

INTERNATIONAL CIVIL AVIATION ORGANIZATION
FOURTH MEETING OF DIRECTORS OF CIVIL AVIATION OF THE
CENTRAL CARIBBEAN

(Grand Cayman, Cayman Islands, 17-20 May 2000)

Agenda Item 2: Results of the CAR/SAM/3 RAN Meeting

RESULTS OF ATM AND SAR ITEMS IN THE CAR/SAM/3 RAN MEETING

(Presented by the Secretariat)

Summary

In this working paper, ICAO presents to the Meeting the results of the CAR/SAM/3 RAN Meeting on Air Traffic Management (ATM) and Search and Rescue (SAR).

Reference: Preliminary Report of the CAR/SAM/3 RAN Meeting,
(Buenos Aires, October 1999)

1. Introduction

1.1 ICAO held the Third CAR/SAM Regional Air Navigation Meeting (CAR/SAM/3 RAN), Buenos Aires, Argentina, October, 1999. In this meeting, the ATM Committee dealt, under Agenda Items 5 and 6, Air Traffic Management and Search and Rescue matters, respectively. A brief description of the items dealt with, as well as the recommendations and conclusions agreed in each area are included as **Appendixes** to this working paper.

1.2 It is important to mention that in this regional air navigation meeting, a new format of the CAR/SAM Air Navigation Plan consisting of two volumes: Volume I – Air Navigation Plan (ANP) Basic and Volume II – Facilities and Services Implementation Document (FASID), was adopted. This new configuration of the CAR/SAM ANP will allow more flexibility because most of the ANP requirements were placed in volume II, which has a more expeditious amendment procedure than the ANP Basic.

1.3 It is the first time that an ICAO RAN Meeting incorporates CNS/ATM planning to an Air Navigation Plan, which will allow the CAR/SAM Regions planning of these new systems for their future implementation.

2. Discussion

2.1 Air Traffic Management (ATM)

2.1.1 The Third CAR/SAM RAN Meeting discussed in the ATM Committee, CAR/SAM Air Traffic Management issues that will allow development in this field, due to innovations discussed. Among the items that were dealt with are:

- Airspace organization
 - Consideration of FIRs in relation to the new CNS/ATM systems
 - Flight information regions
 - Civil/military coordination
 - Interception of civil aircraft
 - Division between lower and upper airspace
- Air traffic services route network
- Area navigation (RNAV) routes
- ATM requirements for communications
 - Point-to-point communications
 - Air-ground communications
 - Automatic terminal information service and data link automatic terminal information service (ATIS/D-ATIS) broadcasts
 - OFIS and HF/VHF VOLMET broadcasts
- ATM requirements for navigation
 - Radio navigation aids
- ATM requirements for surveillance
 - Radar requirements
 - Review of the SSR code allotment plan
 - Problems related to the application of the SSR code allotment plan
- Air traffic services
 - Application of lateral and longitudinal separation minima
 - Reduced vertical separation minima
 - Standard instrument arrival and departure routes
 - Provision of air traffic control service
- ATS Quality assurance
- Year 2000 rollover
- Review of recommendations from previous RAN Meetings

2.1.2 Among the ATM topics that may be of interest for the Central Caribbean, considering its application, we find: considerations on the relation of the FIRs with the new CNS/ATM systems, Civil/Military coordination, ATS Routes network and Area Navigation (RNAV), communications requirements, surveillance requirements, air traffic services and ATS quality assurance. These are the main topics will have more influence on the subregion.

2.2 Search and Rescue

2.2.1 In the ATM Committee matters dealing with CAR/SAM Search and Rescue were also discussed. These matters are very topical at the present time for the Central Caribbean area. The items dealt by the CAR/SAM/3 RAN Meeting are the following:

- Organization of search and rescue regions (SRRs)
- Search and rescue facilities (Table SAR-1 – FASID)
- Liaison with the International Maritime Organization (IMO)
- Use of satellite technology
- Required response time
- Coordination with military and other authorities
- Human resource planning and training of RCCc and RSC personnel
- Cooperation between states and establishment of joint SAR facilities
- Basic provisions for SAR services
- Review of recommendations of previous RAN meetings

2.2.2 In most of these ATM as well as SAR matters, recommendations and/or conclusions were formulated that will allow States to implement CAR/SAM ANP requirements in the Air Traffic Management (ATM) and Search and Rescue (SAR) fields. In view of the importance of knowing the contents of these recommendations and conclusions, they are included as Appendix A (Air Traffic Services) and Appendix B (Search and Rescue) to this working paper.

3. Suggested actions

3.1 The Meeting is invited to take into account the information presented in this working paper and to adopt the corresponding actions so that each State (or groups of States) and International Organizations in the Central Caribbean:

- a) implement the relevant conclusions and recommendations of the CAR/SAM/3 RAN Meeting;
- b) review the corresponding parts of the approved Basic ANP and FASID and in order to keep them updated, present to the ICAO Regional Office the necessary proposals for amendments, additions and deletions; and
- c) implement, so as to achieve international requirements established in the CAR/SAM Regions Basic ANP and FASID, the necessary measures for improving the efficiency and safety of air navigation in the Central Caribbean Region.

ATTACHMENT A
LIST OF RECOMMENDATIONS AND CONCLUSIONS IN
ATM MATTERS ADOPTED BY THE CAR/SAM/3 RAN MEETING

Recommendation 5/1 – A cooperative approach to airspace management

That States, taking into account the need for cost-effective introduction and operation of CNS/ATM systems, give consideration to cooperative efforts for introducing more efficiency in airspace management, particularly through globalization of upper airspace management, in order to facilitate the safe, orderly and expeditious flow of air traffic.

Recommendation 5/2 – Amendment to the Mexican FIR boundaries

That the boundaries of FIRs Mazatlán, Monterrey, Mérida, Mexico and Mazatlán Oceanic be consolidated into two FIRs with the following delimitations:

a) Mexico FIR:

30 45N 120 50W;
along the Mexico/United States border;
26 00N 95 55W;
24 30N 93 00W;
24 30N 88 00W;
24 00N 86 00W;
22 00N 86 00W;
20 44N 85 21W;
20 11N 85 17W;
20 00N 86 00W;
18 09N 87 45W;
along the Mexico/Belize/Guatemala border;
14 32N 92 13W;
13 00N 95 00W;
11 30N 100 00W;
15 00N 105 00W;
30 45N 120 50W; and

b) Mazatlán oceanic FIR:

30 00N 120 00W;
15 00N 105 00W;
11 30N 100 00W;
10 00N 104 30W;
05 00N 120 00W
30 00N 120 00W.

Recommendation 5/3 – Amendment to the boundaries of the Central American FIR

That the Central American FIR be amended as follows: from 01 25N 092 00W to 10 00N 104 30W to 11 30N 100 00W to 13 00N 095 00W, then follow the present FIR boundary to 01 25N 092 00W.

Recommendation 5/4 – Amendment to the boundaries of Ezeiza and Comodoro Rivadavia FIRs

That the shared boundaries of the Ezeiza and Comodoro Rivadavia flight information regions in the vicinity of BAR VOR/DME be amended as follows: from 39 17S 063 07W (existing boundary) to 41 20S 070 27W then follow a 35 NM radius arc centred on the BAR VOR/DME to the south until intercepting 41 27S and the international border between Argentina and Chile, then follow the existing boundary.

Recommendation 5/5 – Amendment to the Brazilian FIR boundaries

That, subject to resolution of some minor discrepancies in coordinates in border areas with adjacent FIRs, the airspace under Brazil's jurisdiction be amended as follows:

a) FIR Amazonica

From 0433.00N/05045.00W; 0006.00S/04200.00W; 0120.73S/04307.50W; connecting to point 0414.72S/04429.31W by the greater arc centred at 0235.35S/04414.40W with a 100 NM radius (CTA BELÉM 3); 0838.00S/04509.00W; 1014.00S/04739.00W; 1022.45S/04751.46W; 1015.05S/04750.74W; continuing in a counter-clockwise direction with a 30 NM radius centred at 1012.19S/04821.02W up to point 1009.21S/04851.29W; 1038.68S/04854.27W; 1016.00S/05126.00W; 1003.00S/05244.00W; 1238.00S/05508.00W; 1243.00S/05703.00W; 1535.00S/05900.00W; 1615.97S/05819.30W continuing along the border line with BOLIVIA, PERU, COLOMBIA, VENEZUELA, GUYANA, SURINAME and FRENCH GUYANA up to 0429.98N/05100.03W; 0433.00N/05045.00W.

b) FIR Atlantico

From 0739.98N/03500.02W; 0459.98N/04000.02W; 0459.98N/04800.03W; 0433.00N/05045.00W; 0006.00S/04200.00W; 0102.00N/04059.00W; 0200.00S/03457.00W; 0049.00S/03102.00W; 0328.00S/02830.00W; 0854.00S/03156.00W; 1155.00S/03253.00W; 1534.00S/03618.00W; 1830.00S/03845.00W; 1943.00S/03455.00W; 2645.00S/04345.00W; 3400.00S/05000.00W; 3400.04S/01000.01W; 0622.02S/01000.01W; 0622.02S/01600.01W; 0739.98N/03500.02W.

- c) FIR Brasilia
From 1943.00S/03455.00W; 2645.00S/04345.00W; 2400.00S/04445.00W; 2345.00S/04456.00W; 2403.70S/04603.27W; connecting to point 2246.03S/04732.43W by the southern boundary arc, centred at 2337.83S/04639.23W with a 42 NM radius and centred at 2300.52S/04707.75W with a 27 NM radius (TMA SÃO PAULO); 2201.00S/04843.00W; 1728.00S/05336.00W; 1743.00S/05619.00W; 1620.02S/05820.53W; 1535.00S/05900.00W; 1243.00S/05703.00W; 1238.00S/05508.00W; 1003.00S/05244.00W; 1016.00S/05126.00W; 1038.68S/04854.27W; 1009.21S/04851.29W continuing in a counter-clockwise direction with a 30 NM radius centred at 1012.19S/04821.02W up to point 1015.05S/04750.74W; 1022.45S/04751.46W (TMA PALMAS); 1014.00S/04739.00W; 1438.00S/04545.00W; 1642.21S/04349.15W; 1816.00S/03930.00W up to 1943.00S/03455.00W.
- d) FIR Curitiba
From 2645.00S/04345.00W; 2400.00S/04445.00W; 2345.00S/04456.00W; 2403.70S/04603.27W; connecting to point 2246.03S/04732.43W, by the southern boundary arcs, centred at 2337.83S/04639.23W with a 42 NM radius and centred at 2300.52S/04707.75W with a 27 NM radius (TMA SÃO PAULO); 2201.00S/04843.00W; 1728.00S/05336.00W; 1743.00S/05619.00W; 1620.02S/05820.53W, continuing along the border line with BOLIVIA, PARAGUAY, ARGENTINA and URUGUAY up to 3400.15S/05259.59W; 3400.00S/05000.00W; 2645.00S/04345.00W.
- e) FIR Recife
From 0120.73S/04307.50W, connecting to point 0414.72S/04429.31W by the larger arc centred at 0235.35S/04414.40W with a 100 NM radius (CTA BELÉM 3); 0838.00S/04509.00W; 1014.00S/04739.00W; 1438.00S/04545.00W; 1642.21S/04349.15W; 1816.00S/03930.00W; 1830.00S/03845.00W; 1534.00S/03618.00W; 1155.00S/03253.00W; 0854.00S/03156.00W; 0328.00S/02830.00W; 0049.00S/03102.00W; 0200.00S/03457.00W; 0102.00N/04059.00W up to 0120.73S/04307.50W.

Recommendation 5/6 – Civil/military coordination

That, in order to achieve optimum civil/military coordination and joint use of airspace with a maximum degree of safety, regularity and efficiency of international civil air traffic, States which have not yet done so:

- a) establish appropriate civil/military coordination bodies to ensure, at all levels, the coordination of decisions relating to civil and military problems of airspace management and air traffic control;
- b) make known to military authorities the existing ICAO provisions (Assembly Resolution A32-14, Appendix P, Annex 11, paragraphs 2.16 and 2.17) and guidance material [*Manual Concerning Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft Operations* (Doc 9554) and *Manual concerning Interception of Civil Aircraft* (Doc 9433)] related to civil/military coordination and promote familiarization visits by military personnel to air traffic services (ATS) units;

- c) arrange permanent liaison and close coordination between civil ATS units and relevant military air defence units, in order to ensure the daily integration or segregation of civil and military air traffic operating within the same or immediately adjacent portions of airspace, employing civil and/or military radars as necessary, and to obviate the need for civil aircraft to obtain special “air defence” clearances; and
- d) take the necessary steps to prevent, as far as possible, penetration of controlled airspace by military aircraft without coordination with the air traffic control unit concerned.

Note. – *The text is included in the Basic ANP at Appendix A, paragraph 5.3.*

Recommendation 5/7 – Review of special use airspace by States

That States:

- a) in light of evolving CNS/ATM systems’ technologies, conduct a review of special use airspace with the objective of validating actual use in order to release airspace for civil use or to obtain joint-use airspace agreements; and
- b) while conducting the review, take the necessary actions to ensure that the prohibited, restricted, and danger areas are in compliance with Annexes 2 and 15.

Note. – *The text is included in the Basic ANP at Appendix A, paragraph 5.3.*

Conclusion 5/8 – Civil/military coordination workshops to promote joint-use airspace in the CAR/SAM Regions

That the ICAO NACC and SAM Regional Offices organize civil/military coordination workshops in their areas of accreditation with the goal of promoting joint-use airspace.

Recommendation 5/9 – Air defence identification zone

That ICAO investigate the present implementation of air defence identification zones and develop proposals as appropriate.

Recommendation 5/10 – Ratification of Article 3 bis of the Convention on International Civil Aviation (Doc 7300)

That States, which have not yet done so, ratify, as soon as possible, the Protocol incorporating Article 3 bis into the Chicago Convention as established in Assembly Resolutions A25-1 and A25-2.

Recommendation 5/11 – Publication of interception of civil aircraft information in AIPs

That:

- a) States which have determined that there is a risk of interception in case of penetration of certain areas adjacent to air traffic services (ATS) routes, include in their aeronautical information publications (AIPs), as soon as possible, text relating to the

potential risk of interception, including the navigation requirements to keep clear of the area;

- b) States which have not determined the existence of interception risk, but which are affected by a situation of this nature, adopt, as soon as possible, all measures which may be necessary to comply with the indications referred to in sub_paragraph a) above;
- c) States, which possess the facilities to monitor deviations from track which may involve the possibility of penetrating airspaces where interception procedures are implemented, include in their AIPs information to indicate that such deviations will be communicated to the aircraft concerned; and
- d) Aeronautical information services (AIS) units prepare a separate pre-flight bulletin on dangers to air navigation with details on activated areas, for distribution to flight crews, and other personnel as required.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 7.5*

Recommendation 5/12 – Operational Letter of Agreement between ATS and military units

That, in order to facilitate uniformity in the application of ICAO Standards and Recommended Practices relating to the interception of civil aircraft, States should, as far as possible, when establishing agreements between air traffic services (ATS) units and between ATS units and appropriate military units, use, to the extent possible, the model Letter of Agreement appearing at Appendix B to the *Manual concerning Interception of Civil Aircraft* (Doc 9433).

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 7.6.*

Recommendation 5/13 – Plane of division between the lower and upper airspace

That:

- a) States, where a division of the airspace into an upper and lower position is required, consider the establishment of a uniform plane of division at FL 245; and
- b) States unable to implement FL 245 as the plane of division between lower and upper airspaces, as far as possible select a level already used by adjacent States.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 5.2.*

Recommendation 5/14– ATS routes plan

That:

- a) the plan of air traffic services (ATS) routes shown at Appendix A to the Report on Agenda Item 5 form the ATS route network for the CAR/SAM Regions; and

- b) the proposed additions, deletions and changes to the requirements for the ATS routes network be coordinated through the ICAO Regional Office concerned.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 4.3.*

Conclusion 5/15– Network of RNAV routes

That GREPECAS, based on information to be provided by IATA, amongst others, study the possibility of establishing a network of RNAV routes and develop an appropriate implementation strategy.

Recommendation 5/16– Near-term areas of application of area navigation (RNAV)

That States, through GREPECAS:

- a) identify those areas within their respective flight information regions (FIRs) where RNAV techniques can be applied, in order to take full advantage of the navigational capability of RNAV-equipped aircraft to meet a specified required navigation performance (RNP); and
- b) in the identification of such areas, the trajectories linking city-pairs of the CAR/SAM Regions as shown in Appendix E to the Report on Agenda Item 5 be taken into account, as well as major cities in the CAR/SAM Regions and those in adjacent regions.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 7.12.*

Recommendation 5/17– Provision of voice-automatic terminal information service/data link-automatic terminal information service

That:

- a) voice-ATIS be provided at those international aerodromes in the CAR/SAM Regions where congestion on the VHF air-ground channels exists during peak traffic periods;
- b) either a discrete VHF frequency or the voice feature of the VOR normally associated with the initial approach be used as determined by States;
- c) in light of new technology, voice-ATIS be complemented with DATIS when a sufficient number of aircraft are suitably equipped; and
- d) pertinent provision for the use of ATIS be included in States' aeronautical information publications (AIP).

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 7.10.*

Conclusion 5/18– Study to determine the need for VOLMET services in CAR/SAM Regions

That GREPECAS conduct a study to determine the need for VOLMET services in the CAR/SAM Regions.

Recommendation 5/19– SSR code allotment plan for the Caribbean/South American Regions

That the revised Caribbean and South American Code Allotment Plan be included as a table in the Facilities and Services Implementation Document (FASID) of the *Air Navigation Plan — Caribbean and South American Regions* (Doc 8733).

Note. – *The text is included in the FASID at Appendix B, paragraph 2.*

Conclusion 5/20 – Coordination of the CAR/SAM SSR code allocation plan with the NAM States

That the ICAO North American, Central American and Caribbean (NACC) Regional Office arrange for a meeting between the United States and CAR States that share airspace boundaries with the United States to harmonize the SSR codes used by both the CAR and NAM Regions and to ensure compatibility of the CAR/SAM and NAM SSR code allocation plans.

Recommendation 5/21– Operational agreements to maintain the SSR code over several FIRs

That States enter into operational agreements so that aircraft can maintain the assigned SSR code beyond the Participating Area, particularly in regions with high traffic density.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 7.16.*

Recommendation 5/22– Consistent application of 10-minute and 80 NM RNAV distance-based longitudinal separation minima

That States implement the facilities necessary to permit the introduction of 10 minutes and 80 NM RNAV distance-based longitudinal separation minima on high density ATS trunk routes.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 7.15.*

Conclusion 5/23– Application of 50 NM lateral separation minimum based on RNAV and RNP 10, and future airspace requirements in the CAR/SAM Regions

That the CAR/SAM Regional Planning and Implementation Group (GREPECAS), in coordination with other regional groups, as appropriate:

- a) identify areas within the CAR/SAM Regions suitable for the implementation of RNP, RNAV and reduced lateral separation minima;
- b) establish the airspace safety management arrangements to ensure the safe operation of airspace where reduced lateral separation minima are to be introduced;

- c) complete appropriate safety assessments prior to any implementation;
- d) determine implementation timescales;
- e) establish a monitoring agency to ensure that the operating environment can meet the safety requirements for the introduction and ongoing operation of 50 NM lateral separation minimum based on RNAV and RNP 10; and
- f) develop appropriate regional guidance material.

Recommendation 5/24– Implementation of 10 minute longitudinal separation minimum with Mach number technique

That a 10-minute longitudinal separation minimum with Mach number technique be implemented in the CAR/SAM Regions in areas lacking appropriate communications, navigation and surveillance facilities to support other separation minima.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 7.14.*

Recommendation 5/25– Finalization of the safety assessment for the EUR/SAM corridor

That the monitoring agency established by Spain as requested by the Informal South Atlantic Coordination Meetings (SAT):

- a) ensure that the operating environment in the EUR/SAM corridor can meet the safety requirements for the introduction and ongoing operation of 50 NM lateral separation minimum based on RNAV and RNP 10;
- b) take into account future requirements for the implementation of reduced lateral separation minima; and
- c) continue to take into account the impact on, and to coordinate with, States of FIRs involved of the AFI and CAR/SAM Regions.

Recommendation 5/26– Amendment to the SAM Regional Supplementary Procedures (SUPPs, Doc 7030) for the introduction of 50 NM lateral separation minimum

That the SAM SUPPs be amended as indicated at Appendix C to the Report on Agenda Item 5.

Conclusion 5/27– Implementation of reduced vertical separation minimum

That the CAR/SAM Regional Planning and Implementation Group (GREPECAS) undertake to assess the requirements and evaluate the benefits of reduced vertical separation minimum (RVSM) implementation in the CAR/SAM Regions.

Recommendation 5/28– Collection of data necessary for implementation of RVSM in the CAR/SAM Regions

That the monitoring agency to be established by GREPECAS to monitor implementation of 50 NM lateral and longitudinal separation in the CAR/SAM Regions also collect data necessary to assess the safety of RVSM implementation and operation.

Recommendation 5/29– Target level of safety for the introduction of reduced vertical separation minimum (RVSM)

That, before implementing RVSM, and while operations continue in a 2000 ft vertical separation minimum environment, verification be made that the level of safety of the proposed designated airspace would remain equal to or better than a TLS of 5×10^{-9} fatal accidents per flight hour due to the loss of vertical separation for all causes of risk.

Note. – The text is included in the Basic ANP at Appendix A, as paragraph 6.3.

Recommendation 5/30– Implementation of reduced vertical separation minimum in the European/South American (EUR/SAM) corridor

That the Informal South Atlantic Coordination Meetings (SAT) finalize as soon as possible the safety assessment necessary for the implementation of RVSM in the EUR/SAM corridor and coordinate with the AFI Planning and Implementation Regional Group (APIRG) and the CAR/SAM Regional Planning and Implementation Group (GREPECAS) prior to implementation.

Recommendation 5/31– Implementation of reduced vertical separation minimum in the CAR Region

That, to facilitate early implementation of RVSM in the CAR Region, the Regional Supplementary Procedures (Doc 7030) be amended as indicated at Appendix D to the Report on Agenda Item 5.

Recommendation 5/32– Establishment of standard departure (SID) and arrival (STAR) routes

That States, which have not yet done so, establish SID and STAR routes wherever necessary, taking into account the relevant ICAO provisions of Annex 11 — *Air Traffic Services*, Appendix 3, and guidance material in the *Air Traffic Services Planning Manual* (Doc 9426), as well as the *CAR/SAM Regional Plan for the Implementation of the CNS/ATM Systems* (Doc II, *Table on ATM evolution in the CAR/SAM Regions — Operations in Terminal Areas*).

Note. – The text is included in the Basic ANP at Appendix A as paragraph 7.9.

Recommendation 5/33– Implementation of air traffic control service

That States, which have not already done so, implement air traffic control service for IFR flights along all ATS routes used for international aircraft operations, except where the type and density of traffic clearly do not justify the provision of such service.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 6.1.*

Recommendation 5/34– Delivery of ATC clearance

That States, in order to enhance safety and expedite aircraft operations, implement at airports, where necessary, provisions for pre-taxi ATC clearance delivery at international airports that have not already implemented such provisions.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 7.8.*

Recommendation 5/35– Implementation of English language programmes

That, States in the CAR/SAM Regions implement language programmes to improve the English language proficiency among operational personnel

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 7.19*

Recommendation 5/36– Development of ICAO guidance material on ATS quality assurance programmes

That ICAO develop guidance material on ATS quality assurance programmes for worldwide use.

Conclusion 5/37– ATS quality assurance seminars and associated workshops

That the ICAO NACC and SAM Regional Offices pursue ATS quality assurance seminars and associated workshops to be held in the Caribbean and South American Regions starting in the year 2000.

Recommendation 5/38– Implementation of an ATS quality assurance programme

That:

- a) States/ATS service providers within the CAR/SAM Regions implement an ATS quality assurance programme with associated supporting documents. The programme should outline the purpose, goals, objectives and responsibilities of the programme within the State/ATS service provider; and
- b) each ATS unit should establish such a programme.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 7.2.*

Conclusion 5/39– Publication of aeronautical information concerning Year 2000 compliance status

That:

- a) States of the CAR/SAM Regions, that have not already done so, provide, urgently to other States and airspace users, appropriate aeronautical information on the year 2000 compliance status of their aeronautical services, air navigation services and aerodrome services of designated international and alternate aerodromes, using, as the basis, the assessment criteria developed by the Secretariat in follow-up of Assembly Resolution A32-10 and contained in State letter AN 13/46.1-99/16 dated 29 January 1999, and the format contained in State letter AN 13/46.5-99/64 dated 14 May 1999; and
- b) States which are in a position to do so, should post the aeronautical information mentioned in a) above, on the ICAO Y2K web page database developed for this purpose, located at www.icao.int/y2k.

Maintenance of guard on the emergency channel 121.5 MHz

[CAR/SAM/2, Rec 5/23]

That provision be made for maintenance of guard on the emergency channel 121.5 MHz at each location indicated in Table CNS 2 in the FASID of the CAR/SAM ANP.

Note. – *The text is included in the FASID at Appendix A, as paragraph 7.17.*

Selective calling (SELCAL)

[CAR/SAM/2, Rec 5/24]

That, wherever applicable, air-ground communications at aeronautical stations guarding general purpose frequencies be equipped with selective calling (SELCAL) devices to facilitate efficient communications with SELCAL-equipped aircraft and to reduce cockpit workload.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 7.18.*

Promulgation of prohibited, restricted and danger areas

[CAR/SAM/2, Rec 5/26]

That States be encouraged to:

- a) refrain, to the extent possible, from establishing prohibited, restricted or danger areas, bearing in mind that, in accordance with Annex 15, prohibited areas or restricted areas may only be established over the territories of a State and not over international waters;
- b) apply the following principles when the establishment of prohibited, restricted or danger areas becomes unavoidable:
 1. give due regard to the need not to prejudice the safe and economical operation of civil aircraft;

2. provide adequate buffer, in terms of time and size, within the designated area, appropriate to the activities to be conducted;
 3. use standard ICAO terminology in designation of the areas;
 4. promulgate information regarding the establishment and day-to-day use of the areas well in advance of the effective date(s);
 5. arrange for the closest possible coordination between civil ATS units and relevant units responsible for activities within the restricted or danger areas so as to enable the ATS units to authorize civil aircraft to traverse the areas in emergencies, to avoid adverse weather, and whenever the restrictions do not apply or the areas are not active;
 6. review the continuing need for the prohibited, restricted or danger areas at regular intervals;
- c) when the establishment of danger areas outside territorial limits becomes unavoidable, it should be of a temporary nature and States should apply the following principles:
- 1) prior to requesting the establishment of a temporary airspace reservation, the requesting authority shall obtain full information on the likely effect of such a reservation on air traffic. Such information shall include areas of high traffic density which may exist in the vicinity or at the planned location of the airspace reservation, as well as information on peak periods of traffic operating through such areas. In the light of that information, the requesting authority should, to the extent possible, select the site of the airspace reservation, and the time and duration so that this will have the least effect on normal flight operations conducted in the area in question;
 - 2) in specifying the extent of a requested temporary airspace reservation and its duration, the requesting authority shall limit the size of the area to the absolute minimum required to contain the activities intended to be conducted within that areas, taking due account of:
 - the navigation capability of aircraft or other vehicles within the airspace reservation;
 - the means available to monitor those activities so as to guarantee that they will be confined within the airspace reservation; and
 - the ability to interrupt or terminate activities;
 - 3) the duration of the airspace reservation shall be limited, taking a realistic account of preparation of the activities and the time required to vacate the reservation after the completion of the activities;
 - 4) the actual use of the temporary airspace reservation shall be based on appropriate arrangements made between the ATS unit normally responsible for the airspace and the requesting authority. Such arrangements shall be based on the general agreement reached previously between the competent ATS authority or ATS authorities and the requesting authority. They should, *inter alia*, cover:
 - the start of the use of the temporary airspace reservation;
 - the termination of its use; and

- emergency provisions in case of unforeseen events affecting the activities to be conducted within the temporary airspace reservation;
- when developing the plans for its future ATS system, give prime consideration to the creation of an integrated civil/military ATS system capable of meeting the requirements of both categories of users in the most effective manner.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 5.4.*

Investigation of ATS incidents

[CAR/SAM/2, Rec 6/11]

That States which have not already done so:

- a) promulgate a requirement in the RAC part of their AIP, to report air traffic incidents using a form and associated reporting procedures based on the procedures contained in the *Procedures for Air Navigation Services — Rules of the Air and Air Traffic Services* (PANS-RAC, Doc 4444);
- b) establish, as a matter of urgency, machinery and procedures permitting the rapid processing and investigation of such reports in accordance with the material in the PANS-RAC and the *Air Traffic Services Planning Manual* (Doc 9426), Part II, Section I, Chapter 3;
- c) emphasize the need for rapid notification of the results of the investigation to all parties concerned including pilots, operators, other ATS units, etc. and to the relevant ICAO regional office, since the systematic receipt and analysis of incident reports is essential for the identification of deficiencies and the remedial action required; and
- d) cooperate with other States in order to ensure that ATS incidents are properly investigated.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 7.3.*

Report of ATS incidents

[CAR/SAM/2, Rec 6/12]

That aircraft operators:

- a) ensure that in cases where the aerodrome of intended landing is located in a different FIR from that in which the air traffic incident occurred, the ATS reporting office at the aerodrome of landing sends, immediately after landing of the aircraft concerned, an AFTN message to the ATS units(s) directly involved with the incident, containing all information provided on the Air Traffic Incident Report Form; and
- b) endeavour to ensure that an incident notification message is sent using the most reliable means available so as to reach the authority responsible for investigation within fifteen days of the incident, followed up by notification, in writing, using an Air Traffic Incident Report Form, to reach the authority concerned within 21 days of the incident.

Note. – *The text is included in the Basic ANP at Appendix A, as paragraph 7.3.*

Implementation of radar
[CAR/SAM/2, Rec 14/31]

That:

- a) implementation of radar be pursued as an enhancement to air traffic services where so required; and
- b) the use of secondary surveillance (SSR) alone, in accordance with the procedures in the PANS_RAC (Doc 4444) and the CAR/SAM SUPPs (Doc 7030) be considered as a cost-effective alternative to primary surveillance radar.

Note. – The text is included in the Basic ANP at Appendix A, as paragraph 6.4.

ATTACHMENT B
LIST OF RECOMMENDATIONS AND CONCLUSIONS IN
SAR MATTERS ADOPTED BY THE CAR/SAM/3 RAN MEETING

Recommendation 6/1 – Amazonica, Atlantico, Brasilia, Central American, Comodoro Rivadavia, Curitiba, Ezeiza, Mexico, Miami, Recife, and San Juan SRRs

That the ICAO *Air Navigation Plan — Caribbean and South American Regions* (Doc 8733) be amended as follows:

- a) *Include* a requirement for Amazônica search and rescue region (SRR) boundary as follows:

From 04 33N 050 45W; 00 06S 042 00W; 01 20.73S 043 07.50W; connecting to point 04 14.72S 044 29.31W by the greater arc centred at 02 35.35S 044 14.40W with a 100 NM radius (CTA BELÉM 3); 08 38S 045 09W; 10 14S 047 39W; 10 22.45S 047 51.46W; 10 15.05S 047 50.74W; continuing in a counter-clockwise direction with a 30 NM radius centred at 10 12.19S 048 21.02W up to point 10 09.21S 048 51.29W; 10 38.68S 048 54.27W; 10 16S 051 26W; 10 03S 052 44W; 12 38S 055 08W; 12 43S 057 03W; 15 35S 059 00W; 16 15.97S 058 19.30W continuing along the border line with BOLIVIA, PERU, COLOMBIA, VENEZUELA, GUYANA, SURINAME and FRENCH GUYANA up to 04 29.98N 051 00.03W;. 04 33N 050 45W.

- b) *Include* a requirement for Atlantico SRR boundary as follows:

From 07 39.98N 035 00.02W; 04 59.98N 040 00.02W; 04 59.98N 048 00.03W; 04 33N 050 45W; 00 06S 042 00W; 01 02N 040 59W; 02 00S 034 57W; 00 49S 031 02W; 03 28S 028 30W; 08 54S 031 56W; 11 55S 032 53W; 15 34S 036 18W; 18 30S 038 45W; 19 43S 034 55W; 26 45S 043 45W; 34 00S 050 00W; 34 00.04S 010 00.01W; 06 22.02S 010 00.01W; 06 22.02S 016 00.01W; 07 39.98N 035 00.02W.

- c) *Amend* the Brasilia SRR boundary as follows:

From 19 43S 034 55W; 26 45S 043 45W; 24 00S 044 45W; 23 45S 044 56W; 24 03.70S 046 03.27W; connecting to point 22 46.03S 047 32.43W by the southern boundary arc, centred at 23 37.83S 046 39.23W with a 42 NM radius and centred at 23 00.52S 047 07.75W with a 27 NM radius (TMA SÃO PAULO); 22 01S 048 43W; 17 28S 053 36W; 17 43S 056 19W; 16 20.02S 058 20.53W; 15 35S 059 00W; 12 43S 057 03W; 12 38S 055 08W; 10 03S 052 44W; 10 16S 051 26W; 10 38.68S 048 54.27W; 10 09.21S 048 51.29W continuing in a counter-clockwise direction with a 30 NM radius centred at 10 12.19S 048 21.02W up to point 10 15.05S 047 50.74W; 10 22.45S 047 51.46W (TMA PALMAS); 10 14S 047 39W; 14 38S 045 45W; 16 42.21S 043 49.15W; 18 16S 039 30W up to 19 43S 034 55W.

- d) *Amend* the Curitiba SRR boundary as follows:

From 26 45S 043 45W; 24 00S 044 45W; 23 45S 044 56W; 24 03.70S 046 03.27W; connecting to point 22 46.03S 047 32.43W, by the southern boundary arcs, centred at 23 37.83S 046 39.23W with a 42 NM radius and centred at 23 00.52S 047 07.75W with a 27 NM radius (TMA SÃO PAULO); 22 01S 048 43W; 17 28S 053 36W; 17 43S 056 19W; 16 20.02S 058 20.53W, continuing along the border line with BOLIVIA, PARAGUAY, ARGENTINA and URUGUAY up to 34 00.15S 052 59.59W; 34 00S 050 00W; 26 45S 043 45W.

- e) *Amend* the Recife SRR boundary as follows:

From 01 20.73S 043 07.50W, connecting to point 04 14.72S 044 29.31W by the larger arc centred at 02 35.35S 044 14.40W with a 100 NM radius (CTA BELÉM 3); 08 38S 045 09W; 10 14S 047 39W; 14 38S 045 45W; 16 42.21S 043 49.15W; 18 16S 039 30W; 18 30S 038 45W; 15 34S 036 18W; 11 55S 032 53W; 08 54S 031 56W; 03 28S 028 30W; 00 49S 031 02W; 02 00S 034 57W; 01 02N 040 59W up to 01 20.73S 043 07.50W.

- f) *Delete* the requirements for Belem, Manaus and Porto Velho SRRs.

- g) *Amend* the Central American SRR boundary as follows:

From 01 25N 092 00W to 10 00N 104 30W to 11 30N 100 00W to 13 00N 095 00W, then follow the present SRR boundary to 01 25N 092 00W.

- h) *Amend* the shared SSR boundaries of Ezeiza and Comodoro Rivadavia as follows:

From 39 17S 063 07W (existing boundary) to 41 20S 070 27W, then follow a 35 NM radius arc centred on the BAR VOR/DME to the south until intercepting 41 27S and the international border between Argentina and Chile, then follow the existing boundary.

- i) *Amend* the Mexico southern SRR boundary as follows:

13 00N 095 00W; 11 30N 100 00W; 10 00N 104 30W; 05 00N 120 00W.

Recommendation 6/2–Search and rescue facilities

That:

- a) the list of search and rescue (SAR) facilities as contained in Table SAR-1 in Part VII – Search and Rescue, of the Facilities and Services Implementation Document (FASID) at the Appendix to the Report on Agenda Item 6, constitute the plan for SAR facilities for the CAR/SAM Regions; and
- b) States establish and/or maintain the appropriate RCCs listed in Table SAR-1 and ensure the availability of services and facilities on a 24-hour basis.

Recommendation 6/3–Coordination with maritime SAR authorities and IMO

That, to ensure compatibility between aeronautical and maritime search and rescue regions (SRRs), aeronautical SAR authorities in States maintain close liaison with their maritime counterparts and the International Maritime Organization (IMO), and consider the possibility of establishing joint aeronautical/maritime rescue coordination centres or equivalent arrangements.

Recommendation 6/4–Satellite-aided search and rescue

That States:

- a) take appropriate action to reduce the number of false alarms on 121.5 MHz caused by inadvertent activation of emergency locator transmitters and eliminate unauthorized use of those frequencies;
- b) encourage the carriage of ELTs transmitting on 406 MHz by all aircraft;
- c) establish a register of ELTs and make available information as to how ELT registration information can be obtained rapidly by rescue coordination centres (RCCs) of other States; and
- d) provide ICAO with a SAR point of contact (SPOC) for inclusion in Table SAR 1 of the respective air navigation plan.

Recommendation 6/5–Search and rescue data provider

That States provide to ICAO information on the search and rescue data provider for inclusion in Table SAR 1 of the Facilities and Services Implementation Document (FASID) part of the air navigation plan.

Recommendation 6/6–Carriage of 406 MHz ELTs

That, to achieve the early implementation in the CAR/SAM Regions of future global mandatory provisions, all aircraft required to carry emergency locator transmitters (ELTs) in accordance with Annex 6, carry automatic ELTs operating on 406 MHz, and on 121.5 MHz for homing.

Recommendation 6/7–Required response times for search and rescue facilities

That States take measures to ensure that the operating plans of rescue coordination centres (RCC) contain provisions for rapid response times, and that RCCs have readily available the required response times of primary search and rescue facilities.

Recommendation 6/8–Coordination with military and other authorities

That:

- a) States which rely on military authorities or other sources for the provision of SAR facilities ensure that adequate arrangements are in place for the coordination of SAR activities between all entities involved; and
- b) States consider the establishment of SAR Committees as recommended in the *International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual*.

Recommendation 6/9–Human resource planning and training of rescue coordination centre and rescue sub-centre personnel

That ICAO be requested to consider SAR requirements, including English language proficiency requirements, in its work on human resource planning and training.

Recommendation 6/10–Development of search and rescue (SAR) training material

That ICAO's TRAINAIR Programme be requested to invite its members to develop Standardized Training Packages (STP) for SAR personnel using the International Aeronautical and Maritime Search and Rescue Manual as its primary reference document.

Recommendation 6/11–Cooperation between States and establishment of joint search and rescue facilities

That States, in order to provide a more efficient search and rescue (SAR) service and to reduce the costs associated with providing SAR facilities, consider establishing joint facilities where possible.

Recommendation 6/12–Basic provisions for search and rescue services

That States take the steps necessary and practicable to ensure the availability of effective aeronautical SAR services throughout the CAR/SAM Regions as follows:

- a) identify aeronautical SAR authorities in legislation and high-level national SAR plans, and make provisions to support those authorities as necessary;
- b) adopt and implement, to the fullest extent practicable, the guidance material contained in the three-volume *International Aeronautical and Maritime Search and Rescue Manual (IAMSAR)* for establishing effective domestic and regional services for aeronautical search and rescue;
- c) establish domestic and international SAR agreements where such agreements may improve SAR services and to coordinate efforts among entities that provide or support SAR services;

- d) ensure that a robust communications network, which takes into account any technologies commonly used by aircraft and RCCs, is in place to receive a voice or data distress alert from an aircraft via terrestrial and satellite systems that may commonly be used for that purpose, and to enable acknowledgement of that alert and coordination of the SAR response;
- e) ensure that RCCs know how to obtain data, as appropriate, from the AMVER ship reporting system to identify ships at sea that can provide assistance to aircraft and persons in distress;
- f) ensure that civil aviation authorities arrange with the appropriate national maritime authorities in order to encourage ships to voluntarily participate in the AMVER system; and
- g) ensure that all RCC personnel have an effective working knowledge of the English language.

Joint SAR training and/or exercises

[CAR/SAM/2, Rec 7/12]

That States:

- a) when considered feasible, make arrangements for joint SAR exercises between their SAR units and those of other States and with operators at regular intervals and, if possible, at least once a year;
- b) invite observers from other interested States and organizations to participate in such exercises; and
- c) grant fellowships to SAR personnel to enable them to attend training courses in this field, after provision of adequate information from interested States to ICAO concerning the type of training to be received.

Review of Annex 12 and SAR Manual

[CAR/SAM/2, Rec 7/18]

That ICAO, in cooperation with the International Maritime Organization, review Annex 12 and the *International Aeronautical and Maritime Search and Rescue Manual*, and update them as appropriate to provide, as practicable, harmonization between aeronautical and maritime SAR services.