

THE CONTROLLER

SEPTEMBER 2021

JOURNAL OF AIR TRAFFIC CONTROL



40 YEARS AGO

THE PATCO STRIKE

ALSO IN THIS ISSUE:

- Federation's 2021 Virtual Conference
- Remembering 9/11 20 Years Later
- 100 Years of ATC
- Should We Still Be Using Magnetic North?





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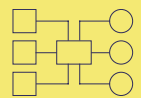
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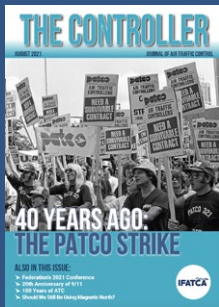


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This cover features a photo of striking air traffic controllers members of the Professional Air Traffic Controllers Organization (PATCO) in the 7 September, 1981, Detroit, Michigan, Labor Day parade. For this issue, IFATCA's Controller Magazine Senior Correspondent Philippe Domogala remembers the strike that happened 40 years ago and had lasting effects on ATC and labor globally.

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REMEMBERING THE MOST SIGNIFICANT EVENTS THAT SHAPED OUR PROFESSION

BY DUNCAN AULD, IFATCA PRESIDENT & CEO



This is an interesting edition of the Controller, full of reflection and mixed emotions. Within the following pages we mark several milestones. Continuing the ongoing theme surrounding a century of air traffic control, we must take time to remember the most significant events that have shaped our profession. We often speak of the resilience in the air traffic control system, yet this comes not from machines and technology but from the thousands of controllers at any moment in time that are using their passion and creativity to bring that flexibility to the system.

people that don't understand or are inconvenienced by safety.

This year is also the 60th anniversary of the Federation; however, instead of joining together for a celebratory cake, we were limited to the distant interaction of an online conference. This served well as a testbed for future events, but we must strive to continue the tradition of our annual meeting. As life returns to the 'new normal,' we will unfortunately see more virtual meetings, making those times that we do meet in person so much more valuable on both a personal and professional level.

body to further the interest of the profession. As generations passed the Federation has grown to become a global body representing the majority of the world's controllers, and we continue with the same goals and mission as those set 60 years ago. There will be more challenges – the impact of aviation on the environment to name just one. But seeing how far we have come and what we have achieved together, I am confident our profession and our Federation can face those and overcome whatever they throw at us.

Hope to see you soon, in person. ◀

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Photo: IFATCA

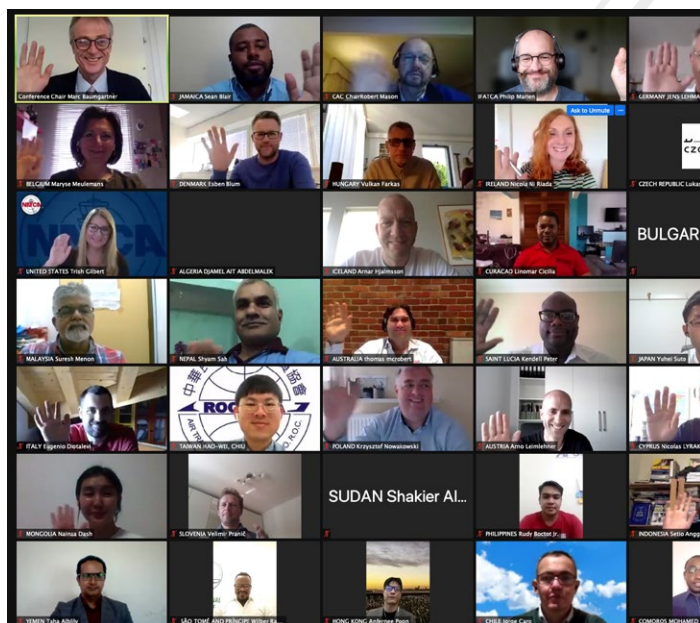
▶ **Photo:** Photo from the IFATCA Constitutional Meeting, Amsterdam October 1961.

As controllers we have adapted time and time again, 100 years ago, 60, 40, 20, and most importantly now. As society adapts to the COVID-19 pandemic, the changing travel patterns and business practices so do we as professionals. There is a promising trend in traffic growth that suggests the worst is behind us; yet the lingering effects of this crisis will take shape of the years to come. The impact on aviation is unprecedented, as will be

The current health crisis is also one of those landmark events. It has not only changed aviation but society in general, as did the terrible attacks 20 years ago on Tuesday, September 11, 2001. Through this tragedy we experienced a new generation of safety and security protocols and a new mindset among the general public. We also look back to the U.S. again 40 years ago to remember the PATCO Strike, a turning point in industrial relations in aviation. In general, over the last few decades, the mechanisms available for Professional Associations and our industrial partners to promote change have been reduced to various forms of 'consultation.' Nevertheless, we still witness the same issues that plagued the air traffic system in the 1980's: staffing, fatigue, and safety culture. Progress is made, but only slightly faster than is it degraded by

the efforts to use this as a convenient excuse to make long desired changes to our profession. As proposals are presented, they should be clearly justified and reviewed with a team of safety and operational specialists. Safety first: it's usually written on the wall somewhere.

In Amsterdam on 19th and 20th October 1961, the twelve founding members formed the Federation in response to technological and societal change that warranted a strong collective



▶ **Photo:** Screen grab from IFATCA conference

IFATCA'S 2021 CONFERENCE: VIRTUAL GATHERING OF MEMBER ASSOCIATIONS

BY PHILIP MARIEN, IFATCA COMMUNICATIONS COORDINATOR

From 24-26 May, IFATCA held its first virtual conference. If it had not been for the global pandemic, during that same week, delegates representing IFATCA's 133 member associations would have met in Montego Bay, Jamaica, for the Federation's annual conference. Unfortunately, for the second year in a row, the event had to be cancelled as travelling remains restricted for many regions of the world.



Even though the IFATCA constitution and bylaws do not include provisions for an online event, emergency COVID-19 requirements applicable to associations registered in Canada, made a limited decision-making meeting possible. A small task force, led by IFATCA Deputy President Helena Sjöström, with the support of the Constitutional and Administrative Committee (CAC) and the Canadian Air Traffic Control Association (CATCA), prepared a set of guidelines for the meeting. Member associations were invited to register one director to attend the meeting via the online meeting platform Zoom. A limited agenda was circulated, dealing only with information reports and administrative issues such as finances and elections.

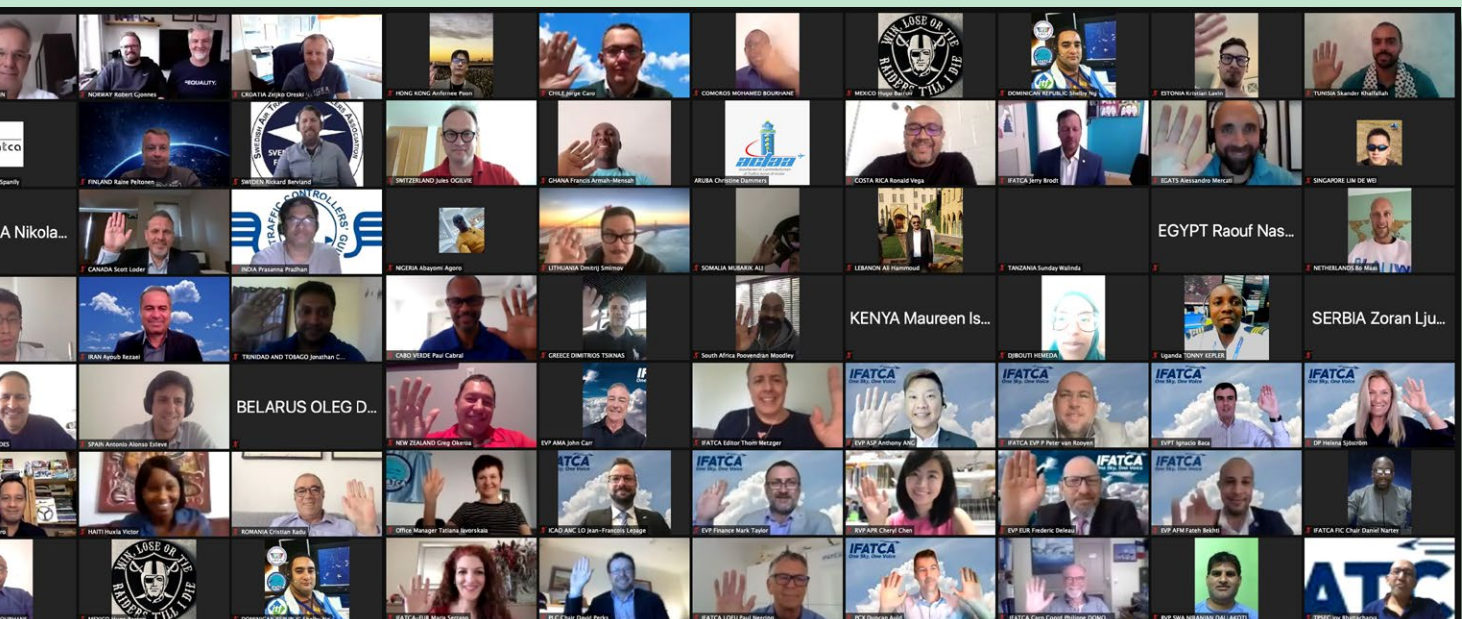
While many of us have experience with online meetings, there were several pitfalls that needed to be managed. Given the

worldwide reach of our Federation, finding a timeframe for this meeting that suited everyone from UTC -12 to UTC +12 is difficult. To keep to reasonable times, it was decided to spread the meeting across several days but restrict each one to 3 hours from 1200 UTC until 1500 UTC. It still meant that our New Zealand colleagues were up between midnight and 3 AM, but most member associations would be able to attend during what most people would consider normal waking hours.

Another challenge was voting and getting a quorum. To ensure that only eligible directors would vote, other attendees were split off during the voting rounds. The directors could then vote on the proposed motions with the results announced after the non-voting attendees re-joined. Over 80 member associations participated in the

meeting, and the required quorum of 67 voting associations was easily achieved.

The meeting was expertly moderated by former IFATCA President and current SESAR Coordinator Marc Baumgartner. After he explained several practical arrangements and President and CEO Duncan Auld made a brief welcome, the first order of business was for members to discuss a proposal from the Executive Board not to suspend/terminate members in arrears with their membership contributions. Not only was the current crisis a factor in this recommendation, but many associations also normally pay in person at the start of the conference. As this was not possible for the second consecutive year, a proposal to enable all member associations to participate and vote in the online meeting was put in front of the members formally in good standing. It was met with overwhelming approval. Many member associations also



Screen grab by Philip Marien (IFATCA)

IFATCA'S 2021 CONFERENCE: VIRTUAL GATHERING OF MEMBER ASSOCIATIONS (CONT.)

applied for support from the Federation's financial circumstances fund.

All this resulted in all 133 member associations becoming eligible to vote, meaning that quorum or the required number of voting member associations present was higher. 67 member associations needed to be present for valid votes, instead of 47. This quorum needed to be verified each day, in accordance with the manual, but was comfortably met each day. A maximum of 82 member associations attended. No proxies were allowed during the meeting.

The first day ended with the reports from the president and CEO, the deputy president, and the regional vice-presidents.

The second day was largely dedicated to discussing the Federation's financial situation, including the report from the EVP Finance Mark Taylor. He elaborated on the efforts of the Executive Board, in close collaboration with the Financial Committee (FIC), to make the Federation's finances more transparent. The Federation's expense tracking tool, Concur, was replaced by Expensify. At the same time, efforts were undertaken to make the categorization of the different budget/expense categories more logical. The accountant described those efforts and answered concerns raised by some member associations. The full impact of the changes will of course only become apparent once the Federation's representatives can start attending meetings in person again, as such claims are currently nearly non-existing.

A legal obligation for any association under Canadian law is the auditor's report and the subsequent discharge of the Executive Board for the past financial year. The virtual format of the meeting gave member associations an opportunity to hear from the auditor first-hand and ask for clarifications. Following that discussion, a vote discharged the Executive Board. Next on the agenda was the report of the Financial Committee (FIC) chair Daniel Nartey, who was appointed to that function for a two-year term.

The day ended with the reports of the EVP Technical Ignacio Baca and of the Chair

of the Technical & Operational Committee (TOC) Renee Pauptit. Baca reported on the solid reputation that IFATCA enjoys at an international level thanks to the excellent work of its representatives. He highlighted the work in three domains in particular: drones, remote towers, and the very constructive relationship with International Federation of Air Line Pilots' Associations (IFALPA). Pauptit was confirmed in her role for the coming year.

In his report, Constitutional and Administrative Committee (CAC) Chair Robert Mason, mentioned that his committee mainly provided support to the Executive Board into matters primarily pertaining to the administration of the Federation during the COVID-19 pandemic, including temporary provisions for this "virtual" conference. Mason was confirmed in his role as CAC chair for the coming year.

The third day began with a discussion on – and the subsequent approval of – the budget for the upcoming financial year 2021/2022, as well as the elections of the Executive Board members. Patricia Gilbert (USA/NATCA) was elected to replace John Carr after he served 7 years on the Executive Board. IFATCA will benefit from the wealth of experience that Gilbert brings to our Executive Board. The other important change was that acting EVP Europe Frédéric Deleau (EGATS) was elected to his function, so he can finally drop the word 'acting' from his title. With these positions formally confirmed by the membership, the composition of the board should remain unchanged at least until the next annual conference.

Regarding annual conferences, we hope that we will be able to resume them starting in 2022. Those participating in this meeting decided that the member association from Singapore would host the 2022 event, while the 2023 event was awarded to the member association from Jamaica.

The update from EVP Professional Peter van Rooyen and Professional & Legal Committee (PLC) Chair David Perks focussed on the work that was done on the various guidelines and documents

that were published in the wake of the COVID-19 pandemic. Perks was re-elected to the position of PLC Chair for the coming two years.

Finally, IFATCA's Liaison Officer to the ICAO Air Navigation Commission (ANC) Jean-François Lepage updated the members associations on our collaboration with the United Nations' civil aviation body. Lepage reported that our input is very highly valued and that our collaboration with ICAO and its stakeholders remains highly beneficial for both sides.

In closing the meeting, IFATCA President and CEO Duncan Auld highlighted again that the past 18 months have been challenging not only for individuals, but also for our profession and for the Federation. Controllers are trained to be resourceful and resilient, so we undoubtedly will overcome these challenges as well. There is no doubt that it will leave an indelible mark, but it is also an opportunity to refocus and reshape our future, both in our daily work as well as how our Federation operates. He thanked the member associations for their continued support and hoped to see them again face-to-face in the not-too-distant future.

As positive as the virtual experience may have been, it cannot fully replace a physical, face-to-face conference. While may be possible to host a hybrid event, there still are lots of practical issues to overcome. The Constitutional and Administrative Committee, in collaboration with the Executive Board, will look at the various options and will present these to the membership for their consideration. COVID-19 cannot be allowed to prevent IFATCA from remaining the global voice of air traffic controllers around the world.

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ICAO'S COVID-19 RESPONSE: CREATING A COORDINATED AND ALIGNED GLOBAL APPROACH (CONT.)

▶ BY JEAN-FRANÇOIS LEPAGE, LIAISON OFFICER TO THE ICAO AIR NAVIGATION

ICAO DURING COVID-19

It is not surprising that the COVID-19 pandemic has greatly affected the way ICAO is doing business. As a result of the first lockdown in Canada in March 2020, all face-to-face ICAO meetings were cancelled. Luckily, the Air Navigation Commission and the Council were both able to hold physical meetings and finish their winter session in ICAO headquarters. But given the deterioration of the situation, the spring session, starting in mid-April, had to be held virtually. Considering the limited time during the two sessions, ICAO had to turn around quickly and come up with a solution to hold these essential meetings electronically.

The Zoom platform was chosen as the medium to conduct such meetings and after a first half of the session without interpretation, ICAO was able to facilitate simultaneous translation into the six official languages of the organization. Regarding panels, working groups, and taskforces, they also had to revert to virtual meetings, sometimes creating scheduling problems – with membership scattered all around the world in different time zones.

While virtual meetings do not offer the same interaction as face-to-face meetings, the participants adapted quickly. After a relatively quiet spring session, handling essentially only what was urgent, the fall 2020 session saw a much more complete and at times challenging agenda. Furthermore, as panels started to meet again after the summer of 2020 – in a virtual format – the Air Navigation Commission began to see new proposals for amendments coming to completion again and being presented to the Commission.

Towards the end of last year, ICAO headquarters started to slowly reopen, with sanitary measures and a reduced capacity. Only essential visits were permitted, and the building ran at approximately 25% of its normal occupancy. Face-to-face meet-

ings were still not possible and only small groups from the Secretariat, the Air Navigation Commission, or the Council could gather with the necessary social distancing measures.

It is hard to say when normal operations will resume at ICAO, given the uncertainty of the present pandemic, border closures, and travel restrictions. ICAO now believes it is unlikely that physical meetings will be held at least until this fall, and possibly not until early 2022. If the situation were to change, this estimate could be revised. Therefore, the next divisional-type meeting that was scheduled – the Third High Level Safety Conference (HSLC/3) – has been cancelled.

Instead of the HLSC, ICAO plans to convene a High-level Conference on COVID-19 (HLCC 2021) which is planned from 12-22 Oct., either in a virtual or hybrid format due to the ongoing uncertainties. The conference, consisting of a plenary session and two streams related to safety and facilitation, will be structured around half-day meetings, ensuring their flexible schedule and sequence with different time zones, the availability of interpretation services, etc. The provisional agendas for the streams were built upon relevant comments from member states and international organizations.

Several factors influenced the Council's decision to cancel the HLSC and to hold a conference on the pandemic instead. First, the report of the ICAO Council Aviation Recovery Task Force (CART) stated that ICAO should consider convening a high-level meeting. Second, in 2021, ICAO initially was planning to organize two divisional-type meetings, the HLSC and the first High-Level Facilitation Conference (HLFC). Organizing three large meetings in one year would be nearly impossible, given the fact that only one is already a challenge, even more so in a virtual setting. Third, it was not possible to delay one or more meeting(s)

to 2022, since 2022 is an Assembly year. Furthermore, there is a need to present and discuss the ICAO work program for the next triennium (and consequently the budget) before the Assembly, so that these two elements can be endorsed by member states at Assembly.

The theme chosen for the conference is "One Vision for Air Transport Sustainability beyond the Global Pandemic," and the event will consider a broad range of issues relating to the COVID-19 pandemic response and the aviation sector recovery. The proposed agendas incorporate topics that are of common interest and pose challenges to aviation, transport, and health authorities, border and custom agencies, tourism and travel sectors, and the industry stakeholders at large.

ASSISTING THE STATES – THE ICAO COUNCIL AVIATION RECOVERY TASKFORCE (CART)

In the early days of the pandemic, the ICAO Council took the initiative to establish a taskforce to assist member states and the industry by providing practical, aligned guidance material in order to restart the international air transport sector and recover from the impacts of COVID-19 on a coordinated global basis. The taskforce published a report and a guidance document called "Take-Off," touching on a variety of health, safety, and security issues related to the pandemic.

The CART recommendations and guidelines will be continuously reviewed and updated based on the latest medical and operational advice, to harmonize with the



ICAO'S COVID-19 RESPONSE: CREATING A COORDINATED AND ALIGNED GLOBAL APPROACH (CONT.)

COVID-19 recovery roadmaps currently established by member states and industry groups.

To address the challenges currently faced by the industry and to provide global guidance for a safe, secure, and sustainable restart and recovery of the aviation sector, ten key principles were identified to support this restart and recovery:

1. Protect people: harmonized but flexible measures;
2. Work as one aviation team and show solidarity;
3. Ensure essential connectivity;
4. Actively manage risks related to safety, security, and health;
5. Make aviation public health measures work with aviation safety and security systems;
6. Strengthen public confidence;
7. Distinguish restart from recovery;
8. Support financial relief strategies to help the aviation industry;
9. Ensure sustainability; and
10. Learn lessons to improve resilience.

The CART recognises that harmonized – and more importantly mutually accepted – measures are essential. As such, measures taken will be compatible with safety and security requirements, proportionate to the improvement of public health, flexible where possible to allow for a viable economic recovery, and safeguarded not to distort markets. Measures that impose costs or burdens on the industry will be carefully considered and implemented only when justified by safety, public health, and confidence of passengers and crew. The measures will also need to be adjusted as required to respond to the evolving situation. For that purpose, ICAO, in cooperation with all civil aviation stakeholders, committed to continue to monitor and assess the situation by seizing opportunities when they arise to reinforce the aviation ecosystem.¹

¹ ICAO. (2020). CART Report – Executive Summary. Montréal : International Civil Aviation Organization. <https://www.icao.int/covid/cart/Pages/CART-Report—Executive-Summary.aspx>

A LOOK AT THE CANSO/IATA/ IFALPA/IFATCA WEBINARS: SAFELY NAVIGATING THE INDUSTRY RESTART

Besides the abovementioned ICAO initiatives, other industry organisations have gathered since the beginning of the pandemic to offer their own response to their respective memberships on how to cope with the consequences of COVID-19 and further assist with the challenges posed by a safe restart of air navigation. Under the leadership of IATA, five webinars were offered to the membership of the four organisations in 2020, several already took place in 2021, and more are to come. These webinars are dealing with topics such as human factors to be considered for ATCOs and dispatchers, traffic management and airport operations during the pandemic, maintaining a positive safety culture and SMS during the restart, and challenges related to maintaining competency throughout and after the pandemic. IFATCA experts were invited to participate in all the subjects, providing either speakers to the webinars or moderating a webinar.

Each of these webinars attracted almost a thousand participants, which was an excellent turn out. Following the webinars, IATA published several bulletins to summarize the discussions of the webinars and to offer a takeaway item to the participants. These bulletins can be downloaded on the IFATCA website, in the NEWSROOM section. Additional webinars are planned through the end of 2021. Visit www.ifatca.org or follow the Federation on social media to find out more and register.

Summary.aspx

WHAT ELSE IS KEEPING IFATCA BUSY AT ICAO?

While business was occasionally disrupted within ICAO at the beginning of the pandemic, all actors of the industry, the Commission, the Council, and the Secretariat quickly adapted to this new reality and the normal flow of meetings quickly resumed – in a virtual setting. As Liaison Officer to the ICAO Air Navigation Commission for the Federation, my role continues to be the same: making sure our interests are heard and our positions advertised and known and collaborating with our IFATCA representatives at ICAO, other industry partners, and the ICAO community to find the best solutions possible to the challenges before us, always with safety as our number one priority.

It is no secret that virtual meetings pose difficulties, whether they are caused by scheduling, time differences, or rostering conflicts. I would like to recognize the work of all the IFATCA representatives who are working with me at ICAO to achieve our mission and our goals. Meetings are held early in the morning and late at night, and most of the time, they overlap with our respective days off. Nevertheless, IFATCA's representatives have been at work, attending the meetings, reading, commenting, and producing the necessary working papers, addressing issues of interest to the Federation, preparing reports and much more, while handling other personal and work constraints. I sincerely thank them and express all my recognition for their dedication to the Federation. IFATCA can count on a fantastic team at ICAO, and I am very proud to be part of it! ◀

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COVID-19 PANDEMIC: USEFUL LINKS

Learn more about the various initiatives from ICAO and the industry related to COVID-19. The following links provide a wealth of useful information:

IFATCA COVID-19 Resource Page:
<https://www.ifatca.org/covid-19/>

CAPSCA (Collaborative Arrangement for the Prevention and Management of Public Health Events in Civil Aviation): <https://www.capsca.org/index.html>

ICAO Response and Recovery Platform:
<https://www.icao.int/covid/Pages/default.aspx>

CART (ICAO Council Aviation Recovery Taskforce):
<https://www.icao.int/covid/cart/Pages/default.aspx>

IATA Resources for Airlines & Air Transport Professionals:
<https://www.iata.org/en/programs/covid-19-resources-guidelines/>



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20 YEARS AGO: THE 9/11 ATTACKS CHANGED OUR PROFESSION AND THE WORLD

► BY PHILIP MARIEN, COMMUNICATIONS COORDINATOR IFATCA

September 11th 2021 marks the 20th anniversary of what is since become known as 9/11: al-Qaeda terrorists hijacked four commercial airliners shortly after take-off in the northeastern United States. American Airlines Flight 11 was flown into the North Tower of the World Trade Center complex in Lower Manhattan, New York at 8:46 am. Seventeen minutes later at 9:03 am, the World Trade Center's South Tower was hit by United Airlines Flight 175. Both 110-story towers collapsed within an hour and forty-two minutes, leading to the collapse of the other World Trade Center structures including 7 World Trade Center, and significantly damaging surrounding buildings.

A third flight, American Airlines Flight 77, flown from Dulles International Airport, was hijacked over Ohio. At 9:37 am, it crashed into the west side of the headquarters of the American military, the Pentagon, near Washington D.C. The fourth, and final flight, United Airlines Flight 93, turned towards Washington, D.C. This flight was the only plane not to hit its intended target instead

crashing in a field near Shanksville, Pennsylvania, at 10:03 am. The plane's passengers attempted to regain control of the aircraft away from the hijackers and ultimately diverted the flight from its intended target. Investigators determined that Flight 93's target was either the White House or the Capitol Building.

The attacks resulted in 2,977 fatalities, over 25,000 injuries, and substantial long-term health consequences for many thousands more, including emergency and law-enforcement staff that were dispatched to the crash sites. It worsened an downturn for the world's economy and triggered a 20 year old military operation costing billions on dollars in Afghanistan, to hunt down those held responsible for the attacks: al Qaeda and its leader Osama Bin Laden.

The horrific attacks had a major impact on the world, but in particular on the aviation industry. Within 20 minutes of the first crash, the FAA announced a ground stop for flights taking off from a US airport. Fearing more attacks,

Ben Sliney, working in his first day in his position as the U.S. Federal Aviation Administration's (FAA) National Operations Manager, ordered the U.S. airspace to be shut down some 40 minutes later. US Air Traffic Controllers had to land around 3500 aircraft as soon as possible, as documented in an [iconic video](#). About 500 flights en-route to the U.S. were denied entry into the airspace. Transport Canada instructed Nav Canada to give permission for transoceanic flights that were over halfway towards their destination to land at the nearest Canadian airport, depending on their point of origin and remaining fuel. Around half of these flights, with some 35,000-40,000 passengers, landed in Canada. The rest turned back to where they came from or diverted elsewhere.

The U.S. and Canadian civilian airspaces remained closed until September 13th. When operations restarted, it was quickly clear that things would never be the same again. [The issue of The Controller](#) following the attacks offers a number of first-hand accounts from controllers that are well worth a read.



► Photo: Jonathan Dorn, AIFPSA Secretary General





Up to September 2001, aviation had been enjoying a period of relative peace. Terrorist bombings or hijacks had significantly decreased over the decade before and especially in domestic air travel in the USA, security measures were relatively relaxed. This changed practically overnight: cockpit doors had to be re-enforced and locked during the flight, passengers were thoroughly screened and many items were banned from hand luggage.

For air traffic control and air policing authorities all over the world, loss of communications and possible renegade aircraft became a major issue. Civil aircraft were being intercepted again on a regular basis. Even more important was the economic impact: it took about six years for airlines to recover capacity and it was the steepest historic decline in air traffic before COVID. Demand fell dramatically and causing legacy operators to cut capacity, lay off staff and mothball their fleet. It was the final blow for a number

of iconic airlines, like Belgium’s national carrier SABENA – one of the world’s oldest operators. The crisis enabled low-cost carriers to expand their fleet through deeply reduced aircraft prices, thereby firmly establishing them as major players. In January 2002 for example, Ryanair scooped up 100 Boeing 737-800s at a 53 percent discount. Terrorists had turned civil aircraft, designed to bring people closer together, into weapons of mass destruction – killing thousands and triggering events that killed thousands more. Whatever sick and twisted motive they had, twenty years later, the aftermath is very much still felt as anyone travelling can experience first-hand.

While an anniversary is an excellent time to remember and reflect, we should also look towards the future. It is chilling to note that the systemic issues that feed these fanatics and their ideas still exist. As we know from modern safety management, eliminating the systemic issues might be more difficult, but it is a lot more effective in the long run than reactionary measures, especially if such ‘patches’ persist. ◀

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► **Photo:** Skyline of New York City with 9/11 Memorial lights visible

Photo: Shutterstock



MY SHIFT ON 9/11: HOW THE ATTACKS WERE EXPERIENCED IN IRELAND

▶ BY AIDAN MC ENROE, ATCO EXPERT, EISNUACC, IRISH AVIATION AUTHORITY



We always came back early from lunch to try and fit a quick game of snooker or to use the Internet in the rest facilities. Lunch normally was most of the team heading down to Shannon Airport to dine in the airport terminal restaurant. The meal and the previous few hours at work were forgettable, but the remainder of the day is etched forever in my memory. As we walked into the rest room/canteen, those who were there were engrossed with the television. Somebody facing it tried to fill us in.

“Did you see this? A plane has hit The World Trade Centre. I’m not sure what type”

As we gathered around the TV, the second plane hit. We were united in gasps and no doubt the gut wrenching feeling in our stomachs. Within minutes a junior member of staff came running in the kitchen, “The coordinator wants every ATCO over to the Ops room immediately.”

When we opened the ops door, it was obvious we needed everybody. All the sectors were manned, I was only working for the IAA for four years and had never seen all the radar positions manned before.

Instructions were quite clear: four people per sector, the third person to assist the planning controller with the strip management and phone calls. I stood beside an already two-person sector SOTA sector, all the chairs were already used in the room.

SOTA is a rectangle piece of airspace. To the west and south of the airspace was the oceanic interface where we needed to have procedural separation prior to 15w (or southbound traffic at 49N) and to the east at about 8w was the London ACC boundary (London Control) and French ACC boundary (Brest control). Our sectors consisted of a radar screen and a strip-board, so only one controller has a radar screen in front of them, the planner has a PC screen and the strip board as procedural backup.

I informed the planning controller that I was there to help. I told her to let me know if she needed anything. The controller was relatively junior and maybe had less than a years’ experience checked out, but she did something that I had the utmost respect for her doing. She turned to me and said, “I’m out of my comfort zone. Can you sit in?”

I always tell my OJTI students this story. It is so vital to be honest with yourself and know when you are reaching overload, be aware of that feeling, and seek help from your colleagues.

So I was now the planner sitting beside a very experienced controller Jim, a controller that I always admired, a type of controller that nothing phased. He had done this ATC thing for years. I was reassured.

At the time we didn’t have the information that this was a hijack scenario. We had completed training at the end of 1999 for the possibility of system failures due to the Y2K bug. Was this what was happening now? Were aircraft navigation systems failing and somehow flying into buildings?

Pretty soon, pilots were getting information via company messages about what was happening in New York. There was a lot of RT calls asking if any information was known. We had none. I could hear in their voices that there was real concern. Were they thinking that their planes may start descending or turning without their control?

News came from the top desk that a third plane had gone down in the U.S. Minutes later the word comes down that, “It looks like multiple hijacks, and the U.S. airspace is closed.”

What did the coordinator say? The U.S. is closed?”

We were in the middle of a busy west-bound traffic flow. Our sector was full of aircraft all heading one way, in the direc-

tion of the ocean and mostly for the US.

Jim turns to me and in his wisdom he said, “Remember this moment Aidan. This day will go down in history.”

He fixed his chair in a position that leaned into the radar screen. I had never seen him so far forward. If he was my student under OJTI, I’d be telling him to relax and lean back a bit, but not that day, that day I also adjusted my seat to the same angle.

Jim did a general broadcast on the frequency, “All stations on frequency, be advised the U.S. is closed to all traffic. Stand-by for further instructions.”

Obviously, pilots were very busy themselves trying to get their own info from other sources and getting directions from their companies. One question came through from a pilot that started a chain reaction that, at the time I remember thinking was visually mesmerising, “Is Canada still open?”

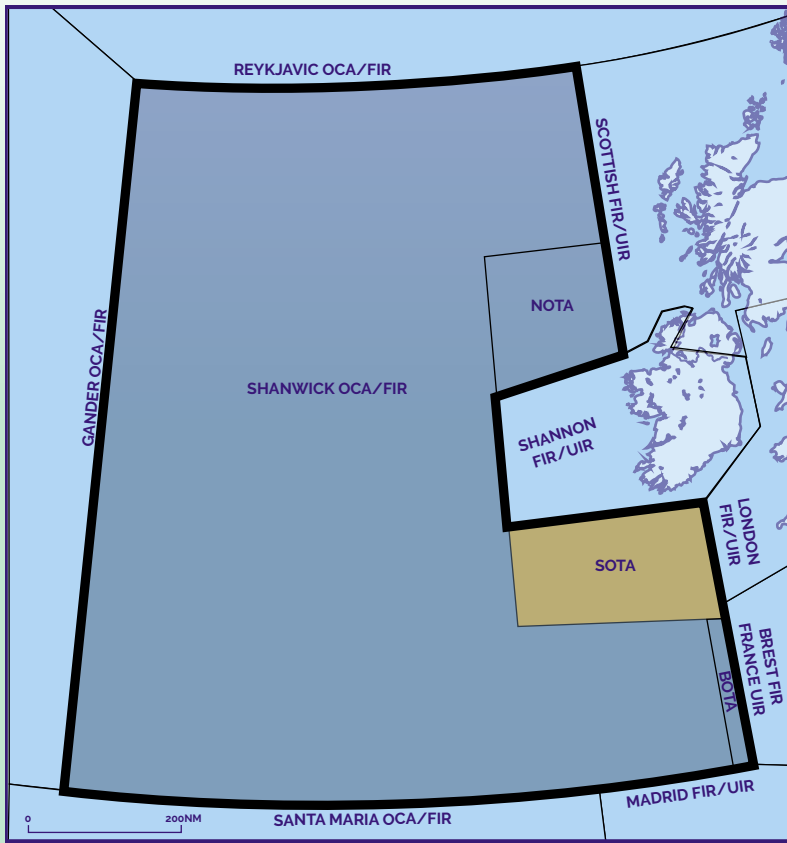
Thankfully that info was quickly available, “Yes. Canada is still open”

Within minutes, the frequency became blocked with aircraft wanting reroutes to “Canada.” I don’t remember any airport being mentioned, just that now most of the aircraft were landing in “Canada.” I’m sure like them, we could sort out those minor details of a destination later.

Phone calls to Shanwick (who control the ocean) were difficult, as every sector from Shannon was trying to contact them, and no doubt Santa Maria and Gander were bursting their eardrums too. It was a case of fastest finger first, when the light on the phone went out you pressed the button.

Shanwick advised that, “Anybody that wanted to go to Canada had to route 51N and north of to enter the ocean, and while you are there, Shannon, we have aircraft





on the ocean, who are less than halfway, and they are turning around and returning to the departure aerodrome. More details to follow."

Aircraft were re-routed to 51N and north of as their new oceanic clearance came in. Some aircraft wanted to route there in anticipation of receiving a clearance. The chain reaction had started. All the aircraft in the sector that until a few minutes ago were routing pretty much westbound were now all turning right to aim for 51N, like a flock of starlings that had been spooked by a predator. All the leader line vectors were all now diagonal.

Then, word came down, "Canadian airspace is closed."

Another general broadcast was issued, and another chain reaction of all aircraft now turning left to head southwest. This time the destination requested was the Caribbean. That didn't last too long. There wasn't any time to get any clearances for the Caribbean when the word came through, "Ocean was closed."

London and Brest were told to send us no more aircraft unless they were landing in Ireland. That was not something I had ever heard before, not something we had trained for, but everybody in aviation that day was experiencing something that they

had never experienced before.

Within minutes, the first phone calls from Shanwick started coming in giving details of returning aircraft off the ocean, storage bins were being searched for the strips. On a normal day, once the strip slides down the chute to the bin, we don't see it again, but not on that day.

We quickly reminded ourselves of the "turnback procedure" for an aircraft experiencing an emergency on the ocean: offset by half a degree and come in 500ft below your previously assigned oceanic label.

The first 'unknown callsign' came on frequency. It was an early call, thankfully. It was a returning aircraft coming off the ocean, coming back via the same point and same level that it had exited Irish airspace maybe 15 minutes previously. This wasn't a day for giving out though. The aircraft was told, "Change your level by 500ft and offset by half a degree as published."

We couldn't see him on radar but were glad of the early call.

The next instruction was to the conflicting westbound aircraft routing to the same point and same level as the returning aircraft. They were told to orbit left and hold.

Once the message that the Ocean was closed started filtering through, many aircraft that could return to their departure airport elected to do so. Because such a scenario was never envisaged, our system struggled with getting information to London ACC and Brest ACC. The frequency was too busy for me as a planner to get confirmed times for coordination points, so a lot of guess work was used. London and Brest were also dealing with their own turnback's, if I had passed an estimate in the form of a song recital, I think they would have taken it without batting an eyelid.

The turnback's continued, not all using correct procedures, but at this stage we had nothing heading out against them, so that was one less worry.

Soon every turnback was now declaring a fuel emergency, and PAN PAN acknowledgements were being heard in the whole OPS room. Not many returning aircraft could make it back to their point of origin, diversions to Shannon and our other airports were occurring. I remember overhearing that Shannon airport was running out of room on the ground for the aircraft.

Our shift went on way past its normal hours that day. Nobody complained. As we walked out drained from the day, the station manager on duty told me there's something on the canteen table for everyone. Cans of beer had been bought for us to take home, I don't drink beer but I liked the thought. I knew I needed something from the top shelf after that day.

The TV was still on as I walked out, I couldn't look at it, I didn't need to. I had heard all the emotions in the pilots voices. I knew it was bad.

I checked my phone as I walked out, I had numerous texts and missed calls and one voice mail. I dialled into my voicemail. There was a message from my uncle who was a priest, who got me interested in ATC almost 10 years previously. He left a brief message that he was thinking of me and my colleagues as he could only imagine what we were dealing with.

With the lump in my throat, I thought, "Yep. We are all in this together, everyone that day, everywhere." ◀

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40 YEARS AGO: THE PATCO STRIKE OF AUGUST 1981

➤ BY PHILIPPE DOMOGALA, SENIOR CORRESPONDENT, IFATCA



This year saw the 40th anniversary of a very important milestone in air traffic control: the PATCO Strike of August 1981. It shook our profession to its core, and effects of the strike still linger today.

The PATCO strike of 1981 not only had a profound impact on the air traffic control profession, but on organised labour worldwide. It demonstrated the limits of industrial action, and it was a harsh reality check for many controllers worldwide who had begun to organise themselves in strong unions. Foremost however, it left many with a sense of injustice and the uncomfortable feeling that our profession was again not understood. Our U.S. controller colleagues fought for better working conditions, salaries, and above all recognition. It is fair to say that nearly all controllers worldwide were experiencing very similar shortcomings in those days.

In the longer term, the strike also had some positive sides: despite tremendous effort, the fact that the FAA could not restore the pre-1981 capacity levels for years, even decades, ensured that a similar scenario is unlikely to ever again or at least not to such a scale. Ironically, this strike and how it was handled also led to a gradual but significant improvement of the controller working and salaries worldwide, as many governments realised, they had to do something to address the controllers' issues to avoid such a crisis themselves.

Sadly, the PATCO controllers never benefited themselves from the action they undertook in August 1981. Many paid a very heavy price for their participation: When he dismissed 11,345 controllers, President Reagan also banned them for life from working again as controllers in the USA. When 12 years later, President Clinton eventually lifted this restriction, the FAA made those that re-applied pass through the normal Ab-Initio selection. In 1995, only 37 were hired back by the FAA. Over the subsequent years, only a total of around 800 managed to re-join the agency.

In our forthcoming book on the history of air traffic control, we will revisit this conflict in three chapters: one on what led to the strike and the final confrontation, one of what happened during the strike itself, and the last one on the aftermath and the legacy. The unsuccessful mediation role played by IFATCA will also be detailed for the first time, with recent interviews of the actors of that time. It will also feature an exclusive interview of John Leyden, who was PATCO president for the decade preceding the strike and who was ousted by Robert Poli just prior to it.

There also soon will be a feature-length documentary on the strike. Filmmakers Danny Alpert and Ray Nowosielski are completing the film "The Last Strike" that takes a detailed look at the event through

interviews with many key players. It will also go into the consequences for the U.S. labour movement, which are still felt today. The teaser for the film says: "This is not a story about then. This is a story about now and about a conversation on workers' rights."

In 2011, Professor Joseph McCartin published a very detailed book about the strike. "Collision Course" is a must read for anyone that wants to understand how the situation developed and what the (hidden) goals of everyone in that strike were. It also provides a timeline of events that helps us understand how we got there. Starting from a 1960 collision in New York where a few controllers felt the need to organise themselves against their management; through the 1970s with a clash of generations between a young workforce that opposed establishment and the Vietnam war against a hard-line military-style management that were unprepared to discuss changes and U.S. politics and presidential elections, with clear parallels to the recent Trump Administration. Ronald Reagan was a Republican from outside of the political establishment. He was a hardliner but needed the support of the powerful established unions to get elected



➤ Photo: Advert for forthcoming film: "The Last Strike"



➤ Photo: Ronald Reagan announcing his ultimatum to the controllers.



Photo: Ron Fandwick

► **Photo:** Chicago controllers demonstrating in front of FAA building and the streets of Chicago.



Photo: Author private collection

► **Photo:** Controller T-shirt calling for the strike.

in 1981. PATCO was a union that wanted to support a candidate that would change the FAA management and implement their demands. Both found mutual reasons to support one another.

After the initial courtship was over and the election was secured, the pre-electoral commitments, even written ones, were quickly dismissed. The realities of power, lobbying, and conflicting interests took over, with Reagan wanting to be seen as a tough U.S. president in his upcoming negotiations with the Soviet Union's President Gorbachev. In hindsight, PATCO clearly underestimated the determination of some within the FAA to end the supremacy and power of PATCO. Many other public service unions eagerly awaited the outcome of the PATCO action, ready to take their own actions if the government gave in. It is worth remembering that most controllers in the U.S. are federal employees, who were explicitly forbidden to go on strike, which meant that their action was illegal. Some in Reagan's Administration feared that the strike would expand to others fed-

eral sectors if they gave in to PATCO demands. Many demanded a tough stance against the controllers to help contain such spill over. Lastly and perhaps most importantly, public opinion was largely opposed to the strike and turned against the controllers, who Americans saw as greedy, overpaid workers just asking for more money during an economic crisis.

All these factors led to the strike backfiring and to the dismissal of thousands of controllers with a single signature.

1981 was a dark year for air traffic controllers worldwide. The shockwaves and the consequences of the PATCO conflict were enormous, and some are still felt today. While it seems unlikely that something like this could happen again, there is a clear precedent which undoubtedly emboldens some. After all, as the old saying goes: History often repeats itself.

One only needs to look at South Sudan, the world's "newest" nation. Independent since 2011 and the 193rd country to join

the United Nations, they established a civil aviation authority and recruited 16 air traffic controllers to staff the nation's capital international airport in Juba. Their enroute airspace is still controlled by colleagues from neighbouring Khartoum ACC in Sudan. In 2020, when the controllers asked for their licences to be renewed, their government refused. In the action that followed, four controllers were arrested, jailed for three months, and subsequently fired. Military controllers were called upon to replace the civil ones, and all remaining civil controllers received their dismissal letters. There are currently no more civil controllers in South Sudan. And there are many more such examples unfortunately including Ethiopia and more recently Albania where a number of controllers were dismissed and jailed after participating in an industrial action. ◀

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Collision Course by Joseph A. McCartin

Published by Oxford University Press, 2011 (ISBN 978-0199325207)

This 470-page book provides a very detailed account of one of the most important labour disputes of the last decades: the 1981 walkout of the controllers of the Professional Air Traffic Controllers Organization (PATCO). President Reagan managed to break the action by dismissing 11,345 air traffic controllers. It is argued that this event altered the course of American labour relations and politics in such way that its effects are still felt today. The book goes deeply into Union organisation and relations with employers that were for ever altered after this strike. ◀

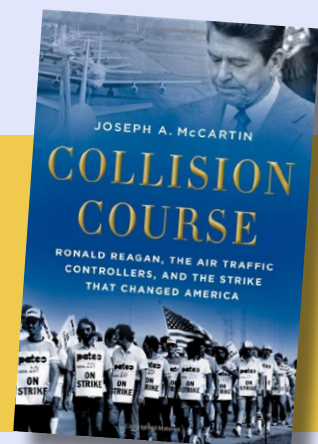


Photo: Oxford University Press

INTERVIEW WITH JONATAN DOINO, ATEPSA SECRETARY GENERAL FROM OUR ARGENTINIAN MEMBER ASSOCIATION



Given the size of Argentina, and its location on the world map, the country relies heavily on air transport. This has become even more critical as the country battles a crippling upsurge of the COVID pandemic. Reaching a collective bargaining agreement to improve working conditions for air traffic management staff in this context was proven to be exceedingly challenging.

The Controller: Can you provide some context on the issues our Argentinian colleagues faced?

Jonatan Doino: In our opinion, Argentina's air navigation service provider, EANA, failed to provide adequate working conditions for its professional workforce. In some instances, we believe this had a direct impact on operational safety, for example by making controllers responsible for more than one main frequency at the same time. In the overall framework, we think that fatigue and stress were not sufficiently taken into account as required by international regulations. Excessive workload in combination with a national economic crisis, and inflation rapidly degrading salaries resulted in operational staff worrying about their personal financial

situation, job stability (due to unjustified dismissals), and ultimately emotional and even physical duress. Many colleagues were being forced to work a second job to cover monthly expenses.

Just as fatigue and stress were not being taken into consideration by either the Civil Aviation Authority (ANAC), nor by the Argentinean Air Navigation Company (EANA), "Just Culture" suffers the same fate, since the excessive workload permanently exposes operational staff to involuntary errors. These were not dealt with from the perspective of fair culture.

The Controller: We understand you had been negotiating with the service provider and after 18 days of legitimate action you reached an agreement?

Jonatan Doino: ATEPSA has been negotiating collectively with EANA for eight months. We approached these negotiations sensibly and with the clear aim of reaching an agreement. We proudly announce that we settled the dispute with EANA on 18, July 2021. After a plenary session, our delegates and grassroots representatives supported the negotiators and approved an agreement which in-

cluded social and economic improvements.

Over the past years, we had raised various technical and professional concerns, including staffing shortages and the lack of a Just Culture. We had hoped for real solutions. Now we have recovered what we longed for - the respect for our dignity.

We want to thank each and every one of you for having been part of the international solidarity extended to ATEPSA and the ATS workers we represent. The deep expressions of solidarity in letters, messages and videos you have sent made such a difference. We will never be alone again, neither will you. ◀

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COVID-19 RECOVERY: AN OUTLOOK OF THE PHILIPPINE AVIATION INDUSTRY

▶ BY RENZ MARIONE BULSECO, AIR TRAFFIC CONTROLLER, DAVAO APPROACH CONTROL (RPMD)



In 2019, the aviation sector of the Philippines was at its peak. The Civil Aviation Authority of the Philippines (CAAP) recorded 737,812 aircraft movements in that year alone. It was attributed to the increasing flight frequencies to both international and domestic sectors as more airports cater to the needs of the flying public. As an archipelagic country, it added connectivity around the Philippines and made it even smaller. The aviation sector was gearing towards a brighter and promising future. Full steam ahead.

It wasn't until 12 March 2020, when President Rodrigo R. Duterte announced the suspension of both domestic and international flights in and out of Manila beginning 15 March to curb the spread of COVID-19. In just a snap of the finger, the entire world stood still. After a few days, other airports outside Manila also followed suit. The major airports in the country, which used to be bustling and filled with aircraft, airport employees, and passengers, were eerily quiet. It felt like a scene straight out of a dystopian movie. In that year, CAAP

recorded only 300,604 aircraft

movements, an almost 60% drop from the previous year. Ninoy Aquino International Airport of Metro Manila, the busiest airport in the country, saw a sharp decline of passenger movements for both domestic and international by at least 85% from the previous year.



Photo: Renz Marione Bulseco



To say that the year 2020 was very challenging for every Filipino was an understatement. Many got stranded as there were only limited flights available. There was a long list of health requirements and declarations mandated by the accepting local government units. Hence, taking domestic flights felt like international travel. There were last-minute changes in the travel requirements as the governments scrambled to adjust from the mandates given by World Health Organization (WHO). The airline companies suffered the brunt of this global pandemic, forcing them to lay off staff and cut pay. New safety protocols were also put in place in every flight as the airline companies struggle to keep their heads above the water as they grapple with huge losses and debts. Philippine Airlines and Cebu Pacific Air, two of the biggest airline companies in the Philippines, have returned some of their fleets to their respective lessors to lessen their expenditures and try and stay afloat.

On 28 February 2021, the Philippines finally received its first batches of vaccines from China. The priority during that time was for those on the medical frontlines. Domestic flights were starting to pick up again as the local governments eased their restrictions as more batches of vaccines from different pharmaceutical companies continue to arrive regularly in our country. Despite this, the pandemic is far from over. The threat of COVID-19 is still there. Experts say based on the current models, air traffic and passenger volume will be around 80 percent of pre-pandemic levels by 2024.

While the government is ramping up its vaccination programs in various cities in the Philippines, we are still far from recovery. We are walking on a tight rope. There were reports that COVID-19 cases were still rising in some parts of the country, and there are cities and provinces that still impose lockdowns, curfew, and flight cancellations to manage this global health crisis. The pandemic claimed millions of lives and affected almost every individual in the world. It not only destroyed the livelihood of people and severed the ties of families, but it took a toll on everyone's mental health. Everyone is striving to recover, including the medical services, tourism sector, and the airline industry. For what it's worth, this is just the beginning of something brighter and better.

One can dream of living in a world without the threat of COVID-19, where everything is back to normal and where everyone can book a flight and travel to different places. We may not see the light at the end of the tunnel yet, but we will get through this. When there is life, there is hope. ◀

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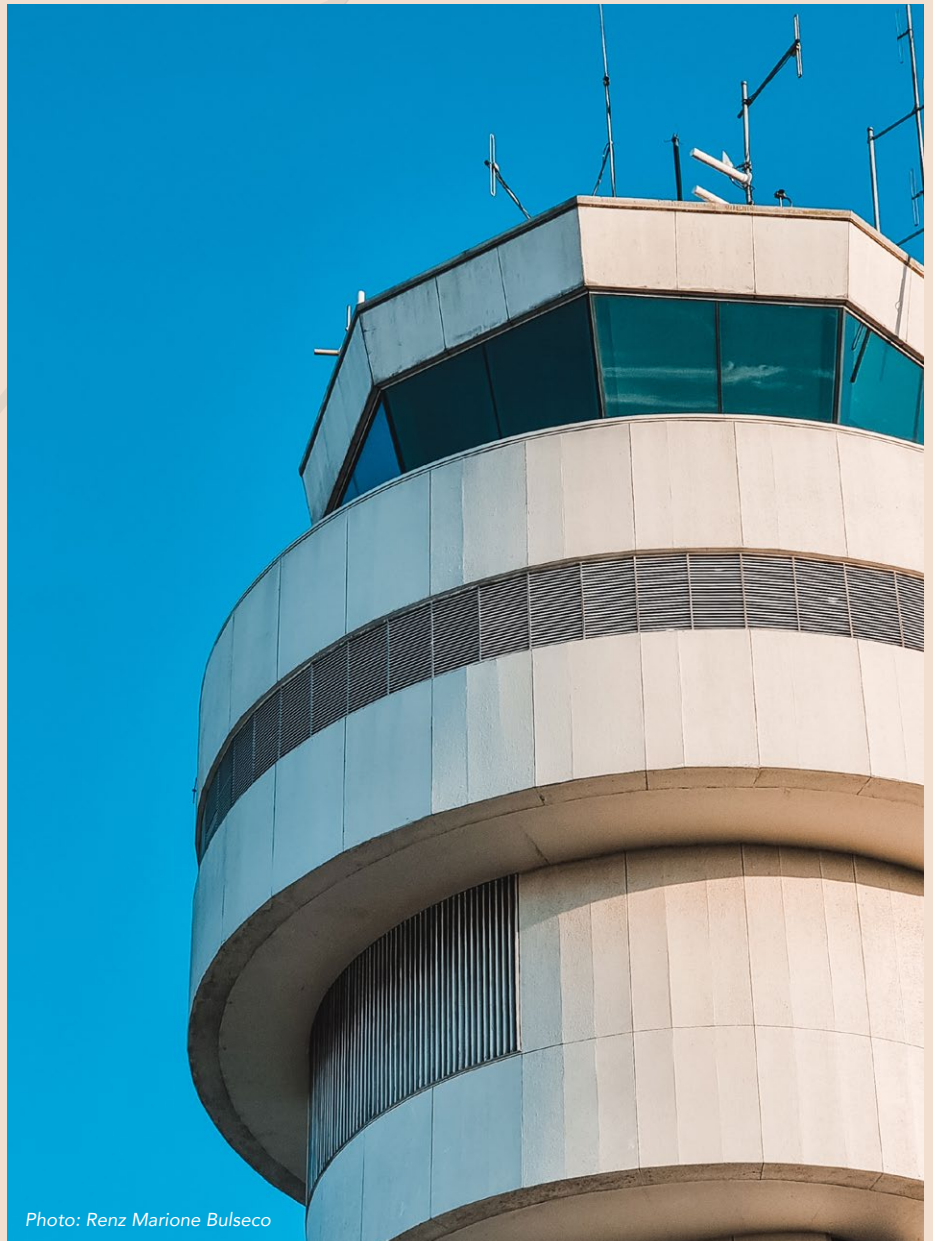


Photo: Renz Marione Bulseco



Photo: Renz Marione Bulseco



Photo: YouTube



BUZZING THE TOWER!

▶ **BY PHILIPPE DOMOGALA, SENIOR CORRESPONDENT, IFATCA**

▶ **Photo:** The controller in the first Top Gun film spilling his coffee.

If you have seen the 1980s action movie *Top Gun*, you know that Tom Cruise's character Maverick's favourite stunt is "buzzing" the control tower. He does this a few times, and when the tower controller refuses ("negative Ghost Rider, the pattern is full"), Maverick does it anyway causing the poor tower controller to spill his coffee in shock and surprise. Like all Hollywood action movies, these movies should come with a label saying, "Do not try this at home!"

Well, that was before the COVID-19 crisis emptied the 'pattern.' The disastrous effect on commercial civil aviation caused a huge drop in traffic in what used to be busy airports. Some major international airports now offer some new, interesting possibilities for VFR pilots, like making low level approaches to runways that until now were reserved to big jets. Things no one ever considered possible are suddenly feasible, especially if you ask nicely.

control zone, perhaps even to help relieve controller boredom, I assume. I must confess that performing a very low approach at 60 Kts and over a 4000m (12.000ft) runway is a great experience and great fun. But even more exiting is to buzz the tower of a major international airport! Admittedly, you must do this safely at a safe distance and make sure the controllers agree as we do not want to have their coffee spilled.

Most European airports opened to the idea of allowing more VFR into their con-

First and foremost, it requires good pre-planning. A telephone call before taking



Photo: DP



Photo: DP

▶ **Photos:** Cologne TWR (EDDK): This one is one of the nicest, because of the layout of the airport with intersecting runways. The best way is to enter the CTR via the South over the Rhine River at 1500ft via Sierra, request a low approach to runway 06. Stop descent to 500ft (300ft airfield elevation plus 200 ft for the tower) and request a small left sidestep. This should bring you just beside and abeam the tower. After that, you climb to 1000ft turning left downwind runway 14L to exit normally via November, or better, via the unofficial "Dom" exit, which will bring you over the famous Cologne Cathedral ("Dom" is word for cathedral in German.) in the city centre. From there, you can exit the CTR following the Rhine River again.



off to explain what you want to do helps, as does asking when the best time of the day would be to do this. Even with reduced traffic, there are still quieter times when it suits better. Also study the airport chart to determine the exact height of the tower and its position compared to the closest runway. Request a low approach to that runway and stop descending at the same height as the tower windows. If you are still far away, request for a small sidestep towards the direction of the tower. Remain at a safe distance and rock the wings when passing abeam. After that, re-join the runway axis, climb out, and exit the CTR via the normal VFR point. It should all be very controlled and safe.

Many European airports have allowed this over the past few months. I have given you the procedure for three of them in Germany, where I took nice photos of the towers.

Besides the fun of doing these “buzzes,” it is a very good precision navigation exercise. You can even combine it with doing a full VOR/DME/ILS simulated approach using your smartphone instead of the actual navigation aids. It is amazing how accurate those approaches are, but that is for a future article perhaps.

The release of the Top Gun sequel has been postponed a few times due to the coronavirus pandemic. It is now scheduled to be released in November 2021.

The trailer is very promising, and while Tom Cruise has aged in the meantime (as we all have), it is a safe bet that there will be a “Buzz the tower” sequence in it. I can't wait! ◀

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Photo: DP

▶ **Photo:** Frankfurt Hahn (EDFH): This one is very easy, with only one 3800m runway with a parallel taxi way. The tower is in the middle of the airfield next to the taxi way. Perform a normal low approach stop at 1800ft (1650ft elevation, plus 150ft TWR), ask for a slight sidestep close to the taxi way, and that is it. Leave the CTR below 3500ft in any direction, but it is best to take Whisky and follow the beautiful Mosel River nearby.

▶ **Photo:** Leipzig (EDDP): This is one of the largest airports in Germany. It has two widely separated, parallel 3600m runways that are 2,2km apart. The tower is 70m high and located in the middle of the two runways in a stand-alone building. The best way to get close to the tower there is to ask for a mid-field crossing from the south, entering the CTR via Sierra 2 (the big lake south of the woods). Then proceed towards midfield, which will naturally bring you very close to the tower. Request a descent to 700ft, which should bring you right at the same level as the windows. Afterwards, climb back to 2000ft and exit normally via November 2. (Credit: author DP)



Photo: DP



IFATCA AND EUROCONTROL COOPERATE ON JUST CULTURE & AVIATION SAFETY

▶ BY MARC BAUMGARTNER, IFATCA SESAR COORDINATOR & IACOPO PRISSINOTTI, DIRECTOR NETWORK MANAGEMENT EUROCONTROL



EUROCONTROL in cooperation with IFATCA and the European Cockpit Association (ECA) supports member states and their judiciaries in finding aviation safety experts trained in Just Culture principles to assist national prosecutors entrusted with the judicial review of aviation incidents and accidents. Experts can be requested to help prosecutors understand the details of aviation occurrences so prosecutors can make an informed decision whether a judicial investigation or criminal prosecution is necessary or not.

Aviation safety is paramount, and establishing a 'Just Culture' reporting environment, in which frontline operators can feel confident that they will not be punished for reporting incidents and providing essential safety-related information, while remaining clear about where the line must be drawn between acceptable and unacceptable behaviour, is key to the operation of a safe air transport system. Just Culture aims to foster mutual trust, learning, and responsibility, so that knowledge is shared to prevent future safety occurrences, and that safety investigations and judicial processes regarding aviation incidents or accidents can each maintain their own independence and objectivity, without undue interference with each other.

When requested by a judicial authority of a EUROCONTROL member state, EUROCONTROL will be able to make a

recommendation on a suitable expert. It remains the decision and choice of any prosecutor to avail themselves of an expert from the list, thus leaving them the freedom of action in full respect of the independence of the justice system.

The Just Culture experts on the list are air traffic controllers or pilots who have been through advanced training and confirmed as prosecution experts based on criteria established by the Just Culture Task Force, IFATCA, and ECA. The initial training and the regular refreshers are conducted jointly by these three organisations.

As part of the advanced training, senior prosecutors and judges impart their knowledge to aviation experts so that as part of an investigation, they can help prosecutors determine whether an incident is a potential criminal offence. The course has been created at the initiative of the Just Culture Task Force, which itself is a group with a wide membership from aviation, rail, maritime, and healthcare, as well as members of the judiciary, meeting regularly under the auspices of EUROCONTROL. The course and its proceedings are in accordance with the EUROCONTROL Model for a Policy Regarding Criminal Investigation and Prosecution of Aviation and Railway Incidents and Accidents as unanimously endorsed by the Provisional Council in 2018.

After an accident or incident within civil aviation, it is an obligation under international and EU law for a safety investigation authority to launch a safety investigation. The purpose of such an investigation serves to prevent a recurrence of the accident or incident. A safety investigation will not apportion blame or liability and is independent of any other investigation. The objective of this model policy is to provide directions regarding the criminal investigation and prosecution of potential criminal offences resulting from aviation incidents or accidents that come to the attention of prosecutors so that both the safety investigation and judicial process can progress in parallel without either party acting in a manner prejudicial to the interests of the other. Ensuring a process in the aftermath of incidents or accidents that achieves a balance between the administration of justice and the safety requirements is essential and maintains public confidence. ◀

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RESISTING THE PULL: SHOULD WE STILL BE USING MAGNETIC NORTH?



Photo: Jonathan Lines via Flickr

➤ Photo: Ship's magnetic compass

➤ BY CHRIS SHIEFF, OPSGROUP TEAM MEMBER & A320 PILOT

This article first appeared on the Opsgroup website (<https://ops.group>) and is reprinted with permission.

LET'S GET SCIENC-Y

In recent years NAV CANADA has been leading a charge to move the industry away from magnetic north to true north. And it makes sense.

Modern technology has arguably rendered magnetic north obsolete. So why are we still using it? The simple answer is because we always have. Delve into ICAO Annex 4, and you'll see that bearings, tracks and radials must still be published in degrees magnetic. But this begs the question: Do we actually need it anymore?

When humans first took to the skies, things were different. They needed a directional reference. Back in those days it had to be something simple and light – enter the magnetic compass. Nature was guiding the way because it had too.

With modern navigation systems these days, all the magic happens reference to true north. Inertial and GPS systems both use simple conversions, so that the information can be displayed to crew as a magnetic reference to match our charts and procedures.

But because we are still using magnetic north as a reference, we are forced to deal with magnetic variation – the angular difference between the true and magnetic poles. It is an issue that costs the industry many millions of dollars a year to manage and can potentially lead to serious safety issues if things aren't handled properly on the ground and in the sky.

The earth has its own magnetic field. That's because its outer core contains molten iron. Writhing lobes of magnetic flux surround the earth and meet near the top and bottom of the globe – the spots we know as the magnetic north and south poles.

Open a compass, and the steel needle will align itself to the magnetic field lines around it. Hey presto, it will point directly at the magnetic north pole.

But here's the problem. Molten iron is a liquid, and it moves around, which means the magnetic north pole does too. It never sits still. In fact, in recent times, it has put its foot down and is now moving close to 40 miles each year. As of last year, it was about 250nm away from the true pole and headed for Siberia.

The magnetic north pole is of no use to modern navigation systems because it is constantly on the move. Instead, they operate using a 'geodetic reference system' – a fancy name for co-ordinates that may impress people at your next cocktail party.

Two variables, the ol' lat and long, come together and allow us to define any spot on the surface of the earth. All meridians of longitude are anchored to the true north pole because it never changes. It is simply the northern end of the axis around which the world and that globe on your desk spins. Latitude on the other hand is reference to the equator which never moves either.

In fact, the only way either could change is if the earth's angle of tilt moved too in which case, we'd have bigger things to worry about. So, when we combine the two, we

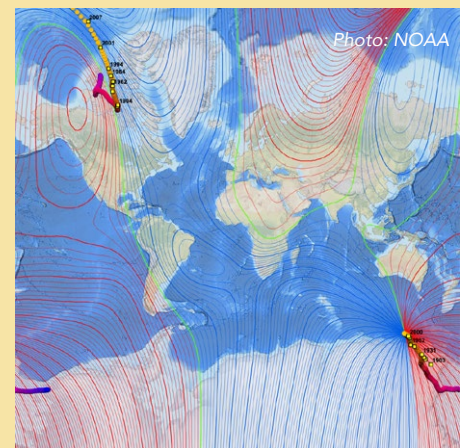


Photo: NOAA

➤ Photo: Magnetic variation is constantly changing over time.

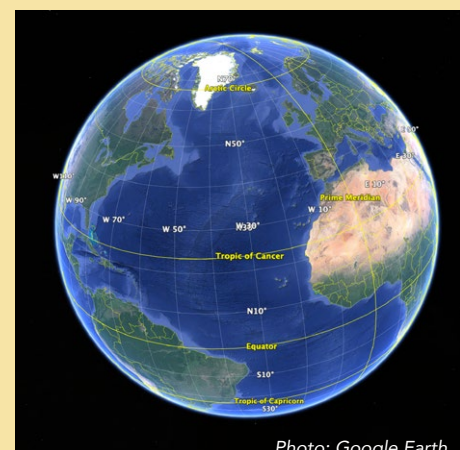


Photo: Google Earth

➤ Photo: Lat and Long – anchored by the equator and earth's axis of rotation.

RESISTING THE PULL (CONT.)

can divide the surface of the world into a grid and pinpoint exactly where we are – a process that both inertial and GPS systems use to stop us getting lost out there.

HERE ARE THE ISSUES

All of our procedures, bearings, tracks, VOR radials, even our runway designators are still presented in degrees magnetic because the regulations say they have to be.

And because of that every time the magnetic north pole moves, magnetic variation changes and the industry has to get out there and re-jig everything. Literally every computer that references magnetic north in some way must be updated.

All our IFR procedures from ENROUTE, to terminal and approach phases have to be changed and re-published. Our FMS's have to be programmed to match too. VORs have to be rotated and nav aids flight tested. Radars have to be realigned and airport signs replaced. Even runways have to be repainted. It literally costs AN-SPs, airports, avionics manufacturers, and operators millions.

Take KTPA/Tampa for example. In 2012 changes to variation forced the airport to renumber its primary runway, no less than 140 signs had to be replaced.

It is also a safety issue. The whole system depends on everyone updating everything at the same time which seldom happens. A small change can have a big impact too. The PBN systems we rely on to keep us safe can be compromised by changes to variation if not updated. Synthetic vision systems can begin to tell pilots lies.

Anchorage in 2012 serves as a cautionary tale. The FAA updated its magnetic variation of the airport. Because operators didn't update their aircraft's avionics quickly enough, in some cases there was a mismatch. Flight tests revealed that using the old value, Cat II and III approaches were no longer within lateral guidance limits – not what you want to hear when you're in the soup. The FAA temporarily changed procedures back to old value to allow time for operators to catch up.

We know that it works too – Canada has been using conventional and PBN pro-

cedures using True North for some time throughout a huge chunk of its northern domestic airspace successfully, where magnetic references become unusable.

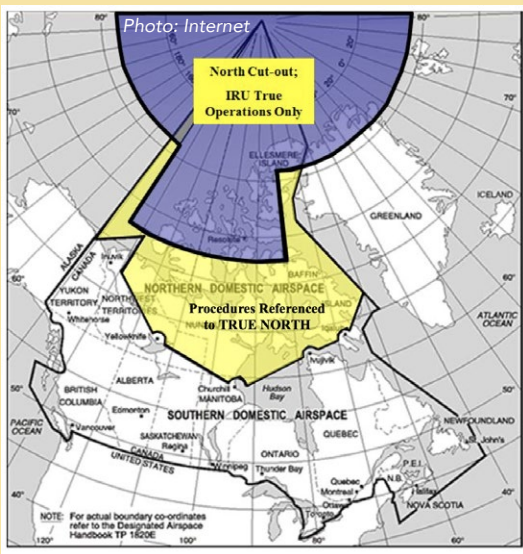
So why can't we just turn it off?

That's the beauty of it – we can. Technically, it's as simple as flicking a switch. Converting things from true to magnetic is just a process that we can just turn off. A lot of aircraft even have that very switch already.

Practically speaking though, the problem is the huge legal, administrative, and legislative implications that would follow. Rome wasn't built in a day, and neither would a huge change to aviation procedures around the world. It would literally take years to implement.

But that may be no excuse for change, otherwise we will continue to expose ourselves to known risks. ◀

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► **Photo:** True north operations in Canadian domestic airspace.



► **Photo:** As easy as flicking a switch?

WHAT HAPPENED 100 YEARS AGO IN 1921

➤ BY PHILIPPE DOMOGALA, CHAIRMAN IFATCA 100 YEARS ATC TASK FORCE



In the lead-up to the celebration of 100 years of air traffic control in 2022, it is worth looking at the situation in 1921. The most striking thing about the situation 100 years ago is the different approaches to civil aviation on both sides of the Atlantic.

Despite the milestone achievement of the Wright brothers in 1903 when they achieved first controlled, sustained flight of a powered, heavier-than-air aircraft, Orville and Wilbur could not convince government and public opinion in the USA: No one saw a future in such flying machines.

In sharp contrast, France quickly took over the pioneering role with full support of the public and its politicians. In 1908, Wilbur and Orville Wright travelled to France where they received a hero's welcome. They sold their first aircraft and established the first flying school in Pau, a city near the French Pyrenees, south of Toulouse. The kings of Great Britain, Spain, and Italy came to see Wilbur's flights around Pau.

In January 1909, Blériot first flew his type XI that would perform the first Channel crossing between France and England six months later. By September that same year, he had orders for over 100 Blériot XI aeroplanes, and within two years, he had sold 500 aircraft. For the next 20 years, until Lindbergh first crossed the Atlantic in 1927 and opened transatlantic travel, France would be the epicentre of aviation.

It is no coincidence that 100 years later the two largest civil aircraft manufacturers, Boeing and Airbus are based in the USA and France, despite their different approaches during the first two decades of aviation. And the different stance also had a profound impact on the development on air traffic control on both sides of the Atlantic.

USA IN 1921

In 1914, there was an early attempt at commercial passenger flights in the USA. The first ever scheduled commercial passenger flight took place between Tampa and St. Petersburg in Florida. It was a mere 18-mile trip. It was more a proof of concept than anything else. The company went out of business after just four months in operation. There were hardly any other attempts at exploiting commercial aviation routes in the USA. Railroad infrastructure was well established and relatively efficient.

Slowly however, the Americans began to see potential in using aircraft to deliver mail across vast distances. One limiting factor was that such a service needed to be reliable in all sorts of weather as well as during night. By 1921, an air route was established between Columbus and Dayton, Ohio. The U.S. Army began installing rotating light beacons all along the 80 mile route to enable night-time operations. Beacons were set up at about ten-mile intervals, with a rotating light visible up to 40 miles away. Green lights signalled an airfield was nearby, while a red light meant no airfield in the vicinity. The U.S. Post Office took over the system in 1922, and by the end of 1923, it had constructed similar beacons between Chicago and Cheyenne, Wyoming. Despite the

impressive infrastructure, the first regular scheduled night flight service only began in 1924. But the focus was clearly on mail and cargo rather than on passengers.

One major hurdle was that it was incredibly difficult to agree on federal aviation regulations in the USA. All aviation matters were firmly with the 48 individual states. Only the U.S. Army and Navy had unified rules across state borders. Consequently, there were no common federal regulations and no civil aviation supervision. In April 1921, the National Advisory Committee on Aeronautics (NACA) was formed, but it took four more years of heated and passionate debate in the U.S. Congress to see any meaningful progress. Every time an attempt was made to introduce legislation, it was ripped apart by the advocates of individual states' rights. One of the main issues was whether a flight over private property without the permission of the property owner constituted trespassing! In other words, who owned the airspace above your property?



➤ **Photo:** One of the U.S. Army line of rotating beacons set up in Wyoming in 1921 to help pilots navigate the mail route from Dayton Ohio.

WHAT HAPPENED 100 YEARS AGO IN 1921 (CONT.)

It would take the USA many more years to start and develop a federal regulatory body that would develop some form of regulatory and air traffic control. As we will see in our forthcoming book, the individual private U.S. airlines pre-empted this by taking matters into their own hands: Each major operator set up their own ATC service. Eventually, these would be incorporated in a federal service around 1936. By then, both passenger and cargo aviation were booming. The end of World War II in 1945 provided an additional boost, with more pilots and aircraft in the USA than the rest of the world combined. It also meant that the country became a major influence on the way air traffic control operates to this very day.

FRANCE IN 1921

Following World War I, with its huge surplus of military aircraft, many entrepreneurs saw opportunities to offer and charge for air transportation. Rail travel across the continent was cumbersome with different standards, and many railroads had been destroyed during the war.

Air travel clearly offered distinct advantages for both passengers and freight.

In 1919, France established an undersecretary for aviation. It also set up a centralised civil regulatory body, the Service de la Navigation Aérienne (SNA). France successfully lobbied for the 1919 Peace Conference to discuss and agree on an international convention to regulate air transport. By 1920, twenty civil airports were up and running, complete with technical installations, dedicated weather stations and radio transmitters for aviation use. One of them was a powerful 10 KW transmitter installed on top of the Eiffel tower in Paris. In 1921, France recruited 170 aviation technicians and management among which were the first seven “côntrolleurs” that started operating in le Bourget near Paris.

Also from 1920, neighbouring countries like the United Kingdom and Spain began equipping their airports and building their first elevated control towers in Madrid Quatro Vientos and in London Croydon. Interestingly, in France, the first controllers initially worked from a convention-

al, one-story building to monitor airport movements.

The availability of well-equipped facilities and the relatively small-sized countries meant that many airlines immediately offered international services: Paris to London began in 1919, followed almost immediately by flights to Brussels, Belgium and Amsterdam, Netherlands. By 1921, there were daily international scheduled passenger flights between Paris, Berlin, Madrid, Lausanne and Geneva (Switzerland), Prague, Bucharest (Romania), Warsaw (Poland), Casablanca (Morocco), etc. Each European country had one or more airlines competing with one another on the same routes. To guarantee safety, the framework of the 1919 Convention allowed standardisation and international cooperation between all those States. Led by France and the United Kingdom, England took the lead and by 1922, the first internationally agreed rules establishing air traffic control were in effect.

By comparison in 1921, there were very few airlines in the USA: most carried mail within the USA on lucrative postal service contracts. In the early 1920s, passenger travel remained relatively rare, except for a few companies using float planes to shuttle people offshore, mainly to circumvent the prohibition laws: Chalk’s Flying Service



➤ **Photo:** 1921 Postcard of the Le bouget Airport Terminal building, this house was holding customs and the cafeteria (“Buffet” in French) with a viewing platform on the roof for the visitors. The radio transmitters and what will become air traffic control room was in a similar building nearby.



➤ **Photo:** First aerial photo taken of le Bourget Airport near Paris in 1921, showing the hangars and the “LE BOURGET” target sign in the middle of the airfield to help pilots locate the correct landing field among the many other fields around.



and America Trans-Oceanic operated between Florida and Bimini in the Bahamas. Aeromarine Airlines began offering flights to Havana, Cuba, in 1920. Most of these airlines and routes did not last long. One had to wait until 1927 to see the first permanent daily scheduled U.S. international flights, when Pan Am opened a route from Key West, Fla., to Havana, Cuba.

The 100 years ATC book will go into much more detail into these stories, and much more for many countries in the world. It will also be filled with anecdotes and interviews with people that changed ATC over the past 100 years. Do not miss it! ◀

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Photo: CAB

➤ **Photo:** Orville and Wilbur Wright's "Flyer" in Pau, France. They created the first aviation school there in 1909.



Photo: Jean Hubert

➤ **Photo:** One of the First French SNA Radio stations for air-ground communications in 1920. This one setup in Algiers, Algeria, which was then a French colony. The operator is wearing a headset and used a handheld microphone. The amplification lamps can be seen on top of the transmitter.

OBITUARY: SQUADRON LEADER MAHENDRAN (RON) RATNASABAPATHY (RETIRED)

31 AUGUST 1933 - 14 APRIL 2021

It is with great sadness that IFATCA and The Controller editorial team has learned of the passing of Ron Ratnasabapathy. Ron was an unwavering supporter of his home association GATCO and of IFATCA since the early 1980s. In 1986, he became IFATCA's Corporate Members Representative and advertising manager for The Controller magazine. In recognition of his dedication to ATC, he was awarded Honorary Life Membership of GATCO in 1988. He also received the IFATCA Executive Board Award in 1999.

Together with his charming wife Vim, Ron was a familiar face at many annual conferences and other events, Ron was the embodiment of a true gentleman. After moving to the United Kingdom from his beloved home country of Ceylon, he spent some time commissioned in the

Army before moving to the Royal Air Force and air traffic control. He ended his professional career working for various ATM equipment manufacturers, including Ferranti and Hughes, helping to develop their ATM products.

Those that had the privilege to meet Ron will undoubtedly remember his infectious smile and sense of humour. He was proud to be considered a part of the worldwide controller family, and we feel honoured to have had him in our midst.

In addition to his wife, he is survived by four children, eight grandchildren, and five great grandchildren. Our condolences and best wishes go out to his wife Vim and his family. He will be dearly missed. ◀



CHARLIE'S COLUMN

▶ BY CHARLIE@THE-CONTROLLER.NET

THE COMPREHENSIVE TABLE OF INCOMPREHENSIBLE SENTENCES™

Let's face it. It is not easy to comprehend the exact meaning of abstract concepts. Does anyone really understand things like "performance-based" or "blockchain technology"? You feel that this gap in your understanding is probably limiting your professional progression. How are you going to participate in a meeting if you cannot understand a sentence like "A new paradigm arises in which traditional point-to-point routes give way to user preferred trajectories that must always be managed by a resilient, properly secured system which can make use of blockchain or any other emergent euphonic technology and that will keep the human at the centre while ensuring that safety is properly addressed," let alone come up with something like it?

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Stop being the nice fellow that speaks in a way that everyone can understand! Thanks to the Comprehensive Table of Incomprehensible Sentences™ men will look at you with envy, women with amazement, experts with respect, and children with boredom! Secure a position in upper management echelons by pretending to know what you are talking about thanks to the Comprehensive Table of Incomprehensible Sentences™!

You can show your gratitude by a donation in USD, EURO or bitcoins. Other currencies can also be accepted. Also look for our "Semi-Automatic Mission Statement Generator for ATM™" and the "Credible Consultants' Conclusions Constructor™".

The future of ATS relies on	a performance-based approach	that will take full advantage of blockchain technology.
We are witnessing the surge of a new paradigm based on	4D trajectories	no longer constrained by national boundaries.
Airspace-based concept is being substituted by	user-preferred trajectories	with safety being always paramount and deeply embedded at the core of the whole system.
Flight plans as we know them will evolve to accommodate	a human centered strategy	with a particular attention of cybersecurity concerns.
Traditional point-to-point networks are giving way to	robust digital structures	with the goal of ensuring a highly resilient environment.
Digitalization of the ATM infrastructure is required to accommodate	multi-modal transport structures	that will evolve to accommodate both mature and emerging concepts in a step-to-step methodology.
New forms of mobility and more autonomous air vehicles will require	strong partnership and strict governance protocols	required to accommodate new air vehicles and future business models.
The inefficiency of the current route structure will be corrected by means of	an optimised gate-to-gate perspective	that can require regulatory changes.
Artificial Intelligence solutions will be required to take full advantage of	key enablers properly defined by the appropriate authorities	needed to face the challenges created by new concepts and emergent technologies.
The strategic roadmap describing the evolution of the system relies on	a transition to an environmentally friendly scheme	that will accelerate the transition to a more robust system as the flying public demands.

UGLIEST AIRCRAFT EVER?

Here at Charlie, we generally consider aircraft as engineering marvels and as objects of technological beauty. Unfortunately, there are exceptions, like the Soviet-era PZL M-15. Nicknamed Belphegor, after a demon who seduces people by suggesting to them ingenious inventions that will make them rich, the aircraft looks like someone mistook some kindergarten drawings with actual production blueprint. Apparently, it started with someone with too much power/responsibility demanding this new dust-cropping aircraft had to be powered by a jet engine. The design committee went overboard from there. Soviet agriculture planners had intended to order as many as 3,000 aircraft from Polish WSK PZL-Mielec to meet its needs, but only around 175 were ever built before the design was abandoned, as besides ugly, it was inefficient, difficult to fly and totally unsuitable for what it was meant to do.



Have you come across an uglier aircraft, please submit your entry for the Charlie's Ugliest Aircraft Ever Competition to Charie@ifatca.org! Note that it must have actually been built and flown, and only post-1945 aircraft will be considered.



MASK

Over the past months, many of us have had to adapt to wearing a facemask while in busy or enclosed spaces. Some people were unprepared but not this passenger. It is clear that he believed that a regular facemask did not offer sufficient protection and/or comfort. The alternative explanation is of course that this person is one of the new members of the US Space Force on his way to work...

ANIMALS

Regular Charlie-readers will know that we have a soft spot for animals, especially in, on or anywhere near aircraft. For this issue, we have two prime specimens.

The first is a bat who thought it would be a good idea to board an Air India flight. After take-off, it started circling above the heads of the first class passengers. Now bats have never been extremely popular, but since they were implicated in the outbreak of COVID-19, their reputation is at an all-time low. Needless to say that the passengers were not terribly impressed with this stowaway and the aircraft had to turn back. Sadly, the excitement proved too much for the poor animal and it passed before it could be let out of the cabin.

And what to think of this bird of prey? They are often deployed to scare other birds away around airports. However, this one seems to have mistaken a B737 for such an unwanted intruder. Having successfully caught the aircraft via its windshield wiper, the ambitious animal looks somewhat confused at its handler as if to say: "What do you want me to do with this one?" ◀

