



AIRSPACE INFRINGEMENTS

LEAFLET

Highlights of the Belgian Airspace Infringement Reduction Plan (B/AIRP)



Since 2007 a steady increase of AIRSPACE INFRINGEMENTS has been observed throughout Europe. In an effort to reduce the amount of infringements, every state is stimulated to set up an action plan. This leaflet wishes to inform every pilot and air traffic controller in Belgium and abroad of the highlights of the “Belgian Airspace Infringement Reduction Plan”(B/AIRP).

What is an airspace infringement?

An airspace infringement is an unauthorized penetration of a notified airspace, without prior request and obtaining approval from the controlling authority of that airspace: ATS Routes (Airways), TMA & CTR, P (Prohibited), D (Danger) and R (Restricted) areas, as well as TSA (Temporary Segregated Areas).

Why is it important to avoid airspace infringements?

There are many possible consequences, with increasing seriousness:



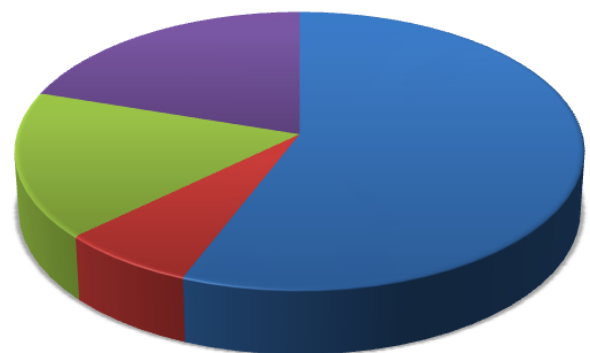
Aeromexico flight 498 crashes in 1986 onto a suburban area in Cerritos, California. Its horizontal stabilizer was ripped off in a mid-air collision with a PA-28, during an airspace infringement.

- Increasing workload for the air traffic controller, responsible for the infringed airspace. While diverting all other traffic away from the intruder, the controller may lose oversight of the traffic in the airspace. Other traffic may come dangerously close in each other's vicinity and as a result cause additional problems.
- Disruption of military exercises. Such exercises usually require extensive planning and coordination and need execution in limited time frames.
- Go-around, evasive maneuvers, holdings or delayed departures, by commercial air traffic which are time and fuel consuming. Costs of delays and extra fuel burn can be charged to the pilot committing an infringement, if the airline files a complaint.
- “Loss of Separation” between aircraft, which is considered a serious incident.

Finally, in the worst case, airspace infringements may lead to a “Mid-air collision”, which may result in a catastrophic accident, with great loss of life.

Who causes most airspace infringements?

More than 50% of the airspace infringements are caused by General Aviation VFR traffic. As most of this traffic flies in class G airspace, where navigation is uncontrolled and radio communication is not mandatory, there is a higher risk of unintentional entry into notified airspaces. The Belgian Airspace Infringement Reduction Plan focuses mainly on General Aviation VFR traffic as well as on pilot training organizations, in an effort to reduce the risk of infringements in the future.



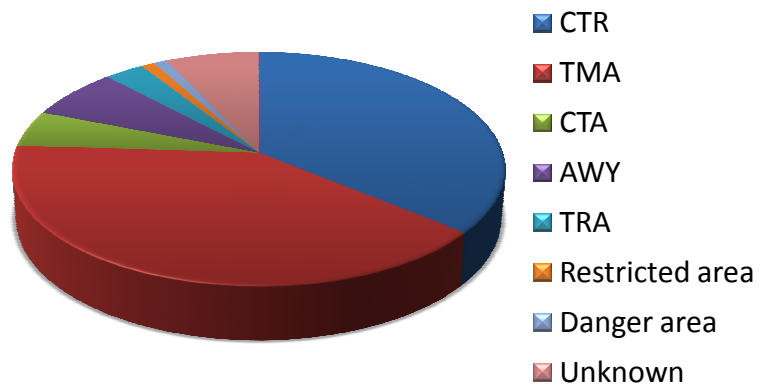
■ VFR-traffic ■ VFR/IFR-traffic
■ IFR-traffic ■ Undetermined



What areas are most often affected by airspace infringements?

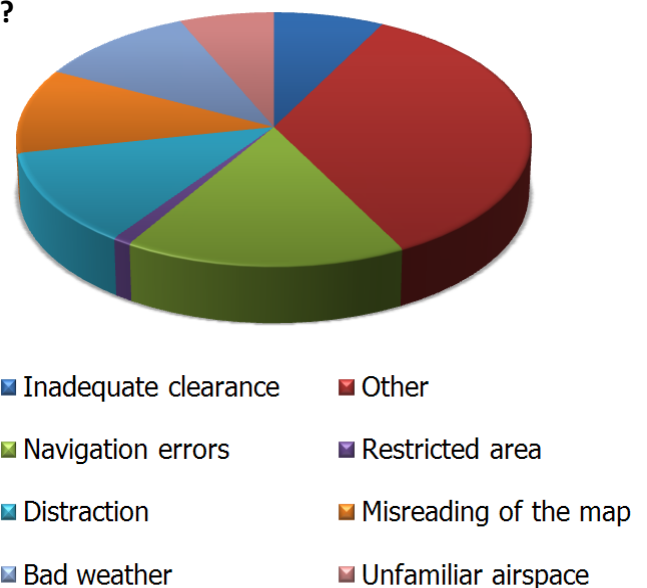
More than 75% of all airspace infringements are reported in **CTR** and **TMA**. Awareness has to be raised on the location and constraints of these protected areas around the controlled aerodromes in Belgium.

(Source of statistics: Eurocontrol)

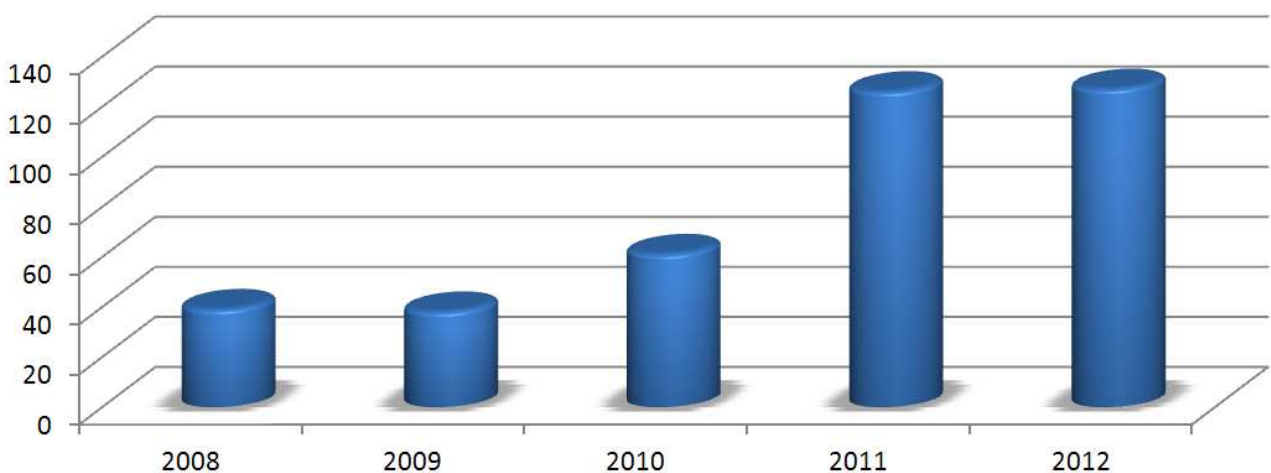


What are the reasons for airspace infringements?

It's hard to identify a single reason for airspace infringements in Europe: navigation errors, poor ATC radio communication skills, reduced navigation skills, not being aware of changes in airspace and lack of flight preparation. All of these factors may cause many recreational pilots to prefer to fly through narrow VFR-corridors, in between CTR's, just to remain in G-class airspace. Slight distraction, loss of situational awareness, crosswind, reduced visibility, may easily lead to an infringement.



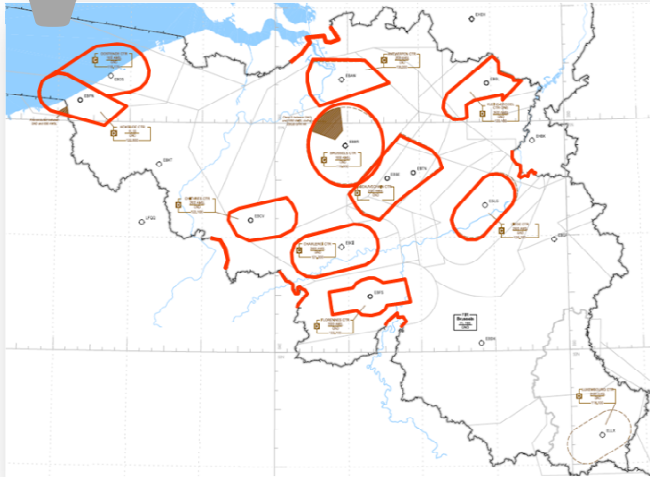
Statistics for the Belgian airspace:



(Source of statistics: BCAA – Belgocontrol – Belgian Air Force)

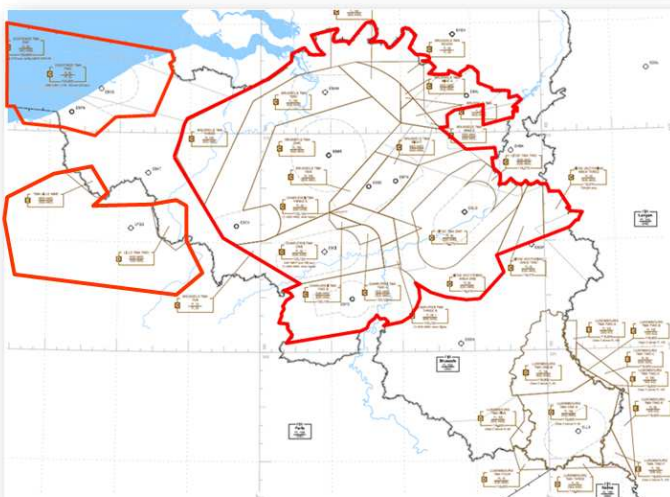
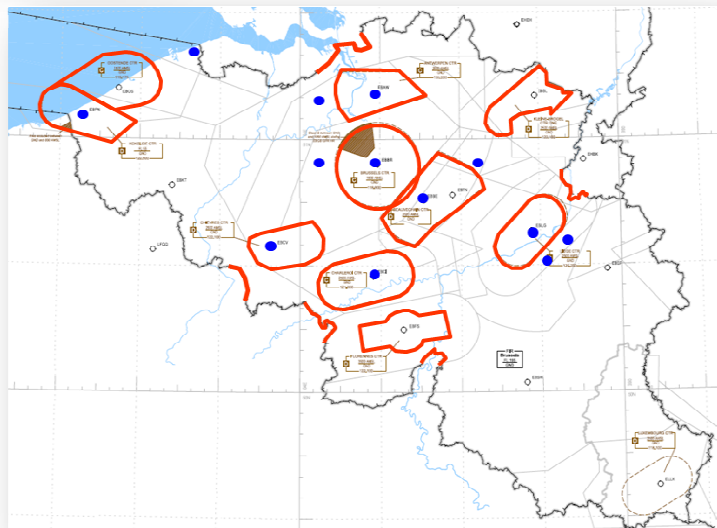
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hich controlled airspaces are more prone to infringements?



It is clear that the Belgian airspace is very complex. There are 10 controlled aerodromes (military and civilian) in Belgium: **Koksijde, Oostende, Chièvres, Charleroi, Florennes, Liège, Antwerp, Kleine Brogel, Beauvechain, and Brussels National**. Additionally, most of these aerodromes are located close to each other, and/or close to the national borders. The corridors allowing VFR traffic in between 2 neighboring CTR's, are also very narrow.

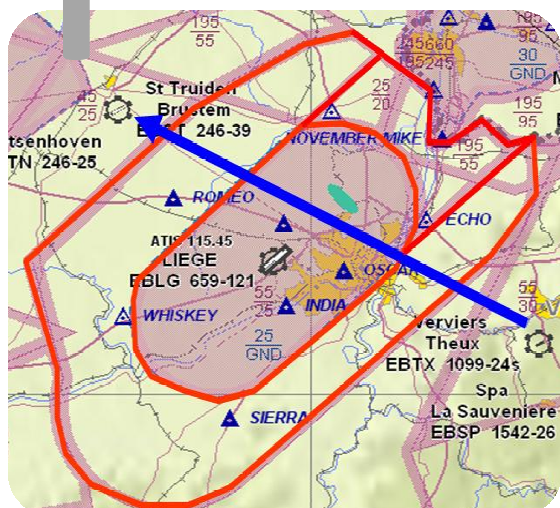
VOR-beacons, available in Belgium, are positioned mainly to aid IFR- and commercial traffic, and are not always useful for VFR-pilots trying to navigate through the VFR-corridors. Landmarks on the ground, that could help navigate safely through these corridors, are unfortunately also sparse. Finally VFR-traffic may temporarily become congested in these narrow corridors.



CTR's typically reach from the ground up to 1.500 - 2.500 ft above mean sea level (AMSL). When flying higher, there is an additional risk of entering TMA's. These are located on top of CTR's and are spread out in a wider area. At higher altitudes, the possibility to remain outside **controlled airspaces (TMA's and/or ATS routes) over Belgian territory** is fairly limited. Wouldn't it be easier to request permission to cross a controlled airspace instead?

Pilots are advised that in Belgian airspace, above transition altitude (located at 4.500 ft AMSL) there is no G-class airspace and ALL TRAFFIC IS CONTROLLED (unless otherwise authorized in NOTAMS)!

How to contact and request to cross a controlled airspace?



(image: Jeppview)

A while later, communication continues:

Liège Tower: "OO-ABC, report position"

OO-ABC: "2NM East of Liège Aerodrome, at 2000ft, OO-ABC"

Liège Tower: "OO-ABC, report ROMEO"

OO-ABC: "Will report ROMEO, OO-ABC"

...

OO-ABC: "ROMEO, 2000 ft, request to leave your frequency and contact Brussels Info, OO-ABC"

Liège Tower: "OO-ABC, frequency change approved"

Here's a random, but realistic situation:

OO-ABC: "Liège Tower, OO-ABC"

Liège Tower: "OO-ABC, Liège Tower"

OO-ABC: "OO-ABC, C-172, from Verviers to St-Truiden, 5 NM NW Verviers, at 2.000 ft, squawking 7000, request to cross your control zone"

Liège Tower: "OO-ABC, squawk 6335 ident."

OO-ABC: "Squawking 6335 ident, OO-ABC"

Liège Tower: "OO-ABC, identified 15 NM East of Liège aerodrome, cross Liège control zone on track Verviers Oscar, Romeo at 2000ft, QNH 1024, report Romeo"

OO-ABC: "Crossing Liège control zone, on track Verviers Oscar, Romeo, at 2000 ft, QNH 1024, will report Romeo, OO-ABC"



(image: Cessna)

Activation of CTR's and TMA's:

Three of the **civil controlled aerodromes** in Belgium (Oostende, Brussels National and Liège) are active 24 hrs a day (Antwerp closes between 23h and 07h local time, Charleroi closes between 22h and 0530h). Every time you enter the CTR's and TMA's of these aerodromes, two-way radio contact must be established, and permission must be received BEFORE entering a controlled airspace. A busy frequency, or not receiving an answer, cannot be considered as a permission to enter.

More information regarding opening hours of controlled aerodromes and Prohibited (P), Danger (D), Restricted (R) areas can be found in the [AIP ENR 5](#).

For **military air bases** the same requirement applies, during the military operational hours (typically between Monday and Friday, between 08h30 and 17h30 local time). Opening of the military bases outside these hours is announced by NOTAM, or can be found in the [AIP AD 2.MIL](#). Outside aerodrome operational hours, military TMA and CTR are not active. HOWEVER overflying military bases is not authorized in a radius of 2NM up to 2500 ft AMSL.

Keep in mind that Florennes and Kleine Brogel can be reactivated at any time, for "scramble" purposes. Activation can be checked with BRUSSELS INFO. The carriage of a serviceable transponder (Mode A and C) is required for all aircraft within military TMA and CTR.

A serviceable transponder Mode S is required for all aircraft within civil TMA and CTR.

In case of doubt -in flight- about the activities of military CTR/TMA, contact [BRUSSELS INFO](#) (126,9 MHz – Civil – H24, available day and night) or [BELGA RADAR](#) (129,325 MHz – Military – Active during military operational hours). It is advised to always monitor a Flight Information Service (FIS), even when flying outside a controlled airspace.

Aeroclubs and pilot training organizations are welcome to visit the military ATC and receive a briefing. Demands may be sent to: ASD-ATM@mil.be



Are you aware of the hazards when using this button?

Although the “DIRECT TO”-function on a GPS is considered a very reliable and helpful navigation aid, it can also cause problems, as it may send you straight through any kind of notified airspace, if you don't pay attention!

Which means are available for a pilot to avoid airspace infringements?



- **A THOROUGH FLIGHT PREPARATION:** set out the intended course on an air navigation map and choose an altitude to either avoid notified airspaces, or prepare to contact the ATC, prior to entering such airspace(s).
- **USE OF ACCURATE MAPS:** the commonly used Belgian 1/250.000 map produced by NGI is updated annually. The use of updated maps is an absolute must!
- **GPS AND TABLET/SMARTPHONE-APPLICATIONS** can act as a back-up and may help to verify your course through areas that you are not familiar or accustomed to. HOWEVER these new technologies are add-ons, to the classic navigation instruments! They should NEVER lead to complacency and loss of pilot's navigation skills and they may NOT replace a classic flight preparation.
- **NOTAMS:** Verify the NOTAMS of the areas you intend to cross, to figure out if certain military CTR's and TMA's are active. Verify in this also in flight in case there is doubt, via a Flight Information Service.
- **AIP:** Register via www.belgocontrol.be for a free account, which allows you to consult the Belgian AIP: e.g. [PART 2](#), [ENR 6](#) contains maps, that sum up all notified airspaces, which may help pilots to get insight in the complex nature of the Belgian airspace.

Use the latest maps available in the market. Don't forget to update your GPS data!



What should I do if I committed an airspace infringement?

All pilots should report incidents. All incident and accident reporting is gathered via the following address:

BCAA-Occurrences@mobiliteit.fgov.be

An airspace infringement is considered as an INCIDENT and can be investigated and possibly lead to prosecution of the pilot(s) involved, if gross negligence is suspected. The reporting culture however should be open and voluntary, so the flying community can learn from these incidents. If a pilot wishes to report an infringement, he/she is asked to provide more details about the infringement by filling out a standard [questionnaire](#) (which can be found on the BCAA and Belgocontrol websites).

What is expected from pilot training organizations (ATO) in Belgium?

All pilots need regular refresher training. Every skill deteriorates after a while, especially aviation skills. There is much focus on training new pilots, but there are few retraining programs available for license holders. Therefore all pilot training organizations are encouraged to develop and offer specific retraining programs (or “refresher courses”) for pilots. Flying clubs and federations are also stimulated to invite non-members to the refresher courses



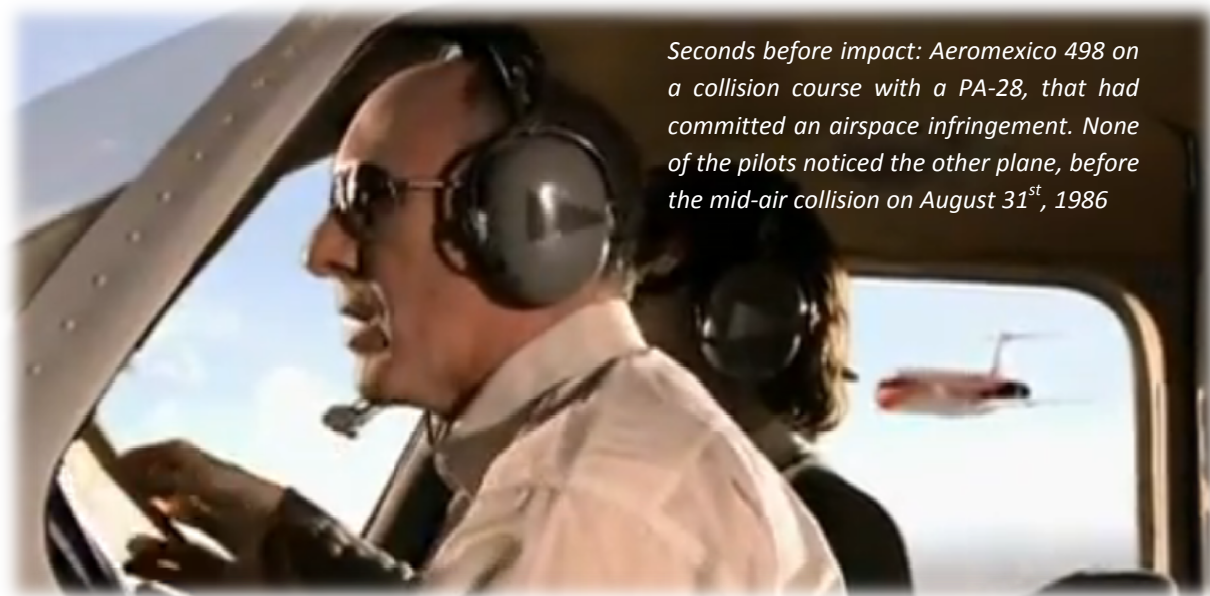
(image: Eurocontrol)

What are the highlights of the “Belgian Airspace Infringement Reduction Plan” (B/AIRP)?

1. B/AIRP focuses on General Aviation VFR pilots, to stimulate them to avoid committing airspace infringements and raising awareness of the risks involved.
2. Inform all pilots of the risks of airspace infringements and how to avoid them, among others via this information leaflet.
3. Stimulation of recurrent training of pilot license holders. Pilot training organizations, aeroclubs and federations are asked not to focus only on training for initial licenses and ratings, but to also systematically organize “Refresher courses”.
4. Encouragement of all license holders to regularly attend these refresher courses.
5. Stimulation of instructors and examiners to check pilots’ radio communication skills, to enter and leave a civil or military CTR in a correct way. Also landing on a controlled aerodrome under supervision, during a skill test or proficiency check, is advised.
6. Evolution towards a voluntary reporting culture, for the benefit of learning from each other’s experiences and mistakes.
7. Fostering of the (correct!) use of emerging technologies, as an add-on for successful navigation: GPS, Tablet/Smartphone-applications, etc.
8. Simplification of the Belgian airspace (where possible), reduce the frequency of changes and more efficient communication of those changes.

9. Development of a separate navigation map (1/250.000), destined for general aviation VFR-traffic: removal of details irrelevant for General Aviation pilots and addition of more relevant details, as well as listing the main changes, when an updated map is published.
10. Stimulation of the use of the AIP and NOTAMS, and training on how to use them.
11. Standardization and optimization of Flight Information Services (FIS).
12. Increasing the awareness of the particularities of the Belgian Airspace abroad.

All this, to avoid...



Seconds before impact: Aeromexico 498 on a collision course with a PA-28, that had committed an airspace infringement. None of the pilots noticed the other plane, before the mid-air collision on August 31st, 1986

(image: National Geographic - Cineflix)

Useful links:

Eurocontrol - Skybrary link to airspace infringements:
<http://www.skybrary.aero/>



-> continue to "Airspace Infringements"

-> Continue to "European Airspace Infringement Risk Reduction Plan"

-> OR Continue to "Airspace Infringements: "Guidance notes for GA pilots"

-> OR Continue to "GPS problem areas"

DISTRIBUTE THIS LEAFLET AS MUCH AS POSSIBLE. PUBLICATION ON YOUR WEBSITES, DISTRIBUTION OF COPIES AND MENTIONING IT IN PUBLICATIONS, ARE HIGHLY APPRECIATED

Questions, suggestions?

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