



INTERNATIONAL CIVIL AVIATION ORGANIZATION

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## ASSEMBLY – 35TH SESSION

### EXECUTIVE COMMITTEE

#### Agenda Item 14: Aviation security

#### ATM RELATED SECURITY INITIATIVES IN EUROPE

(Presented by 41 Contracting States<sup>2</sup>, Members of the European Civil Aviation Conference)

#### SUMMARY

This paper describes progress regarding ATM security related activities based on the strategic security initiatives previously presented to ICAO.

It identifies issues, for review by ICAO, concerning unlawful interference, alert classification, intercept procedures, communications failure, communications watch and training.

The paper has been elaborated and coordinated by EUROCONTROL.

#### ACTION BY THE ASSEMBLY

Action by the Assembly is in paragraph 5.

## 1. INTRODUCTION

1.1 Aviation security within Europe is a political priority. ICAO has undertaken valuable work to safeguard against the unlawful interference with aircraft. A complementary activity, focusing on measures to deal with an unlawful interference, has been jointly promoted by EUROCONTROL and the North Atlantic Treaty Organisation (NATO). This activity supports the four security strategic initiatives

<sup>1</sup> English, French, Spanish and Russian versions provided by ECAC

<sup>2</sup> Albania, Armenia, Austria\*, Azerbaijan, Belgium\*, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus\*, Czech Republic\*, Denmark\*, Estonia\*, Finland\*, France\*, Germany\*, Greece\*, Hungary\*, Iceland, Ireland\*, Italy\*, Latvia\*, Lithuania\*, Luxembourg\*, Malta\*, Moldova, Monaco, Netherlands\*, Norway, Poland\*, Portugal\*, Romania, Serbia and Montenegro, Slovakia\*, Slovenia\*, Spain\*, Sweden\*, Switzerland, The former Yugoslav Republic of Macedonia, Turkey, Ukraine, United Kingdom\*.

\* Member States of the European Union are indicated with an asterisk in the above list.

that were presented to the ICAO High-level, Ministerial Conference on Aviation Security held in February 2002, namely:

- a) Establish processes to optimise the sharing of Civil Air Traffic Control (ATC) and Military (ATC/Air Defence) radar information;
- b) Create a European Regional Focal Point for Air Traffic Management information, involving civil and military interests;
- c) Give priority to the validation of a high capacity air-ground communications capability for the transmission of encrypted cockpit voice, flight data and on-board video information;
- d) Ensure that both civil and military ATC procedures and training, relating to hijack and other emergency situations, are reviewed and harmonised.

1.2 Close co-ordination with ECAC on security related issues has been maintained through the ECAC Security Working Group.

1.3 Close co-operation with NATO has been achieved through the NATO EUROCONTROL ATM Security Co-ordination Group (NEASCOG).

1.4 NEASCOG is studying possible improvements for ATM security, at minimum cost to airspace users.

## **2. BACKGROUND ON STRATEGIC SECURITY INITIATIVE ACTIVITIES**

2.1 NEASCOG in close co-operation with the ECAC Security Working Group and other International and National organisations is proposing a feasibility study into a low-cost, cross-border network called ERRIDS (European Regional Renegade Information Dissemination System) for consideration by States. Its purpose is to share information, on a need-to-know basis, with organisations having counter terrorism responsibilities. These include state organisations, civil ATM service providers, the military, police agencies, air carriers and airports. The secure exchange of information would be based on NATO accredited security software.

2.2 The first ERRIDS application to be tested addresses the failure of aircraft communication. There are several reasons for communication failure ranging from equipment problems to the selection of the wrong radio frequency. Whatever the reason, it will likely result in military interception. In certain parts of Europe interceptions are often required, and the associated cost to States of launching fighter aircraft is high. ERRIDS will be able to help by, for example, automatically notifying the flight operations centre of the airline. The centre would be able to attempt to contact the aircraft, using data link or the radio channel reserved for airline operations communications (AOC), and instruct it to contact air traffic control (ATC) immediately. The aircraft itself could have a high capacity secure link into ERRIDS. This would allow the exchange of encrypted information.

2.3 To avoid the need for modified Secondary Surveillance Radar (SSR) transponders, at airspace user cost, NEASCOG has worked to exploit the potential of using military primary radar information. A successful test conducted by EUROCONTROL and NATO has demonstrated that, on loss of the civil SSR information, military primary radar track information can, under certain circumstances, automatically be made available to the civil radar processing system.

### 3. INTERCEPTION OF CIVIL AIRCRAFT

#### *Unlawful interference*

3.1 Guidance is provided by ICAO on the interception of civil aircraft by state aircraft regarding visual signals and other means of communication between the aircraft, specific manoeuvres and the actions by the civil aircraft to be taken for immediate landing. Detailed intervention procedures for this situation are established at national level.

3.2 A decision by the designated national authority to intercept a civil aircraft will be based on the first indication of a “suspected unlawful interference” since a prompt reaction might be required. Therefore, it is extremely important that the authority responsible for the interception has a complete understanding of the type of situation on-board the aircraft.

3.3 There is a need for air traffic controllers and flight crew to be fully aware of security-related procedures through appropriate training.

#### *Types and phases of unlawful interference*

3.4 The 11th Air Navigation Conference Recommendation 2/9 states: “That, consistent with the ICAO Aviation Security Plan of Action and the ATM operational concept, ICAO consider developing in-flight emergency response and coordination procedures for air traffic controllers, together with training guidance, related to the distinctly different types and phases of unlawful interference. These procedures and guidance material should allow for the different conditions which exist in States”.

3.5 To avoid any misunderstandings and confusion, it is essential that the levels of threat are defined. ICAO has defined the following four levels:

- Level 1 – Disruptive behaviour
- Level 2 – Physical abusive behaviour
- Level 3 – Life threatening behaviour
- Level 4 – Attempted breach or actual breach of the flight crew compartment

3.6 New emerging threats have appeared since these levels were established. Accordingly, the changed security environment requires some augmentation of these levels to be reported by flight crew.

#### *Interception procedures*

3.7. Interception procedures were first developed for use during times of military tension and war. Later the same procedures were also used for interceptions of aircraft being subjected to unlawful interference. However, where aircraft might be used as a weapon, a different military intervention would be required.

3.8 In some States and regions, interceptions are carried out frequently. Recent experiences show that there is a need to review the current interception procedures and signals. Subjects to be taken into consideration include:

- the effect on TCAS of the interception;

- signals related to the threat level onboard;
- signals/manoeuvres when control has been seized by terrorists;
- possible military intervention;
- weather conditions;
- assignment of emergency airfields at national level;
- increased awareness of civil pilots of interception procedures; and
- quick reference guide of procedures and signals in the cockpit.

#### 4. **COMMUNICATIONS**

4.1 In certain regions civil aircraft are unnecessarily intercepted because they are suspected of being subject to unlawful interference. This is frequently due to failure of communication between ATC and the pilot. Causes for such failure of communication include equipment malfunction, incorrect selection of frequency, and inattention by the pilot. Aircraft interceptions pose, by their very nature, a certain risk. Consequently, there is a need to minimize unnecessary interceptions to avoid potentially hazardous situations.

4.2 Under certain circumstances, the VHF emergency frequency (121.5 MHz) should be monitored, both by aircraft and appropriate ATC providers. However, it is recognised that normal airline practice is to use one radio for ATC and the second for AOC.

4.3 It is therefore proposed that the requirement for continuous watch of the emergency frequency should be reviewed taking into account, as appropriate, the current use of AOC voice communication, data link and other communications systems.

#### 5. **ACTION BY THE ASSEMBLY**

5.1 The Assembly is invited to recommend that ICAO, when conducting reviews of security provisions, take into account the following ATM related issues:

- a) the improvement of the ICAO interception procedures and signals;
- b) the specification of global standardization of the threat levels relating to unlawful interference and their reporting by flight crew;
- c) the improvement of the ICAO communication failure procedures and the monitoring, when appropriate, of the VHF emergency frequency (121.5 MHz); and
- d) the continuing need for security related training for air traffic controllers and flight crew.