ICAO CIV/MIL Cooperation Conference – India
Regional Expectations

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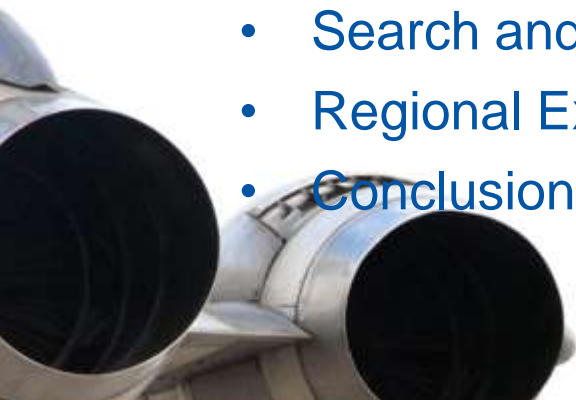*International Civil Aviation Organization (ICAO)*

New Delhi, India, 19 May 2016

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ICAO Civil/Military Forums

- APANPIRG/9 (August 1998) developed guidelines on:
    - Common terminology, abbreviations, rules and procedures;
    - Joint provision of aeronautical facilities and ground services;
    - Equal standards for personnel in civil and military ATS units;
    - No unilateral establishment of controlled and/or restricted airspace;
    - Efficient organization and use of airspace; and
    - sharing of effort in research and development
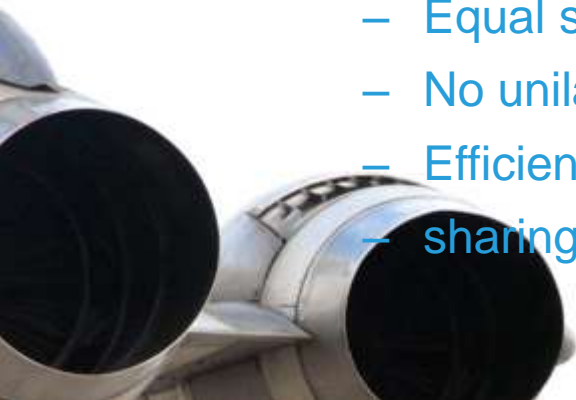
ICAO Civil/Military Forums

- The 47th Director's General of Civil Aviation Conference urged greater participation of military authorities in civil forums to facilitate optimum utilization of airspace:
  - States should consider including their military counterparts in their delegations whenever possible; and
  - military cooperation cells in civil ATC Centres would facilitate appropriate civil/military tactical communication.
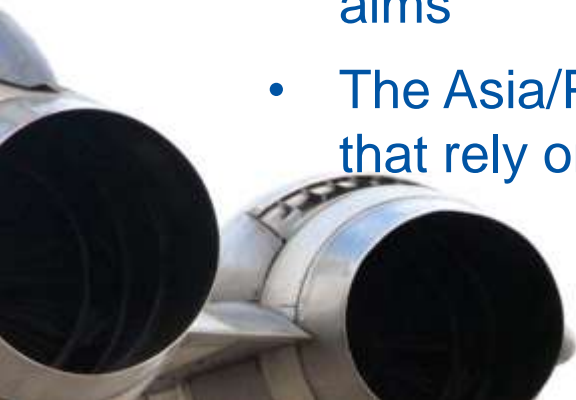
ICAO Civil/Military Forums

- The Seamless Air Traffic Management (ATM) Ad Hoc meeting recognised that civil and military surveillance data sharing can facilitate:

  – Air Traffic Flow Management Collaborative Decision-Making (CDM); and

  – enhance safety nets and safety investigations

ICAO Civil/Military Forums

- The Asia/Pacific Seamless ATM Planning Group (APSAPG) identified civil/military cooperation as one of the main ATM improvement areas to support economic and environmental aims

- The Asia/Pacific has many island and archipelago States that rely on aviation as a primary means of transport
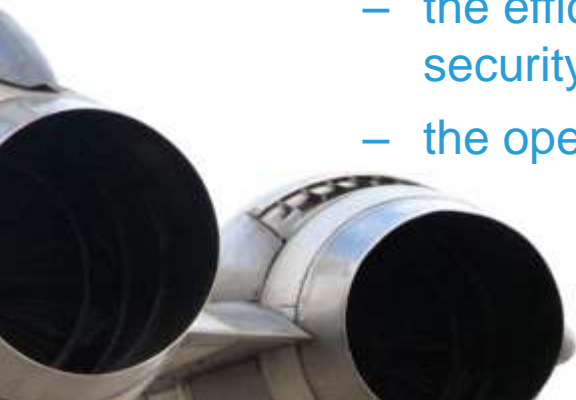
ICAO Civil/Military Forums

- APSAPG noted that: *It is clear that civil air navigation is a vital part of a nation's strategic, economic and environmental interest*

- *Therefore, protecting a State's civil air navigation infrastructure is important for national security, so civil/military cooperation is consistent with the military mission to defend the nation's interests*

ICAO Civil/Military Forums

- Regional forums have noted that civil and military agencies have many common interests, including:
  - access to airspace normally used by the other party
  - the efficiency of civil defence and SAR operations, police, security, humanitarian aid and national emergencies
  - the operation of Unmanned Aerial Systems (UAS)

ICAO Civil/Military Forums

- the need to take into account 'non-compliant' military or other State aircraft using special handling status, given the increasingly complex civil aircraft equipage requirements;

- efficient handling by civil ANSPs of special military manoeuvres, such as formations and air refueling; and

- assurance of civil/military ATC system inter-operability and connectivity in a modern, network-centric environment.

ICAO Civil/Military Policies

- The Seamless ATM meetings have noted the following Special Use Airspace (SUA) principles:

  – many prohibited areas (where there are absolutely no flights) may be more correctly described as restricted areas;

  – restricted areas may not be designated over the high seas or in airspace of undetermined sovereignty (Annex 2);

ICAO Civil/Military Policies

– restricted areas need to be as small as practicable, while encompassing the activity therein;

– danger areas may be considered in lieu of restricted areas, if the pilot can determine the nature of the hazard; and

– SUA should only be activated when required*

*Activation by NOTAM rather than deactivation is preferable.

ICAO Civil/Military Policies

– All airspace, civil and military, needs to be subject to regular review to ensure it is appropriately designated, designed and active only when required

Asia/Pacific Seamless ATM Plan

- Unlike many military operations, civil aircraft are often used in different international environments, thus needing a harmonised and interoperable system = Seamless ATM

- However, civil airspace is fragmented, despite ICAO standards and recommended practices
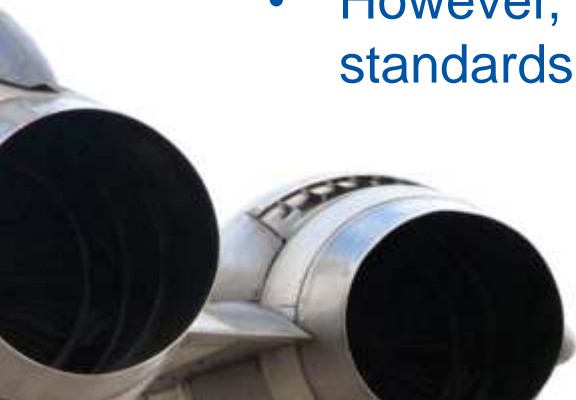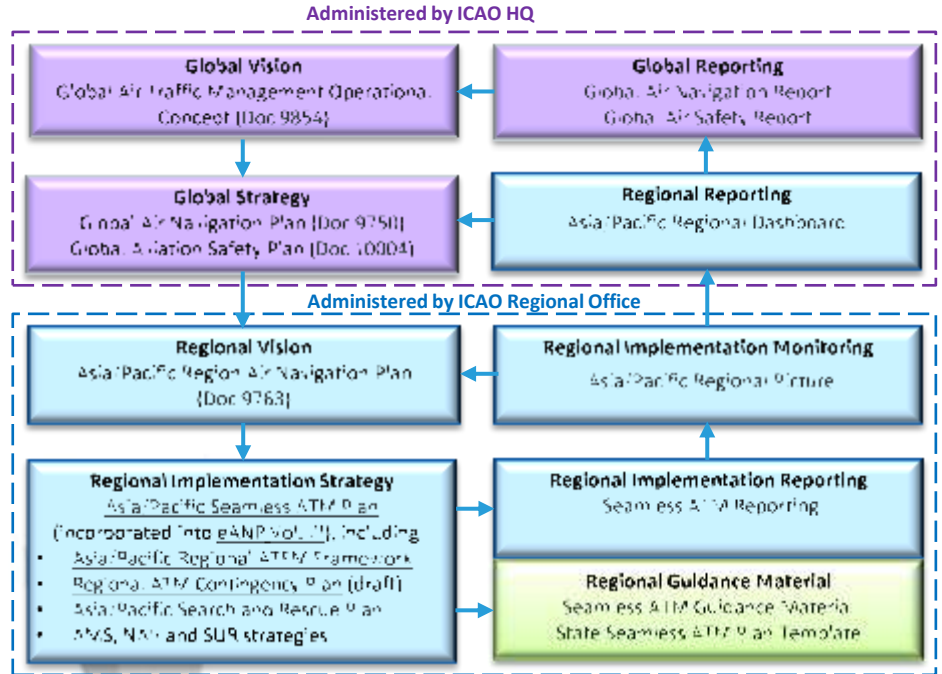
Asia/Pacific Seamless ATM Plan

- Many States have numerous military airspace or restrictions
- As a result, many inefficient ATM route structures and systems impose unnecessary costs and complexity, the latter potentially affecting safety
- ASEAN has announced a 'Single ASEAN Sky' as a key part of its plan for economic growth and stability.

Asia/Pacific Seamless ATM Plan

- Hierarchy of global and regional planning
- APAC Seamless ATM planning is at the level of strategy for regional implementation

Asia/Pacific Seamless ATM Plan

- The Asia/Pacific Seamless ATM Plan incorporated Global Air Navigation Plan Aviation System Block Upgrades, but also added regional human performance and civil/military cooperation elements.

- The Seamless ATM Plan is available at: http://www.icao.int/APAC/Pages/edocs.aspx

Asia/Pacific Seamless ATM Plan

- Civil/Military Cooperation:
  - *5.56 …FUA is an airspace management concept based on the principle that airspace should not be designated as purely civil or military, but rather as a continuum in which all user requirements are accommodated to the greatest possible extent…*
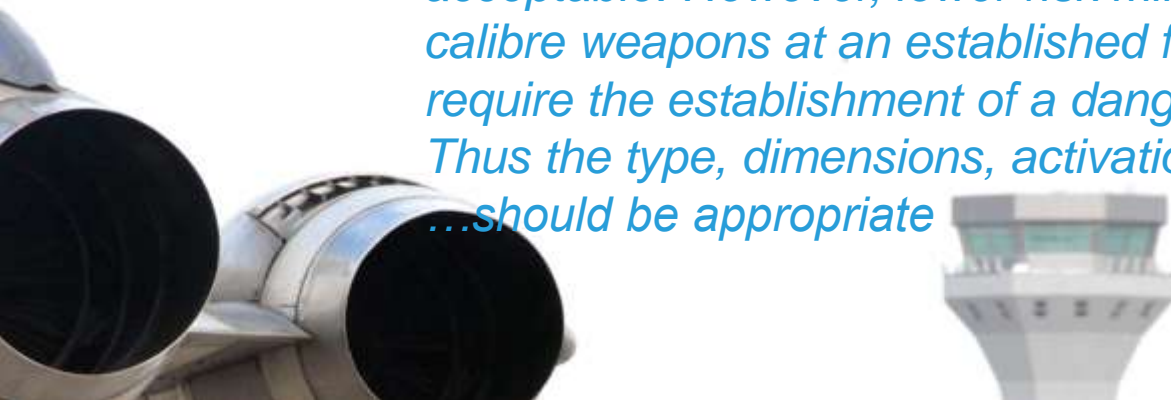
Asia/Pacific Seamless ATM Plan

- Civil/Military Cooperation Policy:

  - *5.57 …SUA required careful assessment, review and management, to ensure the most appropriate airspace designation is used, and the airspace is operated in a cooperative manner… …using risk-based assessments …through coordinated and cooperative methods if possible*

Asia/Pacific Seamless ATM Plan

- Civil/Military Cooperation Policy:

    – *5.58 Restricted areas… would be expected when the risk of an accident for non-segregated operations is higher than acceptable. However, lower risk military operations (e.g.: small calibre weapons at an established firing range) may only require the establishment of a danger area or even no SUA. Thus the type, dimensions, activation notice and duration …should be appropriate*

Asia/Pacific Seamless ATM Plan

- Civil/Military Cooperation Policy:

  - *5.62 Data sharing arrangements (including aircraft surveillance), are a key part of civil/military cooperation for tactical operational responses, and to increase trust between civil and military units. Data sharing between the civil and military could facilitate CDM, a vital component of ATFM. The Regional Surveillance Strategy espouses civil/military cooperation and system interoperability.*
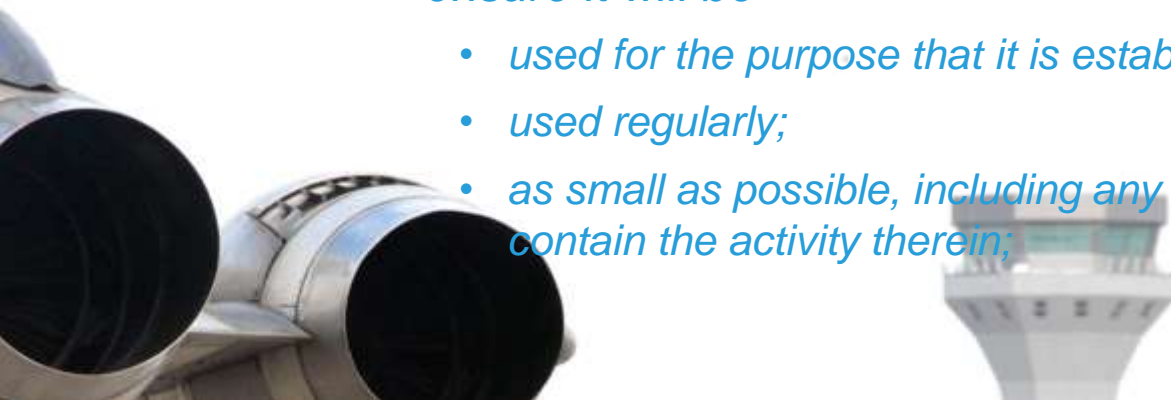
Asia/Pacific Seamless ATM Plan

- Civil/Military Cooperation Policy:

    – *5.63 Aircraft operating ADS-B technology transmit their position, altitude and identity to all listeners, conveying information from co-operative aircraft that have chosen to equip and publicly broadcast ADS-B messages. Thus there should be no defence or national security issues with the use and sharing of such data.*

Asia/Pacific Seamless ATM Plan

- *7.11 Civil/Military Airspace expectations are as follows:*
  - *SUA should only be established after due consideration of its effect on civil air traffic by the appropriate Airspace Authority to ensure it will be –*
    - *used for the purpose that it is established;*
    - *used regularly;*
    - *as small as possible, including any internal buffers, required to contain the activity therein;*

Asia/Pacific Seamless ATM Plan

- • *if applicable, operated in accordance with FUA principles; and*

- • *activated only when it is being utilised; and*

– *SUA should be* *regularly reviewed* *to ensure the activities that affect the airspace, and size and timing of such activity are accurately reflected by the SUA type, dimensions, activation notice and duration of activation.*

Asia/Pacific Seamless ATM Plan

- *7.42 Civil/Military Airspace expectations are as follows:*
  - *A national civil/military body should be formed to coordinate strategic civil-military activities*;*
  - *formal civil-military liaison should take place for tactical responses by encouraging military participation at civil ATM meetings and within ATC Centres;*

Asia/Pacific Seamless ATM Plan

- *integration of civil and military ATM systems using joint procurement, and sharing of ATS surveillance data (especially from ADS-B systems) should be provided as far as practicable;*

- *joint provision of civil/military navigation aids should be encouraged;*

Asia/Pacific Seamless ATM Plan

– *common training* *should be conducted between civil and military ATM units in areas of common interest; and*

– *civil and military ATM units should utilize common procedures as far as practicable.*
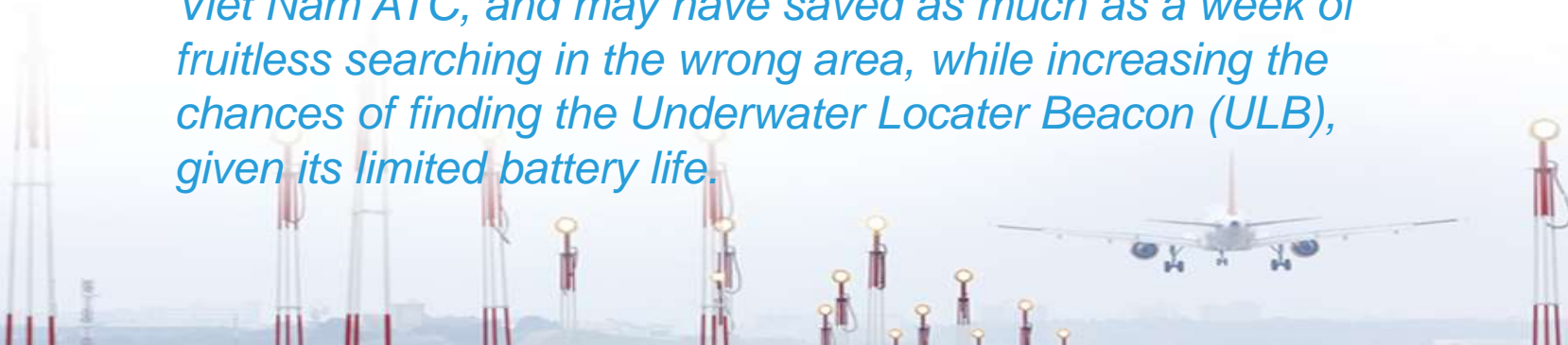
Search and Rescue

- The recent tragedy of MH370 highlighted the need to strengthen a significant aspect of civil/military cooperation in the area of Search and Rescue (SAR).

- APANPIRG/25 noted that several lessons learnt from the tragedy, which would be incorporated into regional and/or global SAR material.
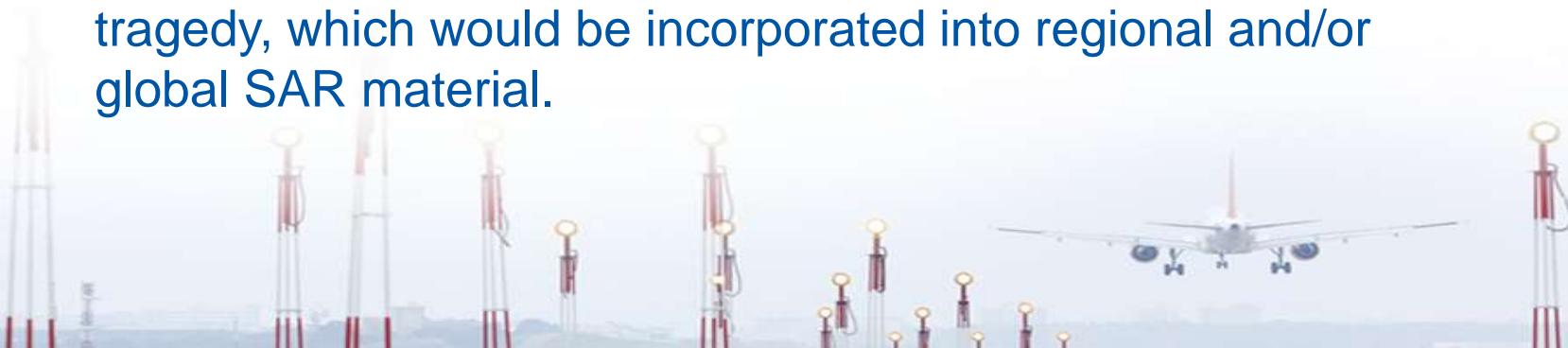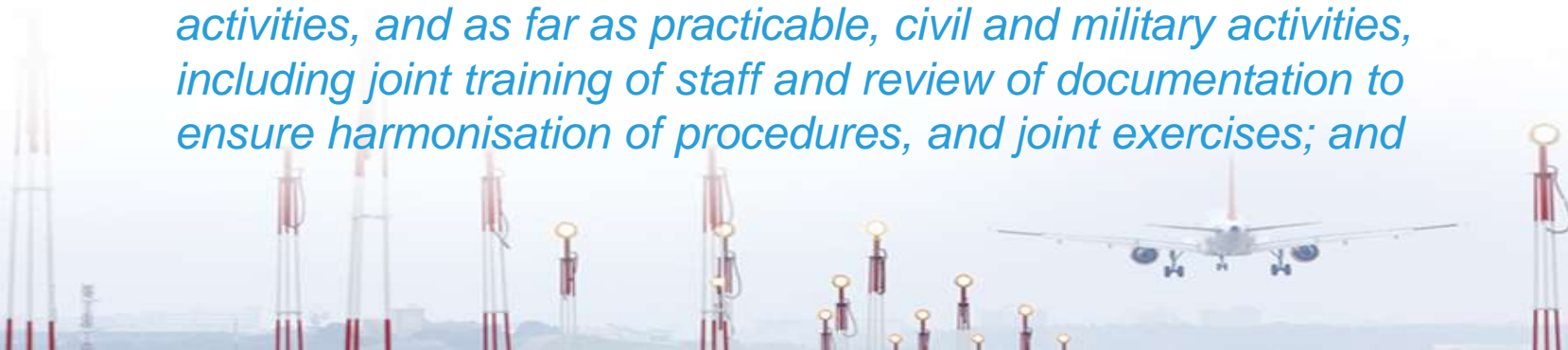
Search and Rescue

- APANPIRG/26 noted that:
  - *It was apparent that a higher degree of civil/military coordination may have revealed the possibility of the MH370 course reversal much earlier after the initial alert advice from Viet Nam ATC, and may have saved as much as a week of fruitless searching in the wrong area, while increasing the chances of finding the Underwater Locater Beacon (ULB), given its limited battery life.*

Search and Rescue

- Asia/Pacific SAR Plan expectations:

  - *National SAR Committee with civil and where applicable, military members;*

  - *The conduct of studies to integrate aviation and maritime SAR activities, and as far as practicable, civil and military activities, including joint training of staff and review of documentation to ensure harmonisation of procedures, and joint exercises; and*

Search and Rescue

- Asia/Pacific SAR Plan expectations (7.1):
  - *c) establish a national SAR committee consisting of civil and where appropriate, military members to enable a whole-of-government approach;*

Search and Rescue

- Asia/Pacific SAR Plan expectations (7.1):
  - *f) conduct studies to check the feasibility for, and develop an implementation plan if practicable, the integration of aviation and maritime SAR activities, and as far as practicable, civil and military activities, including joint training and familiarisation of staff and review of documentation to ensure harmonisation of procedures, and joint exercises*
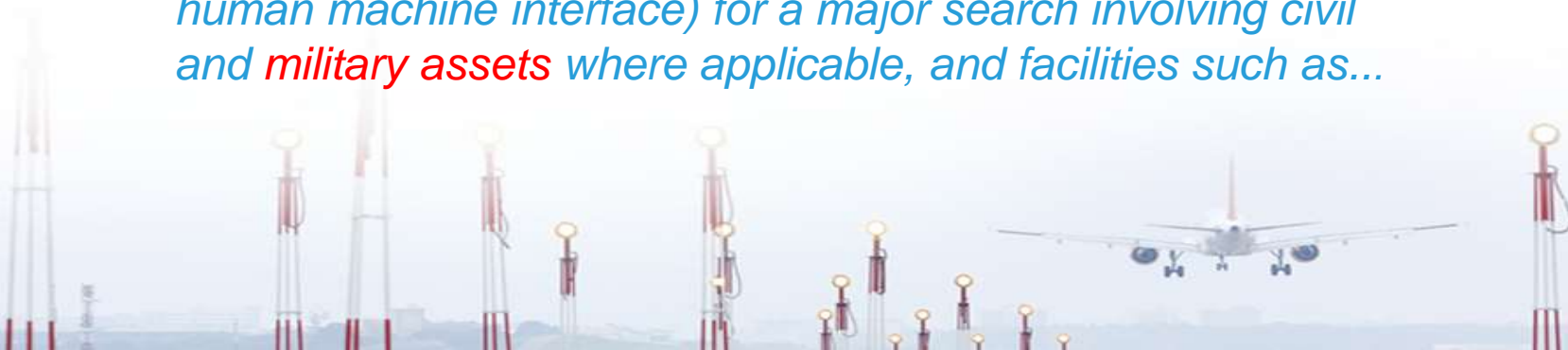
Search and Rescue

- Asia/Pacific SAR Plan expectations (7.2):
  - *All States should…*
    - *(h) establish SAR Alerting procedures which:*
      - *where applicable, include protocols for civil and military support and sharing of information.*

Search and Rescue

- Asia/Pacific SAR Plan expectations (7.3):
  - *RCC Facility: All States should ensure that RCCs are of sufficient size with adequate provision for operational positions designed in accordance with human factors principles (such as human machine interface) for a major search involving civil and* **military assets** *where applicable, and facilities such as...*
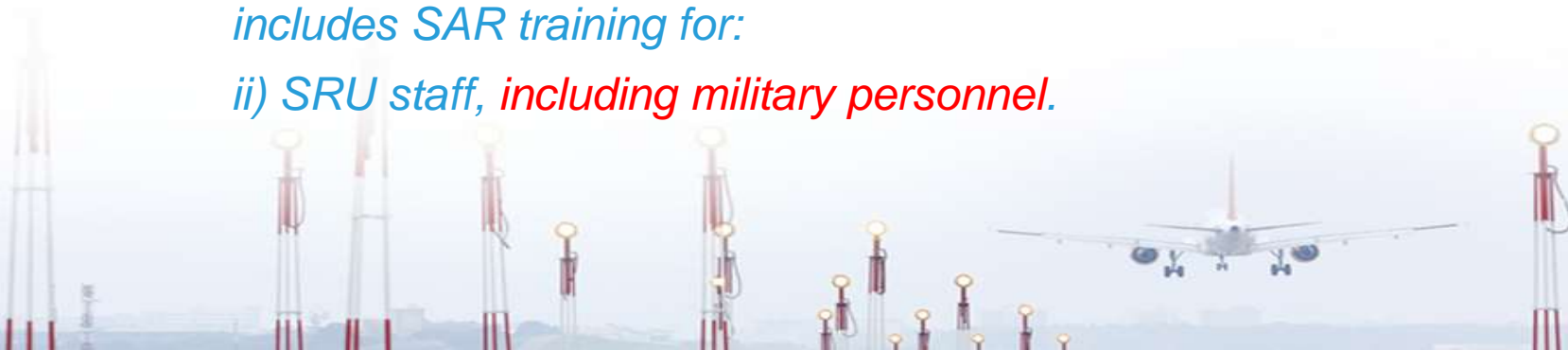
Search and Rescue

- Asia/Pacific SAR Plan expectations (7.4):
  - *All States should, where applicable to maintain a 24 hour service:*

    ... f) develop a comprehensive training programme that includes SAR training for:

    ii) SRU staff, *including military personnel.*

Search and Rescue

- Asia/Pacific SAR Plan expectations (7.6):

  - *a) Procedures enabling… availability and deployment of suitably crewed, trained and equipped SRUs (including a pool of air search observers trained in visual search techniques), public and/or private, civil and military, for rapid SAR response;*

  - *c) protocols for civil SAR authorities to request the assistance of military assets, and similarly military SAR authorities to request civil assets;*

  SRUs = Search and Rescue Units
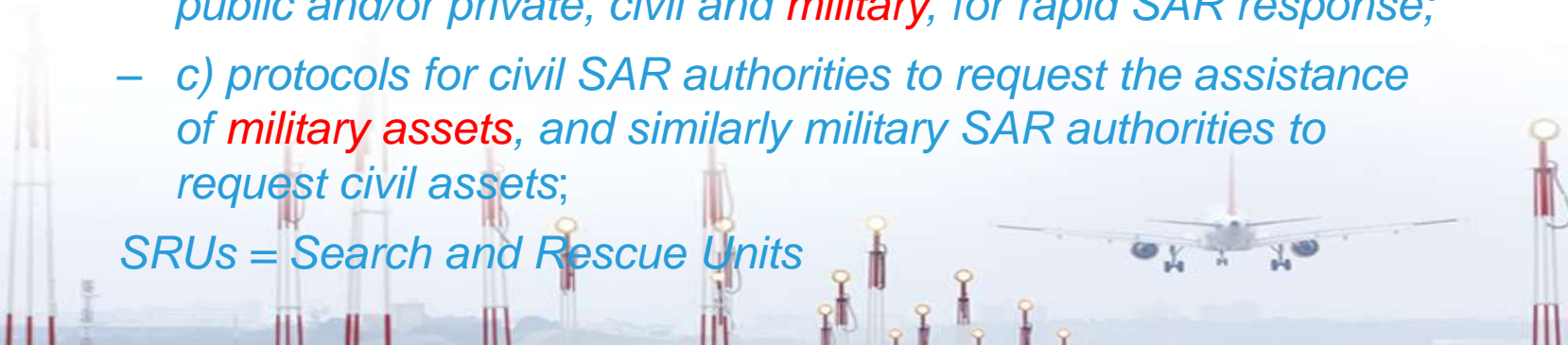
Search and Rescue

- Asia/Pacific SAR Plan expectations (7.7):
  - All States should :

    b) have a reliable distress beacon registration system that:

    ii) is available to RCCs 24 hours a day and includes up-to-date registration details for all national civil and military ELTs, EPIRBs and PLBs;

    ELT = Emergency Location Transmitter

Regional Experiences

- Australia
  - Had maximised the use of airspace through review – resulting in a reduction of Australian restricted areas from 81 to 15
  - Different levels of conditional entry had been appended to all restricted areas by the independent airspace authority, providing greater flexibility

Regional Experiences

- Australia
    - Airservices Australia was working with the Australian military to synchronise training, procurement of ATM systems and ATM operating procedures

Regional Experiences

- China
  - Military collaboration was a priority to release more airspace and operate on a more flexible basis, particularly to increase temporary routes and reduce permanently segregated airspace

Regional Experiences

- Hong Kong, China
  - Differing levels of civilian access to military airspace, and uncertainty of information from military sources for ATM planning

Regional Experiences

- India
  - 35% of Indian airspace was 'reserved' for military use, so air traffic growth had been challenging to manage, with conflicting civil, military and space user requirements and equipage
  - Whole-of-government approach, strategic body set up and new FUA Manual agreed

Regional Experiences

- India
  - ICAO meetings noted that progress towards executing data-sharing agreements with other States required military input Guidance Material on Advice to Military Authorities
  - ICAO Bhutan missions indicated that air defence numbers were a matter affecting flight planning

Regional Experiences

- Japan
  - military liaison is stationed at the ATC Centre for prompt coordination with ATC (i.e.: release of military training airspace for civil use)

Regional Experiences

- Japan
  - Conditional Routes that are only available when airspace is not used by military (such as at night time and in the weekend) are widely established in Japan

Regional Experiences

- Pakistan
  - Permanent prohibition of access to FL410 and above within the Karachi FIR (being considered by NATO and other military parties)
  - Non-availability of some ATS routes H24 even under a FUA arrangement

Regional Experiences

- Thailand
    - There was cooperation with the military, although about 70% of Thailand's airspace was affected by SUA

Regional Experiences

This media report is understood to be incorrect but nevertheless it highlights what might happen if civil and military are not coordinating properly

Major disaster averted for thousands of flyers despite miscommunication between Indian Navy, Mumbai ATC

Tuesday, 3 November 2015 - 9:45am IST | Agency: dna webdesk

dna Web Team

Neither the ATC nor the Navy however are forthcoming about how many commercial flights flew during this period, and whether there were any near-misses.

Representational Image of a Missile dna Research & Archives

The airspace over the Arabian sea might have been the scene of a great disaster on Saturday. According to the Mumbai Mirror, the **Indian Navy** conducted **defence exercises** with surface-to-surface missiles on Saturday even as the airspace remained open for civilian flights.

The Mumbai Mirror reports that the Navy had requested closing of airspace for three hours between 12:30 and 3:30 pm on Saturday. However it did not convey to to aviation authorities whether this meant IST or GMT. The Air Traffic Control (ATC) Mumbai assumed it to be GMT. Consequently, airspace remained open for three hours after the exercises had begun.

Regional Experiences

The Asia/Pacific Seamless ATM Plan is expected to be updated to include a new element on ballistic launch and space re-entry activity for the safe conduct of aircraft

PASL Phase II (expected implementation by 7 November 2019)

En-route

All States with agencies that conduct ballistic launch or space re-entry activities should ensure:

- the development of written coordination agreements between the State civil aviation authority and the launch/re-entry agency concerned;
- that strategic coordination is conducted between the State civil aviation authority and any States affected by the launch/re-entry activity at least 14 days prior to the proposed activity, providing notice of at least:
  - three days for the defined launch window; and
  - 24 hours for the actual planned launch timing;
- that consideration of affected airspace users and ANSPs is made after consultation, so that the size of the airspace affected is minimized and the launch window is optimized for the least possible disruption to other users; and
- that communication is established with affected ANSPs to provide accurate and timely information on the launch/re-entry activity to manage tactical responses (for example, emergencies and activity completion).

Conclusions

- Supporting the civil air navigation system is consistent with the goals of military services

- The Asia/Pacific had clear expectations on States to develop strong civil/military cooperation mechanisms in accordance with the Asia/Pacific Seamless ATM Plan