

Uberlingen/Lake Constance Mid-air Collision

Results of group 'Brainstorming' at PRISM seminar on Human Factors in High Demand Situations. (Brussels, Nov 2003)

Factors which may have contributed to or prevented the incident

1) Control Room (ATC) Management. System Issues

Management decision to carry-out maintenance work which downgraded 2 systems at the same time

- Radar
- Telephones

Did the system for work planning/permit to work, consider this?

Was there any consideration of measures to offset the loss of integrity caused by transfer to back-up radar & telephones?

Were controllers involved in the decision?

Did the controller have authority to block work that significantly downgrades system integrity?

Insufficient testing of back-up telephone before switch-over

Were staff fully trained in use of back-up systems?

The controller apparently had to work between 2 screens and was not able to respond to calls from pilots when at the other console. (was this the design intent?)

Were controllers trained in operation of TCAS?

2) Control Room (ATC) Management Staffing Issues

Was it official policy for controllers to take a break?

If not, was there 'silent approval' of this reduction in effective staffing level?

Who was in overall operational control of the ATC at the time of the incident?

Were they working as a team or as individuals?

4) Individual Factors (ATC)

Reluctance of controller to recall colleague when workload increased

Controller's ability to recognise and assess his own workload when under stress.

Tunnel vision?

Controller working with partial information

ATC pride in doing his job.

5) Control Room (Russia Cockpit) Management.

Possible conflict between two pilots (Reversal of normal management hierarchy)

Crew resource management.

What training was provided in how to respond to TCAS?

What training was provided in how to assess and respond to conflict situations?

6) International Standards

Were Russian standards compatible with those in the West?

Acceptance of conflicting same height routes.

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