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Subject: High-Altitude Redesign- HAR Response to NPRM

IATA Response to Final Rule 14 CFR Part 1 - Separate Rule Action

The Federal Register in its issue 16943 Vol.68, No.7 invited comments in a Separate Rule-making Action enabling the FAA to proceed with the development and design of its High Altitude Redesign Programme (HAR). Implementation of this programme is planned for May 2003. While IATA on behalf of its member airlines fully accepts in principle the implied benefits in flexibility in the airspace using cockpit-based technology and dynamic use of airspace by ATC & users alike, the association seeks this opportunity to comment on several difficulties & inconsistencies anticipated in the practical implementation of this scheme and to express concern at the lack of international/ICAO compatibility within this programme.

- Time and fuel benefits would accrue only to participating airlines and are presumably realized only in its final stage of implementation in the 2006 time-frame. The projected benefits are assumed to include ALL users and across the entire NAS. Benefits therefore need to be re-validated based on the projected real user numbers in any given airspace volume and further possible validation with a cost-benefit analysis within these parameters.
- Most of the aircraft flying the designated 7 sectors in Phase I in the high altitude structure would mainly be International long-haul air-carrier traffic, the vast majority of which are capable of utilizing RNAV routes. To realize HAR benefits however, the HAR routes specifically require the ability to programme and fly to newly devised Navigational Reference System (NRS) grid waypoints. Most international air-carriers will be unable to comply on this account being onerous in time and effort with minimal cost benefits.
- The following comments are hereby submitted for review:
 - **FMS Database memory constraints:** Aircraft rotated on an International route network necessitate maintaining a large (already saturated) international navigational database. An additional 7000 NRR waypoints (37500 characters) will be eventually required at the full implementation stage, clearly impossible without incurring major costs in FMS memory upgrades and/or unit replacements. Airlines have already started to discard useful existing procedures due database constraints and are not in a position to accept such a huge volume of additional significant points without undergoing major outlays on larger FMS boxes.
 - **Flexibility:** If the benefits of HAR are primarily targeted to the benefit of airlines, it is our contention that the present NRR & PTP systems already offer sufficient flexibility in planning and routing optimum tracks at no added airline cost
 - **Databases:** Flight Planning databases will require to be populated at significant additional expense, time & effort to airlines in Data Management & vendor updates. The costs incurred to non-US based operators who together use relatively more of the high-altitude NAS structure but individually relatively very little in individual aircraft time would result in be disproportionately higher costs vs benefits when spread over the international route network.
 - **Charting:** Charting and updating an additional 7000 waypoints for non-US airlines

undertaking this activity is complex. Some perform this activity in-house while others subscribe to a paid service. Again such costs are disproportionately higher than benefits when distributed over & evaluated on an international operational plan. This activity could also be re-considered in the spirit of the Paperwork Reduction Act and International Trade Impact Analysis .

- **International Compatibility:** Contrary to as declared under the item of International Compatibility indicating "no differences identified to ICAO SARP's", these HAR waypoints have been found to be, quite on the contrary, totally non-compliant to ICAO Annex 11, Appendix 2. Quote: The name-code designator should be a "unique five-letter pronouncable name-code"and "shall not be assigned to any other significant point"
- **Margins of Error:** Further, the naming convention of these waypoints lends itself to large potential safety compromises. 80% of Gross Navigational Errors are attributed to incorrect pilot database inputs into the FMS. E.g wrong input of one or a combination of incorrect ARTCC codes, the latitude 2-digit denominator or the longitude single-letter code would most likely point to another significant point within the NRS grid with unnecessary & large compromises to safety
- **Spatial Orientation:** The human impact of the new NRR format on international pilots and dispatchers accustomed to operating within conventional chart and waypoint methodology is uncertain and remains an outstanding issue that merits redressal - e.g. inputting KD54U.DCT.KL60K remains irrelevant to human spatial orientation norms when compared to a conventional routing of DVV..FQF.J116.EKR.J173.SLC etc..
- **ICAO & NAS FPL:** Allowing for this unique naming convention, there are potential data processing incompatibilities with ATC Flight Plan systems and Flight Data Processing systems within the NAS as well as trans-border to Mexico/Canada to contend with.
- **CPDLC:** With the gradual spread of CPDLC , ADS and Datalink as the primary means of communication and navigation, airlines so equipped are likely to be faced with an incompatibility in the ARINC 424 protocol and FANS avionics in supporting this new naming convention given coding rules and protocols on ground systems.

Conclusion

In the longer-term and with the eventual proliferation of NRR waypoints across the NAS, we would therefore seek clear assurances from the FAA that the HAR programme will not be mandated or that "non-compliant" International Traffic will not be unfairly impacted without recourse to a subsequent rule-making process.

It should also be ensured that airlines deciding to opt out of the programme would be fully exempt from requiring use of any NRR waypoints (ref. Item 12-bis of Draft AC) in flying HAR airspace. It is also understood that no modifications would be required to the Part 129 air carrier Ops.Specs on this account.

Thank you for your consideration
Regards
Bernard Gonsalves