



Methods used to Evaluate the Effectiveness of CRM Training in the Aviation Industry.

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Project background

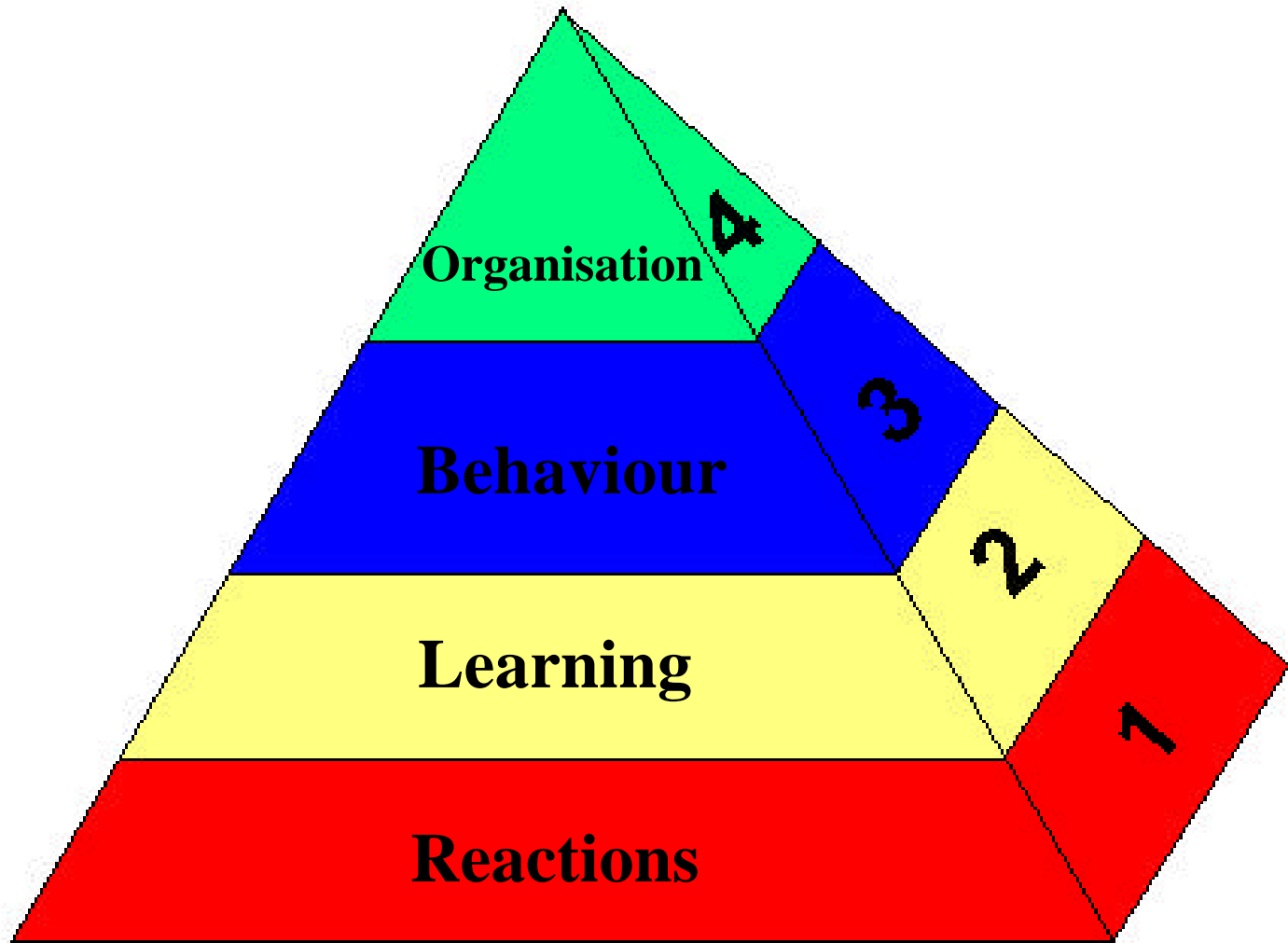
10 month CAA sponsored project to identify the methods that airlines are currently using to assess the effectiveness of their CRM programmes, and to provide a comprehensive summary of the techniques available to assess CRM training.

Method

Literature review.

A review of current knowledge about the evaluation of CRM training effectiveness and other similar human factors training formed the basis of the literature review (a total of 48 studies from civil aviation, military aviation, and other high reliability industries).

Kirkpatrick's (1976) evaluation hierarchy



Questionnaire structure

1. Background on the companies CRM training.
- 2-6 Method of evaluation used: reactions, attitude, knowledge, behaviour, and organisation.
7. Use of other evaluation techniques.
8. Information about why companies are not evaluating CRM training.
9. Feedback on which are thought to be the best methods for evaluating CRM.

Operators Survey

- **Questionnaire survey.** Responses received from 90 AOC holders (55%), 22 POC holders (73%), and 5 non UK companies.
- **Interviews.** The trainers from a representative sample of 20 companies were interviewed to gain more detailed information about their responses.

CRM training background

- Almost all large and medium sized companies provide training in-house.
- For smaller companies, 23% initial and 57% recurrent training is in-house.
- Smaller companies see CRM training as relevant for multi-crew operations.

1. Reactions

An assessment of participants' feelings towards the training course.

60% of companies carry out an evaluation at this level. However, it is generally informal feedback (74%).

2. Learning: Attitudes

The principles, facts, and skills which were understood and absorbed by the participants (Kirkpatrick, 1976).

21% of companies carry out an evaluation at this level. Again, generally informal feedback (79%). Although some used company specific questionnaires.

2. Learning: Knowledge

36% of companies carry out an evaluation at this level, with 24% using a formal knowledge test.

3. Behaviour

The assessment of whether lessons and knowledge learned has transfer to behaviours on the job or a similar simulated environment.

53% companies carried out an evaluation at this level.

- Behavioural markers: 23%
- Technical checklist: 19%
- Informal feedback: 59%

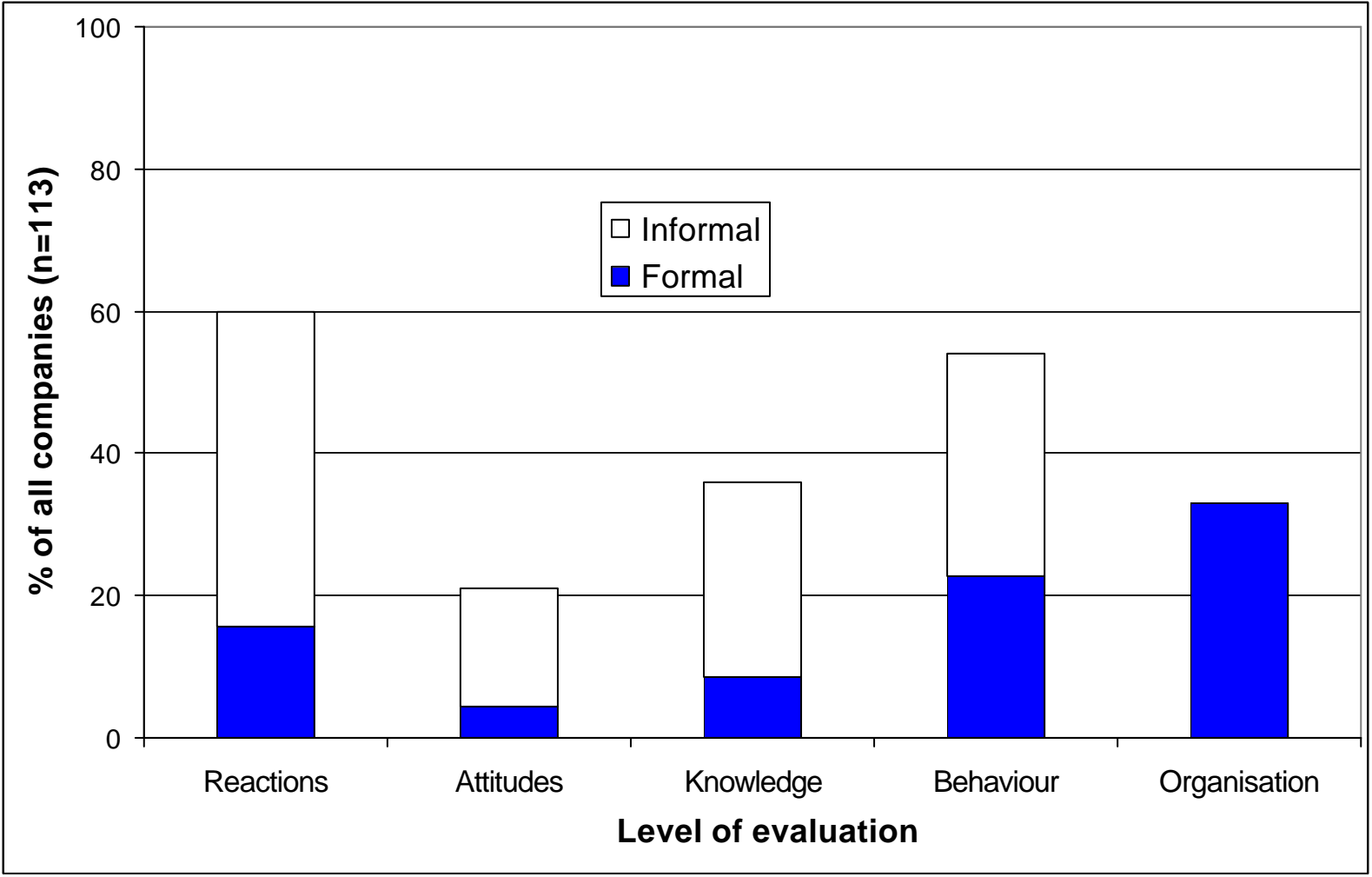
48% use the feedback to adapt CRM training

4. Organisational impact

Assessments carried out at a company level.

- Safety performance: 22%
- Confidential reporting: 17%
- Incident reporting: 23%

% of Companies carrying out evaluations



Reasons why CRM is not evaluated

Size of company had little effect on the answers given.

- Time: 26%
- Resources: 25%
- Availability of systems: 19%
- Expertise 18%
- Management Systems: 10%

Reasons why CRM is not evaluated

Also given the opportunity to rank the reasons, no differences due to size.

1. Availability of systems
 3. Competence of evaluators
 2. Quality of systems
-
4. Flight crews' attitudes
 5. Financial
-
6. Management

Methods to support CRM evaluation

Also given the opportunity to rank where CRM training should be evaluated.

1. Line checks
2. Proficiency checks
3. Simulator checks

It was felt it should be done in as realistic environment as possible.

Recommendations

1. There is a need for a greater availability of simple and concise assessment resources.
2. More guidance on how to carry out an assessment at the attitude, knowledge, and organisational levels.
3. Companies should be encouraged to carry out evaluations at as many levels as possible.
4. The evaluation of CRM training should be a continuous process.
5. There is a requirement for more guidance from the regulator.

Recommendations

6. Companies should be encouraged to pool their limited resources.
7. The content of CRM training for single pilot crews should be examined.

Further information

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