

## 4. SAFETY RECOMMENDATIONS

The BFU has released on 1 October 2002 the following Safety Recommendation to ICAO:

Safety Recommendation No. 18/2002

ICAO should change the international requirements in Annex 2, Annex 6 and PANS-OPS (DOC 8168) so that pilots flying are required to obey and follow TCAS resolution advisories (RAs), regardless of whether contrary ATC instruction is given prior to, during, or after the RAs are issued. Unless the situation is too dangerous to comply, the pilot flying should comply with the RA until TCAS indicates the airplane is clear of the conflict.

The BFU has released on 21 July 2003 the following Safety Recommendations to the Federal Office for Civil Aviation (FOCA), Switzerland:

Safety Recommendation No. 01/2003

The Federal Office for Civil Aviation (FOCA) should ensure that the air traffic control service provider issues and implements procedure to undertake maintenance work on the ATC Systems stipulating operational effects and available redundancies. The procedure shall include the following aspects:

- Stipulating the detailed responsibilities of the Operational Division and the Technical Division.
- Personnel reserve planning of the operational staff for maintenance work on the ATC Systems.
- Timely dissemination of procedure to the controllers, in order to prepare them to deal with the situations.
- Establish and implement the checklists for the maintenance as well operational staff, when maintenance work on the ATC Systems is undertaken, to enhance the safety net.
- Selection of best possible time from operational aspects for the maintenance work on the ATC Systems.

Safety Recommendation No. 02/2003

The FOCA should ensure that the ACC Zurich is manned with the minimum number of air traffic controllers as follows:

- There shall be at least two controllers on active duty at all times.
- There shall be at least two controllers to manage enroute sectors; i.e.: one Radar Planner (RP) and one Radar Executive (RE).
- When ACC is required to manage the approach services for Friedrichshafen and Altenrhein/St. Gallen, one additional controller shall be assigned to this task. Alternatively, this task should be taken over by APP Zurich.
- Additional controllers shall be assigned to manage breaks.

Safety Recommendation No. 03/2003

The FOCA should ensure that the air traffic controllers are imparted with the initial and recurrent training covering the theoretical and practical (simulator) emergency procedures, particularly covering the following aspects:

- Recognition of potential air traffic conflict and maintenance of aircraft separation in accordance with the international standards.
- A quick re-establishment of the minimum separation, in an event of having fallen below it.
- The use of appropriate phraseology, with an emphasis on achieving maximum effects within minimum possible time/radio transmission.

The BFU has released on 19 May 2004 the following Safety Recommendation to ICAO:

Safety Recommendation No. 06/2004

ICAO should ensure that rules and procedures regarding ACAS are uniform, clear and unambiguous. Compliance should be ensured in the ICAO Annexes 2, 6, the PANS and the Guidance Material.

The procedure for pilots should include the following elements:

In the event of an ACAS Resolution Advisory (RA) to alter the flight path pilots shall:

- Respond immediately and manoeuvre as indicated, unless doing so would jeopardize the safety of the airplane.
- Never manoeuvre in the opposite sense to an RA, nor maintain a vertical rate in the opposite sense to an RA.

Safety Recommendation No. 07/2004

ICAO should ensure an high level of acceptance and confidence of pilots staff in ACAS by improving education and training. Therefore the Attachment B to State letter AN 11/19-2/82 should be transferred in a PANS (Procedures for Air Navigation Services).

Safety Recommendation No. 08/2004

To enhance the performance of ACAS ICAO should initiate the development of down-linking RAs to ATC, using such technologies as SSR Mode S and Automatic Dependent Surveillance - Broadcast (ADS-B).

Safety Recommendation No. 09/2004

To improve the investigation of future accidents and incidents ICAO should require ATS units - in addition to present regulations - to be equipped with a recording device that records background communication and noises at ATCO workstations similar to a flight deck area microphone system.

Safety Recommendation No. 16/2004

Utilizing its own mechanism and international resources available ICAO should ensure that all ACAS/TCAS users are consistent in their response to the equipment advice. ICAO auditing processes must pursue compliance with its ACAS SARPs and training objectives at all levels within the aviation industry.

The BFU has released on 19 May 2004 the following Safety Recommendations to the Federal Office for Civil Aviation (FOCA), Switzerland:

Safety Recommendation No. 10/2004

The Federal Office for Civil Aviation (FOCA) should ensure that the air traffic control units of the air traffic control service provider are equipped with an effective Short Term Conflict Alert system covering the following minimum demands:

- An appropriate indication of failure or unavailability of STCA at the affected air traffic controller workstation.
- An adjustment of volume that prevents the controller from missing the acoustical STCA warning.
- When activated the acoustical STCA warning should sound permanently until acknowledgement at the affected workstation by the ATCO.

Safety Recommendation No. 11/2004

The FOCA should ensure that the air traffic control service provider equips air traffic control units with telephone systems which in case of a failure or shutdown of the main telephone system reroutes incoming telephone calls automatically to the bypass telephone system.

## Safety Recommendation No. 12/2004

The FOCA should ensure that the radar system of the air traffic control service provider is technically equipped in a way that enables display updates within 8 seconds or less in en-route airspace.

## Safety Recommendation No. 13/2004

The FOCA should ensure that the air traffic control units of the air traffic control service provider are equipped with system recording and replay facilities in accordance to a recommendation of Eurocontrol that enables a complete reconstruction of the surveillance data presentation, display settings and selections at the controller's display position.

## Safety Recommendation No. 17/2004

The FOCA should ensure that the air traffic service provider takes appropriate action to assure an effective operation of their safety management system in as much as that international requirements (ICAO SARPs, Eurocontrol ESARRs) are assured, and appropriate safety strategies, management techniques and quality procedures are incorporated and evaluated.

## Safety Recommendation No. 18/2004

The FOCA should ensure that the air traffic service provider conducts an evaluation of the staffing levels required. The evaluation should not be limited to identifying the number of personnel required but also consider the qualification and experience required of specialist functions.

## Safety Recommendation No. 19/2004

The FOCA should ensure that the air traffic service provider develops and implements refresher and safety related training compliant with ESARR 5 and adapted to the operating environment.

The BFU has released on 19 May 2004 the following Safety Recommendation to the Civil Aviation Authority (CAA) of the Russian Federation:

## Safety Recommendation No. 14/2004

The Civil Aviation Authority should ensure that the ACAS training for flight crews is in accordance to the requirements and guidelines of Attachment B to State letter AN 11/19-2/82.

The following aspects should be covered:

- Flight simulators equipped with ACAS or inter-active Computer Based Training (CBT) should be utilized for training of ACAS maneuvers.
- ACAS event scenarios should be included in Crew Resource Management (CRM) and Line-Oriented Flight Training (LOFT) programmes.

## Safety Recommendation No. 21/2004

The Civil Aviation Authority of the Russian Federation should ensure that exposure to Crew Resource Management training within the airline industry is advanced. The use of flight simulators or appropriate synthetic training devices for Line-Oriented Flight Training should be promoted.

The BFU has released on 19 May 2004 the following Safety Recommendation to the Federal Aviation Administration (FAA) of the United States of America:

## Safety Recommendation No. 15/2004

The Federal Aviation Administration should ensure that the TCAS 2 000 manufacturer re-phrases the TCAS 2000 Operating Manual to reflect the ACAS/TCAS system philosophy and the international ACAS/TCAS regulations and operating procedures in a unambiguous and consistent manner.