# THE CONTROLLER

February 2017

Journal of Air Traffic Control


## ULTRALIGHT TAKES ON THE WORLD

Also in this Issue

- IFATCA 2016 Regional Meetings
- Aviation and ATC in Myanmar

# KVM FROM G&D

# IT control that towers above the rest

## LEADING THE WAY IN DIGITAL KVM

From the ANSP to the controller to the technician, everyone's better off with KVM.

For the service provider, KVM adds flexibility to IT infrastructure. It enables emergency work-arounds, improves workflows, adds reliability to redundancy concepts and provides continuous, uninterrupted IT availability.

ATCOs enjoy a computer-free environment. Moving the computers to a central location creates less noise, less heat and more space to create better working conditions in the control room. And the system's more reliable too!

With KVM, technicians can access several systems from a range of locations - not just their workplace. Administration is made easier and maintenance too: the computers are stored centrally so no more crawling under desks. There's also more time for maintenance because ATCOs can be simply switched to a back-up system whenever it's required.

For optimum IT system control, improved working conditions and increased system safety, there's only one all-round answer – KVM from G&D.

www.gdsys.de

SEE US AT WORLD ATM CONGRESS STAND 337

seit 1985

Guntermann & Drunck GmbH

THE CONTROLLER

February 2017
Volume 56 Issue 1 – ISSN 0010-8073


Cover photo: Matevž Lenarčič, GreenLight

# In this issue





**PUBLISHER**
IFATCA, International Federation of
Air Traffic Controllers' Associations
360, St Jacques · Suite 2002
Montreal, Quebec · H2Y 1P5 · CANADA

Phone: +1514 866 7040
Fax: +1514 866 7612
Email: office@ifatca.org

**EDITOR-IN-CHIEF**
**Philip Marien**
Van Dijcklaan 31
B-3500 Hasselt, Belgium
email: editor@ifatca.org

**DEPUTY EDITOR & CORPORATE MEMBERS COORDINATOR**
Philippe Domogala
email: dp@the-controller.net

**REGIONAL EDITORS**
Phil Parker, Asia Pacific
Serge Tchanda, Africa & Middle East
Ignacio Baca, Technical

**COPY EDITORS**
Paul Robinson, Jez Pigden, Brent Cash,
David Guerin Alasdair Shaw & Helena Sjöström



The editorial team has endeavored to include all owner information, or at least source information for the images used in this issue. If you believe that an image was used without permission, please contact the editor via http://www.the-controller.net

**VISIT THE IFATCA WEB SITES:**
**www.ifatca.org** and **www.the-controller.net**

# IFATCA'S ADDED VALUE

## The end of globalization? And what does it mean for IFATCA?

by Patrik Peters, IFATCA President & CEO

IFATCA unites the air traffic controller community – across national borders. As a non-political, world-wide organization, IFATCA's strength is an international and a global mindset. Looking back at the year 2016, it has been a year of dramatic changes in global politics.

Hardly anyone predicted the United Kingdom voting in favour of leaving the European Union or the outcome of the Presidential election in the United States of America. Following years of international collaboration and a belief in gaining strength through coalitions without borders, we now seem to be witnessing a 180° turn towards protectionism and a sudden reversal of the push towards globalization.

Will this have any weight for our work as an international organisation?

**IFATCA has been working tirelessly and for decades to overcome regional or national rules in exchange for unified regulations and solutions.**

Naturally, aviation connects people across borders. IFATCA has been working tirelessly for decades to overcome regional or national rules in exchange for unified regulations and solutions. We are pioneers in breaking down barriers in favour of harmonisation and global standards. Will there now be a move back to safeguarding national interests? As before, it's a challenge our profession has to face in a fast moving and changing environment.

We have seen our industry change drastically after the terrorist attacks in September 2001 in the USA. Travel, and air travel in particular became a lot more cumbersome, despite having become a lot cheaper and therefore more accessible. Passengers are confronted with more or less meaningful but nearly always cumbersome security measures at airports. The threat of terrorism is a major consideration for many holiday makers in deciding where to spend their next vacation. Thriving, popular tourist destinations were left nearly abandoned overnight after being deemed too risky. Has air traffic therefore been declining? Hardly: growth figures over the past few years show that people are not travelling less, but where they go has become a lot less predictable. This presents its own challenges for controllers and ANSPs as traffic patterns shift in very unpredictable ways, sometimes overnight.

Contrary, the economic downturn some years ago caused a stagnation or even reduction of air traffic. The general credit crisis and the failing of several large bank and financial institutions, dragged several airlines along into filing for bankruptcy. If politics and national interests lead to a population being pessimistic

Photos: George Petrovich/NATCA

about their future, then those people will seek to increase savings and reduce their spending, resulting in lower economic growth.

Likewise, a downturn in world trade may well result in lower exports and lower domestic demand. Fear and a general pessimistic or negative outlook are detrimental to economic growth. This in turn could have an impact on the aviation community and result in a decline in investments and development. Overly national interests could take precedence over international collaboration, capital expenditure and evolution.

As a global air traffic control community, we observe the need for upgrades and expansion in many regions worldwide. Harmonised rulemaking and rendering assistance is absolutely essentiual to ensure we avoid isolated technology that hinders air traffic and air traffic safety.

Some of IFATCA's member associations may ask "what is in there for us?" or "what do I get out of it"? Here the immediate (selfish) benefit wins over the long-term value and strength that an international community offers. Instead, should the potential of being a role model and the pride to assist and to make a strong body even more powerful, not prevail?

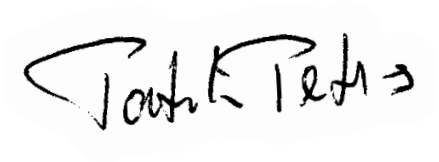
IFATCA's strategy is exactly this: support, assist and lead! Together, we unite a universal and diverse workforce. In doing so, it enables us to reach a similarly high and equal standard of global aviation safety.

In a few months time, delegates from all across the world will meet again to engage in discussions and exchanges raising the bar of the air traffic control profession. It's the perfect opportunity to remind ourselves that we should strive for a world without borders. Let's go global and open our eyes and minds and overcome anything or anyone determined to bring back borders and restrictions!

I am very much looking forward to see you very soon in Toronto at the 2017 annual IFATCA conference!

Be safe! ✈

**patrik.peters@ifatca.org**



# DRONE SAFETY

## Urgent need for national and international regulations

**by Philip Marien, IFATCA Editor**

In a recent article in their magazine Transmit, our member association from the UK, GATCO, called for urgent action on drones. This wasn't the first time: over one year ago, they challenged their Civil Aviation Authority to take effective action to reduce the risks of drones colliding with aircraft. They are by far not the only ones that have raised their concerns: numerous organisations including BALPA, ACI Europe, the European Cockpit Association, CANSO IATA, IFALPA and IFATCA have done the same.

That the issue has become urgent is clear from the number of reports the UK AIRPROX Board has received. Between November 2015 and October 2016, 56 such events were reported and investigated. In 25 cases, the event was classed as a category 'A' event, meaning that there had been a serious risk of collision. Apparently, not even that is sufficient to concern the regulatory authorities. Those AIRPROX are a stark warning of how serious the issue has become and why governments around the world can no longer close their eyes to the problem.

Everyone seems to agree that regulation is urgently needed if we want to contain the issue. As the number of devices continues to grow, so does the risk of a catastrophic encounter. A large part of the problem is that technology seems to evolve a lot faster than regulation can keep up with. This isn't made any easier by the international aspect, where national authorities are looking towards international bodies such as EASA and ICAO to come up with guidance and rules. In Europe, the European Aviation Safety Agency (EASA) has made some progress, but it's clearly not agile enough to contain the issue.

At national level, there's a possible reluctance to be too restrictive, given the boost that drone development has given to research and industry. It is even being looked at by major players such as Amazon and others to augment their distribution network. And even the entertainment industry is increasingly reliant on relatively cheap drones as an alternative for expensive aerial shots. In many countries, politicians seem fearful of, or may even be

under pressure, not to be too prescriptive or restrictive for these emerging industries as it may be a disadvantage against unregulated countries.

Some countries have started to try and control the unbridled use of drones in some way. Ireland has compulsory registration for drones above 1kg and requires a license for drones used for aerial work. Belgium has a licensing scheme for drone pilots, with limitations on what is allowed depending on the type of licence. In the USA, over 550,000(!) drones were registered just months after the initial proposal was made. While registration alone is obviously not enough, it does make it easier to communicate and educate users if you know who they are. It is clear that as the drone industry – both for professional and private use – grows exponentially, it will become ever more difficult, cumbersome and expensive to try and map the existing userbase, let alone educate them.

Other governments rely on raising awareness amongst the general public through untargeted campaigns – which in the past have proven ineffective (e.g. some people still think it's acceptable or cool to target aircraft with laser pointers). In other cases, they deem that the drone industry itself has a responsibility to prevent their products from being used near airports for example, through so-called geofencing. While there is some merit in this, especially for more reputable manufacturers, it is clear that it doesn't seem to apply to the cheaper, generic range of drones that are readily available anywhere. In addition, there seems to be little consensus over which areas should be off-limits to drones.

An often-heard phrase is that 'regulation should be proportionate to risk'. While this is true, the consequences of even a small drone flying into the face of a microlight pilot or into the rotors of a small light helicopter leaves little to the imagination. An EASA report concluded that, at altitudes below 10,000 feet, a crash with a drone less than 1.5 kilograms would not result in fatalities, though light injuries to passengers and crew were possible. At the 2016 European Regional Meeting of IFATCA, it was stated that a collision with a drone may have the kinetic energy five times greater than the impact of a same-sized bird. During a critical phase, like take-off or landing, it is surely a risk we would want to avoid…

Another, growing concern is the possibility of using drones in terrorist activities. Aside from using them for reconnaissance, insurgent groups in Syria and elsewhere have started using off-the-shelf models to deliver explosives. This only augments the case for strong regulation of drone ownership and limitations to their use...

It would obviously be preferable and more effective to contain or control this issue at an international level. But if that is not possible, then surely national authorities shouldn't sit around and wait for an accident caused by an inexpensive toy… Far more trivial and less dangerous issues have been regulated in the past, helping to make aviation the safest mode of transport. Let's keep it that way!

**editor@ifatca.org**

## Close encounters of the good kind?

If there is such a thing as a good drone AIRPROX, perhaps this is it. It involved a drone and a helicopter in the west Pennines near Chorley, UK.

The twist is that the report was filed by the drone operator. All too often, the operator of the aircraft in question when relating to drones remains 'unknown'. This time, the helicopter was in that category. The drone operator was filming on Angelzarke Moor with a sub-7kg drone when he heard a helicopter but could not see it as it was obscured by the top of the hill. As a precaution and not knowing exactly where the helicopter was, he began lowered his drone from 200ft.

As it passed 130ft, the helicopter appeared over the crest of the hill. The drone operator continued to reduce the height of the drone and, as a further precaution, took evasive action with the helicopter passing 200-250m away horizontally and 200ft vertically.

The UK AIRPROX Board quickly determined that the drone operator was operating in accordance with all applicable rules and regulations. It was also encouraged by his willingness to report an AIRPROX as a responsible airspace user who had clear concerns for the safety of the helicopter's occupants. Some board members remarked it would have been more prudent for the helicopter to operate at a higher altitude due to the possibility of encountering other airspace users up to 400ft above ground level, including drones, paragliders, paramotors and hang-gliders soaring in the region. There was even a possibility of military aircraft at or below 250ft.

Some board members felt that this encounter served as a valuable lesson in reinforcing the point that it was prudent to climb to at least 500ft for transits as soon as possible, especially in areas of hilly terrain. The board felt that the drone operator had carried out effective and timely actions to prevent the aircraft colliding and the risk was assessed as category 'C'.

Photos: Ottó G. Eiríksson, ICEATCA

2017 IFATCA ANNUAL CONFERENCE 56

ON BEHALF OF YOUR ORGANIZING COMMITTEE AND
THE CANADIAN AIR TRAFFIC CONTROL ASSOCIATION (CATCA)

# Welcome to

## IFATCA's 56th Annual Conference

where we'll be *"Taking Care of Business Together"*
at the beautiful Chelsea Hotel in the heart
of Toronto, Ontario Canada.

**REGISTER ONLINE* NOW AND SAVE!**

## Visit ifatca2017.com

**for all your conference needs, including:**

- Registration fees and online registration link
- Conference agendas and meeting room maps
- Hotel room rates and accommodation booking link
- Visas and entry to Canada information
- Airline Discount codes
- How to get to the conference from YYZ
- What to see and do in Toronto
- Toronto weather

** contact your IFATCA liaison for your registration access code*

MAY 15–19, 2017

See you in Toronto!

# AMERICAS 2016 REGIONAL MEETING

## Focus on Human Factors

**by John Carr, IFATCA EVP Americas**

The Americas Region of IFATCA held a very successful Regional Meeting from October 10-12, 2016 in beautiful Costa Rica. Ronald Vega, the IFATCA Liaison Officer for the host member association, did an outstanding job of planning and executing the meeting at an all-inclusive resort on Costa Rica's verdant Pacific coast.

There were sixteen attendees representing eight Member Associations, in addition to two observers each from Honduras and Argentina. Both observer nations plan to apply for membership in IFATCA at Conference 2017. Also in attendance were PCX Patrik Peters, Deputy President Scott Shallies, and EVPP Eric Risdon.

The theme of the meeting was "Human Factors in ATC," and that was apparent from the various presentations. The first day began with an appearance from Dr. Garita on various sleep disorders, including sleep apnoea and insomnia. Prime among the considerations for sleep disorders is rotating shift work, like many of our controllers endure. Following Dr. Garita was Jay Barrett from NATCA USA with a presentation on "Embedding Human Performance into the Operation." After lunch the afternoon was spent on Member Association reports and a briefing from EVP AMA on some topics of interest to the membership.

The use of an all-inclusive resort was seen by many attendees as a very positive feature. Every single person was on equal footing with the other. This atmosphere created great opportunities for the members to socialize with one another outside the meeting. It was fascinating and rewarding to see the economic disparity among nations disappear in a venue with great ambiance.

The second day began with a presentation from Jeff Richards, NATCA USA, on "Demystifying and Mitigating Fatigue." Following the coffee break, IFATCA PCX & CEO Patrik Peters gave a talk on the human-machine relationship with a great presentation entitled, "Higher Levels of Automation - Building in Resilience: How Humans Interact with Technology." Patrik Peters was followed by IFATCA's Deputy President Scott Shallies who brought the members up to date with information regarding Conference 2017, to be held May 15-19, 2017 in Toronto, Canada.

Eric Risdon, EVPP, gave a briefing on the work of the IFATCA Technical and Professional Committees (TOC & PLC), followed by the afternoon presentations.


✈ *Left to right: Ronald Vega from the Costa Rica association, Scott Shallies (IFATCA Deputy President), Patrik Peters (IFATCA PCX & CEO), John Carr (IFATCA EVP Americas) and Eric Risdon (IFATCA EVP Professional).*

Photo: STCNA

Photos: JC

✈ *Dr. Garita presenting on sleep disorders, including sleep apnoea and insomnia.*

✈ *Jay Barrett (NATCA, USA) giving his presentation on embedding human performance into operations.*

Photos:JC

✈ *Jeff Richards (NATCA, USA) presenting on professional behaviour.*

IFATCA President and CEO Patrik Peters gave an update on "The State of the Federation," and Jeff Richards, NATCA USA shared the "Foundations of Professionalism" program currently in use by NATCA and the FAA. This program includes "Professional Standards," which is a peer-to-peer problem solving mechanism, to "Fully Charged," a program to combat fatigue in the workplace. "Turn off, Tune In" is a program to eliminate distractions in the workplace, most especially smart phones, and "ATSAP" is the Air Traffic Safety Action Program, which allows for a Just Culture when reporting errors or system deviations. The fifth pillar of Professional Standards is "Respect," a program designed to reduce bullying in the workplace.

The third day featured choosing the location for AMA RM 2017, which will be held in Nassau, Bahamas. The participants also engaged in an exercise loosely titled, "Adopt a Member Association." The Americas Region had 1/3rd of subscription-paying members in attendance at the meeting, so each attendee chose two MAs not in attendance to "adopt" for purposes of establishing communication, verifying information and encouraging participation in regional affairs. The Federation has a wealth of information available to member associations, and it is hoped that establishing more localized contact with each MA will result in their use of these resources and participation in regional affairs.

The 27th Annual Regional Meeting of the Americas was a wonderful and successful event, which would not have been possible without the hard work and dedication of Ronald Vega from the host association, and without the participation of the attendees. The Americas Region is looking forward to more participation and another outstanding meeting in Nassau in 2017.✈

**john.carr@ifatca.org**

## STAFFING CRISIS IN BARBADOS

During the Americas Regional Meeting, the situation in Barbados was discussed. Since 2012, the Barbados Civil Aviation Department has been facing a severe human resource crisis. The official staff complement for the department is sixty-five (65) and as of October 2016, the number of staff available to be rostered is merely forty-two (42). The situation will only continue to deteriorate as more people are retiring each year.

In order for Air Traffic Services to properly function, the minimum staffing requirements had to be reduced and restrictions on vacation or leave were imposed. There is also an acute lack of on-the-job-trainers and instructors to present courses at the training centre. As a result, only five refresher courses have taken place in the past twelve years, violating both local and international regulations. And some shifts cannot be adequately supervised.

Persons that have been promoted within the department are still occupying the posts they leave. This effectively prevents vacancies from being opened. In addition, policy dictates that Barbados Civil Aviation Department staff must be fully rated before they are appointed. This implies completing the Aeronautical Information Services, the Aerodrome Control and the Terminal Control Procedural/ ATS Surveillance courses which take approximately two and a half years to complete. A number of people in the AIS department are eager to advance since 2013, but have been denied the final course and can therefore not be appointed....

Numerous proposals to improve the staffing situation have been submitted but these appear to be ignored. Policies that are applicable in other civil service departments cannot simply be transposed to the Civil Aviation Department and urgent action is needed to guarantee the continuity of the service.✈

# EUROPE 2016 REGIONAL MEETING

## The impact of new technology and of the Single European Sky

**by Tom Laursen, IFATCA EVP Europe**

The 33rd European Regional Meeting was held in Iceland from the 21st – 23rd of October in Icelandair Hotel Reykjavik Natura. The venue was hosted by our local member association ICEATCA and organized by Dora, Otto and their team. Iceland's service provider ISAVIA was the main sponsor and they made it possible for us to visit Iceland at a reasonable price. An impressive 35 member associations out of 43, and 130 participants found their way to Iceland. It was a real pleasure to see a meeting in the upper left corner of Europe have such an impressive turn-out.

There were two main topics for the meeting: 'New Technologies, the impact on the Air Traffic Controller profession' and 'Single European Sky and IFATCA'.

The first day of the meeting was a workshop. During the morning session, IFATCA Single European Sky (SES) Coordinator Marc Baumgartner orchestrated the discussion under the theme of 'New Technologies and the impact on the Air Traffic Controller profession'. Marc had invited speakers from different parts of the European Aviation industry. The speakers and at the same time panel participants were, Eszter Füredi, Project Manager Hungarocontrol, Daniel Ferro, Airbus, Theodor Zeh, Frequentis and Freek De Witte, SESAR DM. It was a very informative session, where they all spoke about the upcoming introduction of technology that we have to integrate and about how it can be introduced. Freek De Witte from SESAR deployment manager outlined the implementation program and the Pilot Common Project's.

The afternoon session was about how EASA is organised and how we as a professional federation can participate and thereby contribute to a safe and efficient ATM system. The session was organised by Anthony Smoker and the speaker was José Luis García Chico, EASA Safety Analysis Section. Besides the detailed presentation from Jose, Anthony had organised a workshop where the participants had a chance to give inputs to EASA.

In the evening ISAVIA hosted a reception with a very funny comedian who explored the small habits and characteristics of almost all European nationalities. A very nice evening that prepared us for the Saturday opening of the ERM.

On Saturday IFATCA PCX & CEO, Patrik Peters opened the meeting. Costas Christoforou, IFATSEA, Volker Dick, ATCEUC and the organizing committee chairman

Photos: Ottó G. Eriksson, ICEATCA

*The vast majority of European member associations attended the 2016 Regional Meeting.*

✈ *IFATCA SES Coordinator Marc Baumgartner during one of the sessions.*

were among the people who spoke during the opening.

The meeting then divided into two separate sessions. Freek De Witte, SESAR Deployment Manager and Nicolas Lyrakides, Liaison Officer for Cyprus at Eurocontrol spoke in one room about the SESAR deployment program and the European Commission's Reporting Periods 2 and 3. In the other room, Richard 'Sid' Lawrence from EUROCONTROL and Jens Lehmann from our German member association GDF spoke about Impact of Technology and Automation on ATCOs and RPAS/UAS. Sigurjon Jonasson, President of ICEATCA, enlightened both groups on how the air traffic controllers in Iceland handle traffic in their FIR and beyond.

In the afternoon all participants gathered for a session on Remote Towers. Because of the huge interest in the subject, the presentation by Helena Sjöström from our Swedish member association, was moved from the morning to the afternoon session to allow ample time for questions. Sweden is currently the only country in Europe where a Remote Tower is in operation. Helena showed how the concept was implemented and how their association SATCA had followed the process. Many of the attending associations had questions and concerns about the implementation. There were explicit concerns about the consequences of a remote tower concept will have on jobs.

Subsequently, EVP Europe Tom Laursen presented his team's vision for the work in the region. A work program with the main points of SES, MA support and involvement was presented. The day ended with a 'warm up' to Sunday's SES session. Poland presented how the European performance scheme can lead to economic difficulties for service providers and, ultimately, the huge impact on their employees – including controllers. In the case of Poland, amongst other problems, the traffic patterns have dramatically changed. Instead of getting a lot of heavy A/C, it has shifted to medium A/C traffic. Revenue from route charges has decreased by more than 30% as a consequence, despite higher traffic counts.

Sunday began with a presentation by the Director of the Icelandic air navigation services, Ásgeir Pálsson. He told us about the Icelandic airspace and the challenges that they have. Following that, the session on Single European Sky and IFATCA kicked off. EUROCONTROL's Xavier Fron, one of the fathers of the 5-year Reporting Periods (RP), presented how the European performance scheme works and some of the problems that have emerged. Three representatives from member associations, Benjamin Fichtner, Swiss ATCA, Anders Liebl, from Danish DATCA and Cristian Radu from Romania's ROMATSA, showed some of the local consequences of RP2. Nikos Lyrakides, Cypriot Liaison Officer at EUROCONTROL, finished off the morning with an update on the complex aviation politics in Brussels.

In the afternoon, the meeting began with a presentation of the IFATCA Technical & Operations Committee's papers for the 2017 annual conference by Renee Pauptit, who is the IFATCA TOC Chair. Alfred Vlasek, IFATCA PLC Chair, presented the committee's work program and papers. Both TOC and PLC are very aware of what is going on and the papers reflected the current interest in the new technologies ATCOs are affected by and the ATM system is confronted with.

An introduction to the IFATCA development of our own key performance indicators (KPIs) followed. The idea is to develop our own KPIs in the four RP2 categories to have a different view on performance and ultimately to have more influence on the developments in the SES.

The meeting continued with a discussion about the need for a Europe-wide Loss of License insurance. There was interest to continue the work and Richard Buresch (Austria) will follow up on the inputs and will update us when there are further developments.

The meeting ended with choosing the location of European Regional meeting 2017. The 2017 ERM will be hosted by our Austrian member association AATCA. It will take place in Loipersdorf, Austria, about 30 minutes from Graz airport. Dublin was preselected for ERM 2018 and Jordan expressed interest to host the 2019 meeting in Aqaba.

Once again I would like to thank our hosts ICEATCA and especially Dora, Otto and their team for a well-organised meeting. I am really happy that so many associations turned up for the ERM in Iceland and I hope to see all of you and more next year in Toronto and in Austria, where we will continue to work on the issues that we discussed in Reykjavik. ✈

**tom.laursen@ifatca.org**

# AFRICA & MIDDLE EAST 2016 REGIONAL MEETING

## SUSTAINABLE PRACTICES FOR ENHANCED AVIATION SAFETY AND COORDINATION

**by Keziah Ogutu, IFATCA EVP Africa & Middle East**

The 27th International Federation of Air Traffic Controllers' Associations (IFATCA) Africa and Middle East (AFM) regional meeting was held in the beautiful North African city of Khartoum, Republic of Sudan. It was the second time that Sudan hosted the meeting, the first being eight years ago in 2008.

The meeting which was officially opened by the Vice President of the Republic of Sudan, Hon. Hassapo Mohamed Abdelrahman. Venue for the event was the prestigious Al Salam Rotana Hotel Conference Hall. The meeting was well attended, with over 130 delegates attending on the opening day. Thirteen IFATCA Member Associations were represented as well as three observer countries: Jordan, South Sudan and Mozambique. Other attendees included two ATM system manufacturers (Thales and Indra), government officials, airline representatives, other aviation stakeholders and invited guests.

In his opening speech the Sudanese Vice-President expressed his Government's continued support for Air Traffic Services and highlighted the importance of the air traffic controllers' profession within the aviation industry and for the economy of a country.

The Sudanese government was also represented by the Minister of Defence, Lieutenant General Ali Salem, who is the minister in charge of aviation and by the Director General of the Sudan Civil Aviation Authority, Capt. Ahmed Satti Bagory. Both expressed their readiness to support the Sudanese Air Traffic Controllers' Association and wished the meeting well in achieving its objectives.

The airport authority was represented by the Director General of the Sudanese Airport Holding Company, Lieutenant General Ismaeel Brema.

The 2016 AFM RM agenda involved panel discussions and presentations based on the theme "Sustainable


*The venue for the 2016 AFM Regional Meeting.*

Practices for Enhanced Aviation Safety and Coordination." The panel discussions were moderated by the IFATCA's Executive Vice Presdient Africa & Middle East, Ms. Keziah Ogutu who was joined by panellists composed of Air Traffic Controllers (IFATCA EVP EUR), Regulators (Sudan CAA), Pilots (Badr Airlines), Airspace designers (Sudan ANSP), the Military (Sudan DOD) and ATM system manufacturers (Indra).

The three day conference, from 7th to 9th November, 2016, covered the various aspects of meeting's theme; amongst others, these included Safety Culture - including the future concept of Safety II; Just Culture;' Collaborative Decision Making; ATM systems manufacturer responsibility to ensure system inter-operability; employer/ employee roles in providing an enabling environment for the provision of air traffic services; and the Regulator responsibility in ensuring sustainable practises are implemented by ANSPs for safe provision of services.

The highlights of the conclusions and recommendations taken at the end of the meeting are as follows:

1. As a matter of urgency, MAs should cooperate with their ANSPs in enhancing Safety Management principles, especially implementation of confidential voluntary reporting, raising safety awareness among ATCOs and promoting Just Culture. In addition, MAs should create awareness of the new safety concept i.e. Safety II.

2. MAs to initiate the development of CISM in collaboration with the ANSPs, taking into consideration the psychological and emotional support for ATCOs involved in incidents and accidents particularly ATC licences insurance issue.

3. To improve coordination and communication between ATC centres MA's should engage ANSPs to invest in harmonized reliable ATM systems that enable automation such as AIDC, OLDI etc, and to push for harmonised interface integration between neighbouring FIRs.

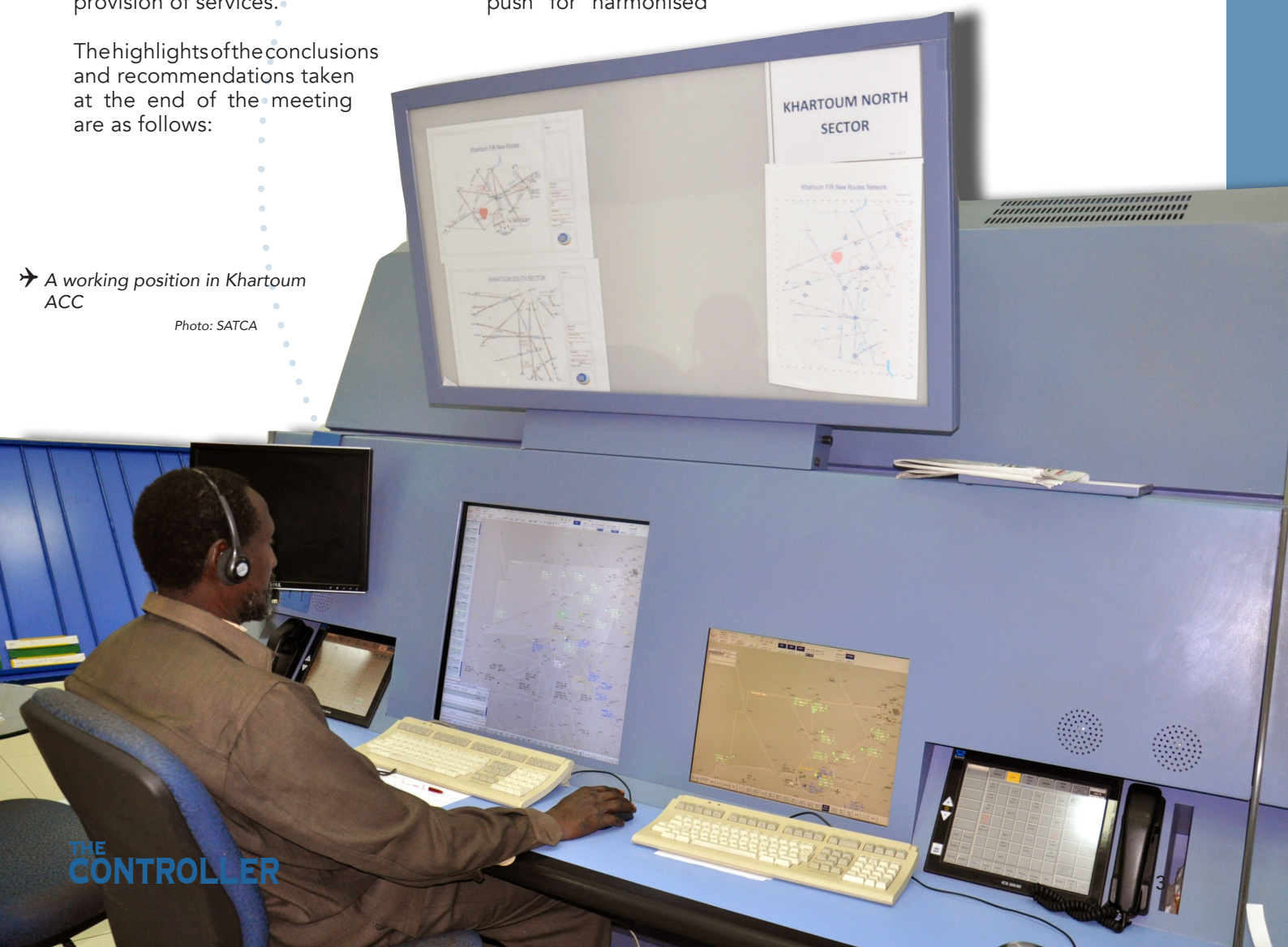
4. To provide continuous, effective and reliable ATM services ANSPs MUST develop backup systems that will ensure redundancy.

5. IFATCA to consider at least one seat per region in IFATCA Standing Committees.

6. Ethiopia was elected to host the 28th IFATCA AFM Regional meeting in 2017.

IFATCA would like to thank is the sponsors who helped make the meeting successful: the Sudan Civil Aviation Authority, the Sudanese Airports Holding Company, BADR Airlines, NOVA Airways, SAFAT Aviation Complex and THALES. Our gratitude also extends to the organising committee of our Sudanese MA, SATCA. ✈

**keziah.ogutu@ifatca.org**




✈ *A working position in Khartoum ACC*

*Photo: SATCA*

# ULTRALIGHT TAKES ON THE WORLD

## The epic journeys of the GreenLight WorldFlight missions


by Matevž Lenarčič, GreenLight Research Project

To fly around the world in an ultralight aircraft, one would expect to take at least half a year: waiting for good weather, visiting interesting places and getting to know the people who live there. The GreenLight WorldFlight mission is radically different. Its main purpose is to measure global atmospheric pollution by flying around the world in the shortest possible time. Such concentrated flights with extremely long legs are very demanding. The pilot faces constant stress due to weather changes, the lack of alternative landing places, short time on the ground, fuel arrangements, bureaucratic nonsense, the technical condition of the aircraft, etc.

Back in 2000, I tested some ultralight aircraft. Since then, I practically stopped flying regular General Aviation planes. Not only is there far less regulation to deal with, but ultralights have evolved significantly over the past 20 years. They've surpassed the strictly regulated traditional general aviation airframes in almost all aspects. The aircraft are lighter thanks to modern composite technology. Simpler certification, as well as lower maintenance and operating costs make them cheaper overall. They have a better glide range and are in fact safer as they're typically equipped with a rescue system. Most importantly, it is possible to install the latest avionics and safety features without normal certification requirements that affect general aviation.

A disadvantage however is that ultralights fall under national legislation which differs from country to country. This can cause some additional paperwork for international flights.

### First missions

My first attempt to fly around the world in an eastbound direction, in 2002, failed due to Canadian bureaucracy. After crossing the whole of Russia, the Bering Strait to Alaska and Canada, Transport Canada withdrew my permit to cross Greenland on the way to Iceland, stranding me in Montreal.

The next attempt in 2004 was successful. I flew an ultralight Pipistrel Sinus with a range of 3000+ km via Mongolia, Russia, the USA, Canada and Greenland back to Slovenia. An incredible experience of eighty days, including eleven days of house arrest in Chita-Russia after I had been intercepted by two MiG-29s: the flight permit from Moscow had not reached eastern of Russia in time.

### Second mission in 2012

With technology making huge progress, I wanted to find an ultralight aircraft which was able to fly over 4000 km without landing, at high altitude and in extreme temperatures. With these wishes in mind, Slovenian manufacturer Pipistrel built the Virus-SW115: the fuel tanks can hold 350 litres and it has a Rotax 914 turbo engine with a custom made intercooler. The avionics consist of a Garmin IFR-

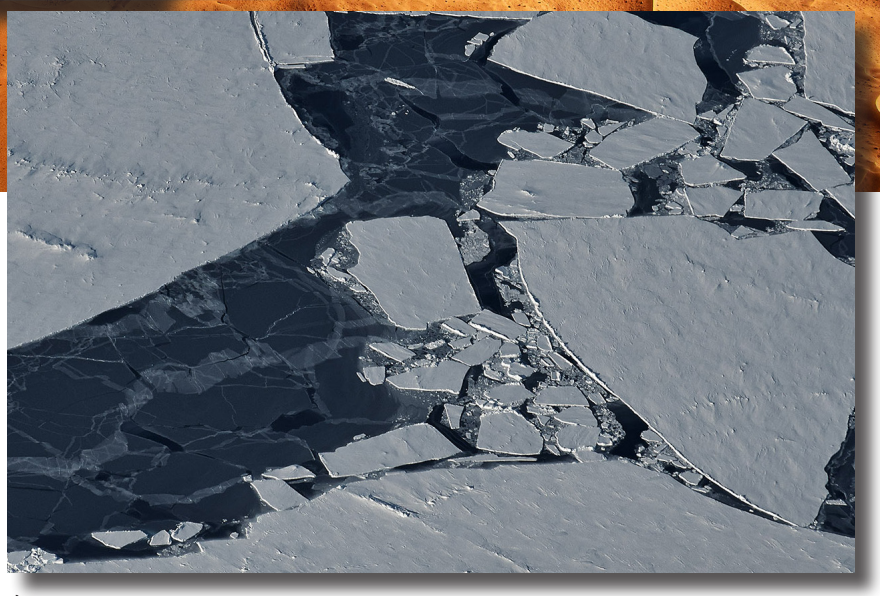
✈ *View of the Mexican desert, with an overlay of the pre-2016 GreenFlight missions* Photo: Matevž Lenarčič

capable GTN750 and a Spidertrack tracking device, using Iridium satellite communications. This enabled me to fly more comfortably at night and in IMC conditions if so required. Spidertrack sends information about altitude, direction and speed to a server in New Zealand from where the information was available live on internet.

The 2012 flight under the name of GreenLight WorldFlight (GLWF) was not only an aviation adventure but also a scientific research mission. We installed a prototype of a black carbon measuring instrument, an aethalometer. Normally these are very bulky boxes, unsuitable for a small plane. But a Slovenian research company, Aerosol, built a compact model that could be fitted to our ultralight plane.

The flight itself was very successful: in 100 days, I flew 91 000 km over the South Atlantic, the top of Aconcagua, towards the Antarctic Peninsula, then crossed remote South Pacific to Easter Island and Tahiti, New Zealand and Australia. Then it was northbound across Indonesia, Thailand, Myanmar, Bangladesh, India and Nepal. I flew past the Himalayas from west to east, seeing the summit of Mt. Everest at nearly 9000m.

The incredible flight continued to the very southern part of India, Trivandrum from where I crossed the Indian ocean to Zanzibar towards South Africa and then north across the continent back home.



✈ *North Pole ice*

Photo: Matevž Lenarčič

## HF Radios

On the insistence of some ATC centres, we had to install an HF radio with a trailing antenna for the oceanic crossings. Being antique technology, such a radio uses a lot of power. And because of the high current needed, it's not without risk on a small aircraft. On top of that, the equipment is bulky and its weight reduces the amount of fuel that can be carried. The antenna also needs good grounding, which is an issue for a small and composite aircraft. All this meant that the quality was usually less than acceptable and where possible, I tried using my Iridium satellite phone. During the 2012 mission, there was only one unpleasant experience with Dakar control because of this, while the rest of controllers where very understanding and helpful.

During the flight from the Cook Islands to Auckland, New Zealand, the controller called me via satellite phone. After some friendly conversation, he advised that an hourly position report wasn't needed, as he could follow me live on internet.

The results of the black carbon measurements gave insight into global pollution levels and was very well received by the scientific press and research institutions. We discovered some surprising facts. For example, why the air is so polluted over the Indian subcontinent between monsoons? It turns out that it's not due to traffic or industry, with most of the pollutants come from burning biomass.

## North Pole crossing

In 2013, our GLWF mission continued over the Arctic region. In early April, I departed from Slovenia


**Path of the 2016 GreenLight World Flight**

1. Portorož - Jerez ✈ 2004km ✈ 9h
2. Jerez - Sal ✈ 2800km ✈ 12h
3. Sal - Fort de France ✈ 4100km ✈ 17h
4. Fort de France - Ft.Pierce ✈ 2500km ✈ 11h
5. Ft.Pierce - Salinas ✈ 4000km ✈ 17h
6. Salines - Maui ✈ 3800km ✈ 16h
7. Maui - Majuro ✈ 3800km ✈ 16h
8. Majuro - Guam ✈ 3000km ✈ 13h
9. Guam - Kota Kinabalu ✈ 3280km ✈ 14h
10. Kota Kinabalu - Chennai ✈ 4100km ✈ 18h
11. Chennai - Dubai ✈ 3000km ✈ 13h
12. Dubai - Iraklion ✈ 3250km ✈ 14h
13. Iraklion - Portorož ✈ 1550km ✈ 7h

and after a 10-hour flight, I reached snowy Tromsø in northern Norway. Flying that far north during a colder part of the year forces a pilot to be humble and patient: bad weather means icing conditions which should be avoided at any cost. A small composite aircraft with glider-like wings is very sensitive to ice. It disturbs the airflow over the wings and there's no anti-icing equipment.

The northern-most public airport in the world, Longyear airport in Svalbard, often has fog so having some IFR instruments on board and knowledge of how to use them helps a lot.

The Russians were just leaving their winter base at Barneo, about 100km from the North Pole when I departed Svalbard for the long crossing of the Arctic towards Resolute, Canada. The weather was forecast to be acceptable over the pole, but a low-pressure area with snow and blizzards was approaching Resolute very fast. But my hope was that I could I could land before the weather deteriorated.

On departing Longyear, the temperature was -25°C but closer to the pole, it had risen to a surprising -10°C. As the low clouds parted, I could see the ice was really melting very quickly. It meant there was no place to land there in case of an emergency. Flying southwesterly towards Canada, temperatures dropped again and the weather beat me to Resolute. I had to divert to the Eureka weather station. Canadian authorities were not impressed with my decision as it is also happens to be a military base. When I explained after landing that I diverted for safety reasons and not due to a fuel shortage, their concerns went away and I spent some nice days with very helpful meteorologists. After the snow storm had passed, I took off for Resolute, mostly flying in IMC due to ice crystals. The day after, I made it safely to Iqaluit – a former military base known as Frobisher Bay.

It was the first of May, but everything was still solidly frozen. Locals made jokes about global warming saying that the world's climatologists and biologists just wanted to prevent them hunting polar bears.

As I left for Gander, a Newfoundland snow storm left 70 cm of fresh snow on the airfield. It was as if the polar weather was chasing me all the way home. As I had already crossed the North Atlantic via the standard route across Greenland and Iceland in 2004, I decided to follow a part of Lindberg's legendary flight from Gander direct to Ireland.

Expecting our measurements to show the air in the Arctic region was as clear as it could be, we got a big surprise. We found two spots close to the North Pole where the air was very polluted by black carbon. After studying the weather patterns for those weeks, we discovered the sources of this pollution were in northern Russia and Sweden.

## 2016 Mission

Preparation for such a flight is often very complex and requires a lot of time and resources. Everything comes down to ensuring the flight can be done in safe conditions. The aircraft needs to be tested, registered and insured. Places with suitable fuel supplies need


✈ *The Garmin navigation computer during the Atlantic crossing.*

Photo: Matevž Lenarčič


✈ *Refuelling in Sal, Cap Verde.*
Photo: Matevž Lenarčič

to be found and a wide variety of permissions need to be secured: for landing, overflying, special authorisations... After 15 years of long distance flying around the world, I can confidently say that bureaucracy has become obstacle number one. It has even caused life threatening situations at times, simply because someone in an office somewhere strictly enforces narrow-minded rules rather than common sense.

## Planning

My plan was to fly around the world in less than 30 days. That meant the pre-planned legs were long and almost always from sunrise-to sunset, with some a lot longer. Flying a light, single engine aircraft over water at night or in IMC and landing at an unknown airport in instrument conditions is something that you do not want to do too often. A limited set of instruments, reduced redundancy, no de-icing and sensitivity to turbulence make these flights extremely demanding and stressful.

For the 2016 GLWF mission, I flew an extremely fuel-efficient ultra-light airplane: a Dynamic-WT9 made by Slovakian Aerospool. The aircraft is equipped with new electronic controls and a very efficient Rotax 912iS engine. The luggage compartment was big enough for our new, slightly larger but more sensitive aethalometer. This was built by a group of scientists at Aerosol lead by Dr. Griša Močnik. The aircraft reduces the pilot's workload to a minimum and thereby also reduces the possibility of errors.

Setting off in March, I had to try to avoid the low temperatures in the northern hemisphere again. So I took off towards the Po River basin in Italy. I then flew across the Mediterranean north of Corsica to Menorca and Majorca before landing in historic Jerez (LEJR) in Andalusia, Spain.

Dawn revealed beautiful clear skies and sunny weather. Seated in the cockpit of the Dynamic, I discussed visual conditions with the controller. She insisted on me filing IFR conditions, making me think we were not at the same airport. It meant an unnecessary delay and after a 10-hour flight straight over the sea covered by low clouds, I arrived later than planned in hazy weather and low visibility in Sal – GVAC – the most northern island of the Cape Verde archipelago.

## Fuel issues

Sal airport had no Avgas available, despite having tried for 5 months to arrange some via the Ministry of Agriculture. It meant my only option was to use regular car fuel, which had to come from the nearest town, Espargo. Ms. Karen Žorž, a Slovenian who works in the tourism industry on the island of Sal helped me to obtain an authorisation to transport fuel to the airport in 20-litre plastic containers on a festive Sunday morning when most locals were on their way to church.

With around 4100 km to Martinique, at least part of the flight would after dusk. Because I never flew this aircraft fully loaded, I decided to leave as daylight broke and complete the last part at night. Co-pilot for this flight was a 120-litre Turtle-pac bladder tank sitting on the right seat.


✈ *Selfie of the pilot and his additional fuel pack.*
Photo: Matevž Lenarčič

As the winds prediction showed normal but unfavourable easterly trade winds, the first two-thirds of the way I flew quite low. Above 3500 ft, the head wind was simply too strong.

## Communications

VHF communication soon disappeared and with poor HF communication on such a small composite aircraft, I preferred using my Iridium satellite phone

to communicate with the Oceanic control centres. Sal Oceanic Control was helpful and understanding, as were Santa Maria and New York.

The flight was as uneventful as it was monotonous: music, exercise, checking engine data, fuel management, chatting with my pilot friend and member of GLWF team, Domen Grauf, photographing, recording, controlling operation of aethalometer, food, drink… The most exciting thing was Domen's text message, giving me a stormy forecast for my night-time approach to Martinique – TFFF.

With the equator to the south, the sun slowly overtook me on the left. While the wind was more favourable at lower altitude, clouds forced me to climb to FL 100. The play of light was beautiful: white clusters were slowly dyed a golden yellow, red, and then dark blue before going pitch black and dark. I could see lightning to the southwest of my destination, so my hopes for a happy ending increased a bit. As I descended and came out of the clouds at 3500 feet, the lights of Fort-de-France came into view. Accepting the controller's offer for a visual approach was a mistake as the airport was very difficult to find in between the mess of the city lights. After almost 18 hours flying, I was finally back safely on the ground. Any doubts about the efficiency of the aircraft had disappeared, as I could have flown another 5 hours if needed.

## Weather

The weather over the Caribbean was not like during my passage 4 years earlier. Back then, the views had been absolutely amazing. This time, storms meant I had to slalom between towering cumulus and rain on the way to Treasure Coast, Florida – KFPR.

On the next leg, a long cold front had moved in from the Gulf of Mexico towards the northeast. It forced me to fly across the water in strong 50 knot headwinds. Unable to reach my original destination – Moriarty in New Mexico – I had to divert to T23, Albany's Municipal Airport in Texas.

The next leg brought me to Watsonwille airport (KWVI), close to Salinas in California. From there, I had planned to cross the Pacific to Maui – PHOG. Typical for the California coast at that time of the year is a dense fog layer in the morning, which normally only clears in the afternoon.

To my surprise, the forecast for the morning promised clear skies. Refuelling before sunrise, I was ready at first light and took off. I soon crossed the coastline and proceeded towards Hawaii, following the confirmed VFR flight plan. The flight itself went well despite having some unexpected headwinds.

## Across the Pacific

Flying to Hawaii with a single engine aircraft is a dream of many pilots, even if it's quite demanding. These days, it's not unusual to use satellite phones, though the official requirement is still for HF radio. I asked Oakland Oceanic Control some months about this, but I never got a clear answer. Advice from some experienced ferry pilots was that Oakland oceanic usually agrees to satellite communications for VFR flights with below 5000 ft.

About 50 miles out to sea, the controller reported that I wasn't allowed to fly VFR to Hawaii. Surprised, but as it's safer to be a bit higher, I agreed to climb to FL100 and requested change to IFR. When I reached the level, the same controller requested an HF radio test. I called them via Iridium to talk to another friendly controller. Assuming that everything was sorted, an angry call came over VHF telling me to turn back. I explained that this was not an option as the fully loaded plane would not able to land safely. Calling my support in Slovenia, I explained the situation and asked Domen to call whoever could help clear the situation: Oakland Oceanic, the Slovenian Ministry of Foreign Affairs, the US Embassy in Ljubljana, … After some intense exchanges, I was finally cleared to fly continue VFR to Maui where I landed in the dark after 17. I was completely exhausted. Despite the fact that I had managed to make all requested position reports, imagine my surprise when I got welcomed by the tower controller telling me that I had been grounded and was expected to sort things out with the FAA!

It took me four days and what felt like thousands of phone calls to clear up what had happened and how important the research mission was. Eventually, we found kind support from the FAA's Senior Representative at the American Embassy in Moscow. He managed to get us cleared to proceed across the Pacific.

## Far East

The flight continued to Marshall Islands – PKMJ, Guam – PGUM

Photos: Matevž Lenarčič

and the final Pacific leg to Kota Kinabalu, Borneo – WBKK. All position reports were given via the two-way satellite telephone.

The next planned stage was again a very long one: some 4100 km straight across Thailand, the Andaman Sea and the Bay of Bengal to the north of the island of Great Nicobar and further on to Colombo, Sri Lanka – VCBI. For the most part, I was cleared on direct routes, except through India, where the controllers insisted that I follow the IFR routes as planned. After flying the last four hours in the dark, I found the entire island of Sri Lanka covered in thunderstorms. The view during the approach was like flying through fireworks, making me feel very small and vulnerable. Thankfully, closer to the island, I managed to get reliable communications with Colombo radar, who vectored me around the thunderstorm cells and high mountains.

## Black Carbon

From Colombo, the flight led me straight across the Arabian Sea, east of Muscat, to Fujairah – OMFJ in the United Arab Emirates. From the research point of view, this yielded our most important discovery: we found extremely high concentrations of black carbon across the open water. It implies that such pollution is not only a regional issue, but that it is indeed a global threat. From an aviation point of view, it can mean having to fly in IMC and under IFR conditions, even if there are no clouds…

As the sun dipped behind the desert mountains, I flew the ILS approach fighting a 40 kts headwind. The handling at Fujairah is mandatory, well organised and fast but very expensive.

Leaving Fujairah, I had to cross Dubai CTR with dense traffic. Controllers had no experience with slow, small aircraft so I had to wait almost two hours in a holding pattern before they gave me vectors to the other side of controlled airspace overhead the Persian Gulf. This delay and much stronger than forecast headwinds, nearly put my original destination, Crete, out of reach. After getting some very confusing instructions over the Saudi desert, I decided to divert to Hurgada, Egypt – HEGN. As I did not have permission to overfly and land in Egypt, I called Domen again to try and solve my predicament. Mike from the White Rose agency arranged an authorisation to land in a record time. All airport administration went smooth and fast, maybe because there was no tourists, after a Russian plane was downed overhead the Sinai peninsula some months earlier.

## On the way home

After the clear skies of the Egyptian desert, pollution was the norm overhead Cairo and Alexandria. Crossing the cold Mediterranean waters, I was reminded of the thousands of migrants making the same crossing, but in much worse conditions – with many of them paying for it with their life. I made it across, landing in Dubrovnik, Croatia – LDDU. It was beginning to look a lot like home, which was just two hours away. After 28 days, I reached my final destination.

I am already planning the next flight, though it will not be around the world: this time, the focus of our measurements will be on concentrations of black carbon and sand dispersed by winds from the Sahara Desert. These particulates deposited on white surfaces of the glaciers in the Alps increase the rates of heat absorption and accelerate the rate at which glaciers are disappearing in the Alps. ✈

# TRAIN FOR RESULTS!

## ICAO's Competency-Based approach for ATCOs and ATSEPs

by Jean-François Lepage, IFATCA Liaison Officer to the ICAO ANC
and Patrick Delaney, IFATSEA Liaison Officer to ICAO

After many years of work, ICAO finally released the long-awaited Doc 10056 (Manual on Air Traffic Controller Competency-based Training and Assessment) and Doc 10057 (Manual on Air Traffic Safety Electronics Personnel Competency-based Training and Assessment). This guidance material, published in July 2016, is the result of ICAO's Next Generation Aviation Professional (NGAP) Taskforce comprised of an international workgroup. IFATCA and IFATSEA had attended many NGAP meetings to assist in the development of this material.

The training manuals will be the main tool provided by ICAO and used by air navigation service providers (ANSPs) and other training organisations to successfully and effectively implement Competency-Based training into their organisations. The manual for controllers, which contains 451 pages, includes many templates and examples of the different forms, documents and materials required for implementation. It is an extremely comprehensive manual, but it requires the user to get fully acquainted with its content before starting implementation of the Competency-Based approach.

One question you may ask yourself is: how are controllers – and more specifically those who are involved in ATC training – expected to become familiar with this manual? Where are ANSPs expected to start, should they decide to implement Competency-Based training in their organization? What are the steps that should be followed? To answer these questions and many more, ICAO has planned workshops in all its regional offices during the upcoming years (2016-2018). Those workshops are free of charge and target a varied audience, including regulators, ANSPs, training specialists and of course controllers (ATCOs) and air traffic safety electronics personnel (ATSEPs).

### 1st Competency-Based Workshop

On 27-30 June 2016, ICAO held its first Competency-Based Workshop for ATCOs and ATSEPs to promote the manuals. The main focus was to raise awareness amongst the many actors in the Industry and the States on the Competency-Based approach, encourage the implementation of the provisions contained in PANS-TRG amendment 4 – which became applicable 10 November 2016 – and provide extended guidance on the contents of Doc 10056 and 10057. IFATCA and IFATSEA participated very actively in the creation of the syllabus and modules for this Workshop, as well as in the delivery of the various modules. The event was held in Montréal's HQ and attracted over 70 participants.

Feedback was collected from the participants and the majority of the comments received were extremely positive and expressed great appreciation for the Workshop. The feedback elements gathered with regards to the contents allowed the presenters to improve their performance in the future events and were taken on board for review and amendment by the development and delivery team.

ICAO Competency Based Training (CBT) Workshop for
Air Traffic Controllers (ATCO) and Air Traffic Safety Electronics Personnel (ATSEP)
ICAO NACC Regional Office, Mexico City, Mexico, 21 – 23 September 2016

*IFATCA's Jean-François Lepage (L) talking to Sergio Martin Saez, from IFATCA's Argentinian Member Association* Photo: JFL

## 2nd Competency-Based Workshop

The second Competency-Based Workshop, following the Montreal initial delivery in June, was conducted on 20-23 September 2016 in the ICAO Regional Office – North American, Central American and Caribbean (NACC), in Mexico City. This second event was also extremely well received from the participants. Among which, several IFATCA members from the various Member Associations in the region were present and appreciated seeing the Federation represented in the delivery team; it was an excellent occasion for them to interact directly with their ICAO Liaison Officer and to meet with other IFATCA members as well as ICAO Secretariat personnel from the Mexico City office. In total, the event was attended by approximately 30 participants.

## 3rd Competency-Based Workshop

The most recent Competency-Based Training Workshop was presented in Lima, Peru, at the end of November 2016. Again for this event, IFATCA and IFATSEA were highly involved in the delivery team for the presentation of the various modules of the Workshop. More than 30 participants attended the event which was again a great success. Mr. Herman Pretorius, from ICAO HQ in Montréal (Implementation Section) was present and appreciated the work done by the team to make the various presentations run smoothly. Once more, the Workshop was attended by may members of the Federation's MAs, and it was another excellent opportunity to showcase the work of the Federation in ICAO and for the members to make personal contact with ICAO personnel and Liaison Officer to the ICAO Air Navigation Commission.

## Upcoming Workshops: get involved!

ICAO has many more Workshops planned for 2017 and 2018. At present the following events have been confirmed by the Secretariat:

- 27-29 March – Western and Central African (WACAF) – Dakar ICAO Office;
- 19-21 June – Asia and Pacific (APAC) – Bangkok ICAO Office;
- 10-12 July – Eastern and Southern African (ESAF) – Nairobi ICAO Office;
- 9-11 October – European and North Atlantic (EUR/NAT) – Paris ICAO Office
  *NOTE: Paris Workshop will be held at the EUROCONTROL Institute in Luxemburg*
- Winter 2018 (dates tbd) – Middle East (MID) – Cairo ICAO Office.

At the time of writing, registration was only open for the Western and Central African (WACAF) – Dakar Workshop, but it will soon be available for the other workshops. Please keep in mind that the number of spaces is limited! If you are interested in attending this Workshop, contact the IFATCA Office Manager (office@ifatca.org) or the Liaison Officer to the ICAO Air Navigation Commission (anc@ifatca.org) directly for more information on how to register.

**anc@ifatca.org**

### Overview of the Workshop Agenda

| DAY 1<br>ICAO Competency-Based Training Overview | DAY 2<br>ATCO Workshop | DAY 3<br>ATCO Workshop and Final Plenary |
|---|---|---|
| Introduction to workshop<br>NGAP overview<br>Competency-based training basics<br>Introduction to PANS-TRG document<br>Group exercise<br>Q&A/closing | Introduction and review of day 1<br>CBT, competencies (group exercise)<br>CBT, training manual<br>CBT, developing an adapted competency model (group exercise)<br>CBT, instructing and assessing<br>Q&A/closing | Introduction and review of day 2<br>CBT, assessing (group exercise)<br>Review and wrap up for ATCOs<br>CBT, the relevance of CBT to your organization<br>(ATSEP and ATCO combined)<br>Final review and wrap-up |

# PREVENTING RUNWAY INCURSIONS

## English Phraseology & Operational Frequency Use

by Phil Parker, Regional Editor Asia/Pacific

Having retired from ATC 3 years ago, after 45 years in the job, I've been doing a little work for a small company based in Hong Kong. We create training programs for cadet airline pilots to improve standard ICAO phraseology, Aviation English and understanding of ATC. The focus is on junior pilots that have finished training but before they start flying for one of the many rapidly expanding Asian airlines.

Through this project, I was approached by an aircraft engineering company based at Hong Kong International airport. They were looking to train their engineers and tug drivers to use standard aviation phraseologies when moving across runways. Their staff had been involved in a number of runway incursions over the previous 12 months. Seizing the opportunity, I also explained things like the correct use of radios, R/T technique, frequencies in use, who they were talking to in the Tower, ATC procedures, aerodrome layout, signs and taxiway & runway markings, lighting and so on.

Firstly, I was surprised that these engineers had never formal training in this regard. At least no more than a perfunctory training program, as approved by the Airport Authority. Doing some further research, I found that the Airport Authority themselves had a very limited training program for their managers who regulate the required standards. Going further still, I found that the Regulator did not have what I would call a robust oversight of the Airport Authority with regard to the standards required for the ICAO phraseologies to be used. As a Tower (and Approach Radar) controller over the 15 years I worked since the opening of this airport, I had no idea of this state of affairs. I always assumed that the engineers and through them, the tug drivers had all had a thorough training program with regular examinations and licence endorsements.

As my research continued I found that many regulators around the world do not adequately police the training programs for these ground personnel, who without adequate training, can severely affect safe operations at airports. Certainly, the major Regulators such as the FAA, CAA in the UK, Canada, Australia, New Zealand and major European countries have all of the required procedures and licencing in place. Many other countries however do not.

Moreover, I found that there were many countries that do not follow ICAO recommended practices with regard to runway safety and the prevention of runway incursions. These recommendations include that at all International Airports should make "use of standard aviation English at International aerodromes which helps provide situation awareness to everyone listening on the frequency" and that the "conduct all communications associated with the operation of each runway (vehicles, crossing aircraft etc.) be on the same frequency as utilised for the take-off and landing of aircraft."

Standard Threat & Error Management principles dictate that an aircraft (or a vehicle or tow) on a runway is a threat if it is not on the same frequency as everyone else operating on that runway. How do you manage this THREAT? Everyone should be on the same frequency.

In this regard, at Hong Kong International Airport, the simple fact of having all operational aircraft and vehicles on the same Tower frequency has helped prevent many possible incidents over the years. This is because it adds to the situational awareness of everyone using the runway. When someone has made a mistake, controller,


Photo: Phil Parker

pilot or driver, another party on frequency has pointed out the error and thus prevented an unwanted incident occurring.

Hong Kong has dozens of runway crossings every day by freighters, business jets and tows as the cargo and business jet aprons are south of the south runway. All are held short of the runway and contact Tower south before being cleared to cross. This also does away with excessive coordination between the Tower Controller and Ground Controller and the timing of any cross can be more finely tuned.

What has really surprised me is that there are many airports around the world that do not follow this simple rule. If you take the time to look through the **Skybrary Accident and Serious Incident Reports**, you will find a large number involve confused and failed coordination at airports where an aircraft or tow has been cleared to cross a runway by the Ground Controller or an assistant had been the person responsible for the clearance, using a frequency other than the runway operational frequency.

There have been at least four of these incidents at Barcelona, Spain when the Ground Controller has cleared aircraft to cross the active runway. In Australia, there has been at least 3 major incidents over the years: Sydney, in 1990 between a departing B747 and a B747 tow crossing the runway; Brisbane, in 2006 between a vehicle and a B737; and Adelaide, in 2016 between a Fokker F50 and an A320.

By far the worst was Sydney in 1990 where the departure made an early rotation and cleared the towed B747 by 100 feet. Although this incident occurred 27 years ago, it is interesting to note that the first recommendation made in the report was: "*The complete runway complex remain under the jurisdiction of the aerodrome controller (ADC 1) during SIMOPS and Multiple Runway operations*".

The Adelaide incident was an aircraft that crossed the runway ahead of a landing aircraft without a clearance. Although the crew made a mistake, they were on the Ground frequency and therefore lacked the situation awareness of the runway operations when they crossed. The Brisbane incident in the Safety Actions of the report contains the following: "*Airservices Australia has indicated that it is actively considering and pursuing the concept of having all runway crossings occurring on the ADC frequency*". This was over 10 years ago and still nothing has been done.

In April 2016, at Jakarta's second airport a Boeing 737, on take-off, collided with an ATR42- 600 under tow. While both the departing aircraft and vehicle had been properly cleared, the vehicle had received its clearance on the ground frequency whereas the aircraft had received theirs on the TWR frequency.

The serious near-collision between a towed B747 and a departing B767 that occurred at Amsterdam Airport in 1998 also had a contributing cause of the towing vehicle communicating with an assistant controller on a different radio frequency. I realise that many aerodrome layouts may preclude the full adoption of the ICAO recommendations in Doc 4444 Pans ATM and Doc 9870.

Preventing Runway Incursions with regard all runway operations being on the same operational frequency. This however, is no excuse for not following ICAO procedures when able. Compliance with ICAO recommendations is a virtually no cost safety improvement. ✈

**philatcinhk@gmail.com**

## REFERENCES

**Doc 4444**

Para 7.1.1.3

The functions of an aerodrome control tower may be performed by different control or working positions, such as:

a) aerodrome controller, normally responsible for operations on the runway and aircraft flying within the area of responsibility of the aerodrome control tower;

b) ground controller, normally responsible for traffic on the manoeuvring area with the exception of runways;

Para 7.6.3.1.2.1 For the purpose of expediting air traffic, aircraft may be permitted to taxi on the runway-in-use, provided no delay or risk to other aircraft will result. Where control of taxiing aircraft is provided by a ground controller and the control of runway operations by an aerodrome controller, the use of a runway by taxiing aircraft shall be coordinated with and approved by the aerodrome controller. Communication with the aircraft concerned should be transferred from the ground controller to the aerodrome controller prior to the aircraft entering the runway.

**Doc 9870 Preventing Runway Incursions**

Para 2.4 - Air Traffic Control Factors

The most common controller-related actions identified in several studies of ATC related runway incursions are:

...

(d) crossing clearance issued by a ground controller instead of air/tower controller;

Para 4.2 - Communications

4.2.5 Conduct all communications associated with runway operations in accordance with ICAO air-ground radiotelephony communications language requirements (Annex 10 — Aeronautical Telecommunications, Volume II, Chapter 5 and Annex 1 — Personnel Licensing, Chapter 1 refer). The use of standard aviation English at International aerodromes helps provide situation awareness of everyone listening on the frequency.

4.2.6 Conduct all communications associated with the operation of each runway (vehicles, crossing aircraft etc.) on the same frequency as utilised for the take-off and landing of aircraft.

# AVIATION AND ATC IN MYANMAR

## Substantial growth after ending international isolation

by Lui Li, Hong Kong TWR controller and Mike O'Neill, IFATCA EVP Asia/Pacific region

Since 2010 Myanmar, officially the Republic of the Union of Myanmar but also known as Burma, has been gradually opening up after decades of isolation and military rule. Yangon (also known as Rangoon) remains the country's economic hub and historic capital, even after the capital officially moved to Nay Pyi Taw in 2005.

### Yangon Airport

The Yangon airport was built on the former World War II airfield RAF Mingaladon in 1947 by the Calcutta Metropolitan Airports Authority.

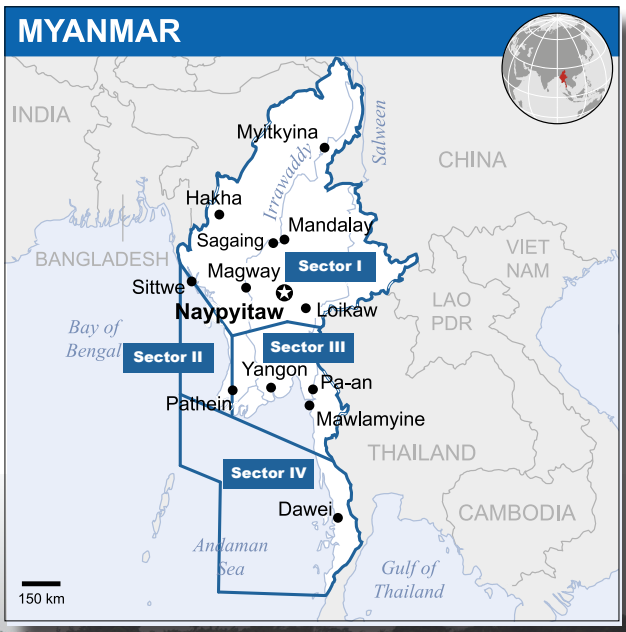
Once the primary airport serving Southeast Asia, the airport fell into disrepair and remained that way for decades, as new super-hubs like Singapore Changi Airport, Bangkok Suvarnabhumi Airport and Jakarta Soekarno-Hatta were built and superseded Yangon's facilities. In June 2011, the government of Myanmar announced plans to expand the airport.

By 2014, some 4 million passengers made use of the airport, well above the targeted capacity of 3.7 million.

To accommodate the increased demand, new international and domestic terminals were constructed by a consortium led by an affiliate of Asia World. The new international terminal (T1) opened in March 2016, with the previously existing international terminal being designated as T2. The new domestic terminal (T3) opened on December 5, 2016.

### Tower

The Yangon control tower is situated next to the main terminal building. It oversees the single runway (03/21, 3414m long). They have one ground control position, one tower control and a non-radar approach control which uses a radar as a reference tool. The runway has a couple of perpendicular exits which enables aircraft to vacate without backtracking. Landing




*Aircraft on the Yangon apron*

Photo: Z3144228 - Own work, CC BY-SA 4.0, via wikimedia


✈ *Where most centres ban smart phones, Yangon ACC has banned shoes...*

spacing can be reduced to 5 Nm at busy time of the day with the aid of the reference radar. As in other places ground control is partially blocked by the terminal building and uses CCTV to get a complete view of the apron.

## Area Control

The area control centre is located besides the tower. They have Kolkata (Calcutta, India) airspace neighbouring to the west, Kunming (Yannan province, China) to the north, Bangkok (Thailand) and Laos to the east. The airspace itself is divided into 4 sectors: sector I controlling the northern Burmese territory, sector II and III controlling the southern Burmese territory and sector IV controlling the oceanic traffic above the Andaman Sea. Sector II and III are normally manned by one controller during quiet hours. Their air traffic management system is designed by French company Thales. It combines paper strips with a mouse-based interface.

In addition to the ATC service provided, they also use HF to provide non-radar flight information service. While their main air traffic management system had ACC coordination functionality, they switched to using IDD instead for better reliability.

The airport and airspace is shared with military operations, which can present some major challenges to the controllers.

And last but not least, Yangon controllers are required to take off their shoes before entering the operations room! ✈

**mike.oneill@ifatca.org**


✈ *The former VIP terminal at Yangon airport will act as a connector between the new terminals 1 & 2*

Photo: © Michael Coghlan via Flickr

# KEEPING UP TO DATE

## Croatia Control deploys new briefing and information management system

**by Tomislav Lovrek, VIBE Product Manager**

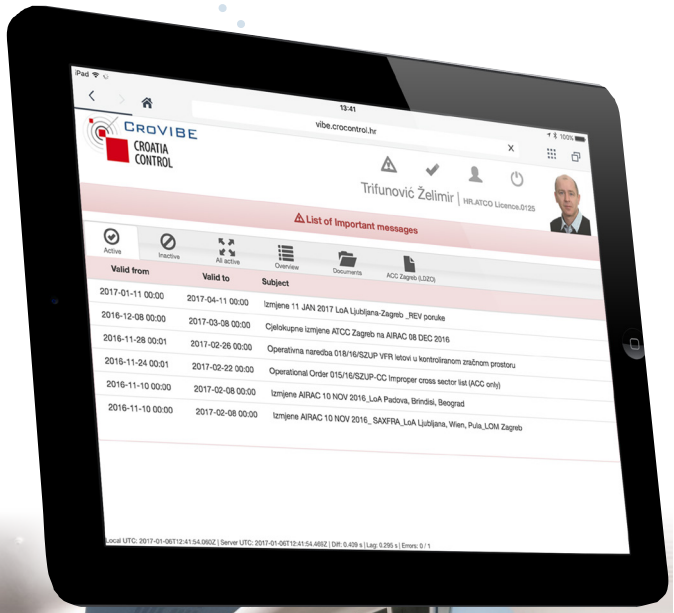
Aviation is a fast-changing business and air traffic management has to keep up to date in order to provide their customers with the safest and most efficient service.

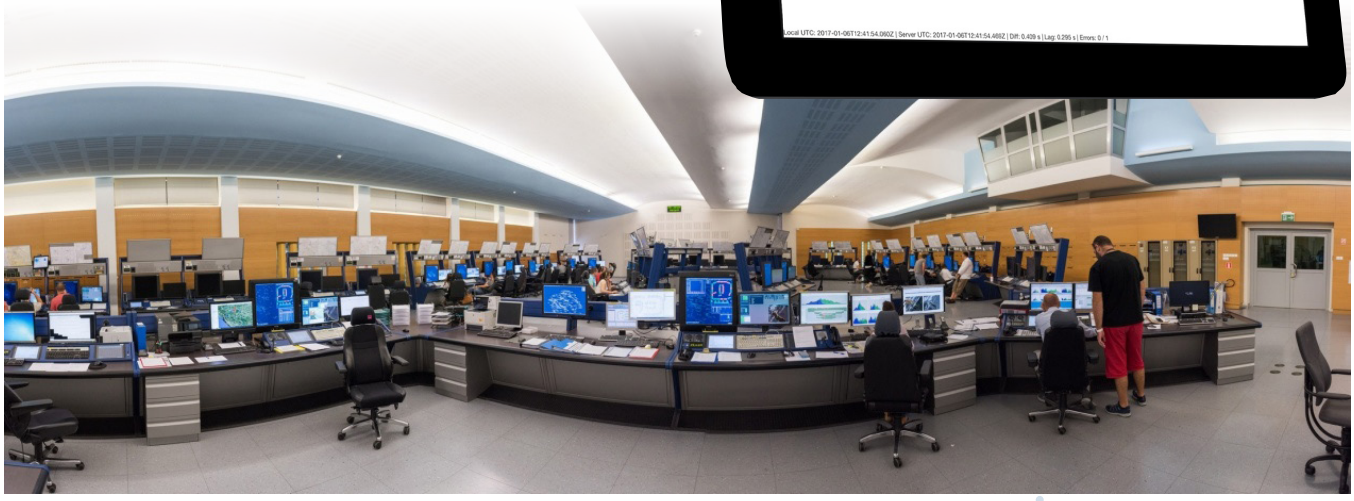
Looking for a way to keep their staff updated, Croatia Control Ltd, the Croatian Air Navigation Service Provider, recognised a need for an appropriate way of communicating with operational staff. This included fast and secure electronic correspondence, quick access to all operational documents (operational orders, letters of agreement, local operational procedures ...), details of individual ratings, medical certificates and rostering information.

For Zagreb ACC and all of its tower and approach units, Croatia Control needs a lot of data to be delivered to and absorbed by operational staff in different locations. Changes and updates need to be distributed in such a way that they can easily be accessed by operational staff.

To do this, they commissioned a customized version of a commercially existing system to be adapted to their processes and organization – and that is how CroVIBE was born. In close cooperation with Croatia Control, EDGE Group tailored their VIBE tool to create a multi-level briefing system, which provides staff with quick and transparent access to relevant operational documents. A trial started in November 2016 and the system is planned to become fully operational in the spring of 2017.

Project manager, Mr. Želimir Trifunović, who is also chief operational technology at ACC Zagreb, elaborates: "We use CroVIBE system in our everyday operations and also for training of our staff. It currently consists of four modules: Briefing, Competency,



Rostering, CBT (Computer Based Training). The system is tailored to provide maximum accessibility, while maintaining simplicity in everyday operations."

One of the main goals was to maximize documentation transparency and fast access to the needed documents. Every user of the system can access any document in just a few clicks. Each staff member is provided with a tablet, which can be used to access the system. The contents can also be accessed using a standard browser on any other device even from outside the premises, over a secured connection.

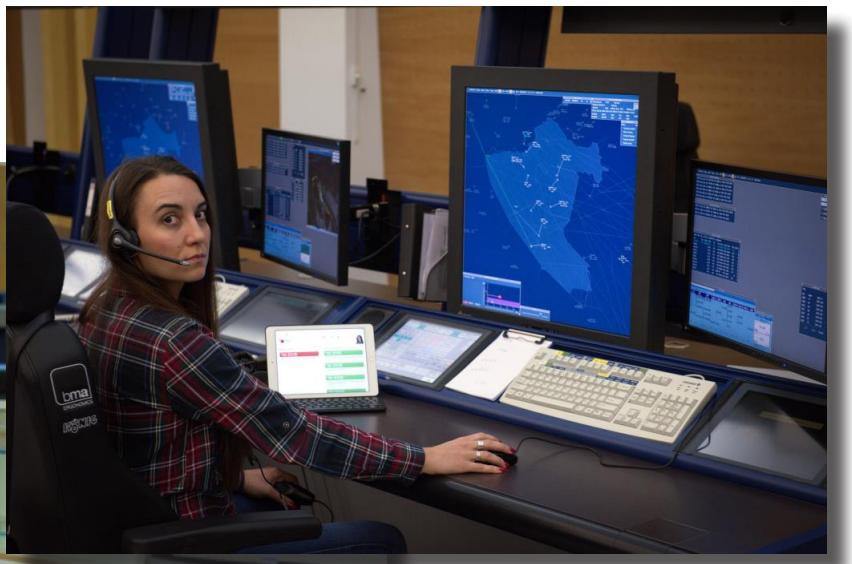
The system is set up to comply with the company's hierarchical structure. It provides all the information that each individual staff member should have access to depending on his function and the functions of his unit.

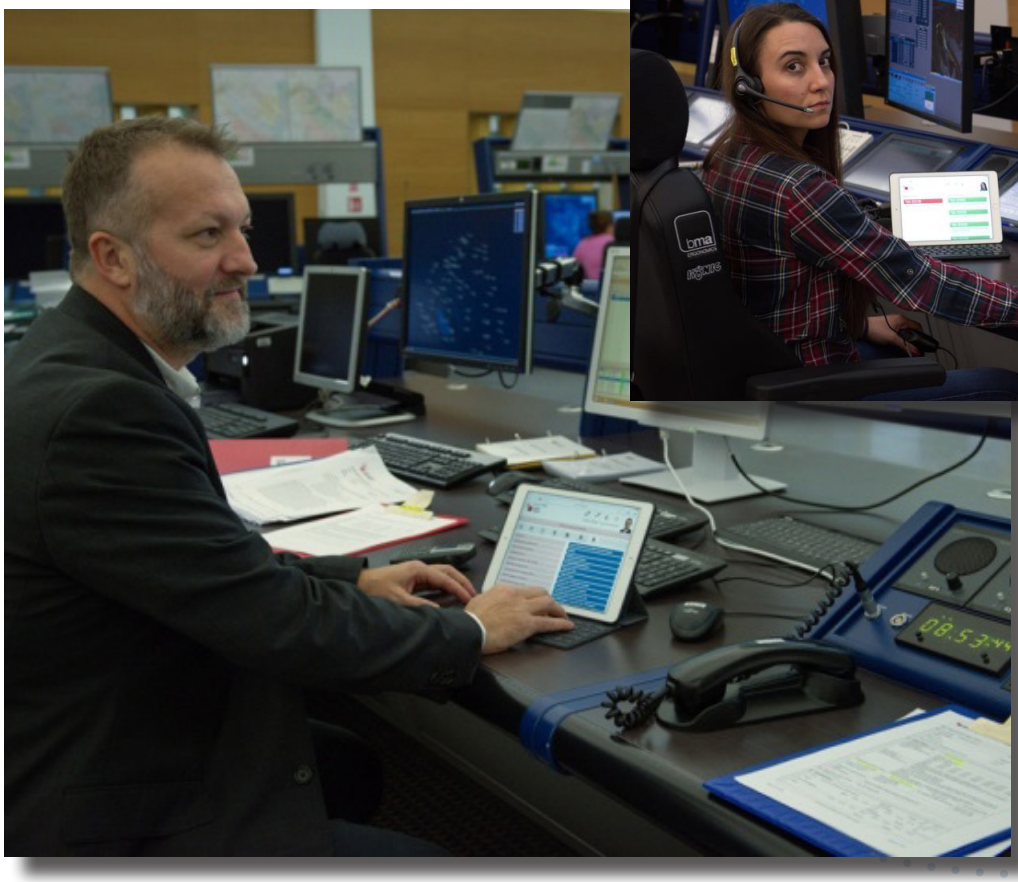
Staff briefings are really quick and easy to use. The competency module provides adequate insight in the processes of training and reviewing through digital training memos and operating staff review digital memos. Certain types of training can be performed through the Computer Based Training component of the system.

Towards the end of 2017, a rostering module will be implemented. This module will be interactive and will provide staff with a way to arrange their duties in accordance with the laid-down rules and restrictions.

As Supervisor and ATCO, Mr. Željko Oreški uses CroVibe every day. In the beginning of the shift, he can get an overview of all his colleagues that are on duty that day, including any competency limitations if there are any. After using the system over the past months, it's nice to see that all necessary documentation is now in one place, very easily available and logically sorted. Best of all, everything is only a few clicks away. It's easy to see who's working on certain days, even in other units. Similarly, control staff can easily track the hours they need to satisfy the competency scheme.
As a controller on position, one can look up some obscure call sign or anything related to aeronautical data that a pilot may ask, including cross checking a flight plan using the sky vector application. Before a break, it will even show you what is on the menu in the company restaurant!

More information on the system and contact details can be found via **http://vibe-solution.eu**. ✈





# TOUCH AND GO 2016

## Romania hosts 6th European controllers' basketball tournament

by Bogdan Popa, member 2016 CBC Organising Committee and Aleksandar Miskovic, Head of the CBC Organising Committee

In what has become an annual tradition, controllers from Eastern and Central Europe meet at the end of November to showcase their basketball skills during the Touch and Go Controllers' Basketball Cup (CBC). This year's edition was 5th tournament overall and the 4th consecutive year that this fast-growing tournament was held. The first 4 editions took place in Vršac, Serbia. Last year, 10 teams from 8 different countries competed in the charming resort of Sveti Martin na Muri, in northern Croatia.

For this year's edition, Romania took their turn to organize the tournament, which included trying to attract new teams and new people to this wonderful event. The city of Timisoara in the western part of the country was the chosen venue for the 2016 edition.

The city benefits from its central location to many of the participating countries. The hotel chosen for the occasion was Hotel Timisoara, a 4-star hotel located right in the centre of the city, while the games were played in the city's main arena, the Olimpia Sports Hall. This venue hosted several matches of the EuroBasket Women 2015 tournament and has a capacity of 2000 seats.

As it turned out, the location was perfect and there was a record number of people attending the tournament: 195 registrations and 14 teams from 11 different countries. As there were four additional teams compared to last year, the tournament format had to be reviewed to squeeze all matches into the two days.

On Friday 25th of November, the group stage took place. The teams were divided into four groups: two groups of four and two of three teams. The top four teams of the previous edition were distributed across the four groups. The top two teams from each group went on to play the quarter finals.

While the winners went on to the semifinals, the four losers of the quarter finals went on to compete for the Plate trophy. The 3rd and 4th placed teams from each group competed for the Vase trophy. The second day of the tournament was a big success. Apart from the matches themselves, there was a selfie booth, a brass band playing the different national anthems, cheerleaders and a great public announcer. This made for a lively atmosphere throughout the day. All the matches were livestreamed via YouTube, so everybody who could not attend in person was able to see their friends/colleagues/family members play.

Team Romania successfully defended their title, winning the competition for the 4th year in a row by beating Croatia in the final. Team Montenegro won the Plate tournament (5th place overall) and Team Italy 1 won the Vase tournament (9th place overall). This year, there were 3 new

teams playing in the CBC Basketball Cup (ACC Prague, Bulatsa Control and Montenegro ATCAM), and hopefully this will be an ongoing trend in the following editions too, as all of us involved in the organization and promotion of the Touch and Go tournament would love to see it grow.


*CroatiaControl vs Italy*
Photo: Sladana Subasic

In the end, there were winners and losers on the court, as it is supposed to be in every tournament, but off the court we think that the bonding, the friendships that are starting to gel, the wonderful memories from all the parties that took place after the games will last much more than the results in basketball.

In the end, a special thanks to RA Romatsa, the main sponsor of this tournament, without whom none of this would have taken place and also to the very few people that actually organized every little detail associated with organizing such a big event, but who in the end were extremely proud of what they achieved.

As our goal is to promote sports and friendship, we are keen to gather more teams each year. Any ATC interested to take place and participate to the next tournament can gain any information needed by writing us on email **touchandgocbc@gmail.com**. The venue for the next edition will be announced in the coming months.

**aleksandar.miskovic@smatsa.rs**

✈ *Team Romania ATC won the tournament for the 4th year running*

Photo: BamBam Photography


| FINAL STANDINGS | |
|---|---|
| Rank | Team |
| 1 | Romania ATC |
| 2 | Croatia Control |
| 3 | ATC Beograd I |
| 4 | ATC Ljubljana |
| 5 | Montenegro |
| 6 | ATC Beograd II |
| 7 | HungaroCon-Trolls |
| 8 | Milano Radar |
| 9 | Italy I |
| 10 | ACC Prague |
| 11 | Bosnia-Hercegovina |
| 12 | Hellas ATC |
| 13 | Bulatsa |
| 14 | Italy II |

✈ *ATC Beograd in action*

Photo: Mihaela Basarab - BamBam photograpy



✈ *Participants from the 14 teams*

Photo: PhotoSociety Studio

# CHARLIE'S COLUMN

charlie@the-controller.net

## Management leading by example...

Las Vegas is home to a small, yet fast growing airline called Allegiant. Note that "small" in US terms still means they have around 3,000 staff and some 85 aircraft, mostly MD-80s and A320's.

Anyway, one day in July, the Vice President Ops and the airline's Director of Flight Safety decided where scheduled to fly as Captain and First Officer from Las Vegas to Fargo, North Dakota. The aircraft had 144 passengers on board.

A NOTAM announced that the airport in Fargo would be closed for a while: the Blue Angels, the US Navy's acrobatic team, was scheduled to practice their routine for an airshow. Unfortunately, the Allegiant flight was delayed by about one hour, which meant they would be arriving in the middle of the acrobatic training session.

That lead to the following R/T exchange between the Allegiant pilots and the Fargo Tower. As is nearly the norm these days, the recording made it to the internet within hours of the event. Enjoy !

**AAY426**: "Our company has been trying to call and we're down circling Fargo. We don't have enough fuel to go anywhere else. Our guys are trying to get in touch with the tower manager to coordinate our landing or I'm going to have to declare an emergency and come in and land."
**Fargo TWR**: "There'll be a window opening in about 20 minutes for a landing."
**AAY426**: "Yeah, I don't have 20 minutes."
**Fargo TWR**: "Roger, unless there is an emergency, there's Grand Forks Airport which is 70 miles to the north."
**AAY426**: "Yeah, listen we're at bingo fuel here in about three to four minutes. I've got to come in and land." *("Bingo fuel" is a military slang term meaning "running on empty.")*
**Fargo TWR**: "You'll have to declare an emergency for that and we would coordinate to get you in."
**Fargo TWR**: "AAY426 you should have known the airport was going to be closed before you left Las Vegas as there were a few NOTAMS on this."
**AAY426**: "OK, yeah. We'll follow up on that."

Finally, the pilot declared an emergency and the TWR controller stopped the Blue Angels practice before clearing the Allegiant for landing.

To add more spice to the story, a local newspaper reported that an Allegiant pilot, who requested to remain anonymous, stated that the VP Operations at the controls has been one of the people in the company that was very vocal on fuel economy, insisting that aircraft take the minimum amount of fuel in order to be lighter and more efficient.

Maybe what happens in Vegas, should stay (grounded) in Vegas...

## Duct tape alternative

Remember the duct tape photos a few issues back? It seems that some airlines think that duct tape is overkill and possibly too expensive.

Indeed, why waste money on buying an expensive brand when a piece of cardboard and packing tape will do the job just fine?

## And now for some exotic photos

The world is a very diverse place and local customs are sometimes, say different.

Like this nice, old but nice taken in Bangkok, Thailand in the 1980s. Talk about an ecological way to tow an aircraft – in this case a Thai Airlines Caravelle – to the gate.

Or, this more recent (2016) one from New Guinea. It's a welcoming ceremony for a brand-new Turbo Caribou arriving from Canada. Just hoping that the crew didn't forget to sign the immigration form...




# Stand With Us!

## COMMUNICATING FOR SAFETY 2017

March 20-22, 2017 • Bally's Las Vegas

*Agenda topics include:*

Improving Safety Through Collaboration • NextGen and Modernization
Pilot-Controller Communications • Runway Safety • Weather

**Register today** natcacfs.com