

Luxembourg Investigation Commission
Additional Recommendations within Original Accident Report

Designs and design standards

- Notwithstanding the existing recommendations and procedures, it appears that intentional override of the primary flight idle stop on turboprops in flight is not excluded. The existing design of the Fokker 27 Mk050 does not prevent the selection in flight of the propeller pitch setting below the flight idle regime. Hence it is recommended to review the existing design in order to examine the possibility of prohibiting in flight, intentional and inadvertent selection of the propeller setting below the flight idle regime.
- It is further recommended, considering the number of similar accidents on turboprops in general, that authorities responsible for airworthiness of these types of aircraft, check whether the design of these safety devices as proposed by JAR25-1155 (change 16) should be made applicable to existing designs.

Organization and management

Luxair

- The investigation of the accident brought to light deficiencies in the domain of crew task-sharing. Consequently it is recommended that a review of the airline operational oversight be performed.
- The investigation pointed out that the variety of training centers used by Luxair could have had an influence on crew cooperation and synergy. It is hence recommended:
 - to ensure that recruitment procedures, pilot training, strengthen cockpit resource management (CRM) training and recurrent trainings allow to reach a standard of harmonization.
- Considering the importance of the information contained in different technical publications issued by a manufacturer and concerning flight operational safety matters as well, it is recommended that Luxair makes sure that their organization ascertains the diffusion of this type of information to all parties concerned.
- ICAO Annex 6 recommends, “ *that from 1 January 2002, operators of aircraft whose takeoff weight exceeds 20,000 kg establish and maintain a flight data analysis programme in the context of their accident prevention and flight safety programme*”. This system enables the operator to constantly monitor the operations and to identify the deviations. Such a system is in place in Luxair for the E145, B734 and B735 types of aircrafts. Hence it is recommended that such a system be implemented also for the Fokker 27 Mk050 type of aircraft.

Airworthiness Authority

- The investigation of the accident brought to light deficiencies in the domain of crew task-sharing. Consequently it is recommended that the authority reviews its methods of oversight of the airline.
- The variety of training facilities that have been used by Luxair could have had an influence on the lack of application of standard methods that were pointed out in the scenario of the accident. As before the application of JAR-OPS1, there was no formal follow-up nor oversight of the different trainings and in the light of the accident it is today difficult to evaluate the situation at Luxair regarding this standardization. Furthermore, the oversight of these trainings did not allow to highlight its potential weaknesses. It is therefore recommended that the authority,
 - perform a review of the previous trainings in order to establish the measures to put in place to achieve a suitable harmonization;
 - review the methods for approval and oversight that would improve the detection of deviations during the training.
 - ensures that the training environment of the operator is kept as stable and harmonized as possible.