WORKING PAPER

INTERNATIONAL CIVIL AVIATION ORGANIZATION

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ASSEMBLY — 35TH SESSION

TECHNICAL COMMISSION

Agenda Item 22: Development of an up-to-date consolidated statement of ICAO continuing policies related to air navigation

AIR NAVIGATION SERVICES IN PAKISTAN

(Presented by Pakistan)

INFORMATION PAPER

SUMMARY

This paper provides a brief overview of the Air Navigation system in Pakistan and our effective participation in global/regional ICAO programmes in the air navigation field.

1. INTRODUCTION

1.1 Pakistan is strategically located at a periphery of ICAO Asia-Pacific and Middle East Regions, providing vital links that Interface the two regions for ensuring safe and efficient operations on International ATS routes established south of Himalayas to cater for the flow of air traffic operating from destinations particularly from Europe to far east and vice versa.

1.2 In order to discharge these responsibilities to optimum level of efficiency CAA has established an ATS system that addresses all communication, Navigation, Surveillance and Air Traffic management requirements of ICAO regional and global programmes i.e. implementation of Reduced Vertical Separation Minimum (RVSM), Europe to Middle East & Asia Revised ATS Route Structure South of Himalayas (EMARSSH), and Required Navigation Performance (RNP) etc. A brief overview of our endeavor in above stated areas is as under.

2. AIR SPACE MANAGEMENT

2.1 Pakistan airspace consists of two Flight Information Regions i.e. Lahore and Karachi FIRs. The airspace failing north of 30° North falls under Lahore FIR while airspace South of 30° north covering entire territorial boundary and 80NM along side the coast over the high seas falls under Karachi FIR. Lahore ACC has two sectors while Karachi ACC is divided in three sectors.

2.2 En-route control centres established at Karachi and Lahore provide air traffic control service and all ATS routes above FL150 are designated as Class 'A' airspace. Terminal Approach control centre have been established at Islamabad, Karachi and Lahore to serve the arriving/departing traffic.

3. COMMUNICATION

3.1 An integrated RCAG VHF communication system is in place, serving almost entire airspace of Pakistan (Annex A). In addition a High Frequency (HF) back up is also available. Ground-Ground, Communication requirements with adjacent ATS units are met by Direct Speech Circuits, ISD telephones, and AFTN system.

3.2 Efforts are in hand for provision of following technologies with regard to implementation of CNS/ATM system communication requirements:

— Controller Pilot Data Link Communication or HF/VHF data links for air-ground communication.

— ATS Inter-Facility Data Communication (AIDC) for ground-ground communication.

— Upgradation of AFTN system to meet future ATN requirements for year 2010 and beyond.

4. NAVIGATION

4.1 ATS routes structure is served by adequate number of VOR/DMEs, NDBs for the purpose of navigation airports. Islamabad and Karachi Airports are served with ILS-Cat-I and ILS Cat-II is provided at Lahore Airports. CAA Pakistan is closely monitoring the global and regional activities on implementation of Global Navigation Satellite System (GNSS) for both elements i.e. Wide Area Augmentation System (WAAS) and Local Area Augmentation System (LAAS).

4.2 Considering the changing scenario of aviation after events of 9/11, Pakistan Civil Aviation Authority is of the view that ground based navigational aids may also be kept available even after the implementation of GNSS to serve as a back up system in case of sabotage or jamming of satellite based navigation system.

5. SURVEILLANCE

5.1 Surveillance requirements are met through an efficient operation of Integrated Aeronautical Communication and Control (AC&C) system which consists of three co-located primary and secondary surveillance radars at Karachi, Lahore and Islamabad Airports and three remote stand alone Secondary Surveillance Radar (SSRs). Integrated Radar network covering almost entire airspace of Pakistan (Annex B).

5.2 Provision of ADS-B technology and upgradation of present SSR system to mode-S capabilities is being evaluated in conjunction with CNS/ATM system to augment existing surveillance system.

6. ATM

6.1 The international and domestic ATS routes network consists of 35 international and 74 domestic ATS routes to regulate Air traffic within and across Pakistan airspace. The interfacing and alignment of International ATS routes with adjacent states is done in coordination with ICAO and IATA to facilitate safe smooth and efficient flow of air traffic.

6.2 Europe to Middle East and Asia Revised ATS route Structure South of Himalayas (EMARSSH) project is successfully implemented in Pakistan airspace on 28th November 2002. The scheme included re-alignemnt of existing and establishment of new routes for the provision of more direct routings for flights operating on Europe-South East Asia-Far East sectors.

6.3 Pakistan implemented Reduced Vertical Separation Minimum (RVSM) between FL290-FL410 (both inclusive) in accordance with the implementation plans of both Asia/Pacific and Middle Regions. Pakistan had to assume the responsibility of transition from Conventional Vertical Separation Minimum (CVSM) to RVSM on ATS routes to/from Afghanistan China and Tajikistan as they are continuing with CVSM. Transition Airspace/route segments are provided at interface of Lahore FIR with Dushanbe, Kabul and Urumqi FIRs.

6.4 Pakistan is timely providing the required data on aircraft approvals, large height deviations, total aircraft movement in RVSM airspace and ATC -ATC coordination failure, to Monitoring Agency for Asia Region (MAAR) and Middle East Central Monitoring Agency (MECMA).

7. CONCLUSION

7.1 Assembly is requested to note, the participation of Pakistan in the ICAO global and regional air navigation programmes.

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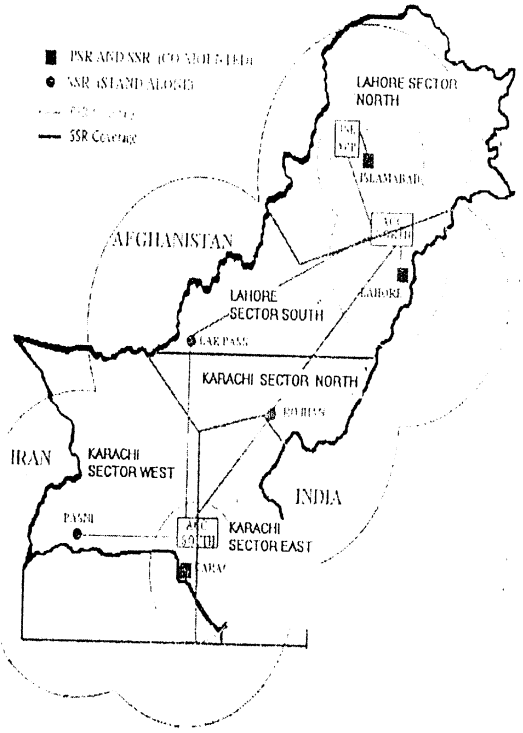
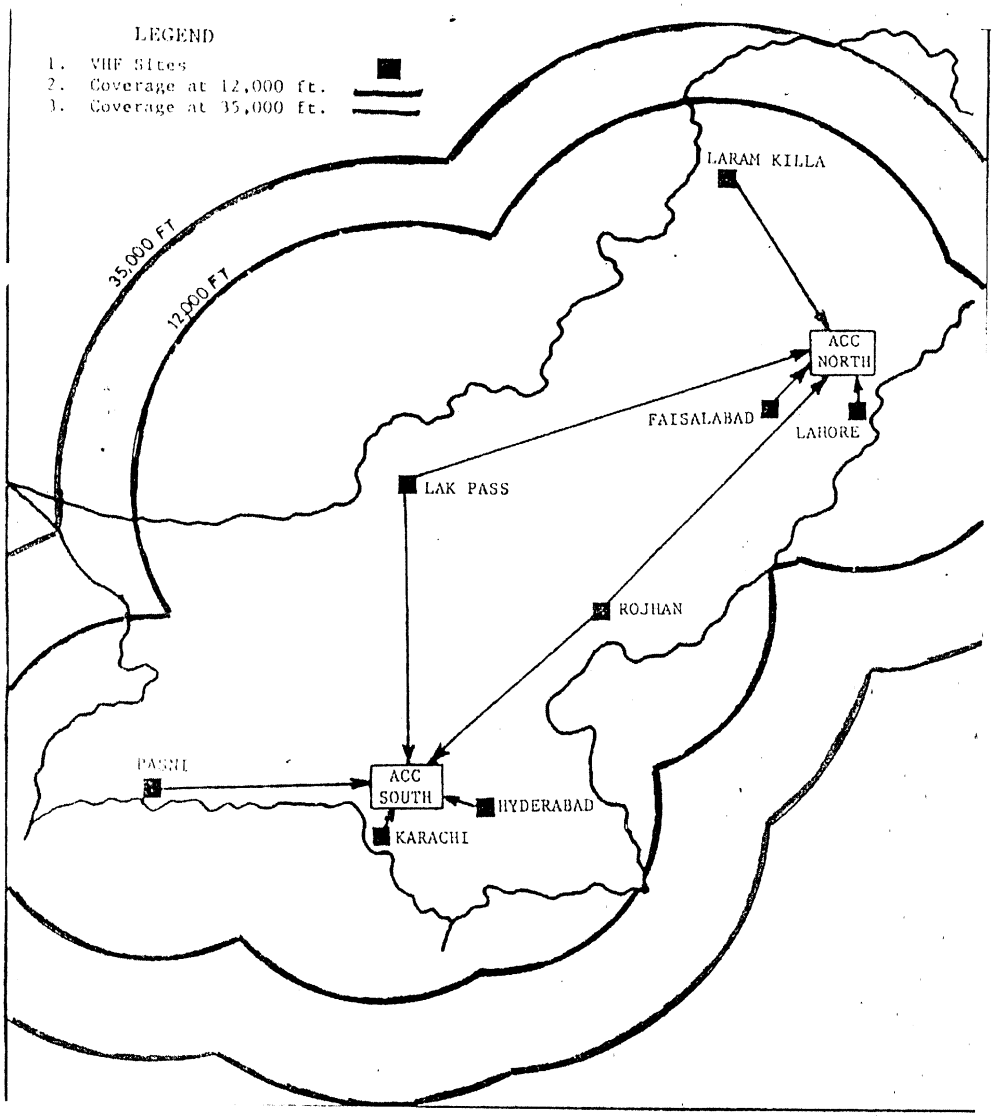
Appendix-A

CAA ATS Network

MAXIMUM RADAR COVERAGE



Appendix-B



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