THIRTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 9 to 19 October 2018

REPORT OF COMMITTEE A TO THE CONFERENCE ON AGENDA ITEM 4

The attached report has been approved by Committee A for submission to the Plenary.

Alexis Brathwaite
Committee Chairperson

Note.— After removal of this covering sheet, this paper should be inserted in the appropriate place in the Report Folder.[*]

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[*] (11 pages)

Agenda Item 4:   Implementing the global air navigation system and the role of planning and implementation regional groups (PIRGs)
4.1: The economic benefits brought by aviation

4.1   Investing in air transport is an enabler for sustainable development and the need for it to be afforded the appropriate level of importance in a State's national planning framework was highlighted in AN-Conf/13-WP/24, presented by the Secretariat, AN-Conf/13-WP/138, presented by the Dominican Republic, and AN-Conf/13-WP/193, presented by the International Council of Aircraft Owner and Pilot Associations (IAOPA). The Committee recognized the importance of global, regional and national plan alignment with the United Nations 2030 Sustainable Development Goals (UN SDGs). Including aviation in a State's national planning framework would facilitate and increase the possibility of aid and the flow of funding into the air transport sector. The Committee also highlighted the importance of reinvesting the resources generated by aviation in the modernization of the air navigation system to ensure its sustainability.

4.2   With the expected doubling of air traffic by 2030, the Committee recognized the importance of general aviation (GA) as an entry point and training ground for both GA and commercial operations to meet the expected demand as emphasized in AN-Conf/13-WP/193. The Committee recognized that regulation should be proportional to the risk and, consequently, commercial air transport regulations were not always best suited for GA. The Committee also noted that States could benefit from national consultative bodies on GA matters.

4.3   The Committee further recognized, as emphasized in AN-Conf/13-WP/24 and AN-Conf/13-WP/138, the need for ICAO to engage with States to promote the importance of aviation development taking into consideration environmental and socio-economic aspects and to develop the needed guidance and training for States.

4.4   Information paper AN-Conf/13-WP/58, provided by the United States, was noted.

4.5   As a result of the discussion, the Committee agreed on the following recommendation:

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;

b)   include clear references to the United Nations Sustainable Development Goals (UN SDGs) in their air navigation and safety plans, as well as in other relevant national plans, with the objective of showcasing the contribution of aviation to the UN SDGs and national economies;

That ICAO:

c)   engage with States to promote the importance of aviation development, taking into consideration environmental and socio-economic aspects, and to include aviation within their relevant national plans, and as necessary, national budgeting, which might be vital to unlocking funding for aviation needs; and

d)   develop guidance for States to include aviation within their relevant national plans taking into consideration global and regional planning.

Agenda Item 4:   Implementing the global air navigation system and the role of planning and implementation regional groups (PIRGs)
                   4.2: Implementing BBBs and minimum service Standards

4.6   Civil aviation can continue to promote socio-economic development provided that there is a safe, secure, efficient and environmentally sustainable air navigation system in place. The Committee highlighted the importance of providing the essential air navigation services outlined in the draft basic building blocks (BBB) framework in AN-Conf/13-WP/25 presented by the Secretariat.

4.7   The Committee noted the relationship between the proposed BBBs and the aviation system block upgrades (ASBUs) and their relationship with the regional air navigation plans. In this regard, while the proposed BBBs were the mandatory services to be provided for international civil aviation according to ICAO Standards and Procedures for Air Navigation Services (PANS), the ASBUs were a group of operational improvements to improve the performance of the air navigation system on a voluntary basis. Accordingly, the provision of the proposed BBBs was aligned with Volumes I and II of the Regional Air Navigation Plans while the planning and implementation of the ASBUs were addressed in Volume III. Therefore, at the national level, States should verify the provision of the proposed BBBs before implementing the operational improvements within the ASBUs.

4.8   In this regard, the Committee agreed that the essential services outlined in the proposed BBB framework should be the foundation of any robust air navigation system and therefore, States and ICAO should provide the necessary technical assistance and establish an effective process, in cooperation with the planning and implementation regional groups (PIRGs) and by making use of existing regional reporting mechanisms, to verify the provision of these services at a regional and national level. To this end, the Committee requested ICAO to develop the necessary tools to support the PIRGs.

4.9   The Committee also encouraged the use of advanced technologies for the provision of these essential services and agreed that ICAO should work closely with the industry to ensure global interoperability and compliance with local requirements, as proposed in AN-Conf/13-WP/149 presented by the Dominican Republic.

4.10   Finally, the Committee highlighted the importance of reflecting the planning for implementation of the essential services outlined in the BBB framework in national air navigation plans to obtain the required funding, if necessary.

4.11   As a result of the discussion, the Committee agreed on the following recommendation:

Recommendation 4.2/1 – Implementation of minimum air navigation services

That States:

a) consider the use of more advanced technologies and procedures, in coordination with international organizations and industry stakeholders, to provide the minimum air navigation services for international civil aviation, taking into account the principles of global interoperability and performance specification compliance;

b) include planning for the implementation of the basic services outlined in the basic building blocks (BBB) framework within their national air navigation plans;

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; and

g) urge the aviation manufacturing industry to create a testing environment for States to justify procurement decisions which guaranty interoperability and system functionality within local specific environments, as a follow-up to the provision of basic air navigation services.

Agenda Item 4:   Implementing the global air navigation system and the role of planning and implementation regional groups (PIRGs)
4.3: Implementing ASBUs for performance improvement

Performance-based approach for implementation

4.12   The Committee noted that, to prioritize future investments and to improve system performance, the Global Air Navigation Plan (Doc 9750, GANP) encouraged the adoption of a globally harmonized performance management process for the modernization of the air navigation system and the implementation of operational improvements within the aviation system block upgrade (ASBU) framework, as presented in AN-Conf/13-WP/11 presented by the Secretariat and supported by AN-Conf/13-WP/137 presented by Colombia, AN-Conf/13-WP/108 presented by Japan, Singapore and the United States, AN-Conf/13-WP/238 presented by the Republic of Korea and AN-Conf/13-WP/91 presented by the United Arab Emirates. In this regard, the Committee welcomed the reminder of the six-step performance management process described in the Manual on Global Performance of the Air Navigation System (Doc 9883), as well as the clarification of the difference between implementation and performance metrics described in AN-Conf/13-WP/11.

4.13   A list of potential key performance indicators (KPIs), proven to allow for meaningful performance assessments, had been published as part of previous editions of the GANP and allowed air navigation services providers (ANSPs) with differing maturity in their performance management processes, to measure their performance in differing resolution. The Committee acknowledged the varied levels of maturity in ANSPs' data management processes and noted that, for this reason, the development

of SARPs and Procedures for Air Navigation Services (PANS) to define global performance-based requirements for the provision of air navigation services was not possible at the moment. The Committee highlighted, however, the benefits of defining performance-based requirements at regional and national levels according to available resources and specific needs as emphasized in AN-Conf/13-WP/11, AN-Conf/13-WP/157 presented by Colombia, AN-Conf/13-WP/156 presented by the Dominican Republic, AN-Conf/13-WP/108, AN-Conf/13-WP/69 presented by South Africa, AN-Conf/13-WP/91, and AN-Conf/13-WP/281 presented by the Member States of the Central American Corporation of Air Navigation Services (COCESNA).

4.14   The Committee also recognized that many challenges could arise from the establishment and implementation of KPI measures and performance management processes. Therefore, to address these challenges, ensure global harmonization, promote collaboration among all stakeholders and join efforts on implementation, the Committee agreed that ICAO should assist States in the understanding and application of a simplified ASBU methodology, through the six-steps performance management process.

4.15   Pressing work to be done on performance included: the development of implementation indicators and new key performance indicators and review the current key performance indicators (KPIs) based on actual and relevant data; the definition of their interdependencies; the analysis of the costs associated with data collection; the development and update, if necessary, of relevant ICAO guidance material related to performance management processes; as well as the consideration of other input provided to the Conference on this subject. To continue and expedite this work, the Committee requested ICAO to consider the establishment of a group of performance experts under the GANP Study Group. The Committee requested the use of the GANP Portal to make the performance information available.

4.16   The proposal to list possible operational incentives during the development of new air traffic management (ATM) concepts in AN-Conf/13-WP/165, presented by the International Coordinating Council of Aerospace Industries Associations (ICCAIA) and the International Air Transport Association (IATA), was also agreed by the Committee.

4.17   To attain a globally harmonized performance management process, the Committee agreed on the importance of collaboration at all levels and among all stakeholders for the collection of data and global, regional and national planning alignment as emphasized in AN-Conf/13-WP/99, presented by the United Arab Emirates, and AN-Conf/13-WP/11 and AN-Conf/13-WP/91.

Regional and national implementation initiatives and processes

4.18   The Committee acknowledged the efforts and applauded the regional initiatives outlined in AN-Conf/13-WP/156 presented by the Dominican Republic, AN-Conf/13-WP/218, AN-Conf/13-WP/219, AN-Conf/13-WP/220, AN-Conf/13-WP/223, all presented by the African Civil Aviation Commission (AFCAC)1, AN-Conf/13-WP/284 presented by the Agency for Air Navigation

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[1] Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cap Verde, Central African Republic, Chad, Comoros, Congo, Cote D'Ivoire, Democratic Republic of The Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Eswatini, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Republic of Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome And Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Togo, Tunisia, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

Safety in Africa and Madagascar (ASECNA2) and AN-Conf/13-WP/281. The Committee acknowledged the improvement on the performance of the air navigation system made by these initiatives.

4.19   In particular, the Committee encouraged ICAO's support to regional initiatives, cooperation among States, collaboration with the industry, initiatives to improve the efficiency and effectiveness of regional processes and the participation of high level authorities in the process of decision-making for planning and implementation. The Committee also acknowledged the benefits of a peer review process in improving the provision of regional air navigation services, as well as regional instrument flight procedure design programmes.

4.20   The Committee encouraged the sharing of surveillance data and highlighted the importance of investing in surveillance systems. At the same time, the Committee acknowledged the need for States and services providers to consider the development of all required communications, navigation, and surveillance (CNS) infrastructure for these systems, in support of agreed operational and safety requirements.

4.21   At the national level, AN-Conf/13-WP/143, presented by China, outlined a method of managing approvals for required navigation performance (RNP) authorization required (AR) approaches which aimed to minimize additional workload by developing public RNP AR procedures available for all approved operators. The Committee was informed that work related to this topic was ongoing within the appropriate expert groups and, noting the strong support for this initiative, agreed that ICAO should finalize this work considering the method outlined in the working paper.

From development to implementation of SARPs

4.22   The Committee was informed that, following AN-Conf/12 Recommendation 6/13, Development of Standards and Recommended Practices, procedures and guidance material, ICAO implemented a project-based approach, which took into account the GANP, to better support the development and implementation of SARPs. The Committee was also informed that the recommendations such as the States' readiness to implement the SARPs in AN-Conf/13-WP/292, presented by the International Business Aviation Council (IBAC), would be considered in the improvement of this approach.

4.23   The Committee acknowledged that the development and implementation of performance-based SARPS is challenging and agreed that, prior to the adoption of provisions, guidance material should be available, impact assessment should have been performed and a structured regional approach to support implementation, through the PIRGs, should be in place as outlined in AN-Conf/13-WP/297 presented by IATA.

4.24   Information papers AN-Conf/13-WP/215 provided by Algeria, AN-Conf/13-WP/195 provided by China, AN-Conf/13-WP/267 provided by Saudi Arabia, AN-Conf/13-WP/261 provided by the United Arab Emirates and AN-Conf/13-WP/285 provided by ASECNA were noted.

4.25   As a result of the discussion, the Committee agreed on the following recommendations:

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[2] Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Equatorial Guinea, France, Gabon, Guinea-Bissau, Madagascar, Mali, Mauritania, Niger, Senegal, Togo

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 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;

b) cooperate among themselves and with the industry to strengthen State implementation provisions within the framework of the No Country Left Behind (NCLB) initiative;

c) plan the modernization of their air navigation system together with all stakeholders, based on local needs and available resources, taking into account regional and global commitments;

d) recognize the important contribution being provided by the Africa-Indian Ocean (AFI) Plan towards the implementation of an effective regional framework for the African Air Navigation Services Provider (ANSP) Peer Review Programme to enhance the safety and efficiency of air transport operations in Africa;

e) support the implementation of ICAO initiatives to improve the efficiency and effectiveness of regional processes;

f) encourage the participation of high level authorities in the decision-making process for planning and implementation;

That ICAO:

g) encourage States, regions and international organizations to support cross-border, interregional and intra-regional collaborative planning, activities and projects, supporting effective, efficient and expeditious harmonization;

h) continue to provide support to the African air navigation services provider (ANSP) Peer Review Programme;

i) urge States, in coordination with the industry, to support the implementation of regional priorities;

j) support the implementation of an action plan for the development of aviation infrastructure in Africa under the Comprehensive Regional Implementation for Aviation Safety in Africa (AFI Plan);

k) encourage States and organizations to continue sharing surveillance data to improve safety and efficiency in air traffic management;

l) encourage regional collaboration and coordination as well as the use of incentives when planning the implementation of operational improvements to enable all stakeholders to achieve the benefits expected from the implementation; and

m) encourage African States and industry to continue to work together within the African Flight Procedure Programme (AFPP).

Agenda Item 4:   Implementing the global air navigation system and the role of planning and implementation regional groups (PIRGs)
4.4: Implementing search and rescue (SAR) processes and procedures

4.26   AN-Conf/13-WP/10, presented by the Secretariat, recalled the importance of regional cooperation and collaboration to improve search and rescue (SAR). It underscored that the implementation of the Global Aeronautical Distress and Safety System (GADSS) would improve the effectiveness of SAR, while providing an opportunity to review and enhance existing SAR procedures. The Committee, noting the existence of critical deficiencies in the provision of SAR services in various parts of the world, agreed on the importance of enhancing SAR services. The point was also raised that as

helpful as the GADSS CONOPS was in providing valuable information on the direction that ICAO had taken and was likely to take in the future, there was still an important role for States to fully assess the impact of these provisions and to have the opportunity to formally comment on them. In that regard, the Committee recognized that more ICAO provisions would be necessary to support the current Annex 6 — *Operation of* Aircraft GADSS-related Standards, and address, in particular, issues related to the exchange of automatic distress tracking information between aircraft operators, ANSPs, rescue coordination centres (RCC), military authorities and others.

4.27   The Committee noted that numerous initiatives had been developed in ICAO regions to support the implementation of effective SAR services. AN-Conf/13-WP/226, presented by the 54 Contracting States of AFCAC[3] recalled that, in the wake of a ministerial conference held in April 2017, States in the region had decided to resolve their SAR deficiencies and were engaged in a SAR project involving workshops, surveys and the production of a template for SAR documentation. The Committee further noted in AN-Conf/13-WP/144 presented by Colombia, that States from the Central and South American Regions had established a multilateral SAR agreement and had ensured that letters of agreement were signed between their respective RCCs. The Committee noted that such arrangements could allow for a group of States to pool their resources to best use their respective capabilities in a given environment (i.e. at sea, over mountains, in the jungle). In the context of the importance States and Regions were placing on SAR services, the Committee recalled the support given to including a GADSS thread in the GANP, in line with ICAO provisions (Recommendation 1.2/1 refers).

4.28   AN-Conf/13-WP/59, presented by the United States, recalled the importance of cooperation agreements concluded at the State level but also at the level of the operational units traditionally involved in SAR operations and highlighted that the implementation of GADSS in support of SAR would offer an opportunity for all PIRGs to re-evaluate SAR-related regional agreements and cooperation mechanisms. In supporting this paper, the Committee also acknowledged that the evolution of GADSS would facilitate discussions on overcoming the shortcomings of SAR organization in the regions. The Committee also noted the availability of various expert groups to assist ICAO with the further development of Standards and PANS, supporting GADSS, and this was seen by the Committee as an important part of the development process.

4.29   The Committee noted the importance of accurate localization of wreckage and survivors after an accident over terrain as highlighted in AN-Conf/13-WP/212, presented by Austria on behalf of the European Union and its Member States[4] and the other Member States of the European Civil Aviation Conference (ECAC)[5] and by EUROCONTROL. The Committee also noted the work undertaken by ICAO to adopt performance-based Standards for the location of an aircraft in distress, and that the purpose of Article 41 of the Convention was to provide States and industry a degree of certainty of the requirements in time to develop appropriate solutions. The Committee agreed that, without hindering the

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[3] Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cap Verde, Central African Republic, Chad, Comoros, Congo, Cote D'Ivoire, Democratic Republic of The Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Eswatini, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Republic of Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome And Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Togo, Tunisia, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

[4] Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom.

[5] Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Iceland, Moldova, Monaco, Montenegro, Norway, San Marino, Serbia, Switzerland, The former Yugoslav Republic of Macedonia, Turkey and Ukraine.

implementation of existing provisions related to the GADSS, a review be conducted regarding a performance-based means to accurately determine the location of the end of flight and that provisions be developed as required.

4.30   Information papers provided by Saudi Arabia (AN-Conf/13-WP/266) and ASECNA (AN-Conf/13-WP/286) were noted.

4.31   As a result of the discussion, the Committee agreed on the following recommendation:

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;

That ICAO:

d) complete the development of Standards and Recommended Practices (SARPs) and Procedures for Air Navigation Services (PANS) provisions related to GADSS, as necessary, and support their implementation;

e) organize regional SAR seminars and/or workshops to facilitate implementation of the Global Aeronautical Distress and Safety System (GADSS);

f) emphasize to States the importance of implementing Standards and Recommended Practices (SARPs) and Procedures for Air Navigation Services (PANS) provisions which support GADSS, related to aircraft tracking and to the location of an aeroplane in distress;

g) invite the appropriate expert groups to provide advice on the implementation of GADSS;

h) review the need for a requirement for a performance-based Standard to accurately determine the location of the end of flight, particularly over terrain, in the scope of efficient SAR operations; and

i) include the general organization of SAR in future editions of the GANP.

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