SPECIAL SECTION ON REGULATION 376/2014 AND THE LAW OF UNINTENDED CONSEQUENCES

We are all, to some extent, at the mercy of another's imagination when it comes to work. The one imagination that might seem to rule them all is the imagination of regulation and law. But this is subject to yet another law: 'The Law of Unintended Consequences'. This series of commentaries explores the possible unintended consequences of Regulation 376/2014 on the reporting, analysis and follow-up of occurrences in civil aviation.

"Reality looks different on the ground to how it looked from the legislator's offices"

In a somewhat different tack from the other stories in this issue, we're trying to look at how a well-intended piece of legislation has had a whole host of positive effects, but along with these positive effects – even offsetting them – it has had more than its fair share of negative impacts. We're talking about the famous EU Reg. 376/2015, or to name it by its full legalspeak name:

REGULATION (EU) No 376/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation, amending Regulation (EU) No 996/2010 of the European Parliament and of the Council and repealing Directive 2003/42/EC of the European Parliament and of the Council and Commission Regulations (EC) No 1321/2007 and (EC) No 1330/2007.

Quite a mouthful, isn't it? And that's before it has even started the recital, let alone its full impact. Unlike many pieces of legislation (whether national or European), this one is not too long. Its English version only goes on 26 pages, including the 3 annexes. To be fair, there's another implementing rule (IR) associated to this, which is the less glamorous **COMMISSION IMPLEMENTING REGULATION (EU) 2015/1018 of 29 June 2015 laying down a list classifying occurrences in civil aviation to be mandatorily reported according to Regulation (EU) No 376/2014 of the European Parliament and of the Council.** Of course, an IR can't aspire to such a beautifully contorted full name as its mother regulation, but it can't exist without it either.

The Regulation lays out the rules and obligations for the reporting of safety events by aviation professionals, their collection, analysis, investigation, sharing with various relevant bodies and ultimate storage in a European database. It imposes minimum standards for who has to report what, when and how. Since the regulation was intended to improve reporting, investigation and sharing of data, I wanted to learn how it did that. So, I asked a few individuals from ANSPs across Europe to give their view on the impact this piece of legislation has had on their work-as-done. Did it actually improve things, as imagined?

Let's get this straight: there are many positive things about this Regulation, as those in this article testify. Just Culture has made a major leap forward. It was already well enshrined in many organisations, and it was already much understood and respected as a process. But it is now even stronger, albeit not as strong as some would like us to believe, given that the criminal law and the judiciary system in any country remains free. This is a great thing and it should remain as such in any democratic, modern country. Further to this, there are certain requirements for data that are likely to get it more harmonised across Europe.

The intention of the Regulation is to find out about the slightest risk in the system and weed it out. Except…that's not happening. Instead, we're creating a major burden on

the very (very few) people who are running this system, in the hope that we leave no stone unturned in order to save lives. Not that we killed that many in the past, mind. But it's a noble objective. Now we have to report risk and potential risk. Well, every single move in life has some potential risk. Any aircraft cleared on a runway carries a degree of risk of a potential runway incursion. This must be reported. Every professional is occasionally tired. This can be construed as fatigue, and has to be reported. Any pilot learns that landing is only made in the right conditions, otherwise a go-around should be initiated without hesitation. Now it must be reported like an incident, even though it is not. Might this make a captain press on with a less than ideal approach profile, in order to avoid a go-around?

This is only the start. As revealed by the ANSP testimonies, we now have strict deadlines. In particular, the 72 hours to submit to the Competent Authority the notification of the event is taxing. Most organisations would be able to do that for most events, but a few have to put in place unreasonable resources to comply with the regulation. A question I have often asked is: ok, so we'll all comply. You get every single event within the 72h deadline, no questions asked. What is it that you do on the 73rd hour? What lives will be saved with that strictly enforced deadline? Isn't using reason more useful and potentially safer?

Unfortunately, this is one example of quite a few where local flavours of something that was intended to be uniform have detracted from the initial goal. It is sometimes a case of the tail wagging the dog, whereby the process and strict observance of the letter is more important than the goal of improving safety. There is also a tendency to seek as much data as possible, without a clear objective or a clear need for it, thus placing an undue burden on resources that are already stretched within ANSPs. Some of these resources are eventually busy with data compliance instead of safety-related work. This was surely not the intention of the legislator. And does it save any lives?

Overall, there is progress. But the effort is over and above what's necessary to achieve this progress. This generates waste, frustration and mistrust. This is in part due to a law that could have been better defined (albeit no law is perfect), due to insufficient guidance and pan-European agreement. The law was intended to improve safety. The result is (hopefully) achieving that in part, but also generating a lot of noise. Reality looks different on the ground to how it looked from the legislator's offices.

In the end, all that we hope for is that reason will prevail, that various European partners will get together and agree on a similar interpretation, that individual ideas will be left aside for the greater good.

Radu Cioponea
Senior Safety Expert
EUROCONTROL Network Manager

"No one could foresee the impact it could have on organisations, especially on those with high reporting rates"

New processes and working methods should always be devised as to be fit for purpose and help work to be done easily and efficiently. However, work can be sometimes different from what was imagined or expected.

Regulation (EU) 376/2014 on the reporting, analysis and follow-up of occurrences in civil aviation entered into force in November 2015. This Regulation repealed Directive 2003/42/EC which had led the attempt to harmonise safety occurrence reporting in the Union. The aim of Regulation (EU) 376/2014 is to improve aviation safety by ensuring that relevant safety information relating to civil aviation is reported, collected, stored, protected, exchanged, disseminated and analysed. To achieve this, it lays down rules on what occurrences should be reported and by whom and how these should be treated both by organisations and Member States. Moreover, it establishes the minimum information that occurrence reports should contain and the format to be used to ensure that safety information is harmonised before being uploaded into the European Central Repository.

As imagined, the Regulation offers obvious advantages:

- for the first time all Member States and organisations therein would share a common reporting criteria, helping to balance reporting rates;
- the inclusion of minimum information and use a common format in the occurrence reports would help information to be stored and thus used to understand the key safety risks in the Union;
- finally the mandate that a common risk classification scheme shall be adopted in 2017 would help harmonise how safety risk is measured across the Member States, allowing comparison and definition of corrective actions commensurate with risk.

However, as promising as the new scheme seemed for the aviation industry, when Regulation (EU) 376/2014 entered into force, no one could foresee the impact it could have on organisations, especially on those with high reporting rates. To start with, the minimum information defined in the Regulation to be included on safety reports cannot always be known to front line personnel or even to safety investigators in charge of dealing with the organisation's internal investigation. The deadlines defined in the Regulation to share the information with the NSAs do not help gather the information, either. Also, the capabilities required to adapt to ECCAIRS format are scarce among organisations and have required a great deal of development of safety databases.

The process has been long, even for organisations that had already adopted IT solutions for the collection and analysis of safety information. Finally, the common risk classification scheme to be used by Member States is yet to be known, but it seems that it will be different to the traditional A to E classification established long ago by ICAO and ESARR. This, together with the fact that air navigation service providers under the Performance Scheme have targets on the use of RAT to derive incident severity, will create differences between the methodologies that Member States and ANSPs use to measure risk.

To sum up, Regulation (EU) 376/2014 is a very good attempt to improve the way safety information is gathered and stored in the European Union, but there is still room for improvement in the way that this is translated into working methods that do not impose too much on the industry concerning the process itself instead of the final result.

Raquel M. Martínez Arnáiz
Directora de Seguridad Operacional
FerroNATS

"The ATM reporting system… is now becoming less reactive, slow and fatigued by mere compliance"

EU Reg. 376/14 makes me think of the word 'Utopia' – a word that derives from Greek ou ('not') and topos ('place'), extended to mean 'any perfect place'.

It was clear, from the first draft, that the Regulation was less than perfect and that there would have been interpretation and application difficulties. Also the attempts with the CAA to translate the Regulation in a more realistic approach failed.

However, Reg. 376/14 appeared to be an improvement to the previous international and national legislation. Therefore, at the beginning of 2015, we started paving the terrain for a practical and effective application in ENAV.

To start running the process all we began using TOKAI as an application to support the reporting and follow-up process. We obtained independent and dedicated local investigators. Then we reinforced and fine-tuned the SMS along with a new Safety and Just Culture Policy. Finally, we spread and disseminated the concepts across the whole organisation with dedicated training days.

The first positive effects were that:
- reporting continued to increase (contrary to a general fear of a possible decrease)
- flow was more direct, from reporter to safety actors
- there were few to no problems in separating voluntary and mandatory events (in Italy the Competent Authorities are different)
- reporting, investigation and follow-up time allocations were respected
- the quality of investigations increased slightly
- the independence of safety was respected.

Unfortunately, soon after, some negative effects appeared. Some of these were largely expected since they had had already and clearly been represented both to the DG Move and to the Italian CAA responsible for mandatory reporting:

- confused list of occurrences in Annex 3
- uncertainty over what to report and investigate
- fear of sanctions brought to introduce irrelevant details in the reporting and distortions
- huge extra workload in handling and supervising the process
- the need to meet deadlines absorbed the majority of resources.

Following are the drawbacks that had not been fully imagined:
- problems with (digital) reporting
- problems with the ADREP taxonomy
- E5X file compatibility problems
- TOKAI was not always sufficiently aligned with ECCAIRS
- difficulties in exporting data and statistics.

What I notice is that the ATM reporting system, with an old successful history (ESARR2), full of vitality, is now becoming less responsive, slow and fatigued by mere compliance. The majority of occurrences collected, relevant to the general aviation field, unduly weigh on the ATM system.

The entry into force of Reg. EU 376/14 brought undeniable positive effects by better granting Just Culture, protecting and increasing the level of reporting and follow-up, easing and raising a positive dialogue between reporters and management.

If we are able, together as ANSPs, Competent Authorities and Agencies, to continue fine-tuning, I'm convinced that we will pick fresh and juicy safety fruits.

Rodolfo Volpini
Funzione Safety
Resp. Gestione Eventi
Enav S.p.A.

"Everything is OK until everything goes wrong"

As we say everything is OK until everything goes wrong. What do we mean by this? We can protect personal information, our reports, and the analysis when it is about an occurrence or an incident. But when it turns into an accident the whole thing changes, even if it was preceded by similar actions as in incidents. For an ANSP, the internal occurrence investigation aims at improving the performance of services, checking every little corner to find a piece of something to improve our work for the sake of safety. Thus, sometimes the reports, the recommendations and even the analysis to the eyes of an outsider (non-ANSP employee) can become a list of omissions – ignored or neglected issues. Everything we do is about our attention to every single detail, our thoroughness led by the drive to keep the airspace and ATS safe. However, these demanding and exhaustive investigations can have an unintended 'dark' side. The dark side is if your detailed report acts against you.

According to the regulation (and as we would like to have it) the analysis can't be used for purposes other than to improve safety. And thus we believe those documents are protected, and meant only for the internal use of an ANSP.

But when it comes to an accident with losses of lives, the protection of the documents may disappear due to your legal system. The national judicial system, the police or the prosecution office has a right to access to every document. So, if the police ask for the recorded data, you have to provide them. I think it is more or less acceptable, however the records are made and kept to improve safety. But further on, if the police asks for the ANSP's internal analysis, I believe it should be kept as confidential information because the analyses are the 'thoughts of an ANSP' about the event. This information is available only via the SMS framework and based on trust. This trust is in danger if all the information gathered by the ANSP is confiscated by authorities during a judicial procedure. A judicial procedure concerning liability or responsibility, and the determination of punishment, is distant to the goal of improving safety, in my opinion.

I would prefer that the confidentiality of the internal investigations be respected, and investigations used for sharing lessons and improving our system performance. If the internal analysis can go outside the ANSP, and can be used in legal procedures, we will lose the information that we have in a (we think) protected environment.

Mihály Kurucz
SQM vezető / Head of Safety and Quality Management
HungaroControl

"The most notorious change is the 72 hour limit…"

The regulation (EU) 376/2014 of the European Parliament and of the Council on the reporting, analysis and follow-up of occurrences in civil aviation have brought to our organisation some important changes to our daily work.

The most notorious change is the 72 hour limit that any organisation has to report to the NSA the notifications of an occurrence, and the also 72 hours that any person has to report an occurrence when mandatory.

This tight limit period to report has made our organisation improve the channel to help our employees to report any occurrence, especially our electronic channel for notifications. But we, as an organisation, have at the same time to report to the NSA. As our safety units are only available during office hours, it is difficult to accomplish this requirement when we receive the report just before a long weekend, when our units are closed for more than 80 hours.

One of the concerns of our organisation about this regulation is the absence of a specific definition about some expressions, which gives cause for different interpretations. One example can be seen in the third article, talking about "the reporting of occurrences which endanger or which…would endanger…" This description is too broad and we would like more a concrete description to avoid misinterpretation between the reporter, us and the NSA. We consider that if the evaluation is provided by the reporter, some occurrences notified by pilots will not be notified by controllers due to different interpretation. This same problem can be found in the fourth Article with the expression "significant risk" and in the tenth article with "certain information".

Another concern is related to Automatic Safety Monitoring Tools (ASMTs), which are mandatory as stated in Regulation 390/2013. They can detect automatically some mandatory occurrences. Like FDM in airlines, ASMT must be considered out of the mandatory reporting system.

The other difficulty is with the quality and content of reports for some issues. For instance, it is mandatory to include a safety risk classification by the ANSP, but there is no formal scheme to set this classification, neither at a European level nor at the national level. Also, the Regulation says that the organisation shall establish data quality checking processes to improve data consistency. To be 100% sure of data consistency requires one to audit one by one every report (which is impossible due the huge quantity of occurrences been reported) or to use a statistical data quality processes (which implies some level of uncertainty). Related to the information exchange and the compatibility of databases with ECCAIRS software and the ADREP taxonomy, our organisation finds it difficult to access the codes that the format E5X needs. In our case, we

have to ask our NSA for them. This is not easy, considering that those codes are mandatory in the European Union.

To summarise, the Regulation has brought to our organisation some challenges, that have significantly impacted our daily work, by increasing workload and requiring new tools, methods and procedures.

Antonio Carlos Guerrero Compas
Jose Ignacio Martinez Carrillo
ENAIRe

"We need time to investigate properly, not only to satisfy European or worldwide databases"

In 1975, ICAO stated that:
"The sole objective of the investigation of an accident or incident shall be the prevention of accidents and incidents. It is not the purpose of this activity to apportion blame or liability." (ICAO Annex 13, 11th Edition, 2016)

Now, we are moving towards EU regulation 376/2014 related to 'reporting, analysis and follow-up of occurrences in civil aviation' which says in their overall objective (Article 1):

1. This Regulation aims to improve aviation safety by ensuring that relevant safety information relating to civil aviation is reported, collected, stored, protected, exchanged, disseminated and analysed.

   This Regulation ensures: (a) that, where appropriate, safety action is taken in a timely manner based on analysis of the information collected; (b) the continued availability of safety information by introducing rules on confidentiality and on the appropriate use of information and through the harmonised and enhanced protection of reporters and persons mentioned in occurrence reports; and (c) that aviation safety risks are considered and dealt with at both Union level and national level.

2. The sole objective of occurrence reporting is the prevention of accidents and incidents and not to attribute blame or liability.

Already in its objective, this regulation is different from Annex 13. So what happens at an ANSP level?

European ANSPs need to be compliant to be able to offer ATM services as certified ANSPs in Europe. But there is time pressure. According to EU376/2014, the report has to be sent to a so called competent authority within 30 days as preliminary – and within 3 months as final. Looking at the reality of ANSP incident investigations, the final report at Austro Control can take up to this mentioned three months. Currently we push the system so far that we finish within 60 days to get ourselves more time if needed. While we were under pressure before, we are under even more pressure now.

EU376/2014 is already hindering ANSPs to work it in accordance with ICAO's idea of conducting an in depth investigation. Of course, we have to do the investigations in a timely way, but we also need to dig as deep as necessary into the aviation system to make sense of occurrence investigation. A superficial investigation may stop at 'human error' or 'system/ equipment failure'. Furthermore, we – at an ANSP level – are looking to the so called 'ANS contribution', which is determined at a very early stage to satisfy regulatory requirements. Cases without 'ANS contribution' are closed without digging deeper. We move away from achieving all the above goals due to time pressure and lack of resources. That's the way we handle it at Austro Control, knowing that we would love to dig deeper, but still need to be compliant.

We are already making some kind of 'efficiency-thoroughness trade off' (ETTO) (Hollnagel, 2009). The ANSP has to justify what is more important: to comply with the details of all regulative rules, or to do a proper safety investigation according ICAO and try to reduce the safety risk. We should not only ask why things happened, but how things happen normally and how things happened on the particular day of the event.

The regulation makes it necessary to cut some corners in the investigation process to meet all the regulatory requirements (preliminary results within 30 days, final results within three months). Wouldn't it be better to go back to the basic idea of Annex 13? What investigators need is a proper time frame to find the weak points in the systems and to properly mitigate them.

To conclude, the process as imagined by ICAO in 1975 was in some ways perhaps more advanced than regulation 376/2014. We need time to investigate properly, not only to satisfy European or worldwide databases. As a reminder: "The sole objective of the investigation of an accident or incident shall be the prevention of accidents and incidents."

References

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Alfred Vlasek
ACG Safety Manager
Austro Control

Michaela Schwarz
Expert Integrated Management Systems
Austro Control