International Civil Aviation Organization

Fourteenth meeting of the APANPIRG ATM/AIS/SAR Sub-Group (ATM/AIS/SAR/14)

Bangkok, Thailand, 28 June to 2 July 2004

Agenda Item 6: Deficiencies in the Air Navigation field

DEFICIENCIES IN THE PROVISION OF AIR TRAFFIC SERVICES IN THE ASIA PACIFIC REGION

(Presented by IATA)

SUMMARY

This paper presents a review of the deficiencies in the provision of air traffic services in the Asia Pacific region.

1 INTRODUCTION

1.1 IATA has previously highlighted deficiencies related to the provision of Air traffic services in the Asia Pacific region. While some FIRs are exemplary in the provision of air traffic services, the same cannot be said for all the FIRs. Worst still, not only has some FIRs not improved, the service level has actually deteriorated. The implementation of new route structures and RVSM might have taken away some of the attention but these have been implemented and are reaching steady state. It is time to focus our attention on getting the basic requirements across all FIRs, to an internationally acceptable level, so that safety of air traffic operations can continue to be maintained.

2 DISCUSSION

2.1 IATA has on many occasions, provided updates on the serious deficiencies in some FIRs regarding air -ground and ground-ground communications, use of non- standard R/T phraseology, unintelligible communications due to poor command of English, poor ATC practices and procedures, non-compliance with Annex 14 requirements and Annex 15 notification requirements, etc.

2.2 Air-ground and ground –ground communications

2.2.1 Flights operating over Yangon, Mumbai, Chennai, Kolkatta, Dhaka and Kabul FIRs. frequently suffer from the inability to establish and maintain two way communications with the respective ATC units. Meeting should note that the situation in Yangon FIR is exacerbated by the fact that flights are required to transition from metric to CVSM to RVSM levels. This has necessitated the implementation of an IATA, a non-ICAO In flight Broadcast Procedure (IFBP) requiring pilots to transmit their positions to each other on a separate frequency and a contingency procedure blocking of conflicting levels in the opposite direction, allowing aircraft to transition from one flight level system to another if communications cannot be established. This cannot be a permanent fixture, and a solution has to be found urgently.

2.2.2 Frequent reports are received from flights operating in Mumbai FIR of exceedingly congested and poor HF communications. This is a busy FIR with heavy traffic volumes. Good continuous air-ground and ground-ground communications has to be an absolute requirement for the area, if flight safety is to be maintained.

2.2.3 Reports of loss of HF communications with Ujung Pandang ATS also occur frequently. Although the traffic volumes might not be as high, the large distances involved where communications are not available are a major cause for concern.

2.2.4 Air-ground communications in the Kabul FIR used to be a problem but we are happy to report that this has been fixed.

2.2.5 Will HF communications ever reach the point where clarity is assured and is not subject to the vagaries of weather phenomena? The question therefore is, will it not be more expedient, and more useful in the long run to make the switch to data-link? Some headway has been made to implement ADS/CPDLC, but progress is slow and patchy. A concerted effort is required to complete the transformation to a data-link environment.

2.3 Unintelligible communications due to use of non- standard R/T phraseology and poor command of English.

2.3.1 It is a basic and fundamental requirement that ATS communications are carried out using standard R/T phraseology. This seems to be a simple directive to follow, but is, violated more frequently than we can imagine. The meeting is urged to take particular note of this. We urge ATS Service Providers to carry out surveys and checks from time to time to ensure that only standard phraseology is used. It is well understood that many ATS units in the region are not manned by native English speakers. This does not mean that they cannot or do not speak English well. However, we may well have to accept that there is certainly a strong presence of local accents, both in the ATS and pilot community in this region, which can only make it harder to understand each other. This makes it all the more imperative that there is strict adherence to standard R/T phraseology, and communications facilities of the highest quality.

2.4 ATC practices and procedures

2.4.1 The practice of late delivery and fragmenting of the Route Clearance continues to cause concern. In the past it was not uncommon for flights to be given their route clearances while taxying towards the runway. Although this could be uncomfortable if it was a lengthy clearance, pilots could still cope, as all that was required was manual copying down of the clearance. With the advent of the glass cockpit, the clearance has to be entered into the FMS, and this is better achieved when the aircraft is stationary, preferably before pushback. It is also preferred that the full clearance, including the SID, be given together with the route clearance as these also have to be entered into the FMS. To be informed of the SID just prior to the take-off clearance is certainly not the best time for the cockpit crew. Sudden changes in the SID and level restrictions, at or near the take-off point is equally unhelpful.

2.4.2 The way forward is to implement PDC, which will resolve many of the problems mentioned above.

2.5 Compliance with Annex 14 requirements

2.5.1 It goes without saying that strict compliance with Annex 14 standards are necessary to ensure the safety of flight operations. However, as traffic grows, many airports have found themselves ill-equipped to handle the increased flow, because of inadequate space in the manouvering areas resulting in complex procedures which in turn causes safety concerns. Further, as aircraft continue to grow larger, many airports in the region have found themselves unable to meet the requirements to accommodate these aircraft. The latest challenge comes in the form of the Airbus 380, which is expected to enter service in the first quarter of 2006. How many airports in the region are equipped to handle these aircraft? How many have plans that have gone beyond the drawing board?

2.6 Compliance with Annex 15 notification requirements

2.6.1 Operators continue to encounter airspace and air route closures, changes to navigation procedures, etc., where insufficient time was given. Annex 15 states “at least 7 days”. There were cases where hardly any lead-time at all was given. It is understandable that sometimes the ATS authority itself was not given time but it has to be emphasized that regularity of flights has to be safeguarded, and the relevant ATS authority has to play its role in ensuring that this message is understood by all concerned. Publishing changes in approach procedures at an airport, without complying with the Annex 15 requirements will not achieve the desired result, as operators will not be able to comply with the new procedures because the necessary charts will not be available. For these the minimum requirement is at least one AIRAC cycle. Two AIRAC cycles will ensure that all the necessary measures by charting agencies, operator dissemination of the information and training, will be accomplished. This has been raised many times before, but it continues to recur.

2.7 ATS Incident Reporting

2.7.1 ICAO Doc 9426 Part II Chapter 3 (see Attachment) requires that reporting of air traffic incidents and ATS investigation procedures be established in order to ensure high standards of safety in the conduct and control of air traffic. Near collisions, serious difficulty caused by faulty procedures or lack of compliance with applicable procedures and serious difficulty caused by failure or ground facilities are identified as air traffic incidents and are reportable.

2.7.2 It should be noted that an initial report would most likely be made on radio by the pilot. Following an air traffic incident the ATC unit involved should ensure that the accident/incident authority and the national ATS authority are notified of all reportable incidents.

2.7.3 To ensure that incident reports are sent by operators, and are received in good time at the appropriate ATS unit, it is imperative that every FIR provides a contact address with a responsible person. We respectfully request that this meeting takes the decision to make a list of contact persons and addresses to which operators can send incident reports for investigation and resolution. In this regard, IATA wishes to acknowledge the effort made by Indonesia, in providing us with an email address for incidents reports to be sent to, which we have circulated to all IATA members.

3 ACTION BY THE MEETING

3.1 The meeting is invited to note the importance and urgency of these known deficiencies and work towards resolving them.

Chapter 3
ATS Incident Reporting

3.1 INTRODUCTION

3.1.1 This chapter is concerned with incidents specifically related to the provision of ATS and known as air traffic incidents. The term air traffic incident is meant to mean a serious occurrence involving air traffic such as a near collision or a serious difficulty caused by faulty procedures, or the lack of compliance with applicable procedures or the failure of ground facilities resulting in a hazard to aircraft.

3.1.2 The specifications in ICAO *Annex 13 — Aircraft Accident Investigation* apply to activities following accidents and incidents, but nothing in Annex 13 is intended to impose an obligation on States to conduct an investigation into an incident. However, when the accident/incident investigation authority institutes an investigation of an incident, the procedures in ICAO Annex 13 and the ICAO *Manual of Aircraft Accident Investigation* (Doc 6920) should be followed where applicable. In such case the ATS investigation should be a part of the investigation by the accident/incident investigation authority.

3.1.3 Reporting of air traffic incidents and ATS investigating procedures should be established in order to ensure high standards of safety in the conduct and control of air traffic. For this purpose, ICAO has developed an air traffic incident report form for use by pilots and controllers when submitting or receiving a report regarding an air traffic incident. This form is reproduced in Appendix A.

3.1.4 Aircraft accidents and incidents are often reported through ATS channels. Such reports and any associated information should be recorded by the unit concerned and forwarded immediately to the appropriate accident/incident investigation authority.

3.1.5 In order to assist States in their accident/incident investigation studies, and accident prevention programmes, ICAO has developed an accident/incident reporting system, which is known as ADREP. In accordance with Annex 13, States are encouraged to submit details of accidents to aircraft above 2 250 kg and incidents, if investigated, to aircraft above 5 700 kg so that the information can be entered into the ADREP system for storage and for automated retrieval. Details of the ADREP system are contained in the ICAO *Accident/Incident Reporting Manual (ADREP Manual)*, (Doc 9156).

3.2 REPORTING PROCEDURE

3.2.1 General

3.2.1.1 Air traffic incidents are identified and designated in reports as follows:

Type of air traffic incident	Designation of incident
Near collision	Near collision
Serious difficulty caused by faulty procedures or lack of compliance with applicable procedures	Procedural
Serious difficulty caused by failure or ground facilities	Facility

3.2.1.2 The air traffic incident report form as shown in Appendix A was developed by ICAO for use when submitting or receiving a report on an air traffic incident. The purpose of the form is to provide investigatory authorities with as complete information as possible on an air traffic incident to enable them to report back, with the least possible delay, to the pilot or operator concerned the result of the investigation and, if appropriate, the remedial action taken. The form is intended for use by:

a) a pilot for filing a report on an air traffic incident after arrival or to confirm a report made by radio;

Note.— The form, if available on board the aircraft, may also be of use in providing a pattern for making the initial report in flight.

b) an ATS unit for recording an air traffic incident report received by radio, telephone or teleprinter.

Note.— The form may be used as format for the text of a message to be transmitted over the AFTN network.

3.2.2 Reporting by pilots

3.2.2.1 A pilot involved in an incident should proceed as follows:

a) during flight, use the appropriate air/ground frequency for reporting an incident of major significance, particularly if it involves other aircraft, so as to permit the facts to be ascertained immediately;
b) as promptly as possible after landing submit a completed air traffic incident report form:
   1) for confirming a report of an incident made initially in accordance with a) above, or for making the initial report on such an incident if it had not been possible to report it by radio;
   2) for reporting an incident which did not require immediate notification at the time of occurrence.

3.2.2.2 An initial report made by radio should contain the following information:

a) type of incident, e.g. near collision;
b) radio call sign of aircraft making report;
c) position, heading or route, true airspeed;
d) flight level, altitude or height, and aircraft attitude;
e) flying conditions (e.g. instrument meteorological conditions (IMC) or visual meteorological conditions (VMC));
f) time of incident in Co-ordinated Universal Time (UTC);
g) description of other aircraft, if relevant;
h) brief details of incident, including, when appropriate, sighting distance and miss distance.

3.2.2.3 The air traffic incident report form initially reported by radio should be submitted by the pilot to the ATS reporting office of the aerodrome of first landing. The pilot should complete sections 1 and 2 supplementing the details of the radio report as necessary.

Note.— Where there is no ATS reporting office, the report may be submitted to any other ATS unit.

3.2.3 Reporting by ATS

3.2.3.1 Following an air traffic incident the ATC unit involved should proceed as follows:

a) identify and designate the incident in accordance with the procedure detailed in 3.2.1;
b) if the aircraft is bound for a destination located within the area of responsibility of the ATS unit in whose area the incident occurred, arrangements should be made with the operator to obtain the pilot's report on landing;
c) if the aircraft is bound for a domestic destination, the ATS unit of destination should be requested to obtain the pilot's report on landing;
d) if the aircraft is bound for an international destination, the ATS authority at destination aerodrome should be notified and given full details of the incident (by AFTN) and requested to obtain the pilot's report;
e) the civil aviation authority of the State of Registry and the State of the Operator should be notified of the incident by the State of occurrence (by AFTN) together with all available details;
f) if the incident involves another aircraft, similar action should be taken in regard to both parties;
g) complete the air traffic incident form;
h) ensure that the accident/incident authority and the national ATS authority are notified of all reportable incidents.

3.3 INVESTIGATION AND DOCUMENTATION

3.3.1 It is essential to determine the cause of an air traffic incident, with the minimum delay so that action can be taken to prevent a recurrence. Immediately following an air traffic incident all documents and tapes relating to the incident should be impounded. Controllers, supervisors and officers-in-charge of the ATS unit concerned should take all necessary measures to preserve relevant documents and to record as many details as possible while they are still fresh in their minds.

3.3.2 The initial ATS investigation is normally carried out by the ATS unit to which the incident has been reported or which noted it. The ATS unit should obtain the following information:

a) statements by personnel involved;
b) tape transcripts of relevant radio and telephone communications;
c) copies of flight progress strips and other relevant data, including recorded radar data, if available;
d) copies of the meteorological reports and forecasts relevant to the time of the incident;
e) technical statements concerning the operating status of equipment, if applicable;
f) unit findings and recommendations for corrective actions, if appropriate.

3.3.3 To give effect to the air traffic incident investigating process, an investigating team should be established. The team should include the officer-in-charge of the ATS unit or a senior ATS officer as team chief and ATS experts, other specialist officers from flight operations, flight calibration, telecommunications engineering or other fields, if required. In addition and when necessary, the controller(s) involved in the incident should be given the opportunity to nominate as a member of the team an experienced controller of equal grade to represent him during the investigation. When two units are involved, the unit in whose area the incident has taken place should initiate action to convene the incident investigation team and include an offer for officers of the other's unit to participate.

3.3.4 Should the pilot, the operator or a civil aviation authority refuse to provide information necessary for the proper investigation of an air traffic incident, the State conducting the investigation should proceed with the investigation using available information and inform the ICAO Regional Office of the difficulties encountered.

3.3.5 The proceedings of an air traffic investigating team, as well as papers and records used by it should be treated as confidential material. Specific *prima facie* facts required by the team should be prepared by the unit and should include, as appropriate:

a) names and operating positions of involved ATS personnel;
b) full details of the sequence of events in narrative form;
c) names of pilots and operating companies and details of aircraft involved;
d) reports from controllers involved as prepared before leaving the unit on the day of the occurrence;
e) reports from pilots involved, if possible as prepared at the next point of touch-down, preferably in penscript but acceptable by AFTN signal and, if necessary, through the operator's office;
f) the marking and impounding of relevant voice recording tapes, flight progress strips and other flight data including recorded radar data if available.

3.3.6 The report of the ATS investigating committee should include a summary of the incident and the cause. The report should contain all relevant information, in chronological sequence where appropriate, and concluding with a list of findings, conclusions, causes and safety recommendations for the purpose of accident/incident prevention. Recommended corrective actions should also be included in the report. The committee should not make recommendations on personnel or disciplinary action in the event of controller error because the fundamental objective of the investigation is prevention of accidents, not to apportion blame or liability.

3.3.7 In addition, the following information should be submitted as appendices to the report:

a) statements by personnel involved;
b) tape transcripts of relevant air-ground and telephone communications;
c) copies of meteorological reports or forecasts relevant to the incident;
d) copies of flight progress strips and other data relevant to the incident, including recorded radar data, if available;
e) any technical statements concerning the operating status of equipment, if applicable.

3.3.8 On completion of the investigation, full details of the findings should be sent through appropriate channels to the pilot, and/or the operator and the civil aviation authority of the State in which the aircraft is registered.

3.4 ANALYSIS OF ATS INCIDENTS

3.4.1 The analysis of an incident should be considered in relation to system operation and have regard to factors such as the following:

a) *Procedures* — Were the procedures and separation standards applied, correct for the situation?
b) *Data and display* — Was the displayed data correct and complete in terms of local unit instructions? Was the displayed information properly interpreted and utilized?
c) *Co-ordination* — Were the prescribed co-ordination procedures adequate and correct and were they correctly and fully applied?
d) *Communication* — Was correct phraseology used by all personnel involved? Was there any failure to communicate clearly and concisely which may have given rise to error or misunderstanding? Was there any failure to note and correct any incorrect read back of information? Was there any failure to obtain acknowledgement of the receipt of information?
e) *Equipment* — Was the performance of relevant technical equipment adequate? (If any failure or malfunction of equipment caused or contributed to the incident, specialized technical advice or evidence should be sought.)

f) *Personnel performance* — Were any factors present which may have affected an individual's performance, e.g. fatigue, illness, personal problems, etc.? (While personnel errors may be established by the committee, degrees of negligence, carelessness or blame are not to be specified.)
g) *Task environment* — All aspects of the working environment should be considered which may have affected the performance of personnel, e.g. background noise, heating, ventilation, ambient light levels, etc.
h) *General operations* — Were all personnel familiar with the traffic situation and pertinent data before assuming responsibility for an operating position? Were the duties and responsibilities for the operating position(s) clearly defined? The adequacy of staffing in relation to traffic density should be considered as well as relief, and adequate rest periods. If applicable, was the level of supervision satisfactory?

3.4.2 Once the analysis of an ATS incident has been completed, information on the results, including conclusions and recommendations reached, should be made available to all concerned so that corrective action, etc. may be taken and all concerned are fully aware of the final results.

3.5 RELEASE OF INFORMATION

3.5.1 In the interest of accident and incident prevention, the State conducting the investigation should publish the report as soon as possible. When the State considers that disclosure of records, described below, might have an adverse effect on the availability of information in that investigation or any future investigation, then such records shall not be made available.

3.5.1.1 Such records include:

a) statements from persons responsible for the safe operation of the aircraft;
b) communications between persons having responsibility for the safe operation of the aircraft;
c) medical or private information regarding persons involved in the accident or incident;
d) cockpit voice recordings and transcripts from such recordings;
e) opinions expressed in the analysis of information, including flight recorder information.

3.5.2 Members of the press and general public who make inquiries into occurrences should be referred to a person authorized to release information.

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Appendix A

Air Traffic Incident Report Form

AIR TRAFFIC INCIDENT REPORT FORM

For use when submitting and receiving a report on an air traffic incident and when preparing for transmission a message on such incidents. Shaded boxes contain items to be included in an initial report by radio.

Section 1. - GENERAL INFORMATION

Type of incident	A	INCIDENT: NEAR COLLISION/PROCEDURAL/FACILITY*
Name of pilot-in-command	B	
Operator	C	
Identification markings of aircraft	D	
Aircraft type	E	
Radio call sign - In communication with - Frequency at time of incident	F	
Aerodrome of departure	G	
Aerodrome of first intended landing and destination, if different	H	
Type of flight plan	I	IFR/VFR/NONE*
Position at time of incident - Heading or route - True airspeed	J	
FL, altitude or height - Altimeter setting - Attitude	K	Level flight/climbing/descending/turning*
Flight weather conditions at time of incident	L	IMC/VMC ..... above/below cloud/fog/haze ..... horizontally from cloud Between cloud layers In cloud/rain/snow/sleet/fog/haze Flying into/out of sun ..... flight visibility *
Date and time of incident in UTC	M	Reported by radio to ... AFIS/TWR/APP/ACC/FIC* at ... (*date/time*)

Section 2. - DETAILED INFORMATION

Description of other aircraft, if relevant: Type, high/low wing, number of engines ..... Radio call sign, registration ..... Markings, colour, lighting ..... Other available details	N	
Description of incident If desired add comment or suggestion, including your opinion on the probable cause of the incident. (In case of near-collision give information on respective flight paths, estimated vertical and horizontal sighting and miss distances between aircraft and avoiding action taken by either aircraft.)	O	*(Continue overleaf if necessary)*

Date ..... Time ..... Place ..... of completion of form	Function and signature of person submitting report	Function and signature of person receiving report .....

Section 3. - SUPPLEMENTARY INFORMATION by ATS unit concerned

How report received	P	Radio/telephone/teleprinter* at ARO/AFIS/TWR/APP/ACC/FIC* .....
Details of ATS action: clearance, incident observed on radar, warning given, result of local enquiry, etc.	Q	*(Continue overleaf if necessary)*

*Delete as appropriate

Signature of ATS Officer .....
Date/time UTC .....