IAIN

ICAO Report 2019/2020

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ICAO is the International Civil Aviation Organization with its headquarters in Montreal. IAIN has observer status to ICAO meetings.

In the past year I have not attended formal ICAO meetings as IAIN representative. However, I have attended the European ICAO PBN (Performance Based Navigation) Implementation Taskforce meeting in Paris on behalf of my employer.

IAIN has a special interest in moving the subject of True Tracks in Aviation forward. It is our aim to promote the transition from conventional magnetic tracks to true (GNSS) tracks for use on board aircraft and in air traffic control.
I have submitted a paper on the subject, co-authored by Paul Hickley (RIN, †) and Anthony MacKay (NavCanada) to two conferences this year. The paper was accepted by both, but unfortunately neither will take place as scheduled. It was decided to withdraw the paper from the ICINS Conference in Saint Petersburg for the time being. A presentation will be held during the postponed ENC 2020 in Dresden at the end of this year.

In 2019, ICAO established a new version of the Global Air Navigation Plan (GANP). It was accompanied by the GANP Portal which helps States and organizations in establishing their analyses and programs. Attached are the high level Recommendations that were accepted at the 40th ICAO Assembly last October.

Lately global attention has focused on the Corona pandemic. ICAO has taken up its role as global leader and coordinator in the resulting aviation crisis. The organization is constantly coordinating with States and organizations all over the world in order to cope with the current situation and to establish a way forward. Guidance material is made available and ICAO State Letters are provided daily with the latest updates. As the graph below clearly indicates, the collapse in international passenger traffic is completely unprecedented.
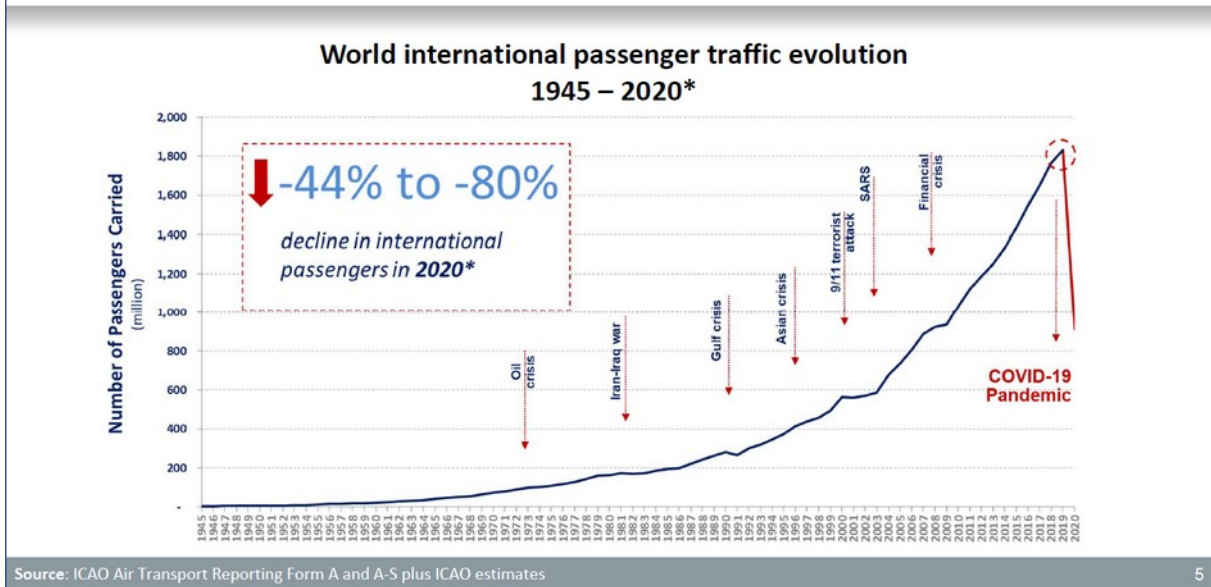
Recommendation 1.1/1 – **Vision and overview** of the Sixth Edition of the Global Air Navigation Plan (Doc
9750, GANP):
ICAO:
g) develop online training and organize regional seminars in conjunction with the planning and implementation regional groups (PIRGs), where possible, for the familiarization of the Sixth Edition of the GANP and support the deployment and implementation of regional and national air navigation plans;

Recommendation 1.3/1 — Air navigation roadmaps
That States:
a) provide ICAO with timely information on their modernization plans and the equipage plans of airspace users

Recommendation 2.1/1 – **Aerodrome capacity** and efficiency enhancement
That ICAO:
e) continue to provide assistance to States in the area of aerodrome certification;

Recommendation 2.2/1 – Long-term evolution of communication, navigation and surveillance systems and **frequency spectrum** access
That States:
a) engage in the spectrum regulatory process to ensure the continued necessary access to and protection of safety-critical aeronautical communications, navigation, and surveillance (CNS) systems;
b) ensure through the implementation of a safety oversight programme that the designated competent authorities are involved in safety case assessments of the radio frequency

environment so as to adequately protect the operational availability of aeronautical CNS systems;

Recommendation 2.2/2 — Global navigation satellite system **(GNSS)** evolution
That States:
a) when defining their air navigation strategic plans, take advantage of the improved robustness and performance offered by dual-frequency, multi constellation (**DFMC**) global navigation satellite system (GNSS) to deliver incremental operational benefits and encourage related industry developments;
b) avoid in principle prohibiting the use of available GNSS elements if they perform according to ICAO Standards and Recommended Practices (SARPs) and can meet all safety and regulatory requirements for the intended operations;
c) avoid mandating equipage or use of any particular GNSS core constellation or augmentation system unless clear operational benefits are offered in return and appropriate consultations have been made with the relevant airspace users;
d) ensure implementation of ICAO provisions for publication of information related to the use of GNSS elements in aeronautical information publications (AIP);
e) take timely action to meet the long-term goal whereby every State accepts for lateral navigation use all GNSS elements that are compliant with SARPs, thus creating a positive environment for DFMC GNSS.
 That ICAO:
f) continue the development of Standards and Recommended Practices (SARPs) and guidance material for existing and future GNSS elements in coordination with recognized standards-making organizations;
g) further develop provisions intended for States and organizations that provide GNSS services regarding publication of service performance standards, regular performance assessment and timely notification of events that may affect the service; and
h) develop additional guidance addressing technical and regulatory aspects to assist States in their acceptance and use of existing and future GNSS elements.

Recommendation 2.3/2 — Further Development of IWXXM for the Exchange of Aeronautical **Meteorological** Information
That ICAO:
c) in close coordination with the World Meteorological Organization (WMO),
1) ensure that the IWXXM format is the only standard exchange format by 2026;
2) develop the policies and procedures necessary to ensure a smooth transition from traditional alpha numeric code (TAC) format to IWXXM format for the purpose of data exchange to support international air navigation, as an interim step toward Regional coordination through METG full IWXXM implementation;
3) promote awareness of the changes brought about by the IWXXM data format, production, dissemination and data exchange among operators; and
4) monitor the status of implementation of IWXXM at State and regional levels

Recommendation 2.3/4 – Development of cost-recovery mechanisms for the provision of aeronautical meteorological information
That ICAO:

a) support the need to expeditiously identify how aeronautical meteorological service provision has changed, how it will continue to evolve, and how these changes (including those arising from the impact of climate change on aviation) may affect the recovery of relevant costs associated with service provision on a global, multiregional, regional, and sub-regional basis;

Recommendation 3.1/1 – Systemwide information management **(SWIM)**
That States:
a) support developments and implementation of system-wide information management;
b) via the mechanism of the planning and implementation regional groups (PIRGs), showcase regional system-wide information management (SWIM) demonstrations, highlighting the operational and economic benefits of SWIM, and evaluate possible transition and mixed-mode scenarios;
c) share information, lessons learned and observations regarding SWIM development and implementation;
d) develop national implementation plans in alignment with regional strategies and priorities and in accordance with the strategy outlined in the Global Air Navigation Plan (Doc 9750, GANP) which would include SWIM;
ICAO:
i) through regional events, and in collaboration with States and industry, promote SWIM and its benefits, as described in the Manual on System-wide Regional coordination through SWIM PT, SWIM/AIM team, future evolution of AFSG, regional workshops and symposia, as well as implementation best practices to the aviation community; and
j) provide assistance to States to support the implementation of Annex 15 —Aeronautical Information Services and Procedures for Air Navigation Services —Aeronautical Information Management (Doc 10066, PANS-AIM).

Recommendation 3.2/1 — **Trajectory**-based operations **(**TBO**)**
That States, along with stakeholders:
a) continue to provide ICAO with the developments and lessons learned from air traffic management (ATM) modernization programmes;
b) work through ICAO to identify and address, not only potential issues, but also opportunities such as the improved management of global traffic flows through a global network-centric approach to ensure the successful development and implementation of trajectory-based operations (TBO);
c) through the mechanism of the planning and implementation regional groups (PIRGs), integrate current implementation efforts with regional transition plans for flight and flow information for a collaborative environment (FF-ICE), system-wide information management (SWIM) and TBO;

Recommendation 3.3/1: **Network** operations **(**NOPS**)**:
That ICAO:
d) support, through its Regional Offices, the sharing of best practices and the advancement of technical cooperation agreements between States in order to implement ATFM.

Recommendation 3.4/1 – **Civil-military** collaboration
That ICAO:

f) consider, where possible, the inclusion of civil-military cooperation and collaboration subjects at ICAO events, and highlight the participation of military authorities in relevant State letter invitations.

h) promote civil-military coordination and cooperation of best practices, and provide forums and other opportunities, such as regional symposiums, for States to exchange best practices; and

i) explore opportunities to provide guidance to enhance safety at joint civilmilitary aerodromes and to assist States in the promulgation of clear procedures for airspace access requirements.

Recommendation 3.5/1 – ICAO location indicator system and database of **significant points**
That States and industry stakeholders:
a) urgently complete the population of the ICAO International Codes and Routes Designators (ICARD) database with all five-letter name codes (5LNC) used worldwide to ensure the accuracy of the database;
b) ensure that whenever a 5LNC that is used for military purposes is published in an ICAO Aeronautical Information Publication (AIP) and consequently coded into aircraft flight management system (FMS), such 5LNCs are coordinated through the ICARD process;
That ICAO:
c) continue to address the limitations of both location indicator and 5LNC availabilities in the short-term and determine a long-term solution;
d) consider, when developing such solutions, the need for global harmonization and interoperability;
e) continue with its efforts to improve awareness and training on the use of ICARD in the regions that do not actively use ICARD;
f) continue to work towards removing duplicated 5LNCs and sound-like conflicts; and
g) implement improvements to the ICARD database functionality, including the use of maps depicting flight information regions (FIRs), more information regarding 5LNC history and sound-like proximity checks

Recommendation 4.1/1 – State National Development Plans
That States:
a) establish a defined connection between their air navigation and safety plans, as well as other relevant national plans;

Recommendation 4.2/1 – Implementation of **minimum** air navigation services
That ICAO:
c) in coordination with the planning and implementation regional groups (PIRGs) and by making use of existing reporting mechanisms, verify the provision of the minimum air navigation services for international civil aviation, as outlined in the BBB framework, through the methodology for the identification of air navigation deficiencies against the regional air navigation plans;
d) develop the necessary tools to support the PIRGs in the verification of the provision of the basic building block (BBB) services at the regional and national levels;
e) coordinate the interoperability of systems and harmonization of procedures at a regional level, through the PIRGs, in relation to the use of advanced technologies and concepts of operations,taking into account global requirements;

f) in line with the No Country Left Behind (NCLB) initiative, provide the necessary technical assistance to States for the provision of basic air navigation services as identified by the PIRGs and as reflected in State national air navigation plans;

Recommendation 4.3/1 – Improving the **performance** of the air navigation system
That States:
a) adopt and adapt as needed, the six-step performance management process for the planning and implementation of air navigation improvements and reflect this process in their national air navigation plans;
b) align their national air navigation plans with regional plans to attain a globally harmonized performance management process and support the achievement of Regional coordination through the global performance objectives;
c) support ICAO in promoting the No Country Left Behind (NCLB) initiative and reaffirm their commitment to the development of timely and accurate national air navigation plans aligned with regional and global plans;
That ICAO:
d) encourage the planning and implementation regional groups (PIRGs) to embrace a performance-based approach for implementation and adopt the six-step performance management process, as described in the Manual on Global Performance of the Air Navigation System(Doc 9883), by reflecting the process in Volume III of all regional air navigation plans;
e) continue to expedite the work on performance indicators related to the Global Air Navigation Plan (Doc 9750,GANP), including review of the work by an appropriate group of performance experts and consider establishing such an expert group under the Global Air Navigation Plan (GANP) Study Group ;and
f) examine possible operational incentives in the development of new air traffic management (ATM) concepts.

Recommendation 4.3/2 – Regional and national collaboration and implementation initiatives
That States:
a) adhere to the implementation commitments agreed at the regional level, and reflected in the regional air navigation plans, in order to effectively deploy regional initiatives;
e) support the implementation of ICAO initiatives to improve the efficiency and effectiveness of regional processes;
That ICAO:
g) encourage States, regions and international organizations to support cross-border, interregional and intraregional collaborative planning, activities and projects, supporting effective, efficient Regional coordination ;
i) urge States, in coordination with the industry, to support the implementation of regional priorities;

Recommendation 4.4/1 – Search and rescue **(SAR)** and the Global Aeronautical Distress and Safety System **(GADSS)**
That States:
a) through the planning and implementation regional groups (PIRGs),examine the possibilities of combining their respective capabilities to improve search and rescue (SAR) effectiveness;

b) take advantage of the PIRGS to actively promote the establishment of bilateral or multilateral SAR agreements;
c) support regional initiatives to implement SAR by organizing high level conferences in coordination with ICAO, industry and international partners;
ICAO:
e) organize regional SAR seminars and/or workshops to facilitate implementation of the Global Aeronautical Distress and Safety System (GADSS);

Recommendation 5.2/1 — **Very low** altitude operations
That States:
a) collect and share information regarding very low altitude operations, including on unmanned aircraft systems traffic management (UTM) systems, autonomous operations initiatives and tactical risk assessment models;

Recommendation 5.3/1 — Remotely piloted aircraft systems **(RPAS)**
That States:
a) collect and share information on remotely piloted aircraft systems (RPAS) operations;

Recommendation 5.4/1 – **Cyber** resilience
That States:
a) in coordination with stakeholders, provide the necessary support for ICAO to evolve the global trust framework as an enabler of flight operations in a digitally connected environment;

Recommendation 7.1/1 — **Data** driven decision-making
That States:
a) implement data-driven decision-making processes, taking into account the ICAO safety and air navigation indicators, within their safety and air navigation activities and to build data analysis capacity;
ICAO:
l) support regional mechanisms and platforms that enable States and industry stakeholders to share and align safety priorities in support of the RASGs.

Recommendation 7.2/1 –Strengthening RSOOs
ICAO:
c) support better alignment and harmonization between PIRGs and RASGs while maintaining the safety framework of the RASGs through consultation with Member States;

Recommendation 7.2/2 — ICAO Runway Safety Programme —Global **Runway Safety** Action Plan
That ICAO:
e) continue to lead and coordinate the runway safety programme with its partner organizations to work together to mitigate runway safety-related risks.

Recommendation 7.3/1 – ICAO implementation strategies
ICAO:

c) further improve the planning and implementation regional group (PIRG) and regional aviation safety group (RASG) mechanisms to enhance the coordination and alignment of implementation between regions;

Recommendation 7.3/4 –Regional Office Resources for implementation activities
That ICAO:
a) give due consideration in the allocation of resources to regional offices for the support of implementation activities;

Recommendation 8.1/1: Measures to proactively address emerging issues
ICAO:
b) urge the regional aviation safety groups(RASGs) or other regional organizations, including regional safety oversight organizations (RSOOs), to institute a process for addressing emerging safety issues based on a data-driven analysis;
c) urge States, regional entities and industry to participate actively in regional and sub-regional studies on emerging safety issues conducted by the RASGs;
i) based on data from regional aviation safety groups, develop a study on the subject of objects falling from aeroplanes and guidance material on preventive measures.