

Eurocontrol has approved a plan to fight airspace infringement — the unauthorized penetration of airspace, often by general aviation (GA) aircraft being flown under visual flight rules (VFR) — which it characterizes as a leading operational risk in European skies.¹

The *Airspace Infringement Action Plan*² prescribes safety improvement recommendations and guidance for their implementation, scheduled to begin this year.

“Improving the safety of European airspace will require the collaborative effort of all parties concerned — national authorities, airspace user organizations, service providers and military,” the action plan’s “Statement of Commitment” says.

Alexander Krastev of Eurocontrol, coordinator of the Airspace Infringement Initiative, said that airspace infringements occur several times a day in busy European airspace. In a presentation to Flight Safety Foundation’s 22nd annual European Aviation Safety Seminar in March 2010 in Lisbon, Portugal, he said that an analysis of reported infringements from 2002–2008 found a steady increase in the number of incidents per year and noted a 13.5 percent annual increase in 2009. The greatest year-to-year increase during the period was in 2005, with 30 percent more reported infringements than the previous year (Figure 1).

The action plan notes that the increasing number of reported events might have been influenced by growing awareness of the airspace infringement risk, as well as overall improvements in the reporting culture. However, some countries do not collect data on this type of safety-related event.

In recent years, the percentage of incidents with a “significant to serious safety impact” has been around 40 percent, the action plan says.

Consequences of an infringement event are classified in one of three ways:

- Disruption to flight operations, which results in a significantly increased pilot and/or controller workload, such as



Eurocontrol aims to implement a continent-wide plan to reduce the risks of airspace infringement.

Keep Out

BY LINDA WERFELMAN

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being forced to break off an approach to landing or change aircraft landing sequences;

- Loss of separation, which may result in a wake vortex encounter and subsequent loss of control, or in injuries to people in the airplane if abrupt maneuvers are required to avoid the other aircraft; and,
- Midair collision.

Who, Where and How?

Eurocontrol’s analysis of infringement events reported in 2005 and 2006 shows that 56 percent of infringements involved GA aircraft on VFR flights, the action plan says. Commercial and military instrument flight rules (IFR) flights each were responsible for about 10 percent of total infringements.

“This is not a surprise, as most GA VFR flights are conducted outside controlled areas and zones and are in general flown by less trained and experienced leisure pilots, whereas IFR flights are usually contained within controlled airspace and carried out under the

supervision of ATC [air traffic control] units,” the action plan says.

Nevertheless, the document says that the unreliability of data has made it impossible to know exactly what proportion of the airspace infringement risk is associated with general aviation.

Terminal control areas were the most common sites of airspace infringement, the report says, noting that 40 percent of events occurred there, and 36 percent occurred in airport control zones (Figure 2, p. 42). In addition, most infringements occurred when aircraft were in level flight.

Although the action plan could identify no single factor as the major cause of airspace infringement, pilots’ navigation skills “appear to play the most prominent role,” the document says. A survey of European GA pilots conducted in 2007, during the information-gathering phase of the airspace infringement initiative, found that “although the level of navigation and communication skills acquired by student pilots during initial training raises some concerns, it is the apparent gradual diminishing of the skills of ‘low-hours’ pilots which requires consideration and adequate measures,” the action plan says. “Refresher training is considered of particular importance by the vast majority of pilots interviewed.”

Fewer data were available on infringements involving commercial and military flights, but the data indicated that inadequate coordination between different control sectors might have been a factor, the action plan says.

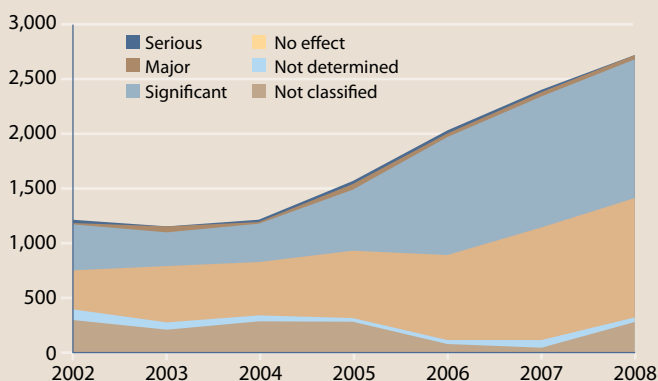
Responsible Factors

Krastev said in his presentation that several major factors are responsible for many airspace infringement events, including differences from one country to the next in the upper limits of uncontrolled airspace; differences in the levels of services that individual European countries provide to pilots of VFR aircraft; and the diversity of GA operations.

“The range is enormous, from taxi and corporate business jet flights, through aerial work

J.A. Donoghue

Number of Infringements

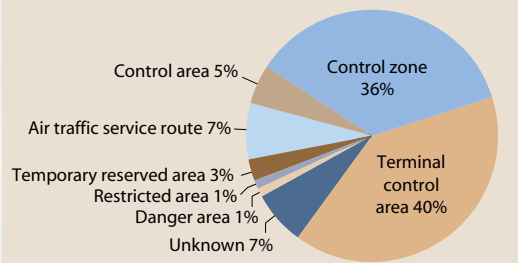


Note: A *serious* incident is defined by Eurocontrol and the International Civil Aviation Organization as one “involving circumstances indicating that an accident nearly occurred.” A *major* incident is one “in which safety of aircraft may have been compromised, having led to a near collision between aircraft, with ground or obstacles.” A *significant* incident involves “circumstances indicating that an accident, a serious or major incident could have occurred, if the risk had not been managed within safety margins or if another aircraft had been in the vicinity.”

Source: Eurocontrol

Figure 1

Where Infringements Occur



Source: Eurocontrol

Figure 2

and powered leisure flights to flying all kinds of non-powered airplanes, balloons and paragliders,” Krastev said. “Respectively, the regulatory frameworks differ significantly, ranging from very strict for multi-engine aircraft flying to practically non-existent [for] paragliding.”

Eurocontrol’s response has been the development of the action plan, which was prepared over a four-year period, with input from all sectors of the European aviation community. The action plan “aims to achieve the right balance between positive encouragement and regulatory enforcement, which is of particular importance for the development of general aviation in Europe,” the action plan’s “Statement of Commitment” says. “It is a further acknowledgement of the recognized need for harmonization and standardization of the services provided to all flights in European airspace, and calls for a consistent and integrated approach to the needs of general aviation, military and commercial operations.”

Recommendations

The action plan includes recommended actions and proposed actions³ for seven groups: airspace users, providers of aeronautical information services and meteorological services, air navigation service providers, military organizations, training organizations, regulatory authorities and Eurocontrol.

Recommended actions for Eurocontrol call for the immediate publication of safety awareness information. By January 2011, a tool kit should have been developed to support the action plan, Eurocontrol should be providing support for enhancement of airspace infringement occurrence reporting, and the agency should have assessed the feasibility of establishing a single Web portal for European aeronautical information, the action plan says.

Other recommendations, to be implemented by 2012 or 2013, include calls for Eurocontrol to support the harmonization of lower airspace classification, flight information services and the development of European standards for VFR publications, as well as the development of “an overall concept for the carriage and operation of transponders by light aircraft.”

Similar harmonization recommendations were among those issued to national civil aviation authorities; other recommended actions called for a review of airspace infringement risk dimensions and establishment of national safety improvement priorities.

Recommended actions for airspace users call for improved awareness of the risk of airspace infringement, and regular updates of global positioning system databases by owners and operators of GA aircraft. Proposed actions for that group include implementation of periodic refresher training for GA pilots and using “better (advanced) equipment to improve navigation accuracy and integrity.”

Other recommended actions call for air navigation service providers to improve communication skills and discipline for air traffic controllers and flight information center personnel, to review and simplify the boundaries of the controlled airspace structure and to organize periodic meetings between controllers and local GA pilots.

Notes

1. The Eurocontrol Safety Regulation Commission has identified four major risk areas in European airspace. In addition to airspace infringement, the others are controlled flight into terrain, runway incursion and level bust (deviation from an assigned altitude or flight level).
2. Eurocontrol. *European Action Plan for Airspace Infringement Risk Reduction*. January 2010.
3. “Recommended” actions are characterized as those that are “consistently considered of key or high importance with respect to their potential to improve safety” and that should be implemented. “Proposed” actions are “consistently considered of high or medium importance,” and their implementation should be considered, the action plan says.