basis of reason's model

STAMINA

Reason Model



Unsafe acts (Active)

Who is Involved? Front Line aircraft maintenance personnel (mechanics, lead mechanics, supervisors)

What? e.g. Distraction from task or deviation from official (task) procedure

Example: Technicians deviate from AMM or MPM because of:

- time pressure
- poorly written procedures
- lack of manpower, etc

How STAMINA Is Customised

In the TASK module, unsafe acts examples come from the company deficiency reporting system

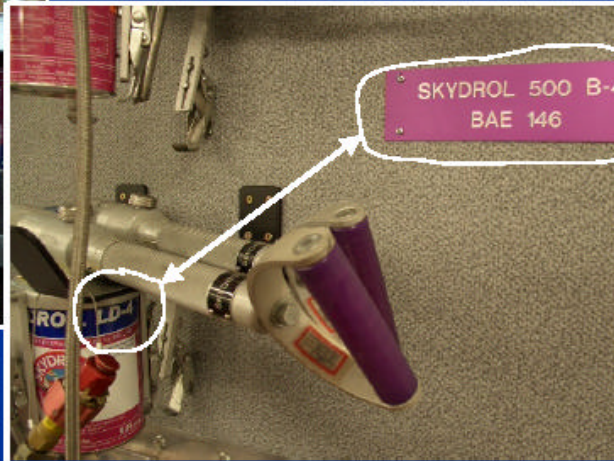
STAMINA

Unsafe Acts-Action Slip



Spot the Difference!

Internal Example



Task module - Task and situation characteristics & unsafe acts

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How STAMINA Is Customised

In the written communications sub-module, company examples are used to discuss problems in communication

Swiss International Air Lines

Workpackage-Summary and Certificate Release to Service

IAB 13:43

13.Jan.2004 Page 1/1

Workpackage JAW-110104 for JAW, the 13.Jan.2004 (22:00) in ZRH

type: ER4, SerialNo: 580, Manufacture-Date: 18.Apr.2002, Delivery-Date: 18.Apr.2002

on last Flight Log entry from Tuesday, the 13.January 2004 ; TAH: 4'058 ; TAC: 3'448

ation: STANDARD WORKPACKAGE

7/7

Nothing done with Workcodes

Work performed but Workorder not closed

Work performed, Workorder closed

| W/O | ATA | Workorder-Description | Est.MH | To go | Prio | T | H | M | Pickslip | CLOSED | OPEN | NOT PER |
|--------|-----|---|-----------|-------|------|---|---|---|-------------------------------------|---------|------|---------|
| 747204 | 30 | TECHNICAL ORDER: FLEET INSPECTION DUE TO FINDINGS ON JAT WO1317090 AND JAV PLS REPLACE ALSO R/T AFU MONITOR FLUX. | 1.00 (ex) | 1/D | 1 | | | | <input checked="" type="checkbox"/> | 1334551 | | |
| 257895 | 49 | Action-Test: X-FERRED TO OPEN WO LIST. | 3.00 (m) | 2/D | 1 | | | | <input checked="" type="checkbox"/> | 1334552 | | |
| 210164 | 52 | DURING PRESSURIZATION TEST AFTER WINDSHIELD REPLACEMENT FOUND SEVERAL FUSELAGE DRAINVALVES W/ ALSO FWD DRAINVALVE HOT LIQUID CONTAINER CB POPPED OUT. | 1.50 (ex) | 2/D | 1 | | | | <input checked="" type="checkbox"/> | 1334553 | | |
| 573260 | 25 | Action-Test: CB SECURED. HLC INOP PLACARDED. X-FERRED TO DO FOR TS AND 14 DAY WINTER OPERATIONS: PLEASE PERFORM INSPECTION OF THE ELEVATOR DE-ICING FLUID RESIDUE. | 1.00 (m) | 4/D | 1 | | | | <input checked="" type="checkbox"/> | | | |
| 747239 | 30 | | 2.00 (m) | 1/D | 2 | | | | <input checked="" type="checkbox"/> | 1334549 | | |

05 D.C.

FAXED

Remove copy from Technical Log after 1 day and discard.

Comments:

00 3 NO T/A

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50

Swiss International Air Lines Ltd. FOCA-124:

work specified except as carried out in accordance with respect to that work the only for release to service.

Example No. 4

Not Released



How STAMINA Is Customised

.....And to reinforce positive communication techniques.

Example No. 3

Technically Accurate
Provide Enough Information
Proper Sequence
Short and Simple Sentences
Clearly Written

TECHNICAL

80604 HB-120 2030 480 804 SWR 1555V1ERSE

ATA 2.3

ATA

ON DUZ 21 FREQUENCY 825 THE 7 H
SUDDENLY THE 825 FREQUENCY 20
HOURS ON 21 H
THE 825 FREQUENCY 825 H
ON 21 H 825 H

Case #2 checked and faulty removed
Case #3 was replaced Jan 22-11-10
Jan 21/98 No 32 and tested 8085

PN: 825-1115-001 SU: 01A 2137
OFF 825-1115-001 OFF 1418

01.03

03.12 290604 0015 18480



Reality Check

- Current human factors training continues to be a training department initiative.
- Majority of HF training currently concentrated at the mechanic/certifying staff level.
- Management remains largely outside of HF training.
- No mechanism in place to capture, measure or quantify maintenance error, therefore the HF programme is “groping in the dark” for direction.



Positive Signs

- Closer collaboration between HF facilitators and quality manager on systemic problems in maintenance organisation
- Realisation that significant attitude change with regard to HF issues is required by management
- Quality manager to institute specific training for management on systemic theory (Reason Model)



How the Programme Is Evolving

- HF at Swiss is a evolving programme, which is re-evaluated course by course to reflect changing operational realities. (Now on change 4 for 2004).
- Facilitators exchange notes and ideas to find “best practice” for a multi-cultural, multi-lingual group.
- Specific HF training for planners being defined and developed to reflect individual needs.
- Simple case studies from in-house incidents have been developed.



Challenges for the Future

- Most of the certifying staff has now been through the first phase of STAMINA training: where do we go from here?
- How can the company identify the HF problem areas to be addressed without a maintenance error management system in place?
- How to convince the management to embrace HF principals in the face of growing operational pressures, and with no tools to measure “what has not happened” because of HF/safety training?



Questions?

