**Executive Summary**

TOC will present these proposals at the April 2010 Conference in Dominican Republic.

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<th>Title</th>
<th>Issue</th>
<th>Proposal</th>
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<td>Stop Bars</td>
<td>Aircraft crossing lit stop bars. Reducing runway incursions.</td>
<td>Proposed IFATCA policy:</td>
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<td>• Stop bar HMI should not distract from</td>
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<td>• Stop bars should be operated 24x7 if able.</td>
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<td>Proposed ICAO changes:</td>
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<td>• Aircraft never cross lit stop bars.</td>
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<td>• ICAO documents be updated for consistency</td>
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<td>Go-around off Visual Approach</td>
<td>Published procedures for a go-around off a visual approach are desired.</td>
<td>Propose ICAO change:</td>
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<td>• Publish go-around procedures for visual approaches in the AIP.</td>
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<td>• Charted visual approaches should contain a go-around procedure.</td>
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<td>SID / STAR Altitude Restrictions</td>
<td>Unrestricted climb waives SID altitude restrictions in the US but not in Europe.</td>
<td>Propose ICAO change:</td>
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<td>• “Climb/descend [FL] via SID/STAR”: SID/STAR restrictions intact</td>
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<td>• “Open climb/descent [FL]”: Waive SID/STAR restrictions through [FL]</td>
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<td>Mode S Flight ID</td>
<td>Mode S transponders broadcast a flight ID that does not always match the flight plan.</td>
<td>Establish a global policy regarding incorrect broadcast data: Must be corrected, switched off or marked invalid. Propose ICAO changes that ATC systems will recognize wrong flight ID and transponders can change flight ID in flight.</td>
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<td>Frequency Management</td>
<td>Examine technologies to alleviate frequency congestion.</td>
<td>Proposed IFATCA policy encourages new frequency congestion techniques that conform to all existing safety requirements and that enhance safety and efficiency.</td>
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<td>North Atlantic (NAT) Oceanic Route Clearance</td>
<td>Processing of NAT flight plans is inadequate and prone to error.</td>
<td>Proposed IFATCA policy requires changes in routings to connect to existing route. Further study is required on how routes are amended and who should be authorized to amend them.</td>
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<td>Required Communication Performance</td>
<td>Review Doc 9869 (RCP Manual) and consider IFATCA policy.</td>
<td>Existing policy suffices for this issue.</td>
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**Attendees**

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<tr>
<td>Kimmo Koivula, Finland</td>
<td>Alex Schwasserman, Germany</td>
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<td>Tinus Olivier, South Africa</td>
<td>Willem Zuidveld, Netherlands</td>
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<td>Andrew Beadle, Australia</td>
<td>Matthijs Jongeneel, Netherlands</td>
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<td>Alasdair Shaw, New Zealand</td>
<td>Bill Holtzman, USA</td>
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<td>Maurice Egan, Ireland (via Skype)</td>
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**Discussion**

The purpose of this meeting was to fine tune the various technical papers the Committee has been writing in preparation for the IFATCA Annual Conference in April. Most of the papers have policy proposals, and the content and form of both the papers and the proposals were scrutinized to insure their soundness and accuracy.

**Stop Bars**

The existing problems are:
- In some places, aircraft are crossing lit stop bars. For global consistency, pilots should never cross lit stop bars except in the event of an equipment failure.
- Many would prefer that stop bars operate 24x7 instead of merely in low visibility conditions. Runway incursions could be reduced by greater use of stop bars.
- There are a number of inconsistencies in the wording of ICAO documents regarding the use of stop bars.

Stop bars are the next level of protection beyond a holding point. At present, aircraft are allowed to cross red stop bars in some locations. All agree to eliminate that practice, but we need a policy to enable that to be practical. The proposal is a change to ICAO documents to never allow an aircraft to cross stop bars except when instructed by ATC and when the stop bars are unlit. Contingency procedures are also proposed in the event of an equipment failure.

There is a general consensus that the use of stop bars should be increased as another method of preventing runway incursions. Stop bars provide a definitive highly visible indication to pilots to prevent inadvertent transgression of a holding point. The Committee proposed IFATCA policy that stop bars should be operated 24x7 as long as the workload is acceptable.

**Conclusions**

3.1 Stop bars are not always being used in a manner consistent with ICAO Standards and Recommended Practices for never crossing an illuminated stop bar. This inconsistent use undermines the integrity of stop bars as a safety net.
3.2 The fact that a large percentage of runway incursions is caused by stop bar violations implies that the present installation and/or operation of stop bars does not fulfil its task to serve as a last resort to prevent runway incursions.

3.3 ICAO documentation on stop bar operation is inconsistent.

3.4 Standard phraseology for stop bar contingency procedures does not exist.

3.5 Inadequate ICAO documentation on the operation of aircraft and vehicles regarding stop bars causes the crossing of illuminated stop bars without an ATC clearance.

3.6 The design of many of today’s HMI is inadequate to support ease of operation because of distraction and head down operations.

3.7 IFATCA has no Policy on 24/7 stop bar operation. Many of today’s stop bars are designed for low visibility operations and reduced traffic volumes. Improvements are needed to stop bar implementations before stop bars can be safely and efficiently used 24/7 at normal traffic levels.

Recommendations

4.1 The stop bar HMI design, location, implementation and automation should prevent an unacceptable increase of workload, distraction and head down operations.

4.2 The operation of stop bars 24 hours a day is supported by IFATCA provided that the design and implementation of stop bars support operations at normal traffic volumes.

4.3 IFATCA should promote towards ICAO the Amendment Proposal on Stop Bars included within this paper in Appendix A.

Appendix A

ICAO Amendment Proposal on Stop Bars

- Replace wording in ICAO Annex 2 paragraph 3.2.2.7.3 “An aircraft taxiing on the manoeuvring area shall stop and hold at all lighted stop bars and may proceed further when the lights are switched off” with “Traffic on the manoeuvring area shall stop and hold at a lighted stop bar and may proceed further when both the stop bar is switched off and the traffic is authorized to proceed by the aerodrome control tower.”

- Add wording in ICAO Doc 4444 paragraph 7.15.7 and ICAO Doc 9870 paragraph 4.5.4 after “Stop bars shall be switched on to indicate that all traffic shall stop and switched off to indicate that traffic may proceed when authorized by the aerodrome control tower”.

- Replace wording “an aircraft”, used twice in ICAO Doc 9476 Appendix A 2.4, by “traffic”.

- Replace the value of the RVR “less than 400 metres” in ICAO Doc 9365 paragraph 5.2.9 with “less than 550 metres”.
Go-around off the Visual Approach

On rare occasion, pilots must execute a go-around while on a visual approach. Unexpected weather conditions, runway activity, events in the aircraft or other reasons may cause the pilot to go around. While the controller may have a contingency plan for this, the pilot is uncertain about what how the aircraft is to be flown. Pilots and many controllers would like a default procedure for this.

A number of aspects of this were considered. Obviously, there would need to be different procedures for each runway. At some airports, there may be very simple and straightforward procedures for each runway that pilots and controllers would like to have published. At others, the procedure might depend on a wide number of factors such that a set procedure would not be of value.

Discussion from Ric Loewen (DFW) and other NATCA Reps was presented so that TOC members would understand how impractical any policy would be that required the issuance of contingency go-around instructions. NATCA feedback also concerned how go-around clearances can be extremely dependant on circumstances and that at some airports it would be inappropriate to publish anything more than “as directed by ATC”.

Recommendations

4.1 Existing IFATCA policy is deleted: “Missed approach procedures for visual approaches should be published in the AIP.”

4.2 Each aerodrome at which visual approaches are undertaken shall have go-around procedures documented in the AIP.

4.3 A visual approach procedure chart that is published in the AIP shall contain a go-around procedure.

4.4 Visual approach procedures that are published in the AIP shall include on the approach chart procedures that are to be followed in the event of a go-around.

4.5 The inclusion of go-around procedures in the AIP should not preclude a controller from issuing alternative instructions in the event of a go-around.
SID and STAR Altitude Clearances

The practice of US and UK controllers is opposite that of European and many others. SID restrictions are canceled when the US controller issues a climb and restrictions are retained with the same clearance in Europe.

Existing phraseology from PANS ATM Doc 4444 (the international ATP):

6.3.2.4 When a departing aircraft on a SID is cleared to climb to a level higher than the initially cleared level or the level(s) specified in a SID, the aircraft shall follow the published vertical profile of a SID, unless such restrictions are explicitly cancelled by ATC.

Similar language governs STARs. While Europe complies with ICAO, it is not practical for US controllers at major airports to use the existing phraseology to delete the SID restrictions because they are too lengthy:

CLIMB TO (level) [LEVEL RESTRICTION(S) (SID designator) CANCELLED (or) LEVEL RESTRICTION(S) (SID designator) AT (point) CANCELLED]

The ICAO Air Navigation Commission has been discussing this, and there are many other interested stakeholders. IFALPA in particular is extremely concerned since international pilots must work to a double standard. IFALPA would like the issue resolved as soon as possible.

The new proposal is:
“Climb/descend [FL] via SID/STAR” – retain altitude restrictions to assigned altitude.
“Open climb/descend [FL]” – eliminates altitude restrictions through assigned altitude.

Questions that were considered include:
- What does the pilot do if the controller says simply CLIMB? Use of the generic climb clearance would undermine a solution since the intent is that the new clearance explicitly (not implicitly) state whether restrictions are retained.
- What happens if the procedure has no restrictions or has no restrictions remaining from where the aircraft is? It would seem that either phraseology could be used. However, pilots would be uncomfortable with the use of OPEN CLIMB because they will be looking for a restriction to cancel on their FMS.

Conclusions

3.1 Responses to the ICAO State letter on SID and STAR phraseology has indicated a safety hazard exists in relation to level changes on SIDs and STARs.
3.2 This whole issue is caused by poorly harmonized SID and STAR design around globe. To solve all problems concerning level restrictions in SID’s and STAR’s a global redesign would be necessary. SID’s and STAR’s should be designed in the same way all around the world.
3.3 As it is unlikely that a global redesign of SID’s and STAR’s will happen in the near future, a short-term solution should be found to cope with the current (unsafe) situation.

3.4 The current ICAO phraseology is too long and seems unworkable. For the short term, where the current ICAO procedures remain valid, new phraseology should be developed which is easier to use. This should encourage a globally harmonized way of working, according to the procedures in Amendment 5.

Recommendations

4.1 SID and STAR design and use should be globally harmonized.
4.2 Phraseology should be developed to easily indicate whether published vertical restrictions and requirements are to be followed or not.
4.3 All level change clearances for aircraft on SIDs and STARs shall explicitly indicate whether published vertical restrictions and requirements are to be followed or not.

Mode S Flight ID

Mode S transponders broadcast a flight ID that is manually entered by the pilot during the pre-flight. For airline flights this is the carrier and flight, for military it is the call sign and for general aviation the tail number.

It has been demonstrated that pilots will occasionally enter a Flight ID that does not exactly match the flight plan. Some current ADS-B systems use the Flight ID to correlate the track, and so there must match exactly or the track will not correlate. In addition, in the future more aircraft will have ADS-B IN, where pilots will see other aircraft on their cockpit display of traffic information (CDTI). If the Flight ID is incorrect, the pilot will see a different Flight ID than the controller sees on the ATC display. Further, it is understood that some Mode S transponders do not allow the pilot to change the Flight ID during flight.

IFATCA has a policy with regard to position data:

3215 - To ensure integrity of system surveillance data (not just ATC surveillance) it is essential that the automatic transmission of erroneous dependent position data can be disabled or marked as inaccurate during all phases of flight.

The new proposal is to expand this policy to all broadcast data in the ATC system.

Conclusions

3.1 In ATC systems where Mode S flight ID is used to correlate a track, the correlation cannot be completed correctly if the flight ID is incorrect. While the situation is fairly straightforward in the Mode A world, there are complications in Mode S. First, it’s much easier to enter the flight ID incorrectly. Secondly, often pilots cannot change the flight ID once airborne.
3.2 In ATC systems where Mode S flight ID is not used to correlate a track, there is an important issue in ADS-B applications that involves a potential discrepancy between the call sign shown to the controller by the ATC system and the call sign of the same target shown to the pilot on the CDTI.

3.3 With pilots viewing call signs in their CDTIs, it becomes possible for pilots to not only misread a call sign aurally, but now they can also misread a call sign visually in a situation where they will typically be looking at a screen at a significant angle. Many pilots are not familiar with the call signs associated with flight designators used in the Flight ID.

3.4 There is also potential confusion between IATA and ICAO airline designators.

3.5 IFATCA policy remains valid. “Identification issues need to be resolved prior to the implementation of ASAS application.”

3.6 The IFATCA policy on erroneous broadcast of position data remains valid but requires expansion.

3.7 As Mode S Flight ID is replacing the use of Mode A information for correlation to ATM data, Mode S Flight ID needs to have the same priority, display, and ease of use as existing Mode A implementations on the aircraft.

**Recommendations**

4.1 IFATCA Policy is: ATC systems must validate the Flight ID transmitted by an aircraft’s Mode S transponder and indicate to the controller any discrepancy with the ICAO aircraft identification in the flight plan.

4.2 IFATCA Policy is: Any broadcast of incorrect ATM data should be corrected or if unable then switched off or marked as invalid.

**Frequency Management**

This paper and the paper on Required Communication Performance (RCP) were split from the original paper on frequency management. The intent of this paper was to examine methods to alleviate frequency congestion.

The discussion covered recent history of emerging communications methods such as datalink and 8.33 kHz frequencies. Clearly, datalink will reduce congestion. The use of 8.33 kHz spacing rather than pre-1994 spacing of 25 kHz has provided more frequencies, but even this method seems to be reaching its limit since sectors can become only so small and many of the new frequencies have been allotted.

Some European providers are pushing the “monitor” instruction to reduce check-in calls. TOC considers this a poor practice that undermines important traditional safeguards. Another European method that is under question is the issuance of downstream clearances by a second ATC unit operating independently of the controller working the airplane. This issue is also considered in the paper on oceanic clearances.
The conclusions and recommendations from this paper are still a bit in flux but proposed IFATCA policy encourages new frequency congestion techniques that conform to all existing safety requirements and that enhance safety and efficiency.

**North Oceanic Route Clearances**

Both sides of the Atlantic have been experiencing difficulties with traffic exiting the oceanic tracks. The procedures and equipment in the North Atlantic developed differently from the other oceanic areas of the world.

New York and Shanwick receive aircraft from oceanic tracks whose clearances are not tied in to their original routing to destination and they arrive at a route discontinuity not knowing where to go. In addition, European central flow management has been communicating with flights without coordination with the controller working the aircraft and delivering “downstream clearances” to the pilot.

Regarding the first issue, in Europe is it not common practice to insure that the aircraft rejoins their current route. The PANS ATM was reviewed but it seemed to require this only in connection with a pilot request for reroute.

Regarding the second issue, there was considerable discussion. Of course, the first reaction of most controllers is that no one but the controller working the aircraft (or one delegated by that person) should be issuing a clearance to an aircraft. However, for very long flights some routing changes do not affect the flight for several hours. The new route may be very lengthy and probably includes fixes with which the controller has no familiarity. It seems that circumstances may exist in which this is desirable.

**Recommendations**

4.1 Any route change must rejoin the current route or end with destination.  
4.2 IFATCA should investigate how flight plans are amended and who should do it.

**Required Communication Performance (RCP)**

The paper reviews the ICAO manual on RCP. RCP is a set of standards similar to RNP (Required Navigational Performance) but pertaining to the performance of communications systems. Presumably, RCP standards will be used to establish minimum performance levels for different phases or levels of ATC service.

In the past, aircraft were required to have particular equipment for certain airspace or handling. A pilot may have needed Mode C, a two-way transceiver, or RNAV to be eligible to fly in certain airspace or to receive certain services.
The way going forward is not to require specific equipment, but to require specific capabilities. That is the intent of both RNP and RCP.

Discussion focused on the use of a 95% parameter for the required performance level. Forcing 95% conformance is a practice that mathematically provides a near 100% compliance within 3 standard deviations of the performance standard. It was noted that the performance of the voice environment is probably in the 95% range.

It was determined that existing IFATCA policy concerning mixed mode operations was adequate to cover developments in this area. As such, the paper is not a proposal but an information briefing about the new ICAO manual on RCP.

**Conclusions**

3.1 The ICAO Required Communication Performance concept follows the same principles as the Required Navigation Performance Concept already widely accepted within aviation.

3.2 The RCP Manual ICAO Doc 9869 in general provides adequate guidance material for States that want to introduce RCP within their airspace. It remains unclear how exactly the RCP types stated in the manual were determined. It could be beneficial for IFATCA to investigate further.

3.3 The RCP Manual addresses both technical and human capabilities when defining RCP types, which is very much supported by TOC.

3.4 However, the Manual states the possibility of operating more than one RCP type within a given airspace, yet fails to mention how in such a case the different RCP types should be managed. This is a human factors issue that is not addressed in the Manual.

**Recommendations**

TOC found that no new policies were needed for RCP.