

AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
Meeting 04-02 – October 25-26, 2004
HISTORY RECORD

FAA Control # 04-02-256

Subject: Impact of Temporary Runway End Changes on RNAV Procedures.

Background/Discussion: A side-bar topic of discussion at the last ATA FMS/RNAV Task Force meeting in Charlotte, centered around situations where runway end coordinates are temporarily changed by NOTAM, but the corresponding procedure source documents (8260-series forms) are not modified - either in original form or by NOTAM. While all understand the rationale behind such changes, it leaves unanswered questions about procedure coding. Often times, a temporary runway end change (new coordinate) will affect the procedure when the MAP is coincident with the 'original' runway end. This, in turn, may also affect any associated TCH or VNAV/Descent Angle calculations.

For non-RNAV procedures, these temporary runway end adjustments can and do result in the procedure coding being withdrawn from the navigation database until the situation is resolved. When this happens, users can still fly the procedure by applying the NOTAM and using conventional navigation and an approach chart. However, its an entirely different story for RNAV (GPS) procedures. Without an official IAP source document change, i.e.; 8260-series form, database coders cannot modify official source-defined MAPs and are reluctant to construct new TCHs/VNAV Angles based on temporary runway ends. Jeppesen designates the RNAV (GPS) procedures as 'not usable' in their database and may suspend use of a coded procedure via a Jeppesen NavData NOTAM; or, the procedure coding may be removed from the database entirely until the condition is resolved. In a growing numbers of cases, there may not be any coded conventional procedure in place to serve the runway in question.

In those cases where only RNAV procedures are published for an airport, voiding the procedures in the database could have the impact of denying IFR approach capability to operators using Jeppesen NavData coding. This could affect a large number of pilots at a given location and thusly affect ATC operations and the local NAS.

Recommendations: FAA should study this issue and provide guidance for temporary displaced or re-located runway ends. Specifically, advance coordination by airport owners and operators so that procedures may be amended to support the temporary condition.

Comments: This recommendation affects FAA Orders 8260.19, 8260.43 and airport operating directives.

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Date: October 8, 2004

INITIAL DISCUSSION (Meeting 04-02): New issue introduced by Ted Thompson, Jeppesen. Ted noted that unplanned changes to runway end coordinates present a significant problem with the ARINC coding of RNAV approaches. When the runway end is designated as the missed approach point, the IAP data string retrieves this information from the airport file; e.g. RW23. Therefore, moving the runway end in contradiction to the officially-designated position of the MAP invalidates the coding rules. For example, ARINC coding does not allow coding of a runway end prior to the MAP. These movements cause changes in descent angles, segment lengths, and when runways are extended, it places the approach outside TERPS design criteria. Eric Secretan, NACO, stated that NACO uses an internal “rule” that allows for a variance of up to 0.1 NM between the relocation of a runway end and the official source MAP. Ted replied that Jeppesen does not have such a tolerance and expressed concern about the changes becoming official through NFDD action with no change to the official source (8260-series forms) for the affected approach. When a runway end position changes but the MAP and related values on the 8260 are not modified, it creates a conflict between “official source” and the charted/coded procedure. This, in turn, creates conflict in terms of so-called database integrity/certification requirements. Both Jeppesen and NACO remove the procedure from their respective databases when the NFPO states via NOTAM that straight-in minimums are NA. Since some airports only have RNAV approaches published, this affects the NAS in that the airport reverts to VFR only. After lengthy discussion, it was agreed that Jeppesen and NACO actions to withdraw the IAPs from their databases, based solely on the “straight-in minimums NA” NOTAM are valid. Brad Rush, AVN-101, briefed that the problem is caused because there are too many players involved in making official changes to airport data through NFDC and closer coordination through the Regional Airspace and Procedures Team could prevent most problems. Brad also commented that if Jeppesen or NACO receive complaints from Air Traffic about the removal of RNAV procedures from public databases as a result of these situations, they could refer the complaints him. Bill Hammett, AFS-420 (ISI) emphasized that the FPO, as chair of the RAPT, is a good place to start emphasizing better coordination at the regional level and AVN-1, as chair of the NAPT, could emphasize better coordination at the FAA headquarters level. Brad also recommended that establishing waypoints for RNAV missed approach points vice coding the runway threshold would help resolve the problem, especially for temporary threshold displacements. Ted Thompson responded that this idea was a step backward and did not address the underlying problem. Mark Ingram, ALPA, noted the AFS-400 letter of September 19, 2002, provided guidance for aircraft operators. The ACF-IPG discussion indicates that perhaps this guidance is only valid when a runway threshold is displaced, not extended. Ted concluded with a remark that, with the increasing number of RNAV IAPs, including WAAS approaches, which rely on FAS data blocks, and the expected increase in the number of RNP RNAV procedures, something must be done, now, to address the lack of coordination between airports and procedures with regard to the critical and essential use of runway end information. **ACTION: AVN-101 and AFS-420.**

MEETING 05-01: Tom Schneider, AFS-420, had an IOU to check the 8260.19 guidance per ALPA’s request. Tom confirmed that the Order reflects the guidance in the AFS-400 memorandum dated Sept 9, 2002. Mark Ingram, ALPA, asked if it adequately covered those instances where the threshold was moved toward the FAF. Ted Thompson, Jeppesen, confirmed that this creates the greater problem, as it invalidates the coded procedure in the electronic navigation database as well as creates contradictions with information shown on the associated IAP chart. The existing process for FAA’s responding to unannounced runway end extensions is to issue a government NOTAM restricting the procedure to circle-to-land minima only. The official 8260 procedure source cannot be

updated in time to reflect the new runway end position. Consequently, when the runway extension is not reflected on the 8260 procedure source, a conflict is created between the new runway end coordinates and the associated descent angle, FAS segment mileage(s), and sometimes, the designation of the MAP fix or waypoint. Jeppesen and NACO both withdraw the coded procedure from use. This is done in order to comply with database integrity concerns noted in AC 90-DB. These actions taken were discussed and validated in the previous ACF. If the only procedure available is an RNAV approach (an increasing scenario) then the airport is without IFR capability. Brad Rush, NFPO, stated that notification is the problem. For example, the airport manager at a location in Maine extended the runway 150', but did not tell anyone about it. Bill Hammett, AFS-420 (ISI), stated that this should have been coordinated through the RAPT. Brad responded that the Regional Airports Division is responsible for funding, not gathering data. Randy Kenagy, AOPA, stated that AIP funds could be dispensed with a "notification" caveat. Brad stated that the bottom line is that efforts through various groups have not resolved the issue. He further recommended that the Chair try to get Airports participation at the next ACF-IPG. Mike Riley, NGA, noted that NGA has 5 meter and 1-meter imagery available for the CONUS, if this would be of any value. Mark Ingram, ALPA, noted that perhaps AOPA could be of value in notification through their Technical Support for Airport Managers program. Randy replied that there is a complete breakdown in communications between the Airports District Offices, FAA HQ Airports Division, and Airport Operators. Rick Mayhew, NFDC, stated that all towered airports have the responsibility to report airport changes. Airport data for these airports is usually current; NFDC has less success with non-towered airports. Tom recommended that this be made a special RAPT and NAPT agenda item. Brad agreed to coordinate this. Tom also agreed to work this issue through the Aeronautical Information Services Working Group (AISWG) and attempt to get the FAA Airports Division participation at the next ACF.

ACTION: NFPO, AFS-420, and ACF-IPG Chair.

MEETING 05-02: Tom Schneider, AFS-420, briefed that as agreed at the last ACF, he presented the issue for discussion at the government Aeronautical Information Services Working Group (AISWG) meeting in July. Representatives of the National Flight data Center, the FAA Airports Division, the National Aeronautical Charting Group, and the National Flight Procedures Group all agreed that notification and verification of runway changes is a serious issue. As a result there is better cooperation and coordination among the affected agencies. Brad Rush, NFPG, also briefed that he has elevated this issue through each Regional Airspace and Procedure Team (RAPT) to emphasize the importance of advance notification of airport changes by owner/operators. He has also stressed better coordination between the Flight Inspection Division and the supporting flight inspection database managers. The AISWG consensus is that all that can be done is being done. An excerpt of the AISWG minutes was provided in the meeting handout material and is included below in *italics*. During discussion, it was also suggested that Jeppesen consider sending a letter to the FAA Airport Safety and Operations Division, AAS-300, highlighting problems associated with uncoordinated airport data changes. Tom recommended the issue be closed and the group concurred. **Issue Closed.**

Excerpt from minutes, New Business, Item b, of the Aeronautical Information Services Working Group (AISWG) meeting held July 7, 2005 at the FAA - National Aeronautical Charting Group (NACG) in Silver Spring, MD.

05-037 (July 7, 2005). Runway/Airport Data Changes. ISSUE: During the past two ACF-IPG meetings, concern was expressed over runway end changes and the impact of those

changes on database driven procedures. Additionally, different data for other airport values hinders the procedure development and charting process. For example, the NFPG, through a FPFO receives new runway and airfield elevation data and develops a procedure based on that data. However, when the 8260-series form reaches NFDC for the pre-publication review, the contradiction is noticed. If unnoticed, procedures could be published with different airport data. In either case, increased processing delays may be encountered while resolving data discrepancies.

*STATUS 07-07-05 – Tom Schneider presented this issue for discussion, which was originally introduced at the ACF-IPG. Brad Rush provided background on development of IFPs based on proposed data and last minute runway data changes that affect database coded procedures. Runway data changes that are NFDD'd just prior to publication require IFPs to be NOTAMed NA and put back into work. In many cases, this leaves the airport without an instrument approach and the airport must revert to VFR operations only for an extended period. Most problems are at non-Part 139 airports. Tom Harris explained the NFDC procedures for accepting and verifying airport data changes. NFDC will accept data changes from airport managers, but will verify those changes through AVN-210 prior to NFDD action. E.C. Hunnicutt stated that all public use airport changes must be processed through the Airports Division. Brad also briefed a NAVAID (Dublin VORTAC) coordinate change that was NFDD'd' without coordination that impacted several airways and IFPs. Bill Hammett questioned if NFDC was as thorough verifying NAVAID data changes as airport data. Tom Harris assured the group that NFDC verifies NAVAID data changes equally as well as airport data. E.C. briefed that there are many new initiatives to help the data sharing/verification process to include electronic ALPs, Doc 405 expansion to include 3rd party survey standards, etc. Brad took an IOU to work with the Flight Inspection Data Branch and the NACG to ensure better coordination when advised of a data change by NFDC. Brad also has an IOU from the ACF to make airport data notification a RAPT special agenda item. The consensus is all that can be done is being done. Tom Schneider will take this message back to the ACF. **Closed.***