AERONAUTICAL CHARTING FORUM 16-02

Federal Aviation Administration

Instrument Procedures Group

October 25, 2016

Charting Group

October 26-27, 2016

Hosted by Pragmatics, Inc.

Reston, Virginia

Instrument Procedures Group

AERONAUTICAL CHARTING FORUM (ACF)

MEETING 16-02 October 25, 2016
HOST: Pragmatics, Inc.
1761 business Center Drive
Reston, VA 20190

INSTRUMENT PROCEDURES GROUP (IPG) AGENDA

I.	**OPENING REMARKS**	Tom Schneider
II.	**WELCOMING COMMENTS**	TBD
III.	**INTRODUCTIONS**	Attendees
IV.	**REVIEW MINUTES OF LAST MEETING, ACF 16-01**	Steve VanCamp
V.	**BRIEFINGS**	
	Status Update – 8260-Series Orders	Tom Schneider

VI.	**OLD BUSINESS (Open Issues)**	**OPR**
07-02-278	Advanced RNAV (FMS/GPS) Holding Patterns Defined by Leg Length	AFS-420
12-01-299	Loss of CAT D Line of Minima in Support of Circle-to-land Operations.	AFS-420
12-01-301	Publishing a Vertical Descent Angle (VDA) with 34:1 Surface Penetrations in the Visual Segment	AFS-420 (US-IFPP)
13-02-312	Equipment Requirement Notes on Instrument Approach Procedures	AFS-420/AJV-5
14-01-315	90 Degree Airway-to-RNAV-IAP Course Change Limitation: Arrival Holds	AFS-420 (US-IFPP)
14-01-316	RNAV Fixes on Victor Airways Used for RNAV SIAPs	AFS-420
14-02-317	Use of GPS on Conventional (Ground-Based NAVAID) Instrument Approach Procedures (IAPs)	AFS-470

15-01-320	Common Sounding Fix Names	AJV-82/AJV-5
15-01-321	Coding of Missed Approach for ILS31L and ILS31R at KJFK	AFS-420 (US-IFPP)
15-02-323	Depiction of Low, Close-in Obstacles on SIDs & ODPs	AFS-420/AJV-54
16-01-324	SID/STAR Naming Policy.	AFS-420
16-01-325	Priority of Terminal Procedure Amendments.	AFS-420
16-01-326	FAA Order 8260.46F, "Top Altitude" Charting Constraints.	PARC-PCPSI WG

VII. NEW BUSINESS (New Agenda Items)

		SPONSOR
16-02-327	Arrival Holding Patterns Required for Approach Entry	NBAA
16-02-328	Increasing Complexity of Speed Restriction Notes on SIDs & STARs	Jeppesen

VIII. NEXT MEETINGS

ACF 17-01 is scheduled for April 25-27, 2017, host USGS. Herndon, VA.

ACF 17-02 is scheduled for October 24-26, 2017, host TBD.

June 16, 2016

Dear Forum Participant

Attached are the minutes of the Aeronautical Charting Forum, Instrument Procedures Group (ACF-IPG) meeting held on April 26, 2016. The meeting was hosted by the Air Line Pilots Association (ALPA) at their Herndon, VA facility. An office of primary responsibility (OPR) action listing (Atch 1) and an attendance listing (Atch 2) are appended to the minutes.

Please note there are briefing slides inserted in the minutes as PDF files shown as stickpins. All are asked to review the minutes and attachments for accuracy and forward any comments to the following:

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The AFS-420 web site contains information relating to ongoing activities including the ACF-IPG. The home page is located at:
https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs420/acfipg/
This site contains copies of minutes of the past several meeting as well as a chronological history of open and closed issues to include the original submission, a brief synopsis of the discussion at each meeting, the current status of open issues, required follow-up action(s), and the OPR for those actions. There is also a link to the ACF Charting Group web site. We encourage participants to use these sites for reference in preparation for future meetings.

ACF meeting **16-02** is scheduled for **October 25-27, 2016** with Pragmatics, Inc. as host at their Reston, Va facility. ACF meeting **17-01** is scheduled for **April 25-27, 2017** with host TBD.

Please note that **meetings begin promptly at 8:30 AM**. Dress is business casual. Forward new agenda items for the 16-02 ACF-IPG meeting to the above addressees not later than October 6, 2016. A reminder notice will be sent.

We look forward to your continued participation.

Thomas E. Schneider, FAA/AFS-420
Co-Chairman, Aeronautical Charting Forum,
Chairman, Instrument Procedures Group

AERONAUTICAL CHARTING FORUM (ACF)
MEETING 16-01 April 26, 2016
HOST: Air Line Pilots Association (ALPA)

I. OPENING REMARKS: Tom Schneider, AFS-420, Flight Standards co-chair of the Aeronautical Charting Forum (ACF), and Chair of the Instrument Procedures Group (IPG), opened the meeting at 8:30 am on Tuesday, April 26, 2016. ALPA hosted the meeting at their Herndon, VA facility.

II. ALPA WELCOMING COMMENTS: Darrell Pennington, ALPA Staff Engineer, provided welcoming comments on behalf of ALPA.

III. INTRODUCTIONS: Attendees introduced themselves and whom they represented. A sign in roster was circulated and a listing of attendees is included as attachment 2.

IV. REVIEW MINUTES OF LAST MEETING, ACF 15-02: Steve VanCamp, AFS-420, (ISI/ Pragmatics Contract Support), briefed that the minutes of ACF-IPG 15-02, which was held on October 27, 2015, were electronically distributed to all attendees and contacts on the ACF Master Mailing List on Dec 14, 2015. There were no changes submitted, and the minutes are accepted as distributed.

V. BRIEFINGS:

Tom Schneider (AFS-420) briefed and demonstrated proposed, revised FAA Forms 8260-3/4/5/7A. These forms, which will be incorporated into FAA Order 8260.19H (planned to be effective in the November 2016 timeframe), will be of interest primarily to procedure developers and cartographers, since they show source information for chart producers. The new forms are in a report format using Adobe LiveCycle. The benefit is a continuous flow of information without having a continuation Form (Form 8260-10). (EX. 1 2 3 4 5 6 7) Tom showed some of the forms and demonstrated the new style and advantages. As the form is filled out, selections “drive” the form for all associated required information. FAA Order 8260.19H, chapter 8, will change to follow the flow of information as shown on the forms. Jill Olson (AJV-5) asked about automation being ready with the release of the Order. Tom said he has been coordinating with AIS and they indicate the automation will be ready by the time procedures make it thru the coordination process. A benefit of the LiveCycle format is the ability for electronic coordination and signatures. When completed, the final form will not show all the boxes (i.e., check boxes, drop downs menus, etc.); it will be in a “clean” PDF format.

Tom Schneider (AFS-420) briefed the revision to FAA Order 8260.43B, Flight Procedures Management Program. AFS-460 (Keith Butcher) is lead on the Order rewrite and provided a progress report.(view) There is a complete rewrite of the Order underway; several meetings have taken place already, and one change (for example) is the current RAPT and NAPT (Regional and National Airspace Procedures Teams) are going away. The decision and prioritization process for procedures will be changing to a 10 year, executive oversight decision making team concept (not finalized yet). Agenda items 12-01-299 and 16-01-325 are related to the status of this order.

VI. OLD BUSINESS (Open Issues)

07-02-278: Advanced RNAV (FMS/GPS) Holding Patterns Defined by Leg Length.

Tom Schneider (AFS-420) briefed that Rich Boll (NBAA) has done extensive work on the issue with multiple work group meetings formed after ACF meeting 15-02. Bob Lamond (NBAA) briefed from the attached slides (View). Recommendations have been completed and were provided to the ATO in October 2015. These DCPs have gone out for coordination with comments due back no later than May 5, 2016. Tom provided the DCPs for those interested in seeing them; one changes RNAV holding information and the other changes the definition for Along-Track-Distance (ATD).(Hold DCP)(ATD DCP).

Status: NBAA requests item remain open one more cycle to ensure completion and will plan on closing this agenda item at ACF 16-02 **Item Open:** AFS-420

10-01-294: RNP SAAAR Intermediate Segment Length and ATC Intervention.

Tom Schneider (AFS-420) briefed that Gary Petty (AFS-420) said Order 8260.58A has been published and includes the new language (View). NBAA concurs with closing item.

Status: Item closed.

12-01-299: Loss of CAT D Line of Minima in Support of Circle-to-Land Operations.

John Bordy (AFS-420) (View) said the AFS-400 memorandum issued December 4, 2014 (see ACF 15-01 for discussion) is still active, with the intent to incorporate those concepts into Order 8260.43. New language in Order 8260.3C (published) has a focus on procedure development and points to Order 8260.43 (View) as the RAPT having final authority as outlined in the Memo. Bob Lamond (NBAA) inquired if the memo would be rescinded. John said not until it is incorporated into Order 8260.43, adding the Memo says it is FAA policy to publish Cats A-D as much as possible, recognizing the responsibility the airport may have publishing Cat D minimums. Airport representation in the RAPT will watch for possible financial obligations that may be incurred with the inclusion of Cat D minimums. The RAPT approves what is charted. Bob said they like this, and John added the Office of Airports is involved and wants to form a group to work out issues, adding this is part of the Order 8260.43 process. AFS-460 (Keith Butcher) is the point of contact and provided the draft language; there is no set date for publication (at least one year out).

Status: John said the issue will remain open. He will follow up with the Office of Airports to ascertain status. **Item open**: AFS-420

12-01-301: Publishing a Vertical Descent Angle (VDA) with 34:1 Surface Penetrations in the Visual Segment *also includes issue 13-01-309*.

Tom Schneider (AFS-420) briefed (View) that the associated US-IFPP issue 13-02-18 is closed, and AFS-420 has been involved in several working group meetings on the issue. Orders 8260.3C (VDA design criteria) & 8260.19G (Note changes) have been published, and the AIM (guidance) was published on 12-15-2015. John Collins (General Aviation) commented that he has seen both old and new notes on current charts, and Valerie Watson (AJV-5) said procedures will be updated with the new obstacle profile note as

they are reworked, but they are not being processed solely to apply the new note. Ted Thompson (Jeppesen) said they are charting the advisory angle and TCH based on data provided in the ARINC data record that is incorporated into the 8260 series Forms. This includes the new note as the procedures are updated. Jeppesen wants to ensure the chart and data base do not have conflicting information (i.e., "chart/database harmonization"). Tom said there is some internal FAA discussion about having the angle and TCH in the data base, the new chart note, but no angle/TCH charted on procedure. Ted again said the Jeppesen chart will include the angle and TCH for database compatibility. John said the General Aviation community does not understand this and needs it to be explained. Ted said it is an education issue and they were under pressure (customers) to put angles and TCH back on the charts. Tom said on the FAA chart you will not see the angle or TCH, just the note, but the information will be in the database. Lev Prichard (APA) added he thinks the FAA will have problems not charting the angle/TCH with the users of AIS charts, since the database will not match the charts. Tom will take this information back for internal discussion, and was not aware Jeppesen and Lido were publishing the angle and TCH along with the new note. Chris Hill (Delta), Larry Hill (FedEx) and other industry representatives all like the Jeppesen approach, so the database and chart are compatible. John Collins added most General Aviation pilots were unaware that the angles being restored to Jeppesen charts, but likes it.

Status: With the publishing of Orders 8260.3C, 8260.19G & the AIM/AIP updates, those portions of the issue are completed. Tom will take the charting disconnect issue back (Jeppesen and Lido supplying angle and TCH on charts and FAA is not) for discussion at the US-IFPP. **Item Open:** AFS-420

13-02-312: Equipment Requirement Notes on Instrument Approach Procedures.

Tom Schneider (AFS-420) had an IOU to update FAA Order 8260.19, and displayed (View) draft language. Input was requested from participants at ACF 15-02, and comments were received and considered. The order is now in coordination within the FAA. Mike Webb (AFS-420) will brief another aspect of the issue during the charting portion of meeting. John Collins (GA pilot) inquired on timeline, and Tom said issue invoves: publication of Order 8269.19H; Valerie Watson (AJV-5) will address the charting RD process and IACC specifications; Ted Thompson (Jeppesen) and other charting service providers will be kept informed of progress. Kevin Allen (American Airlines) inquired if the PBN requirements box has been coordinated with ICAO. Mike said ICAO Annex 4 does not specify how the box is to be presented, just that it has to be on the chart. The guidance is State specific by data house providers and users, with the Order 8260.19H being specific to our State. Ted added Jeppesen and Lido plan to follow US method, providing the PBN requirements are determined at the design level, specifically documented on procedure source and not left to cartographers. Mike said the NavSpec for the procedure will be first item in the requirements box, with the US following AC 90-105A in naming of the NavSpec, adding this is tied to ICAO Doc 9613 naming also. Discussion followed on charting notes for RNP/RNAV/RNP-AR and conventional procedures with RNAV legs on the charts, along with various combinations of equipment. Ted said there were two aspects to the issue: What should the note read; and how should the note be charted. Gary McMullin (Southwest Airlines) said pilot training will be required on this change. Tom added guidance will be out November 1 (Order 8260.19H), and Valerie will have the RD (charting portion) around the same time frame. AIM/IPG guidance will be required for transition from notes now to notes in future.

Status: Tom will provide status update on Order 8260.19H. Valerie will provide update on status of charting portion. **Item open:** AFS-420/AJV-5

14-01-315: 90 Degree Airway-to-RNAV-IAP Course Change Limitation; Arrival Holds.

Tom Schneider (AFS-420) briefed this issue had been on hold, but FAA Orders 8260.3C and 8260.58A are now published and now AFS-420 and the US-IFPP (Item 14-01-22) will be working the issue.(View) The lead is Gary Petty (AFS-420), and he was planning on forming a working group in May. Tom requested that suggestions/comments be sent to AFS-420 for consideration.

Status: Open item at the US-IFPP and a working group will be formed by Gary**. Item Open:** AFS-420

14-01-316: RNAV Fixes on Victor Airways Used for RNAV SIAPs.

Tom Schneider (AFS-420) briefed that the proposed language is in draft Order 8260.19H. Nothing has changed from last ACF and the Order is in coordination, with anticipated publication in November, 2016. (View)

Status: Tom will track status of FAA Order 8260.19H through the coordination process. **Item Open:** AFS-420.

14-02-317: Use of GPS on Conventional (Ground-Based NAVAID) Instrument Approach Procedures (IAPs).

Mason Curling (AFS-470) advised AIM language (para 1-2-3) locked in and will be published 5-26-2016. (View) Bob Lamond (NBAA) requests item remain open until published.

Status: Mason will track status of the AIM update. **Item Open:** AFS-470.

15-01-320: Common Sounding Fix Names.

Gary Fiske (AJV-82) briefed that some of the identified Dallas area similar sounding/spelled fixes (NAVYS, NAAVY and NAVYE) were supposed to change on March 31, however they did not. In Atlanta, one of the identified fixes (SHELE & SCHEL) will change, and they may eliminate the ONYON arrival anyway (SHELE), but no specific time line given by ATL approach (probably 8-12 months due to staffing). Gary stated that several other instances were identified and have been fixed already, adding there is a tremendous amount of resistance to many changes due to facility preferences. Lev Prichard (APA) inquired about criteria, noting these issues have existed for a long time. Gary said criteria already exists in Order 7400.2 to look for similar sounding fix names within 300 miles, but it is a manual process and not easily applied. Tom Schneider (AFS-420) pointed out you only hear about these when something happens (i.e., ASRS report). Gary said many fix requests are not from the National Flight Data Center (NFDC) supplied list, but rather commemorate someone or something. Lev asked why there was no program to search out and identify potential issues. Bennie Hutto (NATCA) said on a Metroplex project, a list of names is requested and they do not check for similarities because they believe the list is already usable for that area. Gary said the problem is that even though names are unique, there can be spelling and pronunciation

issues (i.e., the Dallas fixes). Also regional dialect can sway pronunciation. Frank Fortuna (AFFSA) said ICAO uses the International Codes and Routes Designators (ICARD) system which has an algorithm to check for these issues and suggested that it might be useful. Gary was unfamiliar with the ICARD system and said the FAA uses NFDC to check all the databases for fix name duplication, but that pronunciation is not an automated function. The point was made that when a fix is requested, sometimes NFDC asks the usage and wondered if that would affect the search parameters. Ted Thompson (Jeppesen) said they have business rules looking for same items, but it only looks at spelling, not pronunciation, and the issue is phonetics. He added with the different dialects in the US, when you have a non-English speaking crew, fix enunciation can sound completely different. Ted said he and Divya Chandra (VOLPE) attended a CNS Task Force meeting which had a presentation on a new metro plan. The plan had a list of about a dozen waypoint names, showing how each will look and how they should be pronounced. They both felt having a lexicon on how to pronounce a name should be a red flag. Tom asked if any NFDC personnel were present, and Jill Olson (AJV-5) said she was in email contact with NFDC (Scott Jerdan), he would be present tomorrow (27th), and she will inquire about these issues and if he is familiar with ICARD.

A brief follow up discussion occurred the next day on the ICARD search mechanism, and NFDC will take this back and examine along with looking at other search algorithms.

Status: Gary will continue to work on the identified similar fixes. Jill will discuss ICARD and other procedures with NFDC. **Item Open:** AJV-82 /AJV-5

Editor's note: Follow on correspondence with NFDC subject matter experts stated that the ICARD system sound-alike function only checks against names in its data base, the max range is 500nm, and the data base is not current (being rebuilt). They offered the following comments:

1. *NFDC could stop allowing users to create new 5LNCs. This would allow us to improve name quality by checking what we have more closely and deleting the bad names.*
2. *Use only names from the list that we have now.*
3. *Only reserve names when the user "knows" where it will be used…provide proposed coordinates. This would help with the sound-alike search.*
4. *Have the ARTCCs examine their list and eliminate problem names.*
5. *Have the requester/developer do the sound-alike search before using the name at a particular location. See 7400.2*

15-01-321: Coding of Missed Approach for ILS31L and ILS31R at KJFK.

John Bordy (AFS-420) briefed that this issue involves hold down altitudes on the two approaches, which are non-standard. New language in Order 8260.3C clarifies the issue by stating altitudes other than the clearance limit altitude or an altitude to identify a turn point are not permitted, which should stop or stem the flow of these type missed approaches. AFS-400 would need to grant a waiver, and their position is to discourage this. A recommendation for the ARINC coding working group was developed, but the AFS-460 representative could not attend their February meeting and will attend next. One of the recommendations from the working group was specific missed approach verbiage related to hold down altitudes so that coders can discern intent and code appropriately. That is, instead of saying, for example, "…climb to 1000 until CRI VOR/DME, then climb and maintain 2000," we would say "climb and maintain 2000 until CRI VOR/DME then climb to 4000…" Regarding the specific procedures that drove this agenda item, they were scheduled for amendment in February, but changes did not occur. The FAA, (AIS and the FPT), are negotiating with the New York TRACON (N90),

trying to remove the hold down altitudes completely since the RNAV procedures to the same runways do not have any hold down restrictions. Tony Lawson (AJV-5) said they are involved in the waiver process, but do not like those type missed approaches, adding there are similar issues in Van Nuys, CA and at other airports. They would prefer the procedures be designed without hold down altitudes. Kevin Allen (American Airlines) said ATC wants flexibility to hold aircraft down, although procedure calls for higher altitudes. The recommendation was to code hard altitudes. John said the work group came to the same conclusion, but we generally do not establish policy on how to annotate/design non-standard procedures. In this case the altitude was coded as "at or above." If a procedure comes thru the Procedure Review Board (PRB) like this, we will ensure it is coded as "at or below," with the missed approach language something like "… maintain 2000 until crossing xxx, then…" Gary Fiske (AJV-8) asked N90 to provide the rationale for the RNAV and ILS missed approach differences. Tony advised that work is still on hold and being discussed at the region and they (AIS) are not involved in the discussion, but he has requested an update and will provide it when received. Lev Prichard (APA) expressed concern over the slow pace at which the FAA is reacting to correct this problem at JFK and feels coding guidance is needed for non-standard procedures to avoid this again. In the specific JFK cases, their crews have to manually catch this every time, so the pilots are asking why it is not fixed yet, and it has been over a year now, so why is it not at least coded correctly? Ted stated that the data base is coded as the FAA defines it on FAA source (i.e., 8260-series Form), but they still receive queries on these same procedures on a monthly basis. John said the issue needs a higher priority within the FAA. Coordination must be completed with the Eastern Region and N90. All altitudes specified on FAA Forms are "at or above" unless stated otherwise. Ted said that missed approaches are designed for obstacle clearance, not ATC needs, and that is the crux of the issue. Tony said from a design standpoint, the developer needs to know how long the aircraft must remain at a specified altitude due to required obstacle clearance. The FAA needs to look in the short term at a verbiage change initially then a procedure amendment to follow on these specific procedures.

Status: John will continue to work this through the US-IFPP regarding future criteria enhancements and look into raising the priority on this specific safety issue. **Item open:** AFS-420

15-02-323: Depiction of Low, Close-In Obstacles on SIDs & ODPs.

Tom Schneider (AFS-420) stated that the status update will be in two parts. In part 1, Krystal Behrns (AJV-5) briefed an Aeronautical Information Services proposal (View) to remove takeoff notes from Standard Instrument Departure (SID) graphics, as outlined in the attached PowerPoint presentation. This proposal would reduce clutter, eliminate redundancy (as they are repeated in the textual takeoff section of the TPP), reduce number of continuation pages (currently 107), and leave Takeoff Obstacle Notes on all Obstacle Departure Procedure (ODP) charts. Vince Massimini (MITRE) discussed that if a pilot is given a different departure they would have to go look for notes elsewhere when busy rather than having them on the new SID, but agrees with the clutter issue. Michael Stromberg (Air Wisconsin) suggested that rather than placing all obstacle information at front of book, each airport have its own individual page, making the data readily available, but no chart clutter. Ted Thompson (Jeppesen) endorses this proposal. Jeppesen was compelled to provide notes when they began to appear on the 8260 series forms. Jeppesen then received airline feedback, questioning what to do with the notes (i.e., bushes, chain link fences, etc.), and were asked by the users of their

products to remove them from the procedure charts and place on separate page. Jeppesen decided that on procedures with few low, close-in obstacles (<6) to place them on the SID graphic, and if there was an "excessive" number, place them on separate obstacle page indexed to follow the SID procedure. Airlines with a tailored service could then opt to not receive the separate obstacle page (most opted out), because many airlines do their own obstacle data research/analysis for low, close-in obstacles. Ted added many pilots feel this is not useful information. Jeppesen maintains an obstacle base requiring a lot of effort, but they are not sure of any benefit and would prefer they go away. Gary Fiske (AJV-8) inquired if this was the Rich Boll (NBAA) proposal to just show highest/closest? The answer was no; this proposal is to reduce chart clutter by placing this redundant information (i.e., same information applies to multiple procedures) in a single location. A lengthy discussion ensued including: chart all obstacles; not show any at all; identify highest in certain proximity; append take off minimums per runway; etc. Tom Schneider (AFS-420) added this has been discussed for many years; originally pilots said they did not want to pull up a SID and then have to look elsewhere for the info on obstacles, so the decision was made to chart all information on each procedure chart to offer "one stop shopping". Changes were made to accommodate this, but now we are trying to revert back to taking this information off the charts by having pilot, once again, being faced with having to go to two locations to get ***all*** the applicable information for the procedure to be flown. Tom asked if the FAA should chart as Jeppesen does, even though this would require the pilot to look for the information in a different place, but in the same area with the SIDs vs. in the Takeoff Minimums section in the front of the Terminal Procedures Publication. Valerie Watson (AIS) added pilots would still have a lot of reading to do, but the information ***would not*** be deleted. More discussion followed about the Jeppesen representation of the data, and Ted added that an irony of the digital age is it takes more work to look at a different page for the data electronically than flipping a book page. He questioned if anyone actually uses the data, either on chart or on an add-on page. Lev Prichard (APA) said some GA and military use the data, and supported moving the obstacle information to the single, ODP location; he believes users want the data somewhere. Valerie responded the FAA provides the digital Takeoff file containing the takeoff obstacles, but cannot control what industry does with it. She asked if the takeoff text were searchable by airport ID, would the group support removing it from SID graphics. Rune Duke (AOPA) said they at least want information in the front of the book, but searchable would be better. Larry Hill (FedEx) said, for example, the 6 ft. fences can go, but FedEx prefers some obstacle data on the chart in case of unplanned event. Michael inquired about color coding of obstacles. Ted said this would require more effort and he thought would be of marginal value. Tom said the issue has a short term and long term component; this short term fix places obstacles in a "single" list of their own. Valerie again asked the group if takeoff entries were searchable by airport and could perhaps be "clickable," would that justify or make possible the removal of them from redundant locations. Group said yes, but Ted said this is harder to do than it sounds. Tom questioned if SID and ODP obstacle data are always the same, and both Valerie and Tony Lawson (AIS) said yes. Tony added that when you change one obstacle you must amend every chart affected. Listing the obstacle on only one FAA Form 8260-15A (Takeoff form) would significantly reduce maintenance by eliminating the current necessity of updating ALL of the SID forms at a given airport when a single obstacle is revised. Michael acknowledged the benefit for this information being in one location, mentioning the airport chart like Jeppesen does. Bill Wade (Delta Airlines) also likes the way Jeppesen displays the info where it does. A group discussion on Form 8260-15B usage and possible changes ensued. The group agreed that, in the FAA digital files, if the Takeoff section (and thus the takeoff obstacles) were searchable by

airport ident, it would be permissible to remove the redundant takeoff obstacle text from the planview of SID graphics. Valerie repeated that because there is no textual takeoff entry (with the subject obstacles listed) for graphic ODPs, this would NOT apply to them, but only to SIDs. Valerie will advise Ted before any changes are implemented. Valerie took an IOU to investigate making the textual takeoff section searchable by airport ident and to draft proposed revisions of IACC specs to support the removal of takeoff obstacle text from SID charts. She also agreed to label the current obstacle text "TAKOFF OBSTACLE NOTES" vs the current "NOTE" in the takeoff section so that the obstacle information is more obviously labeled and is in concurrence with the Form 8260-15A source document. If and when this proposal is implemented, AIS will issue a "Chart Notice" to address these changes. No objections received.

Tom briefed part 2 (View) of this agenda item on how this was presented to the US-IFPP in January, and it also generated a lot of discussion. One concern raised by Flight Inspection was if obstacles are removed from the chart are we removing information that may be important to the pilot. Rob Kroeplin (AJV-5) briefed the US-IFPP on an AIS computer tool that groups obstacles. In some cases it may reduce number of obstacles (not all), but it helps procedure designers, especially with the proliferation of new survey generated obstacles. Kevin Allen (American Airlines) asked if any pilots in the room actually look at or read the obstacles on the chart, and only Jen Scott (AFFSA) said yes. Discussion followed on possibly listing controlling obstacles and placing generic note stating not all low, close-in obstacles are charted. Tom advised the US-IFPP Departure WG is being reenergized (long term concept work) for departure criteria, and there are also possible changes to the obstacle identification surfaces. Tom will brief this discussion at the June US-IFPP, and report back at ACF-16-02.

Status: Valerie took IOU to investigate making the takeoff section of the TPP searchable by airport, to draft proposed revisions to IACC specifications to remove text obstacles from SIDs and to revise the "TAKEOFF OBSTACLE NOTES" obstacle note label. They will issue a Chart Notice to alert users of the changes if/when implemented. No objections received. John Blair (AFS-410) took an IOU to look at flight ops and AIM/AIP changes required for guidance to pilots concerning the transition to the new method of charting; i.e., changes on some charts having obstacles, and some having the key indicating to look at front of book. Tom took an IOU to brief this discussion at the June US-IFPP, and report back at ACF-16-02. **Item Open:** AJV-5/AFS-410 /AFS-420

VII. NEW BUSINESS (New Agenda Items)

16-01-324: SID/STAR Naming Policy.

Tom Schneider (AFS-420) briefed this item submitted by Derek Benda (Love Travel Stops), stating there have been several ASRS reports on SID/STAR procedure naming when they begin with same first letter or the first two letters. This agenda item is similar to the pronounceable name discussion from earlier (Agenda Item: 15-01-320). Derek recommends naming graphic departure procedures (which consist of graphic ODPs and SIDs) and STARs so they do not start with the same first letter; or as an alternative, change the revision number of one procedure to make them different. Tom said that changing the revision number out of sequence would not work because the graphic departure procedure numbering process serves as indicating an amendment to the procedure has occurred and doing this would become a record keeping (i.e., historical tracking) nightmare. What we could do is provide guidance to the procedure developers

to be alert to watch for and avoid similar sounding names during the procedure development and design process. Example draft language was shown (View) that could go into Order 8260.46 for graphic departure procedures and Order 8260.19 for STARs. Bill Rabek (Atlanta ARTCC) said similar sounding letters when spoken would also need to be considered and cautioned this might be a difficult process to control. Tom said he understood, but the objective was to give the procedure developers guidance to at least look for and avoid, if at all possible, the similar sounding names. Bob Lamond (NBAA) agreed with the direction, but suggested a more general statement, such as "Consideration of names should be a factor reference similar sounding…" or something along those lines. This takes into consideration regional dialect variations such as southern and foreign accents, adding you will never be able to eliminate the problem, but this will at least be a great help. Bill agreed with Bob's thoughts, suggesting something like "Be cognizant of similar sounding names…" Question was asked if this should be tied Order JO 7400.2, Procedures for Handling Airspace Matters, tying it to the fix 300 NM discussion, and the responses were no. This particular issue, although tied to a fix name, belongs in the directives supporting specific procedure development. Tom said this issue should be a prime consideration at the beginning of Metroplex project development. Lev Prichard (APA) said, although he found only one instance of this reported in ASRS, he feels it is a problem, and following this procedure naming proposal would add one more layer of protection. Tom asked Jazz Armstrong (FAA/AOV-110) if there was any way that during evaluations these issues could be looked at since it appears system wide. Jazz said he would look in their operating guidelines and determine if feasible, but noting that adding this to their oversight is not really geared to the ATC system itself, so there was uncertainty whether this would be in the scope of their operating practices. Tom said NFDC has stated on a number of occasions that there are many pronounceable names available to use. Gary said the SID/STAR usually has some local area specific "theme" associated with it driving the naming request(s). Gary also asked about facilities that may have 26 SIDs and to use different first letters would be extremely difficult. Bill said ATL just added 22 new STARs on April 12, in addition to existing procedures, and he thinks DFW has more. Bill said the controllers/pilots want them pronounced a certain way and that the spelling may not completely match the pronunciation. In conclusion, short of any major policy changes to the naming processes already in place, it seems best to provide a reminder in our policy directives to have procedure developers consider the similar sounding names of graphic departure procedures and/or STARs while in the development phase.

Status: Tom said AFS-420 will work on the draft language for Orders 8260.19 and 8260.46 and report back at the next meeting. **Item open:** AFS-420

16-01-325: Priority of Terminal Procedure Amendments.

John Kernaghan (NBAA) briefed that the SFO DYAMD TWO RNAV STAR final altitude at ARCHI was scheduled to be amended to 7000, along with a change to the associated Class B airspace floor. The STAR amendment was processed, but the Class B change was not, which put arrivals below the floor of the Class B airspace. A temporary NOTAM was issued to amend the DYAMD TWO to 8000, but it looks like an 18 month fix. Even though it is the responsibility of the pilot-in-command to be familiar with all NOTAMs, this violated the 224 day NOTAM limit because a temporary NOTAM does not revise the data base or the charts. NBAA requests a change to FAA Order 8260.43B, Flight Procedures Management Program, to prioritize the timing and importance of related procedure development. Bob Lamond (NBAA) added they just heard the Western

Service Area, Regional Airspace and Procedures Team (RAPT) has stopped meeting due to a backlog of scheduled procedure development work with publish dates more than two years out. The Metroplex projects seem to always have issues and there needs to be a way to affect corrections sooner without using 18 month temporary NOTAMs. Tom Schneider (AFS-420) said the T-NOTAM has a 224 day limit, and again spoke of the revision work under way with FAA Order 8260.43B. Bennie Hutto (NATCA) said there is ATC phraseology to correct issues like this (preferable to NOTAMS), and added the DYAMD THREE STAR is scheduled for publication in July 2016 addressing the problem. Bob said this is the first NBAA heard of the July publication for the DYAMD THREE. Brian Townsend (American Airlines) agreed with Bennie that ATC using phraseology is a quick fix, however even though NOTAMs are the legal fix, procedure via NOTAM is not good and there needs to be an expedited process in place for these corrections. Lynette Jamison (AJR-B1) reminded the group that "estimated" NOTAMs (i.e., "EST" following the expiration date of the NOTAM) drop out of system at 224 days (In this case, October 2). Lev Prichard (APA) asked if a NOTAM will just drop on an important issue like this, and Lynette said yes, adding it is the responsibility of the NOTAM originator to monitor NOTAMs to determine if it is still needed. Tom said he believed that the NOTAM issuer would be notified before it expired and dropped, and Bill Rabek (ATL ARTCC) said they are not notified. Lynette said if the NOTAM Manager system is used to issue the NOTAM, there will be a three day notification; the ARTCCs do not use this system and do not get the notification. Lev said this shows work is needed on the issue. Lynette said there is no one person looking at these; no oversight; no specific office is looking at STAR NOTAMS with "PERM"; nor are the old "FIT NOTAMS" that are still in the NOTAM system being monitored. Valerie asked if these "old NOTAMS" are being cleaned up when STAR oversight is turned over to AFS, and Tom said no; these are ATO items. Lynette added it should be the responsibility of the issuing authority to ensure validity of all the NOTAMS they have issued. The discussion had moved off the original topic of the agenda item and the discussion ended. Tom Schneider will take the IOU to monitor progress of the Order 8260.43 revision and report back at the next meeting on the latest proposed changes.

Status: AFS-420 will monitor Order 8260.43 revision work under way (by AFS-460) and report back. **Item open:** AFS-420

16-01-326: FAA Order 8260.46F, "Top Altitude" Charting Constraints.

Bennie Hutto (NATCA) presented the issue (View). Order 8260.46F published in December, 2015, and allows for two Top Altitudes per procedure for a Standard Instrument Departure (SID). Bennie gave an example of a procedure being developed that served six airports, and AIS advised the limit was still only two Top Altitudes for the entire procedure; NATCA feels the Order 8260.46F, Appendix D and E examples, which do show variations, are misleading and do not follow text of the Order. At this location, Jeppesen charted three airports on one SID, and individual procedures on the other three airports. The FAA charts each airport individually (no combined procedures). NATCA would like to retain the two Top Altitude restriction, but expand it to accommodate the multiple airport aspect by allowing two Top Altitudes per procedure, per airport. An associated issue is the definition of what a "Top Altitude" is in Order JO 7110.65 and Order 8260.46F, and because of this ATC must issue a Climb Via clearance (even though many published procedures are truly not Climb Via). Kevin Allen (American Airlines) said he feels industry would prefer to see satellite airports coded as separate procedures.

Bennie replied that is problematic in some areas due to the amount of different procedures that would exist for ATC to remember in same area, which is why ATC wants to "tie" as many as possible together (i.e., use same procedure that goes to the same waypoints). The only issue ATC is having is the Top Altitude. Ted Thompson (Jeppesen) says they use an "also serves" concept to reduce the sheer number of procedures. Gary Fiske (AJV-8) said a "Climb/Descend Via Working Group" was formed (no longer active) that discussed the issue, and Tom Schneider (AFS-420) said that group was trying to avoid confusion about a limitless number of Top Altitudes charted and ATC having to worry about which airport an aircraft departed from (different Top Altitude). The anticipated workload for the controller drove the two altitude limit per procedure decision. Tom said AFS (responsible for the Order on source document for charting) will put whatever limit on "Top Altitudes" the ATO requests. Bennie said again the definition of Top Altitude, defined in both Orders, is forcing ATC to issue Climb Via clearances. Tony Lawson (AJV-54) stated that he was part of QC process and when they asked for clarification from AT Headquarters, they were told two per procedure. Gary McMullin (Southwest Airlines) said a Top Altitude does not belong on every procedure (use "climb and maintain" may be applicable phraseology). Brian Townsend (American Airlines) added the Top Altitude is just the ATC clearance limit on the SID, whereas the "Bottom Altitude" on a STAR is a constraint. The Climb Via phraseology for all SIDs with a Top Altitude, even though no published altitude constraints, leads to confusion. There is a recommendation at the Pilot Controller Procedure and Systems Integration (PCPSI) work group to clear up this issue; but as a first step there are a number of facilities that are being forced to apply a Climb Via clearance with their SIDs. There needs to be leeway so that even if a Top Altitude is present and the procedure has no other altitude constraints, a "climb and maintain…" clearance can be used. This would not require the removal of a top altitude if the facility wants it. Ted added that in Houston, if you split out all the procedures separate, the Jeppesen published number would go from 50 to 240. Tom inquired if the Climb/Descend Via working group is being reenergized and some thought so. Gary felt the issue should not go back to AJV-8 thru him, but rather a different avenue. Since "Top Altitude" remains a topic in the PCPSI group, Brian will bring it back to that group for consideration.

Status: Brian Townsend will take the issue to the PCPSI work group and report back. **Item open:** PCPSI

VIII. NEXT MEETING:

ACF 16-02 is scheduled for October 25-27, 2016, hosted by Pragmatics, Inc. Reston, VA.

ACF 17-01 is scheduled for April 25-27, 2017, host TBD.

Please note the attached Office of Primary Responsibility (OPR) listing (attachment 1) for action items. It is requested that all OPRs provide the Chair, Tom Schneider, AFS-420, a written status update on open issues not later than October 6th, 2016 - a reminder notice will be provided.

IX. Attachments (2): 1. OPR/Action Listing
2. Attendance Listing

AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP
OPEN AGENDA ITEMS FROM MEETING 16-01

OPR	AGENDA ITEM (ISSUE)	REQUIRED ACTION
AFS-420	**07-02-278:** (Advanced RNAV (FMS/GPS) Holding Patterns Defined by Leg Length)	Track publication status of the DCPs and provide status update at next ACF.
AFS-420	**12-01-299:** (Loss of CAT D Line of Minima in Support of Circle-to-Land Operations)	Track status of Order 8260.43C and provide status update at next ACF.
AFS-420 (US-IFPP)	**12-01-301:** (Publishing a Vertical Descent Angle (VDA) with 34:1 Surface Penetrations in the Visual Segment, *also includes issue 13-01-309*)	Work the issue thru US-IFPP and provide status update at next ACF.
AFS-420/AJV-5	**13-02-312:** (Equipment Requirement Notes on Instrument Approach Procedures)	AFS-420 will provide status update at next ACF. AJV-5 will update of Charting RD.
AFS-420 (US-IFPP)	**14-01-315:** 90 Degree Airway-to-RNAV-IAP Course Change Limitation; Arrival Holds	Monitor US-IFPP action and provide status update at next ACF.
AFS-420	**14-01-316:** RNAV Fixes on Victor Airways Used for RNAV SIAPs	Draft work done in Order 8260.19H; Provide status update at next ACF. (Should publish November 2016)
AFS-470	**14-02-317:** Use of GPS on Conventional (Ground-Based NAVAID) Instrument Approach Procedures (IAPs)	Track status on AIM update and provide status update at next ACF. (Should publish 5-26-2016)
AJV-8/AJV-5	**15-01-320:** Common Sounding Fix Names	AJV-8 will continue work resolving identified fixes and brief progress at next ACF. AJV-5 will report on NFDC discussions.
AFS-420 (US-IFPP)	**15-01-321:** Coding of Missed Approach for ILS31L and ILS31R at KJFK	Work on raising priority on this specific safety issue, and monitor US-IFPP action on future criteria enhancements and brief progress of working group meetings at next ACF.
AFS-420/AJV-54	**15-02-323:** Depiction of Low, Close-In Obstacles on SIDs & ODPs	Being worked in US-IFPP Departure Working Group. Report status at next ACF.
AFS-420	**16-01-324:** SID/STAR Naming Policy.	Work draft language for Order 8260.19 & Order 8260.46 and report status at next ACF.

AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP
OPEN AGENDA ITEMS FROM MEETING 16-01

OPR	AGENDA ITEM (ISSUE)	REQUIRED ACTION
AFS-420	**16-01-325:** Priority of Terminal Procedure Amendments.	Monitor Order 8260.43 revision (by AFS-460) and report status at next ACF.
PARC-PCPSI WG	**16-01-326:** FAA Order 8260.46F, "Top Altitude" Charting Constraints.	Issue to presented to PCPSI WG to discuss and report status at next ACF.

ACF 16-01
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AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
Meeting 16-02 October 25, 2016

RECOMMENDATION DOCUMENT

FAA Control # 16-02-327

Subject: Arrival Holding Patterns Required for Approach Entry

Background/Discussion: Recently, two RNAV IAPs were published with an arrival holding pattern that is required for procedure entry. One is a new RNAV Rwy 19R procedure at KRVS (attachment 1); the other is an amendment of the RNAV Rwy 30 procedure at KLRU (Attachment 2). For reference also attached are the former KLRU RNAV Rwy 30 (Attachment 3) and a snippet of the KLRU en route low-altitude area (Attachment 4).

These are two examples of an arrival holding pattern being a de facto HILPT, which is contrary to the intent of criteria and specifically prohibited by implementation policy in FAA Order 8260.19G. Based on input from NBAA, and follow-up by AFS-420, a NOTAM was issued prohibiting arrival on the KLRU RNAV Rwy 30 from V94 westbound or V611 southeast bound. The NOTAM removes some ambiguity to procedure entry but does not change the fact that the arrival holding pattern at MOLLY is a de facto HILPT. Note also the confusion at KLRU where straight-in on V94 from the west is permitted for the ILS Rwy 30 IAP even when RNAV navigation is used. (Attachment 5).

NBAA believes that neither pilots nor controllers understand the use of arrival holding patterns for entry into the instrument approach procedure. The Aeronautical Information Manual (AIM) does not discuss the use of arrival holding for procedure entry when turn angle limitations are exceeded. Further, NBAA notes that the current guidance furnished to air traffic controllers in FAA Order JO 7110.65, Air Traffic Control, paragraph 4-8-1, does not address the use of arrival holding when required for procedure entry nor are there any intercept angle limitations prescribed for RNAV direct-to clearance to a feeder fix (Note: The Order does limit turn angle to 90 degrees for less at the IAF and IF). Because RNAV will be used to enter an RNAV approach, the 90 degree or less turn angle restrictions applied to airway-to-feeder turns using RNAV must also be applied when an RNAV direct-to clearance is issued to a feeder fix.

Recommendations: NBAA makes the following recommendations with respect to the use of arrival holding for instrument procedure entry and RNAV direct-to clearance to feeder fixes:

1. Criteria and policy should be revised to prohibit the use of an arrival holding pattern when a satisfactory HILPT can be placed at the intermediate fix. When that is not possible, then an arrival holding pattern may be used for procedure entry from an airway provided the holding pattern is coded in the nav-database as part of the applicable approach transition and a chart note is published informing the pilot that the arrival hold is mandatory for procedure entry. NBAA proposes the following Planview Note:

“Arrivals at <fix name> on <airway><direction>, arrival holding for approach entry mandatory”

Example:

“Arrivals at JOXIT on V343 northeast bound, arrival holding for approach entry mandatory”

See example in ATTACHMENT 6

2. Amend the AIM to provide guidance to pilots on the use of arrival holding:

5−4−9. Procedure Turn, and Hold−in−lieu of Procedure Turn, and Arrival Holding

7. Arrival Holding. Some approach charts have an arrival holding pattern depicted at an IAF or at a feeder fix located along an airway. The arrival hold is depicted using a “thin line” since it is not always a mandatory part of the instrument procedure.

(a) Arrival holding is charted where holding is frequently required prior to starting the approach procedure so that detailed holding instructions are not required. The arrival holding pattern is not authorized unless assigned by ATC. Holding at the same fix may also be depicted on the enroute chart.

(b) Arrival holding is also charted where it necessary to use a holding pattern to align the aircraft for procedure entry from an airway due to turn angle limitations imposed by procedure design standards. When the turn angle from an airway into the approach procedure exceeds 90 degrees, an arrival holding pattern is published along with a note on the procedure specifying the airway and arrival direction where use of the arrival hold for procedure entry is mandatory. Unlike a Hold-in-lieu of Procedure Turn, use of the arrival holding pattern is not authorized until assigned by ATC. Once ATC issues holding instructions and the aircraft reports entry into the hold, ATC will issue the approach clearance. The pilot may then exit the hold after the next passage over the holding fix and then continue with the published procedure.

3. Amend AIM regarding RNAV direct-to feeder fix turn angle limitations

5−4−6. Approach Clearance

6. In addition to the above, RNAV aircraft may be issued a clearance direct to ***a feeder fix*** or the IAF/IF at intercept angles not greater than 90 degrees for both conventional and RNAV instrument approaches. Controllers may issue a heading or a course direct to a fix between the IF and FAF at intercept angles not greater than 30 degrees for both conventional and RNAV instrument approaches. In all cases, controllers will assign altitudes that ensure obstacle clearance and will permit a normal descent to the FAF. When clearing aircraft direct to the IF, ATC will radar monitor the aircraft until the IF and will advise the pilot to expect clearance direct to the IF at least 5 miles from the fix. ATC must issue a straight-in approach clearance when clearing an aircraft direct to an IAF/IF with a procedure turn or hold−in−lieu of a procedure turn, and ATC does not want the aircraft to execute the course reversal.

4. Amend FAA Order JO 7110.65, Air Traffic Control, Paragraph 4-8-1:

a. Add New Note 3 to ***PHRASEOLOGY*** – *CLEARED STRAIGHT-IN (type) APPROACH*

3. Arrival holding may be depicted at the IAF or at a feeder fix where use of the hold is mandatory for procedure entry from an airway. The approach procedure will publish a Note identifying the airway and arrival direction where the use of the arrival hold is mandatory. The arrival holding pattern is not authorized until ATC issues holding instructions; however, ATC must assign the hold before the aircraft can be cleared for the approach. Once the pilot reports established in the hold, the approach clearance may be issued.

b. Amend paragraph 4-8-1 h. 1:

h. For RNAV−equipped aircraft operating on unpublished routes, issue approach clearance for conventional or RNAV SIAP including approaches with RF legs only after the aircraft is: (See FIG 4−8−4).

1. Established on a heading or course direct to the IAF ***or a feeder fix*** at an intercept angle not greater than 90 degrees and is assigned an altitude in accordance with b2. Radar monitoring is required to the IAF for RNAV (RNP) approaches when no hold−in−lieu of procedure turn is executed.

NBAA also recommends FAA explore an option that would permit the pilot to execute the arrival holding entry and then proceed inbound on the approach, without a specific ATC clearance to execute the arrival hold when procedure entry requires the use the arrival hold.

Comments: This affects FAA Orders 8260.58A, 8260.3C, 8260.19G, JO 7110.65 and the AIM.

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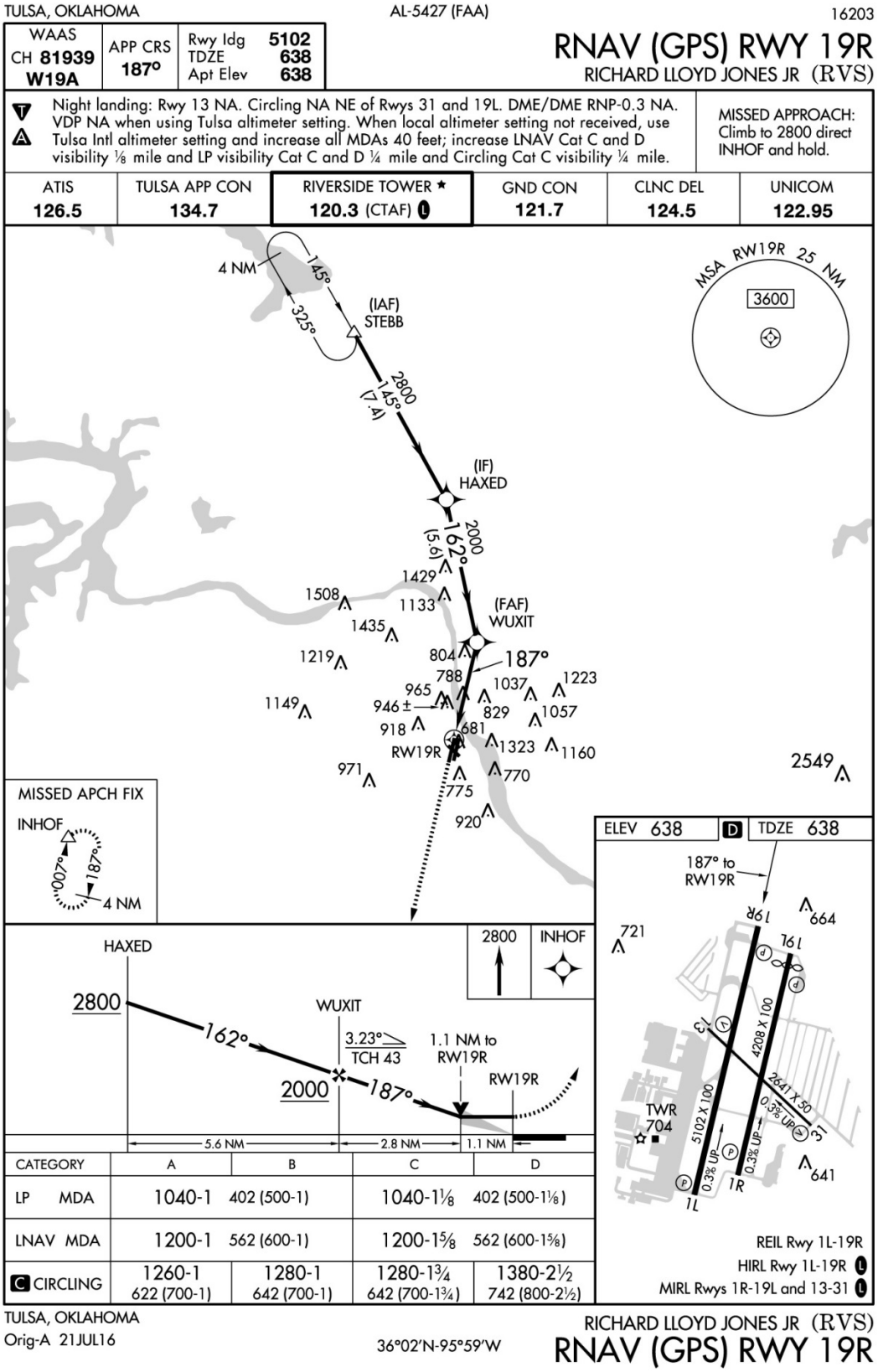
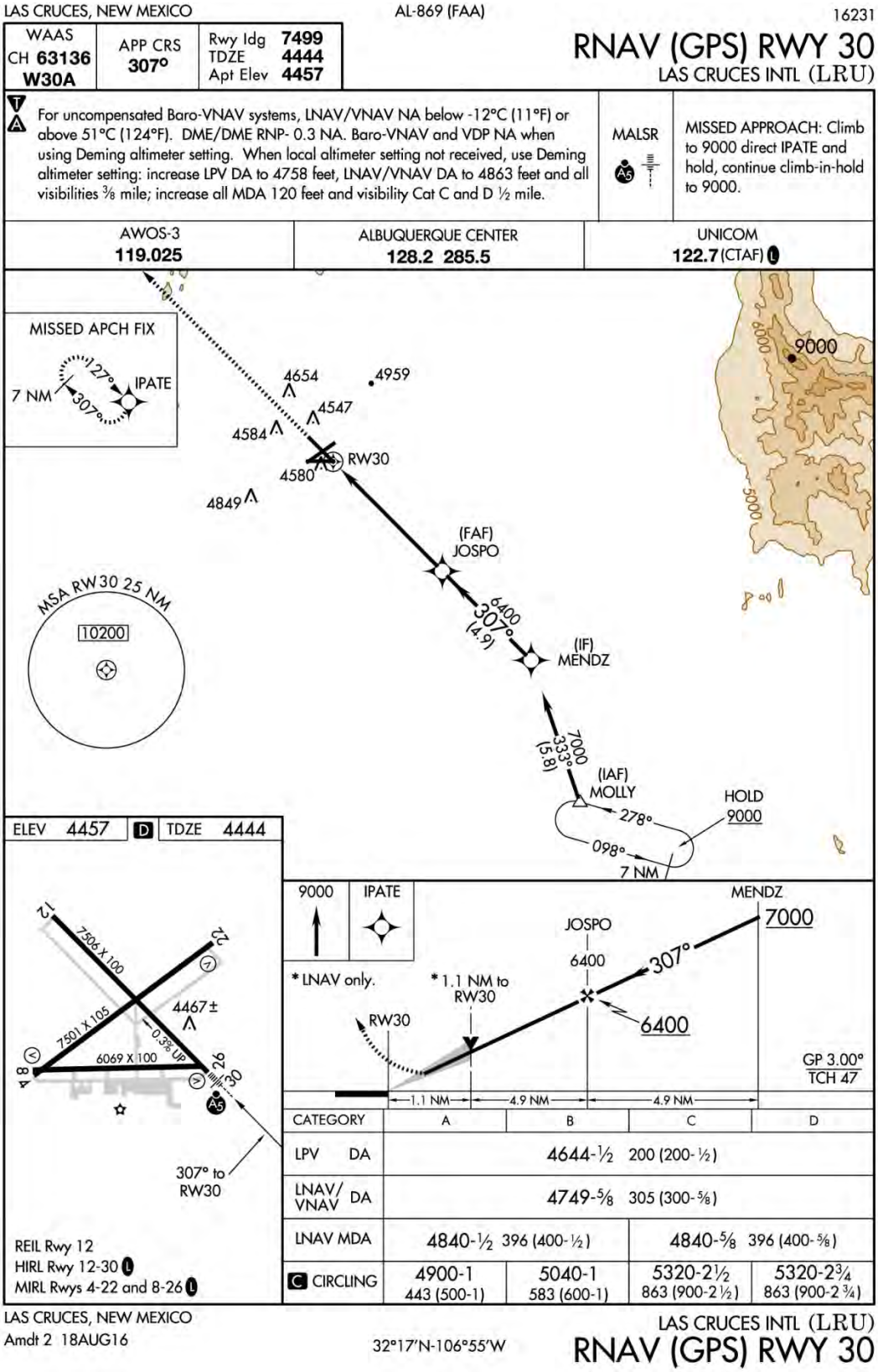


ATTACHMENT 1



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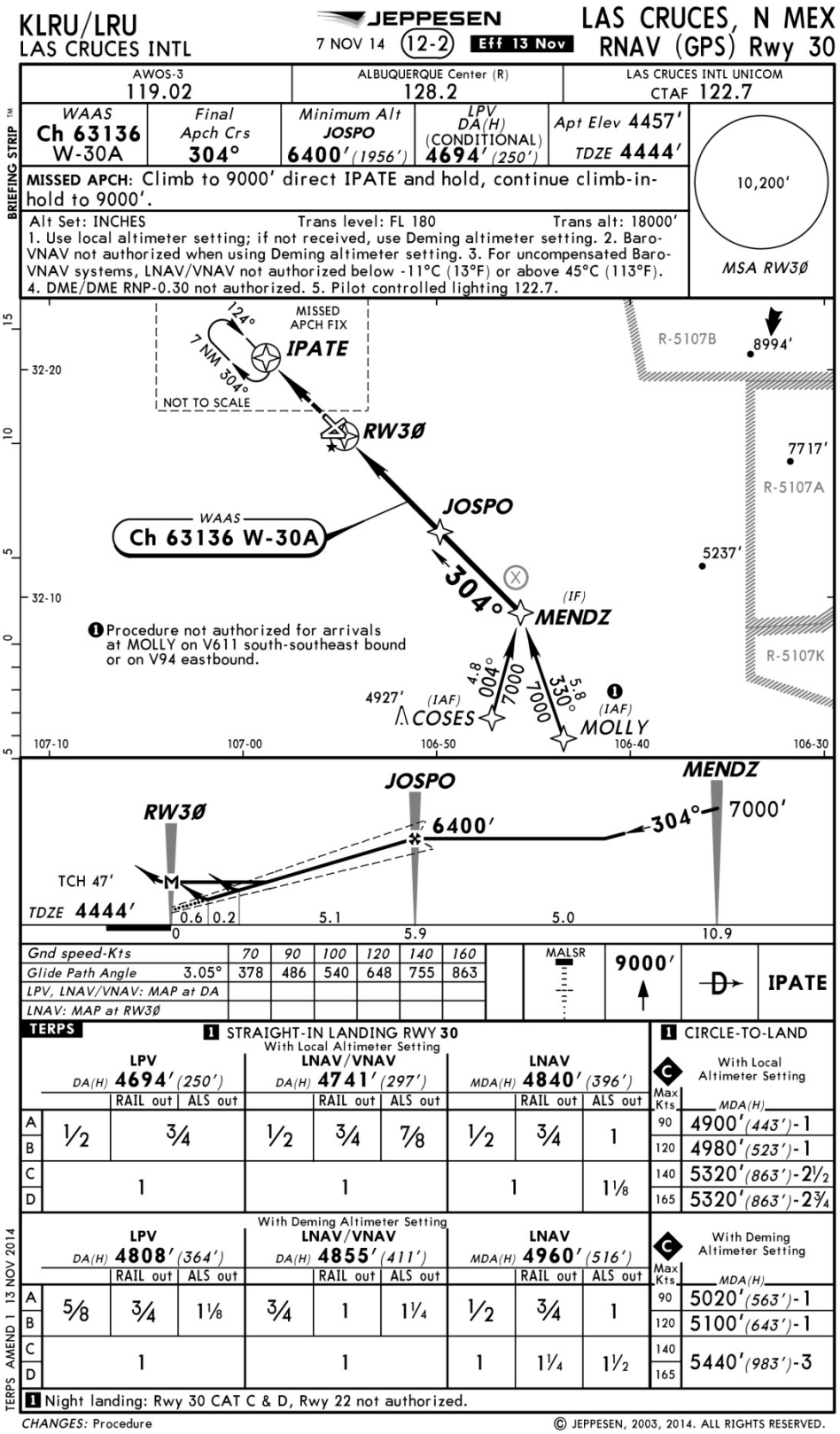

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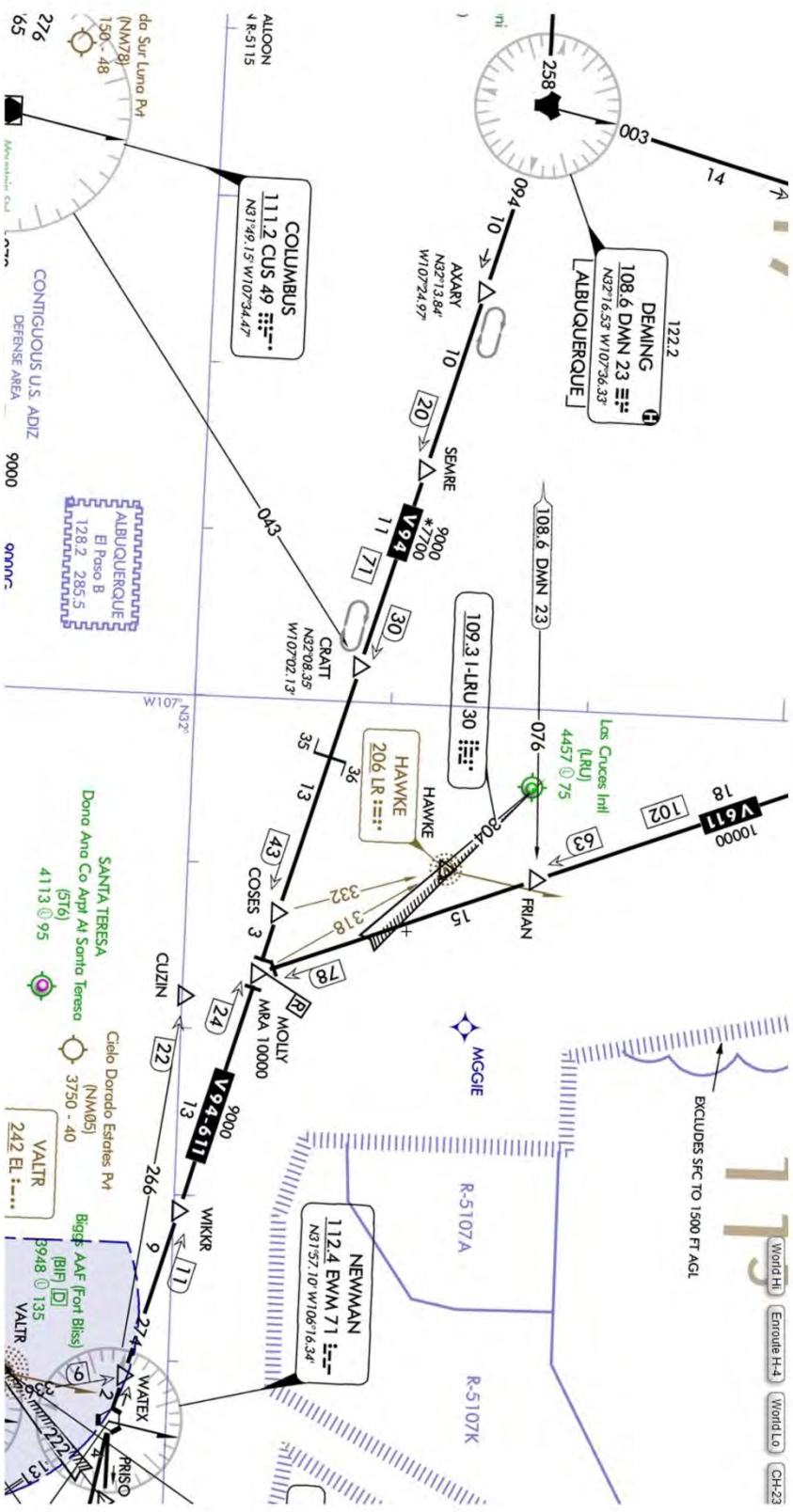

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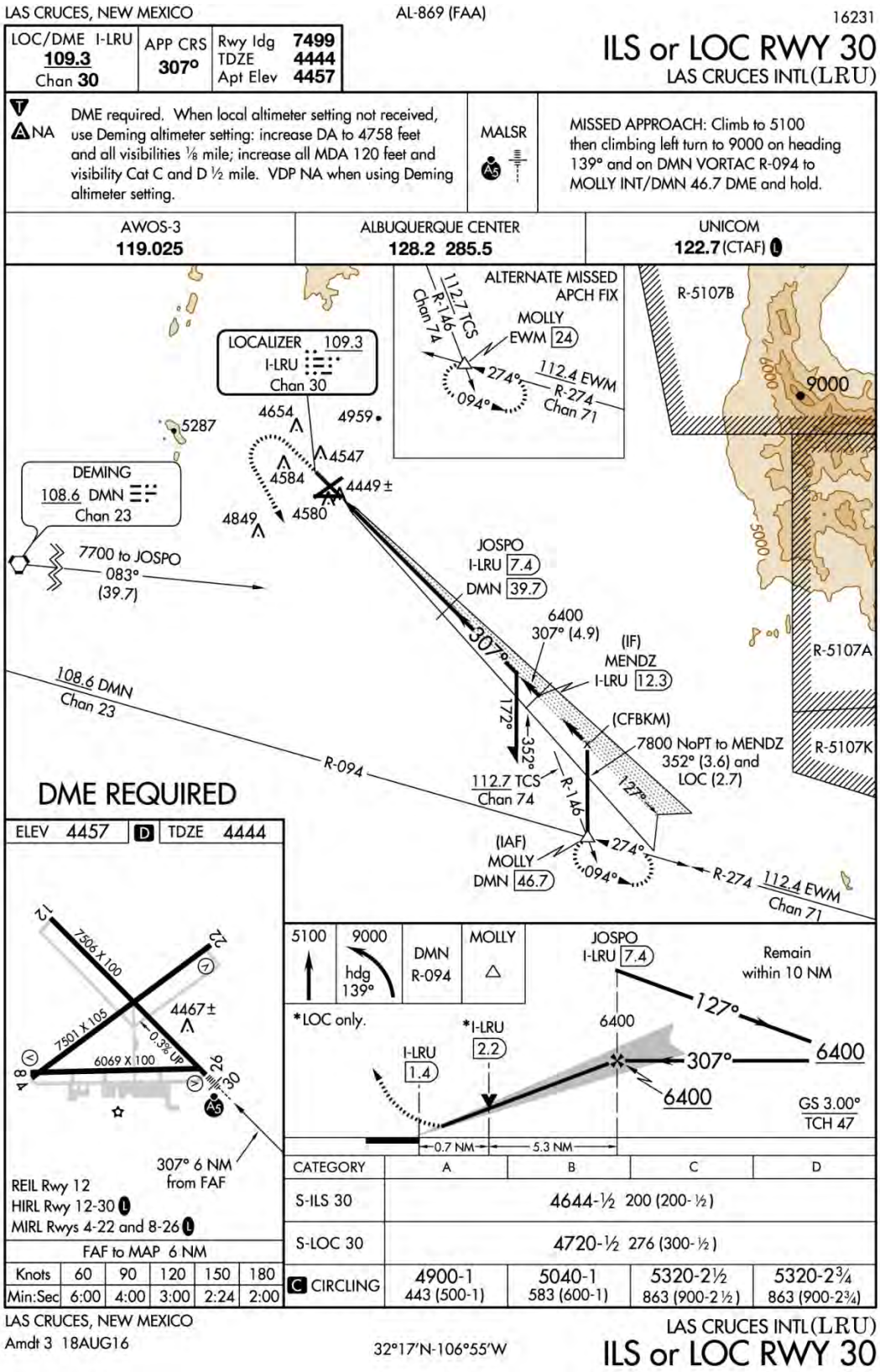

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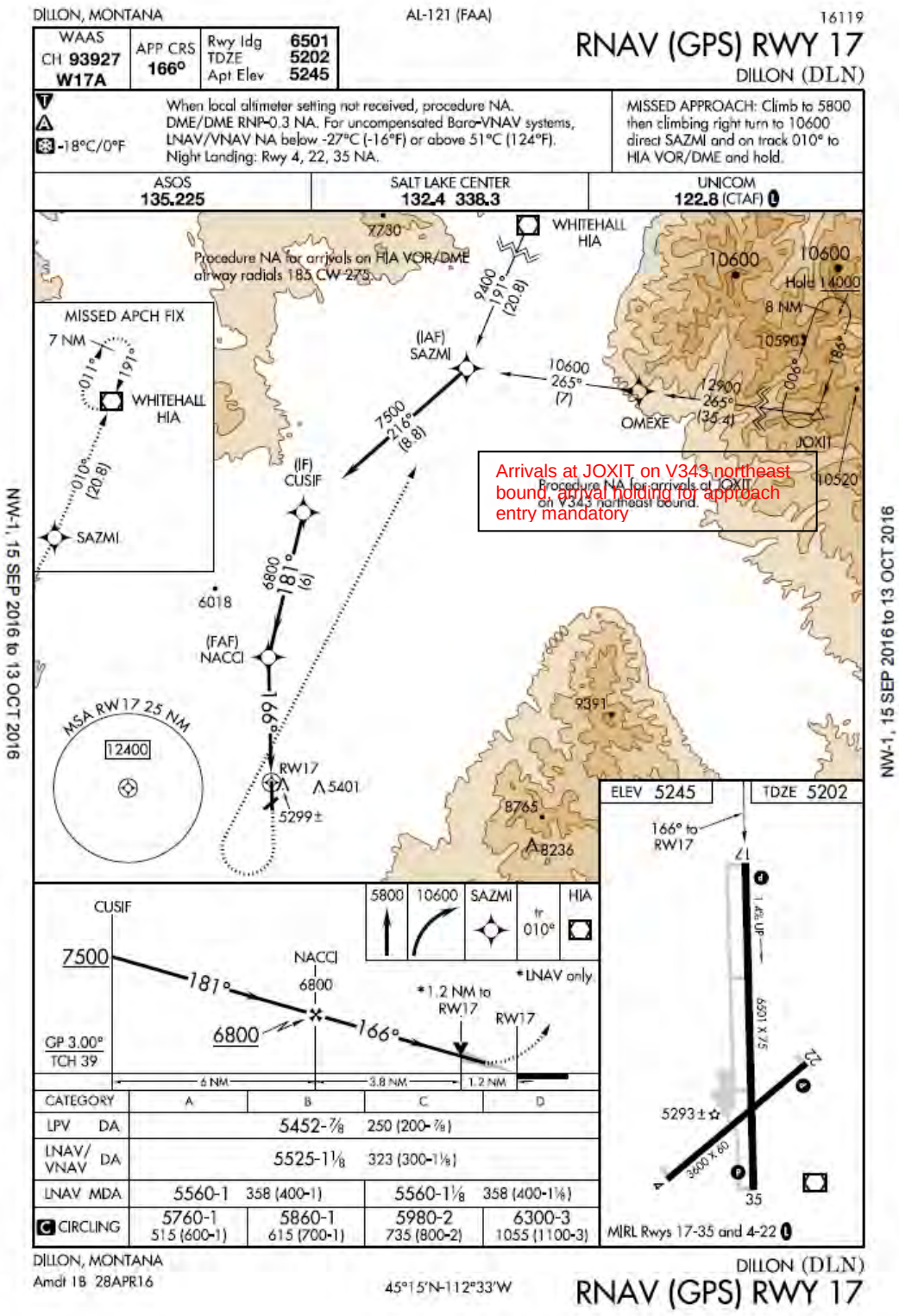

ATTACHMENT 6

AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
Meeting 16-02 – October 25, 2016

RECOMMENDATION DOCUMENT

FAA Control # 16-02-328

Subject: Complexity of Speed Restriction Notes on SIDs & STARs

Background/Discussion:

Speed Restriction Notes (sometimes also referred to as Speed Constraint Notes) applicable to Standard Instrument Departures (SIDs) and Standard Terminal Arrivals (STARs) generally fall into one of two categories:

1. Speed Notes, in simple form, that apply to the entire procedure
2. Speed Notes, in simple form, that apply to a specific point-in-space (e.g. Waypoint, Reporting Point, Airspace Fix or Navaid)

This categorization was typical until the emergence and influence of Performance Based Navigation (PBN) concepts and capabilities expanded and began to influence the design of terminal procedures.

Likewise, Speed Restriction Notes were, at one time, typically simple which made them easier for pilots to understand and apply, as well as for aeronautical chart providers (government or commercial) to depict them in accepted and consistent forms.

While chart formats and depictions may vary from one chart provider to another, the content of such notes is common; in accordance with the official FAA procedure source document applicable to each SID or STAR.

It is well known that adherence to speed restrictions is of utmost importance to both air traffic controllers and to pilots. Pilots, using their aeronautical charts of choice or provided by their airline, fully expect charted speed restriction notes to be:

a. prominently depicted and quickly located
b. presented in a consistent form
c. simple and easy to understand.

Chart providers understand pilot expectations and base their individual depiction specifications on an understanding of the nature and content of the speed restriction notes as contained on the official FAA procedure source documents.

Although chart providers may depict speed notes differently, an important common element is that the actual content or wording of the notes is not altered from the source document. This is done to ensure the information determined by the procedure designer is accurately provided to the pilot

When pilots encounter difficulty with a charted note on a particular SID or STAR, usually an all-important Speed or Altitude restriction note, they're most likely to be critical of the chart's composition, the depiction method used, or the placement of the particular note.

Chart providers listen and attempt to address their customer's concerns within limits and controls they have available. *(Refer to expectations a. and b. listed above).* While chart providers can affect changes and make improvements in depiction and/or composition of charted notes, they DO NOT have control over the actual content or verbiage of the official source-driven notes.

The subject of Speed Restriction Notes has gotten a great deal of attention lately and has been discussed in various industry groups. As a result of that work it's become evident that two of the three areas of concern are within the means of chart providers to address *(a. depiction and b. consistent placement)*, however, the important third aspect *(c. simple and easy to understand)* requires specific action on the part of the FAA source providers; specifically the applicable criteria, guidance, and/or procedure design.

As evidenced by newer SID and STAR designs being implemented across the U.S. NAS, Speed Restriction Notes are becoming much more complex. Further complicating matters is that speed control methods used by ATC (in the form of charted notes) vary by local facilities across the U.S. The increased complexity and inconsistencies lead to additional concern and aggravation among professional pilots who operate in these different operational environments. It has also been reported that some pilots may interpret the same chart note differently. Ambiguity of meaning or operational intent of certain types of speed notes is another concern.

In addition to the circumstances described above, examples included below in the 'Comments' section are intended to illustrate the point that a new "third type" of Speed Restriction Note has emerged, described as follows:

3. Speed Notes, in complex and/or conditional form, which apply to an entire procedure

NOTE: It is this new, third type of Speed Note which has becoming prevalent and is the center of many recent complaints from professional pilots and related groups.

Recommendations:

1. Applicable FAA criteria and guidance covering the design, development and expected operational use of SID and STAR Speed Restriction Notes, especially those which apply to an entire SID or STAR and are complex and/or conditional, should be re-examined and amended to improve simplicity, ease of understanding and uniformity.

2. An effort should be made to review and address differences in the application and verbiage of procedure-level Speed Notes currently in use across the U.S. NAS. Notes which may be difficult to understand, or are similar in intent but inconsistently worded, should be amended for improvement.

3. A primary objective should be to develop Speed Notes which achieve necessary ATC objectives but which are written in a manner which is concise, consistent

and easy to understand, nationwide. An important aspect is to compose notes in such a way that they have the same unambiguous meaning to all pilots.

4. Recent research by Volpe NTSC indicates that pilots tend to categorize chart notes into two forms; those which require immediate action and those which are reference only. Speed Notes should be written with the understanding that, when published in the form of an "actionable" charted note, the primary intended users are pilots on the flight deck.

5. As FAA procedure source documents are amended, chart providers could develop and apply charting specifications for these so-called "third type" of complex procedure-level ("actionable") Speed Restriction Notes - known to be of significant importance to both ATC and pilots - in order to depict them more prominently and consistently.

Comments:

The following examples of complex, conditional Speed Restriction Notes, applicable to the entire SID or STAR procedure, are offered to illustrate of the variety in the NAS.

- KMKE ACCRA2 RNAV SID
  "Turbojet aircraft maintain 250 KIAS until advised by ATC."
- KLAX FIXIT3 RNAV SID
  "Maintain At or Below 250 KIAS unless otherwise directed by ATC."
- KORD ORD2 SID
  "All turbojet departures in all directions: Maintain 250 KIAS until advised by ATC."
- KDFW DALL3 SID
  "Maintain 240 KIAS until leaving 5000 feet."
- KCVG BLGRS2 SID
  "Turbojets accelerate to 250 KIAS until reaching 10000 feet. If unable, advise ATC."
- KCLT ANDYS8 RNAV SID
  "Accelerate to 250 KIAS, if unable, advise ATC. Upon reaching 10000 feet, accelerate to and Maintain, 280 KIAS. If unable, advise ATC".
- KLAS SHEAD9 RNAV SID
  "Rwys 1 L / R: Max 230 KIAS until BESSY."
- KSEA KMORE4 RNAV SID
  "Do not exceed 250 KIAS until passing KMORE."
- KBOS REVSS3 RNAV SID
  "Maintain At or Below 250 KIAS until BERRO."
  "Maintain At or Below 290 KIAS until HEWMO."
- KCLT BARMY1 RNAV SID
  "Charlotte/Douglas Intl only: Accelerate to 250 KIAS, If unable, advise ATC."
  "All Airports: Upon reaching 10000 feet, accelerate to and Maintain 250 KIAS. If unable, advise ATC."
- KSEA HAWKZ5 RNAV STAR
  "Turbojet aircraft descend via Mach number until intercepting 280 KIAS. Maintain 280 KIAS until slowed by the STAR."
- KCLT PARQR2 RNAV STAR
  "Descend via Mach number until intercepting 270 KIAS. Maintain 270 KIAS until slowed by the STAR or assigned by ATC."

Submitted by: Ted Thompson,
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Date: October 11, 2016

Charting Group

Government/Industry Aeronautical Charting Forum (ACF)
Meeting 16-02

October 26 – 27, 2016

Pragmatics, Inc.

1761 Business Center Drive
Reston, VA 20190

CHARTING GROUP AGENDA

I. OPENING REMARKS

II. REVIEW MINUTES OF LAST MEETING, ACF 16-01

III. AGENDA APPROVAL

IV. PRESENTATIONS, ACF WORKING GROUP REPORTS, ACF PROJECT REPORTS

ICAO / IFPP Committee Report	Mike Webb, FAA/AFS-420
PARC PBN Procedure Naming & Charting	Mike Webb, FAA/AFS-420 Valerie Watson, FAA/AJV-553
Airport GIS	FAA/AAS-100
Discontinuation of VOR Services	Dale Courtney, FAA /AJW-292
NOTAM Briefing	Jerry Torres, FAA/AJR-B11
Atlantic Coast Route Project (ACRP)	Dan Bryder, FAA/AJV-5221
Transitioning to Point to Point Navigation	Rune Duke, AOPA
Discontinuation of Facility Aeronautical Data Distribution Systems (FADDS)	John Graybill, FAA/AJV-552
Discontinuation of the Digital En-Route Supplement (DERS)	Scott Jerdan, FAA/AJV-533
Revised Inoperative Components Table	Tony Lawson, FAA/AFS-542

IV. OUTSTANDING CHARTING TOPICS

Forum Number	Description Summary	Submitter
07-01-195	Charting & A/FD Information Re: Class E Surface Areas **Status:** Paul Gallant, FAA/AJV-113	NBAA
13-01-262	Airport Facility Directory (A/FD) Depiction of Traffic Pattern Altitudes **Status:** Lev Prichard, APA and Bob Lamond, NBAA	Randy Coller Michigan DOT
13-01-270	Stepdown Fix Chart Notes **Status:** Bruce McGray, FAA/AFS-410, Rune Duke, AOPA, and Rich Boll, NBAA	Kevin Bridges FAA/AIR-131
14-01-274	Solar Power Plant Ocular Hazard Symbol on Aeronautical Charts **Status:** Jill Olson, FAA/AJV-533	FAA Western Services Center Operations Support Group
14-01-279	Naming of FAA Certified, National Disseminated AWOS-3 Systems on Private Use Airports **Status:** Dale Courtney, FAA/AJW-292	Regina H. Sabatini FAA
14-02-282	VASI PAPI Differences **Status:** Tony Lawson, FAA/AJV-5441	John Collins GA Pilot
15-01-289	Adding “CPDLC” Information to Airport Diagram and Terminal Procedures and Updating the AFD **Status:** Valerie Watson, FAA/AJV-553	David Cherry DataComm
15-01-293	STAR Terminus Point Standardization **Status:** Tom Schneider, FAA/AFS-420 and Valerie Watson, FAA/AJV-553	Lev Prichard Allied Pilots Association
15-01-295	Charting Airports for the Minimum Operating Network (MON) **Status:** Vince Massimini, MON Workgroup Chair, MITRE and Valerie Watson, FAA/AJV-553	VOR MON Program FAA
15-02-296	Charting of Unmanned Free Balloon Activities and Amateur Rocket Activity Areas **Status:** Paul Gallant, FAA/AJV-113	Paul Eure FAA/AJV-113
15-02-297	Charting of HILPT Maximum Holding Altitude **Status:** Tom Schneider, FAA/AFS-420 and Valerie Watson, FAA/AJV-553	Rich Boll NBAA

Forum Number	Description Summary	Submitter
15-02-298	Charting GLS DMax (Service Volume) **Status:** Tom Schneider, FAA/AFS-420 and Valerie Watson, FAA/AJV-553	Ron Renk United Airlines
16-01-301	RVR Locations in FAA Documentation **Status:** John Blair, FAA/AFS-410, Bruce McGray, FAA/AFS-410 and Jill Olson, FAA/AJV-553	Kamal Ahmed Navtech
16-01-302	Cold Temperature Restricted Airport SIAP Segment Depiction **Status:** Tom Schneider, FAA/AFS-420, Valerie Watson, FAA/AJV-553, Tony Lawson, FAA/AJV-5441, Jill Olson, FAA/AJV-553 and Gary McMullin, Southwest Airlines	Rune Duke AOPA
16-01-303	Terminal Area Charts (TAC) and Charting IFR Arrival/Departure Routes **Status:** Rick Fecht, FAA/AJV-5223	Rune Duke AOPA
16-01-305	Cold Weather Temperature Compensation at Military Authority Locations **Status:** Catherine Graham, FAA/AFS-470	HQ AFFSA/XAP (Terps) USAF

V. NEW CHARTING TOPICS

Forum Number	Description	Submitter
16-02-307	Light Gun Chart on Sectional and Terminal Area VFR Charts **Briefer:** TBD	Tim Riley CFII
16-02-308	23,000 Feet vs. 18,000 Feet IFR Chart Change Recommendation **Briefer:** TBD	Joseph D. Fabian Eagle Air, LLC
16-02-309	Publishing of CLNC DEL Phone Numbers in Chart Supplement **Briefer:** TBD	Jeff Black FAA
16-02-310	Inclusion of MSA Info for ODPs, SIDs & STARs **Briefer:** Ted Thompson, Jeppesen	Ted Thompson Jeppesen

VI. NEXT MEETINGS

ACF 17-01 is scheduled for April 25-27, 2017, host USGS, Herndon, VA.

ACF 17-02 is scheduled for October 24-26, 2017, host TBD.

Government/Industry Aeronautical Charting Forum (ACF)
Meeting 16-01
Charting Group
April 27-28, 2016
ALPA
Herndon, VA 20170

CHARTING GROUP MINUTES

I. Opening Remarks

The Aeronautical Charting Forum (ACF) was hosted by the Air Line Pilots Association (ALPA) at their headquarters in Herndon, VA. Valerie Watson, FAA/AJV-553, opened the Charting Group portion of the Forum on Wednesday, April 27. Valerie acknowledged ACF Co-chair Tom Schneider, FAA/AFS-420, who presided over the Instrument Procedures Group (IPG) portion of the Forum the previous day. Valerie also expressed appreciation to Darrell Pennington and ALPA for hosting the 16-01 ACF.

II. Review Minutes of Last Meeting, ACF 15-02

The minutes from ACF 15-02 meeting were distributed electronically last fall via the Aeronautical Information Services (AIS) ACF website: http://www.faa.gov/air_traffic/flight_info/aeronav/acf/. The minutes were accepted as submitted with no changes or corrections.

III. Agenda Approval

The agenda for the 16-01 meeting was accepted as presented.

IV. Presentations, ACF Working Group Reports and ACF Project Reports

ICAO/IFPP Committee Report

Mike Webb, FAA/AFS-420 and advisor to the U.S. Delegation to the ICAO Instrument Flight Procedures Panel (IFPP), provided an update on the ICAO/IFPP Committee activities and an overview of the key topics of the ICAO/IFPP Integration Working Group (IWG), see Slide #3.

Mike also spoke to several other charting topics that are being discussed in working groups in preparation for the IFPP 13th Panel Meeting in September 2016. He touched on issues related to a revision to the RNP AR Procedure Design Manual, the charting of procedure design magnetic variation, and the restructuring of PANS OPS Volumes I and II. More information on these topics is included in Mike's presentation slides.

ACTION: Mike Webb, FAA/AFS-420, will provide an update at the next ACF.

PARC PBN Procedure Naming and Charting

Mike Webb, FAA/AFS-420, provided an update on the Performance Based Operations Aviation Rulemaking Committee (PARC) Performance Based Navigation (PBN) Procedure Naming Action Team activities since the last ACF. Mike showed several Instrument Approach Procedure (IAP) prototypes with the new Equipment Notes Box added with a delineating line to the top portion of the existing notes box in the pilot briefing strip. Mike stated that the new section of the notes box will be for equipment requirement notes for conventional procedures and for PBN requirements for PBN procedures. He emphasized that the equipment box would only appear when specifically noted on the procedure source document. Mike asked for formal written comments on the charting proposal to be sent to him no later than 30 June 2016 via email – mike.webb@faa.gov.

Mike asked Divya Chandra, VOLPE, about her thoughts on the human factors aspect of the new equipment box. Some procedures will not have specific requirements and Mike asked Divya for her opinion of how users might respond to seeing either no notes box or an empty notes box. Divya commented that the lack of information might be of concern depending upon how often the equipment box appears on the charts. If it is present on a large percentage of procedures, pilots might be confused or concerned when encountering a procedure without. Mike discussed the possibility of showing the box whether there was data in it or not. Tom Schneider, FAA/AFS-420, stated that that there is precedent for not showing a briefing strip informational box when there is not information to be placed in it, i.e., the approach lighting system box. Valerie Watson, FAA/AJV-553, and Ted Thompson, Jeppesen, agreed that an empty box would be more likely to cause pilot confusion by leading users to assume that necessary data had been inadvertently left off the plate. Consensus of the audience agreed and it was decided that the equipment box will not be shown unless the procedure source document specifically calls for equipment notes. Divya then stated that as long as the layout of other information on the chart isn't grossly impacted (it would not be), she felt that the lack of a box would have minimal impact.

There was ACF consensus in support of showing the equipment/requirement notes consolidated into the briefing strip notes box, separated by a delineating line, as shown on the prototypes and for NOT showing an empty (place holder) box when equipment notes are not specified on the procedure source document. It

was also agreed that this notes box need not be labeled, but should only contain the specific information documented on the procedure source.

Mike then discussed the topic of changes to PBN procedure names. Mike re-stated the ICAO position for adopting "RNP" in procedure titles and reiterated that the U.S. is still planning to retain (and will file a difference to state this) the use of "RNAV" in the title. The U.S. is planning to change the parentheticals to remove GPS and include a single navigation specification shown in parentheses at the end of the procedure title. Mike stated that these changes are supported and he would like the implementation process to begin.

Rune Duke, AOPA, asked about the impacts of the titling changes on the FMS. Mike stated that because procedure title parentheticals are not included in the FMS title or verbalized by ATC, there should be no effect.

Mike stated that there may be redundancies for a time regarding items in the title and in the equipment box until all the titling changes can be accomplished, i.e., GPS will be in the procedure title and the equipment box until the titling changes can be made to remove GPS from the procedure title. Mike stated that he is working with Tom Schneider regarding the procedure name changes which require an update to FAA Order 8260.3 and FAA Order 8260.19.

ACTION: Mike Webb, AFS-420, will provide an update at the next ACF.

ACTION: Valerie Watson, FAA/AJV-553, to draft an IACC Requirement Document for depiction of the briefing strip Equipment Box for IAPs and report back at next ACF.

Airport GIS

No briefing was given.

Discontinuation of VOR Services

Leonixa Salcedo, FAA/AJM-324, briefed the issue, providing an overview of the VOR MON program and a status report since the last ACF. She reviewed the goals of VOR MON Program (See Slide #2) and the VOR MON Program Timeline (See Slide #3). She stated that the Federal Register Notice (FRN) on the "Provision of Navigation Service for the Next Generation Air Transportation System (NextGen) Transition to PBN (Plan for Establishing a VOR MON)" is due out in a few weeks. Leonixa stated that the number of VORs targeted for discontinuance remains at 308 by 2025.

Leonixa then discussed the recent VOR MON Program accomplishments, including holding two National Planning Working Group meetings to discuss the discontinuance waterfall and the role of Instrument Flight Procedures in the program implementation. Leonixa also reported that the first VOR (Orangeburg, SC) was discontinued in February 2016.

Valerie Watson, FAA/AJV-553, asked if the addition of new DMEs is still part of the plan. Leonixa stated yes and said that a different group within the FAA is handling that aspect of the program.

Rune Duke, AOPA, asked what operators can expect regarding operations and decommissioning. Dale Courtney, FAA/AJW-292, responded that when a VOR is decommissioned, a NOTAM will be issued, the NASR database will be updated and all affected airways, procedures, fixes, etc., will be amended.

Ed Phillips, FAA/AJW-B62, expressed concern over the potential lack of synchronization between changes to procedures and charts when a VOR is decommissioned. Leonixa replied that her office is working to ensure that all VOR decommissionings are carefully pre-coordinated to ensure that all aspects of the affected airspace and procedures will occur concurrently on a single chart effective date cycle.

Bob Lamond, NBAA, asked if it is possible to publish a list of everything that a specific VOR decommissioning will affect. Dale replied that a notice will be published for general awareness, but will not include a list of all the impacts.

Gary Fiske, FAA/AJV-822 asked if the resultant DMEs are going to be charted. Valerie replied yes, for the present. Per consensus from the last ACF, if the VOR portion of a VOR/DME is decommissioned, the remaining DME would still be charted. She stated that this decision could be reevaluated in the future if a proliferation of DMEs results in chart congestion.

John Collins, GA Pilot, asked, for users of 6-month VFR charts, where the notice of a decommissioning would be published. Valerie stated that all NAVAID decommissionings are published via NOTAM. Also, the Chart Bulletin in the Chart Supplement (previously the Airport Facility Directory or AFD) provides interim updates to VFR charts, so a decommissioned VOR would appear in the Bulletin for an affected VFR chart until the chart is re-issued and reflects the change. The IFR Enroute charts are updated every 56 days, so this should not be an issue.

ACTION: Leonixa Salcedo, FAA/AJM-324, will provide an update the next ACF.

FAA Order 7100.41A PBN Implementation Process Update

Newton Gentry, Contract Support, FAA/AJV-142, briefed changes since last ACF. Newton gave an overview of the PBN Implementation process and stated that the original release of FAA Order 7100.41 was approved for use on April 3, 2014. The order establishes a five-phase process for the development and implementation of PBN procedures and/or routes. Newton provided details of each phase in his presentation. Newton then reviewed the details of the 7100.41 (Alpha) release (see Slide #11). He stated that all stakeholder comments for the Alpha release have been resolved and that the final document is scheduled for release April 29, 2016.

Brian Townsend, American Airlines, asked if community outreach is being added to the process. Newton commented that the Order establishes that public outreach will occur, but does not specifically state what that may entail. Newton stated that the level of outreach is dependent on the specific project and its impacts. Coordination is being done with the Service Center Operations Support Groups regarding environmental concerns.

Mike Stromberg, Air Wisconsin, inquired whether the impact studies relate to traffic volumes at given locations and if the intent is to reduce traffic. Newton stated that the studies do not look at traffic volumes specifically, but the goal is to look at the overall impact of the design on communities.

Newton added that work will start on Order 7100.41B in 6-8 months.

VFR Chart Print Schedule Realignment and Synchronization

Rick Fecht, FAA/AJV-5223, briefed the issue. Rick stated that since the last ACF, the proposed change to the Visual Charting Print Schedule has been eclipsed by the shift to Available on Demand (AOD) Printing (see briefing below). Rick added that this shift would enable the Visual Charting Team to adjust resources to focus on other projects that are of interest to stakeholders, such as developing a digitally seamless U.S. VFR Chart and moving to a 56 day VFR product update schedule. Given these changes, this topic is withdrawn.

Caribbean Aeronautical Charts and Alaskan VFR Wall Planning Charts Briefing

Katie Murphy, FAA/AJV-5222, provided a briefing on the new Alaskan VFR Wall Planning Chart. Katie stated that the development of this chart was in response to comments received following the announcement of the discontinuance of the World Aeronautical Chart (WAC) series. She explained that the new Planning Chart is similar to the existing U.S. VFR (Lower 48) Wall Planning Chart. The chart is constructed at a scale of 1:2,000,000, is not for navigation but is intended for preflight planning purposes only, and is designed to be mounted on a wall. The first edition of this chart is scheduled to be effective on 10 November 2016 and will be revised every 2 years. Katie announced that prototypes would be available for the audience to view throughout the remainder of the ACF and that input is welcome.

Barry Lewis, FAA/AJV-5223, provided a briefing of two new VFR Caribbean Charts that are also being produced in response to the WAC discontinuance. These charts will provide complete VFR coverage, at a scale of 1:1,000,000, in Caribbean areas previously supported by the WACs, with additional coverage of Cuba. (See Slide # 3). The new Caribbean charts will show, in addition to previously charted standard WAC attributes, Class D and E Airspace, more detailed obstructions and expanded airport data including UNICOM/CTAF/AWOS information. The first edition of the Caribbean 1 Chart will be 15 September 2016 with a one year update cycle. The first edition of the Caribbean 2 Chart will be 10 November 2016 with an update cycle of 2 years. Barry also announced that prototype charts are available for viewing at the ACF and that comment is welcome.

Rune Duke, AOPA, expressed support for both new charting products. Rune asked if shareholders would be provided an opportunity to provide formal feedback prior to the public release of new the charts. Katie responded that she was not aware of a planned comment/review period prior to release, but that she would ask her management if that can be accomplished.

Samples of the charts were left for ACF attendees to view.

Available on Demand (AOD) Charting

Lauren Priem, FAA/AJV-553 and Monica Price, FAA/AAQ-722, provided a briefing on Available on Demand (AOD) Charting. Lauren explained that the FAA is transitioning its printing and distribution of paper aeronautical products from FAA print contracts to FAA-approved print providers in the private sector. The FAA will provide digital files to the print providers for printing and distribution. This will allow the FAA to focus more energy and resources on its core work. It was stressed that this is a business process change not a change to the digital content or the fidelity of the data. Lauren emphasized that FAA paper products will continue to be made available in the market.

Monica then briefed the vetting process for the potential print providers and the key elements of the print provider agreement (See Slide #11). She announced that Williams & Heintz, who currently prints the Enroute and Visual Charts, has recently signed on as the first FAA-approved Print Provider.

Tom Schneider, FAA/AFS-420, asked about the impact of AOD on in-house FAA subscribers of the charts. Lauren stated that her office was reaching out to over 700 points of contact within the FAA regarding in-house standing order subscriptions and working to ensure that questions are addressed in advance, that FAA colleagues are aware of what AOD is and is not, and that paper will continue to be available.

Gary Fiske, FAA/AJV-82, expressed his concern over the change, emphasizing that FAA field facilities cannot afford any disruption to their currently provided FAA product subscriptions. Lauren stated that her office is reaching out to all FAA subscribers. She also stated that they are going to be holding FAA teleconferences for internal subscribers, separated into “product users” and “purchase card holders” to address specific concerns of this transition.

Michael Stromberg, Air Wisconsin, asked how this change would impact FAA revenue generated from chart sales. Alan Gibson, FAA/AJV-5111, stated that paper sales since 2009 have decreased 64%. Alan added that changing to the AOD process will, in the long run, save the FAA money, but stated that this decision was primarily about freeing up resources to so the FAA can focus more energy and resources on its core work.

Rune Duke, AOPA, stated that he sees the value of electronic charts, but stressed that there are still a lot of pilots using printed paper products and that it is crucial that the FAA ensures their availability. Lauren reemphasized that the paper products WILL be made available in the market.

John Bordy, FAA/AFS-420, expressed concern that if the publishing of the charts is market driven, what degree of oversight will the FAA have in regards to the quality, e.g., paper weight and ink quality? Monica stated that the FAA will look at the print quality when a potential provider initially submits a sample to become an FAA-approved print provider. After that, the quality will be market driven and print providers will be responsible for their own quality control. It is in their best interest to provide a quality product to the users.

Vince Massimini, MITRE, asked if the FAA intended to conduct recurring reviews of the print quality of products published by approved print providers. Monica responded that no, the quality control process is with the print provider, however it is written into the agreement that the FAA can audit a print provider’s product at any time if they are receiving complains about the quality. Vince then asked about the process for submitting problems or complaints about the products. Monica said that there will continue to be an FAA

feedback email address published where comments can be submitted. Additionally, the FAA will require that charts be traceable to the provider by requiring that the print provider's identification be included on the output product.

Ted Thompson, Jeppesen, asked what action will be taken if a print provider makes a mistake. Monica said that the print provider is liable for their printing errors and it is their responsibility to notify their customers. If there is an aeronautical data error in the FAA-produced file from which the chart is produced, the FAA would correct that error by updating the digital file and issuing a NOTAM.

NOTAM Briefing

Lynette Jamison, FAA/AJR-B11, announced that Jerry Torres is the new manager of the U.S. NOTAM Office Operations and Policy Group. Lynette stated that work continues on modernizing NOTAMs with implementation of new NOTAM policy. She anticipates providing a more detailed presentation at the next ACF.

ACTION: NOTAM Offices will provide an update at the next ACF.

Atlantic Coast Route Project (ACRP)

Ray Spickler, FAA/AJV-142, presented a briefing on the Draft PBN Route Structure Concept of Operations (ConOps). Ray stated that in the future, PBN is envisioned to be the primary means of navigation through the NAS. He discussed the benefits a PBN Route Structure by use of strategically placed PBN ATS Routes (See Slides 13 and 14).

Ray reviewed previous efforts to establish PBN-based routes. He stated those efforts were perhaps not well coordinated and therefore resulted in low to near zero utilization. This new effort strives to ensure that the routes established will be more heavily utilized and will more efficiently optimize airspace in the NAS. The Atlantic Coast Route Project (ACRP) will be the first of five phases of implementation of the new PBN Route Structure across the U.S. and is scheduled to be completed in 2017. See the presentation slides for a detailed explanation of the ACRP.

Lt. Col Jen Scott, USAF, expressed concern, stating that the U.S. military does not have 100% GPS capability and that much of their operations rely heavily on the conventional NAS. She stated her belief that a large shift from a conventional route structure to a GPS route structure would impact the military's ability to safely navigate through the NAS.

Rob Goodson, NGA, asked about the implementation plan. Ray stated that the intent is to publish all of the new PBN routes on the Enroute charts, leaving the existing conventional routes in place. After a trial period of 56 to 112 days (2 ARINC cycles), many of the conventional routes would then be removed. Valerie Watson, FAA/AJV-553, expressed her concerns regarding the impact this would likely cause to chart congestion. She stated that this approach would likely cause a tremendous amount of congestion that could result in a safety issue if the charts become unreadable. She voiced that a large number of Enroute chart

users continue to utilize paper charts and the success of the project depends upon those charts being easily decipherable by users.

Ted Thompson, Jeppesen, echoed the concern expressed by Valerie regarding the overlay of a large number of new routes on the existing and already congested East Coast structure. Ted said that there is the potential to generate a high degree of chart clutter to the point where the charts become unusable. It was suggested by several people in the audience that the FAA may have to adjust the scale or the coverage or possibly even create duplicate charts to be able to accommodate this project. Valerie expressed her doubt regarding these options, stating that it would be extremely unlikely, if not impossible, for the FAA to produce extra RNAV-only charts or increase the scale of existing Enroute charts in time for the expected October implementation. Ray voiced that he recognizes the concerns of charting and is willing to explore other solutions.

Ray also briefed that his office wants the new routes published on the charts prior to them being made operational. Valerie voiced concern over this and asked the purpose/logic of deliberately publishing regulatory routes that are not intended for use and asked how this was foreseen to be accomplished. Ray responded that the publication would allow pilots and ATC to "become accustomed" to the routes by seeing them on the charts for a cycle or more until they become operational. The current plan is to publish 30 to 40 Q Routes and then immediately NOTAM them out on the day they become effective. Valerie commented that in the 1970s the NTSB issued a recommendation that IFR procedures should not be published with the express intent to immediately NOTAM them out and assumed that this also pertained to airways (which are essentially IFR procedures).

The group discussed the issues regarding premature publication of non-operational routes, publication of a new series of routes on top of already congested underlying existing structure and the charting and operational problems that may ensue. Various solutions were suggested. Valerie suggested that an incremental implementation of the route project be investigated and suggested publication of a few new routes, deletion of a few old ones, publication of a few more new, deletion of a few more old ones, etc., until the area is restructured according to plan. Barring a stepped approach, she suggested it would be preferable to make all of the new routes effective and deletion all of the old routes effective for the same ARINC cycle.

Ray stated that he will look into these issues and committed to engaging with AJV-5 regarding an implementation strategy and possible charting solutions. Lance Christianson, NGA/XCF, expressed concern and requested that Ray's office also engage DoD charting individuals in the discussion as the NGA has a vested safety interest in the compromised readability of the FAA Enroute charts that could result from this project. Ray agreed to include the NGA in his discussions with AJV-5.

Ted asked Ray about the value of the current Navigation Reference System (NRS) waypoint grid – asking if the waypoints are being used and if they are planned to be retained. Ray stated that the NRS grid still has value and that his office is looking at ways to optimize use of the system. Gary Fiske, AJV-82, commented that he hopes they plan to retain the current NRS grid system and waypoint nomenclature.

PBN Strategy - 2016

William "Bill" Fernandez, FAA/AJV-142, provided a briefing on the PBN Navigation Strategy. The strategy includes replacement of conventional terminal procedures with PBN procedures, replacement of conventional Jet Routes and Victor Airways with RNAV Q and T Routes, expansion of the use of PBN, RNAV and RNAV RNP. The focus will begin with the 15 busiest airports and the entire transition is expected to be completed by 2030.

John Collins, GA Pilot, stated that a key issue to the success of the FAA PBN plan is avionics capability. The avionics in place today aren't readily able to handle deviations from established PBN procedures and/or routes.

Michael Stromberg, Air Wisconsin, commented that the biggest issue he sees is getting users to install the equipment in their aircraft because the cost to upgrade is significant. Mike emphasized that there needs to be a quicker, cheaper way for pilots to be able to use this new advanced PBN technology. Bill responded that the NAS has to serve all of the flying public. The plan is to prepare for those that can use the new technology and for those who cannot.

Bob Lamond, NBAA, expressed his support for Michael's point regarding the cost of equipping the aircraft. Bob also stated that the FAA will not reach its PBN goals if it does not address the criteria. He stated that there is a work group under the PARC that is looking at these criteria issues.

Lev Prichard, APA, echoed the comments regarding the cost of equipping aircraft.

Rune Duke, AOPA, expressed his concerns over the certification requirements that are so expensive and time-consuming that it presents a barrier for the GA community.

Assessing and Reporting Airport Conditions, Revised Procedures

Lynette Jamison, FAA/AJR-B1, provided a briefing on the changes being implemented regarding the assessment and reporting of runway conditions via NOTAM. Lynette discussed the expanded NOTAM system for filing Field Condition (FICON) NOTAMs and showed examples. Technical details of the changes can be found in presentation slides.

V. Outstanding Charting Topics

07-01-195 Charting & AFD Information Re: Class E Surface Areas

Valerie Watson, FAA/AJV-553 reviewed the issue. Paul Gallant, FAA/AJV-113, stated that the publication of revised AIM guidance regarding the specifics of the disposition of Class airspace and associated extensions when an airport's air traffic control tower closes is scheduled to appear in the 26 May 2016 edition.

Paul then stated that the list of AIS-identified airspace legal descriptions needing revision continues to be worked by his office and reported that approximately 65% of those descriptions have been corrected and republished. He will report back on continued progress at the next ACF.

STATUS: OPEN

ACTION: Paul Gallant, FAA/AJV-113, to report back on updating airspace legal descriptions at the next ACF.

13-01-262 Airport Facility Directory (AFD) Depiction of Traffic Pattern Altitudes

Valerie Watson, FAA/AJV-553, reviewed the issue. Rick Mayhew, FAA/AJV-5331, stated that of the 19,585 runways databased in NASR, 1,191 of have published Traffic Pattern Altitudes (TPAs) in NASR. Rick reviewed how the FAA gathers TPAs. He stated that FAA Form 7480 (see Slide #6), owned by the Office of Airports, is the form that is the source for populating the NASR database with TPA information. Rick stated that the Office of Airports only fills out the field for TPAs when the traffic pattern is "non-standard". Because of the lack of a firm definition of what is "standard" or "recommended", Rick made the recommendation to the Office of Airports that the TPA box be filled in every time. Rick reported that Chris Criswell, FAA/AAS-100, had stated to him that his office recognizes there is a gap in the information and will work with Rick to address the issue.

Lev Prichard, APA, agreed that the AIM definition for a standard traffic pattern altitudes IS confusing. He suggested that this issue could be resolved by cleaning up the AIM definition. Bob Lamond, NBAA, agreed and offered to help Lev revise the AIM guidance. Valerie stated that if the definition for "standard" or "recommended" is made clear in the AIM, the FAA could reasonably retain the policy of only publishing *other* than standard or recommended.

Scott Jerdan, FAA/AJV-533, agreed. The best solution is to clean up the AIM definition to better define standard TPAs and then only publish those that are non-standard.

Tony Lawson, FAA/AJV-5441, cited several other FAA publications where traffic pattern altitude guidance is published. He emphasized that when the AIM definition is clarified, the other FAA publications will need to be updated accordingly.

STATUS: OPEN

ACTION: Lev Prichard, APA, and Bob Lamond, NBAA, to work on clarification of the AIM guidance for Traffic Pattern Altitudes.

13-01-270 Stepdown Fix Chart Notes

Valerie Watson, FAA/AJV-553, reviewed the issue. Bob Lamond, NBAA, stated that NBAA concurs with the removal of the profile stepdown notes as long as the published AIM guidance provides a very clear description of stepdown fix use.

Tom Schneider, FAA/AFS-420, said that he has drafted revised guidance for FAA Order 8260.19H to remove all of the stepdown fix chart notes (including the "LOC only" type notes).

Valerie asked Bruce McGray, FAA/AFS-410, what progress he had made in the revision to the AIM guidance. Bruce reported that no progress had yet been made, but said that he will coordinate with Rich Boll, NBAA, to revise the AIM language. Rune Duke, AOPA, stated that this is an educational concern for AOPA and they would be willing to help with the drafting of new AIM guidance.

STATUS: OPEN

ACTION: Bruce McGray, AFS-410, Rune Duke, AOPA, and Rich Boll, NBAA, to review existing AIM guidance and draft revisions necessary to clarify stepdown fix use.

14-01-274 Solar Power Plant Ocular Hazard Symbol on Aeronautical Charts

Valerie Watson, FAA/AJV-553, reviewed the topic and stated that there are currently two solar power plants depicted on the FAA VFR Sectional charts. Rick Mayhew, FAA/AJV-533, reported that he has investigated the publications strategy, but, due to the fact that there are currently only two such areas being requested for charting, it is not financially feasible to modify NASR to add the new resource to the database. He stated that such locations will continue to be handled via NFDD "add-on" pages for the foreseeable future.

Jill Olson, FAA/AJV-553, reported that since last ACF she sent an inquiry to ATO Safety regarding the identification of solar plants that are classified as an ocular hazard for pilots. The intent is that the ATO Safety Office provide guidance on the criteria that could be used to determine if an ocular hazard warrants depiction on the charts and/or as a text notice in the Chart Supplement. Jill reported that she has not yet gotten a response back from ATO Safety and will continue to follow up.

STATUS: OPEN

ACTION: Jill Olson, FAA/AJV-553, will continue to reach out to the ATO Safety Office regarding charting/publication criteria for ocular hazards.

14-01-279 Naming of FAA Certified, National Disseminated AWOS-3 Systems on Private Use Airports

Rick Mayhew, FAA/AJV-533, reviewed the process for the establishment of a new private AWOS system. The problem he was finding was that there was no way to track or verify if private AWOS systems are being maintained and certified after initial certification. Rick stated that he has been in contact with the Non-Fed Weather Office regarding this issue but has not yet come up with a viable solution. Rick would like to

develop a Public/Private Use flag in the weather resource in NASR, but would need the Non-Fed Weather Office to have a mechanism to alert NFDC when a system is no longer certified and should no longer be considered public-use.

Dale Courtney, FAA/AJW-292 commented that AWOS owners cannot opt out of maintenance and if they cannot comply, the system is shut down. Dale added that there is a tracking system for all certified public and private AWOS systems. Dale said that he would reach out to the Non-Fed Weather Office to close that loop and get the needed information fed to NFDC.

STATUS: OPEN

ACTION: Dale Courtney, FAA/AJW-292 will coordinate with the Non-Fed Weather Office to get the FAA Certified AWOS systems data to NFDC.

14-02-282 VASI PAPI Differences

Valerie Watson, FAA/AJV-553, reviewed the topic. Tony Lawson, FAA/AJV-5441, stated that Brad Rush, FAA/AJV-54, has submitted changes to the AIM language. The new language will describe the Obstacle Clearance Surfaces for both VASIs and PAPIs in terms of nautical mile vs the existing nautical/statue mile. The AIM language is in the process of finalized and should appear in the November 2016 release.

STATUS: OPEN

ACTION: Tony Lawson, FAA/AJV-5441, to update on the publication of revised AIM guidance.

14-02-284 DME Facilities – Charting and MAGVAR Issues

Valerie Watson, FAA/AJV-553, briefed the issue. Valerie stated that the IACC Requirement Document (approved by the ACF sponsored DME Workgroup) supporting depiction/publication of DME NAVAIDs has been signed and that AJV-5 is prepared to publish these facilities. She also reported that the NASR and AIRNAV databases are able to accommodate DME as a NAVAID type. Valerie asked Dale Courtney, FAA/AJW-292, if we can move forward with the DMEs that have been thus far retained as VOR/DME facilities with the VOR portion decommissioned. Dale responded yes. All outstanding items have been completed and it was agreed to close this issue.

STATUS: CLOSED

15-01-289 Adding "CPDLC" Information to Airport Diagram and Terminal Procedures and Updating the AFD

Valerie Watson, FAA/AJV-553, reviewed the issue. Valerie stated that the CPDLC potion of this recommendation has been completed and that the RD has now become a discussion about Terminal Weather Information for Pilots (TWIP), another digital communications system brought up by Rich Boll,

NBAA, at the last ACF. Rich was concerned with the sorely outdated AIM text regarding TWIP, its use and availability.

Valerie reported that she has been working with Gordon Rother, FAA/AFS-430, on the publication of Rich's suggested AIM revisions to the TWIP entry. The new guidance has been submitted and should appear in the May 2016 edition. Valerie also reported that AFS-430 had a difficult time finding a source for TWIP availability. The AIM guidance will list 43 airports with current TWIP availability.

Valerie also had an IOU from the last ACF to research digital communications availability, usage and source, with an eye to possible publication on and in FAA products. Valerie found that there is no single FAA office that handles digital communications. Many current digital communications systems are private-use, may require subscription and/or special equipment in the cockpit. She stated that if and when a request is submitted to the ACF to look into a specific digital communication type (like CPDLC), it can be investigated, but that she is unable and doesn't believe it appropriate for the charting offices to anticipate user needs and solicit these many communication systems for their suitability for publication as public-use systems on FAA products.

STATUS: OPEN

ACTION: Valerie Watson, FAA/AJV-553, to provide an update on publication of revised AIM guidance regarding TWIP.

15-01-293 STAR Terminus Point Standardization

Valerie Watson, FAA/AJV-553, reviewed the issue and showed several new prototype STAR charts requested by the audience at the last ACF. The first set of prototypes showed STAR terminus identifiers and the suggested procedure source document revisions to support the charting. The second set of prototypes also included terminal altitudes associated with the terminus identifiers.

There was strong consensus in the room *against* the depiction of terminus altitudes shown in association with terminus identifiers.

ACF consensus exists for charting terminus point idents, boxed, on STAR procedures when specified on the procedure source document. Valerie will draft an IACC specification document to support this.

Tom Schneider, FAA/AFS-420, stated that he will draft language for FAA Order 8260.19 for the STAR terminus information to be included on FAA Form 8260-17.1, in the Additional Flight Data section as proposed in Valerie's presentation.

STATUS: OPEN

ACTION: Tom Schneider, FAA/AFS-420, to make revisions to FAA Order 8260.19 to accommodate STAR Terminus Point Identifiers.

ACTION: Valerie Watson, FAA/AJV-553, to draft an IACC Requirement Document for the depiction of STAR Terminus Point Identifiers.

15-01-295 Charting of Airports for the MON

Vince Massimini, MITRE, and Chair of the MON Airport Workgroup discussed progress made since the last ACF. Vince reported the ACF-sponsored MON Airport Workgroup had met twice since the last ACF. The group recommended that "MON Airport" would be the terminology used in NASR (as a General Airport Remark) for publication and they recommended that the list of MON Airports be published in the NTAP or in the AIM. The group agreed that access to the list of MON Airports would be for pre-flight planning only and would primarily be useful to ATC in a widespread GPS outage. It was agreed that MON Airports will be uniquely denoted where charted on IFR Enroute Charts only, will be identifiable in the airport entry section of the Chart Supplement by the presence of the airport remark "MON Airport". Vince demonstrated the negative MON symbology proposed to accompany the airport identification text on enroute charts and it was well received by the ACF audience. (See Slide #10).

Valerie Watson, FAA/AJV-553, asked Vince if the group still desired the listing of MON Airports to be published on the inside back cover of the Chart Supplements. Vince agreed as did the audience that this would make the entire list readily available digitally to all users.

Valerie asked Vince about the source for the "MON Airport" designation. Who is committed to provide (and provide updates to) the listing to NFDC so that the General Airport Remarks can be added to the NASR database? Vince replied that responsibility for "MON Airport" designation resides with the VOR MON Program Office and that coordination has already begun between that office and NFDC regarding publication of the remarks in NASR. Valerie expressed concern about the maintenance of this airport attribute in the long term, after the MON Program is complete and that office disbanded. Vince replied that the VOR MON Program Office would be in existence at least until 2025, at which time the responsibility will need to be transferred, along with other long-term responsibilities created by the program.

John Collins, GA Pilot, inquired if the category of aircraft was part of the decision in the designation of a MON Airport. Vince responded that the designation has to do with the availability of terminal instrument approaches that do not require GPS, but NOT with respect to the specific aircraft that can fly those approaches.

Rune Duke, AOPA, commented that AOPA saw a lot a value in both having access to the full list of MON airports on the ground and in showing them on the enroute charts and voiced support for the directions proposed.

Valerie summarized stating that she would begin writing an IACC Specification change to support the charting of MON Airports on the enroute charts and for publication of the complete MON Airport list on the inside back cover of the Chart Supplements. The MON Airport list will thus become a part of the digital Chart Supplement files available online. She will also work with Vince to coordinate source flow from the VOR MON Program Office to NFDC. Vince will work with the VOR MON Program office to coordinate publication of the listing into the NTAP and/or AIM.

MON Workgroup		
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STATUS: OPEN

ACTION: Valerie Watson, FAA/AJV-553, to draft a new Requirement Document for the IACC Specifications.

ACTION: Valerie Watson, FAA/AJV-553, and Vince Massimini, MITRE, will coordinate with NFDC and the VOR MON Program Office to begin the process of populating NASR with the MON Airport designations.

15-02-296 Charting of Unmanned Free Balloon Activities and Amateur Rocket Activity Areas

Valerie Watson, FAA/AJV-553, reviewed the issue and reported that she provided guidance to Paul Eure, FAA/AJV-113, regarding the electronic submission process for submission of Special Notices in the Chart Supplement.

Paul Gallant, FAA/AJV-113, reported that not much progress has been made since last ACF. Paul stated that they are going to begin work on putting together Special Notices for publication in the Chart Supplement. They also plan to begin coordination with Flight Standards regarding the development of charting criteria.

STATUS: OPEN

ACTION: Paul Gallant, FAA/AJV-113, to provide an update on the publication of Special Notices and on discussions with Flight Standards regarding charting criteria.

15-02-297 Charting of HILPT Maximum Holding Altitude

Valerie Watson, FAA/AJV-553, briefed the issue and showed chart prototypes with various ways of depicting the Maximum Holding Altitude on a Hold-in-Lieu holding pattern. The prototype depiction that gained a consensus of approval depicted the word "HOLD" preceding the block altitude (with over and underbars to indicate max and min altitudes) as a leadered note in the planview (See Slide #4), but it was recommended that both the minimum and maximum altitudes be placed in both the planview and the profile.

Ted Thompson, Jeppesen, asked how the maximum holding altitude would be documented on procedure source. Ted emphasized that he prefers to see it documented on the FAA Form 8260-3 (procedure source) form rather than only on the 8260-2 (holding pattern source) form where it resides currently. Valerie agreed with Ted that if this is to be charted consistently and correctly, it should reside on the procedure source document. Tom Schneider, FAA/AFS-420, agreed that the altitude will need to be documented on the applicable 8260-series Form and will take action to revise the guidance.

Tony Lawson, FAA/AJV-5441, commented that criteria will need to be written so that the procedure design specialist knows when to apply the maximum holding altitude for charting.

Tom Schneider, FAA/AFS-420, stated that he would draft language for FAA Order 8260.19H to support documentation of the maximum holding altitude.

Valerie stated that she will look at the IACC specifications and, if a modification is required, will draft the change to support the agreed-upon charting when specified on the procedure source document.

STATUS: OPEN

ACTION: Valerie Watson, FAA/AJV-553, to review IACC Specifications and, if a modification is required, will draft the change to support charting.

ACTION: Tom Schneider, FAA/AFS-420, to draft new language for FAA Order 8260.19 to support documentation HILPT maximum holding altitude.

15-02-298 Charting GLS DMax (Service Volume)

Valerie Watson, FAA/AJV-553, reviewed the issue and showed a prototype approach chart depicting the identification of DMax. There was ACF consensus in support of the chart depiction.

Tom Schneider, FAA/AFS-420, showed the language that he has drafted for FAA Order 8260.19H. This language received support and Tom will move to finalize it.

Tony Lawson, FAA/AJV-5441, asked if DMax is documented in the AirNav database and asked how a procedure specialist will know where the antenna is located on the airport. Catherine Graham, FAA/AFS-470, confirmed that the DMax information is reported on the Airport Datasheet that can be pulled from AirNav.

STATUS: OPEN

ACTION: Valerie Watson, FAA/AJV-553, to draft an IACC Requirement Document for charting of DMax on IAPs.

ACTION: Tom Schneider, FAA/AFS-420, to proceed with ACF-supported draft FAA Order 8260.19 language to support procedure documentation for DMax publication.

VI. New Charting Topics

16-01-301 RVR Locations in FAA Documentation

Kamal Ahmed, Navtech, briefed the issue. Kamal recommended that the airport Chart Supplement entries contain the complete RVR sensors available for use on a given runway. The RD states that currently only those RVR sensors physically situated on a specific runway are listed for that runway, but that other RVR sensors (for instance those on a parallel runway, or designated for a use on the opposite runway) may be available and *should* be associated. RVR location information is necessary in the calculation and publication of minima on instrument approach procedures.

After presenting his RD, Kamal relayed a recent discussion with Rick Mayhew, FAA/AJV-5331, and said that he learned that RVRs are now being published differently in NASR and that some of the information Kamal is looking for is now being databased in a more useful way. Kamal felt that the FAA could go a step further by publishing the geographic coordinates of the individual RVR sensors and by depicting them on airport diagrams.

Ted Thompson, Jeppesen, agreed that the lack of more detailed RVR sensor data, coupled with the removal of a related parcel of RVR/ILS data once made available by the FAA, is also an issue for Jeppesen. Ted stated that in the past, FAA Flight Standards (AFS-410) maintained and made publicly available a spreadsheet called the ILS Component List that served as a primary source for RVR information. He stated that because this list is no longer available (it was removed approximately 2 years ago), it has become difficult for Jeppesen to derive and publish lower than standard minimums. Ted stated that Jeppesen would like to see either this spreadsheet reinstated and made publicly available, or for the FAA in some other way provide a consolidated listing of RVR installations and applicability to runways for airports where U.S. OP SPEC Lower-Than-Standard operating minimums are permitted for air carriers.

Dale Courtney, FAA/AJW-292, said that he had a copy of the spreadsheet, but that it is not current. Dale stated that NASR has all the necessary RVR information. Ted responded that the data in NASR is fragmented and disagreed that NASR provides all the information that is needed.

Bruce McGray, FAA/AFS-410, suggested that AFS take responsibility for providing the data and possibly resurrecting the ILS Component List once maintained by AFS-410. John Blair, FAA/AFS-410, agreed to take the recommendation to AFS-410 management, express the industry need and seek support for his office providing the information. John shared that in the past, some 5000 users regularly accessed the ILS Component List and he acknowledged its popularity. He stressed that it would be helpful if he could provide to his management exactly what information is needed and why. Representatives from Jeppesen, Lido and others agreed to meet with John at a break during the ACF and provide him detailed input.

Dale restated his belief that all the necessary information is already contained in NASR and suggested that NASR may be able to generate a report to support the need. Jill Olson, FAA/AJV-553, suggested that a scrub of NASR be completed to determine if all the information is already in the database and if a report can be generated. Jill committed to working with AJV-5 management to determine the possibility.

STATUS: OPEN

ACTION: John Blair, FAA/AFS-410, and Bruce McGray, FAA/AFS-410, to discuss the ILS Component List with AFS-410 management.

ACTION: Jill Olson, FAA/AJV-553, will work with AJV-5 management to determine if all RVR information exists in NASR and if a report fulfilling the use of the ILS Component List can be generated.

16-01-302 Cold Temperature Restricted Airport SIAP Segment Depiction

Rune Duke, AOPA, reviewed the history of Cold Weather Temperature information appearing on the IAPs and current cold weather correction practices. He stated that AOPA has received a great deal of negative feedback with regard to usability of the current process. Pilots are finding issues with the accessibility of the information because they have to utilize multiple sources to get all the information they need. For complete information, pilots must consult the Notices to Airmen Publication (NTAP) for changes, which is a document not normally referenced by pilots and not easily accessible.

Rune stated that AOPA recommends the FAA provide all temperatures and applicable segments in a single location on the approach chart. Providing all of the information on the IAP chart would give the pilots easy, one stop access to the information. Since the Cold Temperature Error Table is provided in the TPP, pilots would no longer have to go to the NTAP for additional information. He also recommended that Fahrenheit temperatures be removed from the IAP since Celsius is the only temperature pilots use in calculating cold weather altitude correction. Further, AOPA recommends that the Cold Temperature Restricted Airport note be sourced on the applicable 8260-series Form procedure source rather than in the NTAP and via National Flight Data Digest (NFDD). The FAA could then issue a P-NOTAM for changes to Cold Temperature notes until charts could be updated.

Catherine Graham, FAA/AFS-470, commented that she had discussed the proposed recommendation within FAA/AFS-470, and was in support of adding the segment temperatures and for the removal of Fahrenheit. She stated that the other items AOPA is recommending would have to be taken back to AFS-470 for further discussion.

Ted Thompson, Jeppesen, voiced that his organization has also received numerous complaints regarding the publication of cold temperature information. Pilots want all the segment information on the chart so they do not need to consult a second resource. Ted also echoed his support for removal of Fahrenheit and believes that it could/should be removed from all temperature chart notes. Tom Schneider, FAA/AFS-420, will look into the removal of Fahrenheit from ALL 8260 chart notes that currently cite both Celsius and Fahrenheit.

There was some discussion about whether pilots are using the information in the NTAP and applying the temperature adjustments correctly. Gary McMullin, Southwest Airlines, voiced that there is a lot of confusion regarding the interpretation and application of the language in the NTAP and suggested the matter be reassessed by the PARC NAV Workgroup. Rune expressed concern about delaying at least the actions of segment publication on the charts. It is possible that the PARC could take years to reach a solution and pilots have current problems applying cold temperature correction that need immediate attention. Valerie Watson, FAA/AJV-553, agreed that due to clear ACF consensus to add the segments and remove Fahrenheit temperatures, those recommendations should be pursued as soon as possible. She agreed with

Rune that the FAA should not delay those steps while the PARC addresses potential revision to NTAP and AIM language. She committed to drafting a specification change to support procedure segment references in the notes and to delete references to Fahrenheit, but stressed that the specific text of the notes would continue to exactly reflect the NASR Airport Remark. If the notes on the charts are to be revised, Valerie clarified that AFS-470 is required to submit those changes to NFDC for publication via memo and hold to the pre-coordinated maximum of 175 procedures affected per 56-day ARINC cycle. Catherine will relay that message to her management.

Discussion then shifted to Rune's recommendation to document the cold temperature notes on the procedure source documents (i.e., FAA 8260-series Forms) rather than publish them via NFDD airport remark. Tom Schneider, FAA/AFS-420, stated that placing this information on the 8260-series Form was discussed at length years ago in the Instrument Procedures Group portion of the ACF (of which he is the Chair) and it was rejected. At that time, it was decided that sourcing the cold temperature notes on the 8260-series Forms would be too cost- and labor-prohibitive due to the procedure amendment requirement for every addition/deletion/change to the notes. Ted Thompson stated that he would prefer the note sourced on the 8260-series Form for clarity, for tracking purposes and because this is the only note on an instrument procedure NOT sourced on the 8260-series Form. AOPA, NBAA, and Jeppesen all voiced that they would rather see the note on the 8260-series Form.

Tony Lawson, FAA/AJV-5441, stated that he does not believe the cold temperature notes should be on the 8260-series Form because this is not a TERPS issue and the 8260-series Form is primarily a TERPS record. He believes the adjustment is an aircraft equipment issue and stated that currently AJV-5 chart automation and databases do not support the data. Rune repeated the importance of making the note a procedural item so that a procedure NOTAM would be issued if/when there is a change. He stressed that pilots check NOTAMs, but they do not check the NTAP or read the NFDD, if they even know they exist. It was also pointed out that cold temperature adjustment adherence is now mandatory, not merely a recommendation or suggestion, and this regulatory aspect may lend justification for it being on the regulatory procedure source document rather than published along with other non-regulatory data in the NFDD. Tony and Jill Olson, FAA/AJV-553, will investigate the feasibility of adding the cold temperature notes to the 8260-series Forms.

STATUS: OPEN

ACTION: Tom Schneider, FAA/AFS-420, to update FAA Order 8260.19 to remove references to Fahrenheit from procedure notes citing temperature (other than cold temperature notes which are NOT currently documented in Order 8260.19).

ACTION: Valerie Watson, FAA/AJV-553, to work with AFS-470 to draft an IACC Requirement Document for the addition of segment specifics and for the removal of Fahrenheit.

ACTION: Gary McMullin, Southwest Airlines, to report back on discussions within the PARC NAV Workgroup regarding possible changes to the NTAP language.

ACTION: Tony Lawson, FAA/AJV-5441, and Jill Olson, FAA/AJV-553, will investigate the feasibility of sourcing the Cold Temperature note on the 8260-series Form.

16-01-303 Terminal Area Charts (TAC) and Charting IFR Arrival/Departure Routes

Rune Duke, AOPA, briefed the issue. Rune stated that AOPA is recommending three things:

1. The primary airport's IFR arrival/departure routes should be added to the TAC and/or flyway chart for the six TACs that do not currently have this information depicted.

2. AIS should work with Air Traffic to ensure significant IFR arrival/departure routes to satellite airports in high-density airspace are charted on TACs.

3. The FAA should review the ten TACs that currently do not have flyway charts to determine the feasibility and value of adding the supplementary flyway chart.

Rune commented that the suggestion was in part from a recommendation made by the RTCA (Radio Technical Commission on Aeronautics) Technical Operations Committee.

Rick Fecht, FAA/AJV-5223, stated that he would discuss the recommendations with AJV-5 management and report back at next ACF.

STATUS: OPEN

ACTION: Rick Fecht, FAA/AJV-5223, will discuss the recommendations with AJV-5 management and report back at next ACF.

16-01-304 Depicting Non-Standard Maximum Holding Speeds

Michael Stromberg, Air Wisconsin, briefed the issue. Michael presented examples of non-standard holding speed depictions. He compared the FAA depiction with the Jeppesen depiction and showed that Jeppesen depicts altitude information for non-standard speed holding patterns. Michael stated that, in his experience, pilots using FAA charts can easily misinterpret the speeds and incorrectly apply it to all altitudes.

Valerie Watson, FAA/AJV-553, stated that the FAA charts speed restrictions on holding patterns when they are non-standard, but do NOT depict standard altitudes. The altitude standards are clearly explained in the AIM and in the TPP Legend.

Rune Duke, AOPA, inquired if there had been any safety reports regarding this matter. The audience was unaware of safety reports related to misunderstanding of these holding altitudes.

Valerie commented that in her opinion the issue is more a matter of pilot training than charting and that it would be a mistake to add undo clutter to a chart to add information clearly explained elsewhere. It was agreed to close this item.

STATUS: CLOSED

16-01-305 Cold Weather Temperature Compensation at Military Authority Locations

Frank Fortunato, Air Force Flight Standards Agency, briefed the issue, stating that though he is aware that military locations are included as part of the MITRE cold temperature study, they are not published as part of the NTAP list. This recommendation requests that military locations be considered for publication in the Cold Temperature Restricted Airport list in the NTAP.

Lt. Col. Jennifer Scott, USAF, emphasized that this is not for military needs but for civilian authorized and regulated aircraft that fly in to military facilities.

Catherine Graham, FAA/AFS-470, agreed to take the recommendation to her management for discussion.

STATUS: OPEN

ACTION: Catherine Graham, FAA/AFS-470, will discuss the recommendation with AFS-470 management and report at the next ACF.

16-01-306 Availability of Airport Ground Parking/Ramp Diagrams

Kemal Ahmed, Navtech, briefed the issue. Kemal provided background on the challenges facing chart producers with regards to securing the necessary data to produce airport taxi charts and airport diagrams with the detailed information that their clients require for low visibility movement operations at U.S. airports. He showed how current FAA Airport Diagrams do not contain parking information, latitude/longitude information for parking stands, detailed ramp layouts, taxi lanes and other detailed airport infrastructure. Kemal pointed out that ICAO Annex 4 stipulates that states provide this information. Kemal stated that in order to meet their clients' needs, Navtech must independently solicit data from individual airports to secure the necessary information. The information they receive is not standardized and is not always current. Kemal is asking the FAA to provide this data.

Ted Thompson, Jeppesen, expressed his support for Kemal's recommendation and stated that Jeppesen experiences the same difficulties with securing current and detailed source data for production of their LVO/SMGCS (Low Visibility Operations/Surface Movement Guidance and Control System Operations) charts.

Bruce McGray, FAA/AFS-410, reviewed the FAA's past attempts to establish a process and funding to collect, verify and maintain LVO/SMCGS data. He would like to see this effort restarted, but reported that currently the funding does not exist.

Scott Jerdan, FAA/AJV-533, commented there has recently been a push for NASR to be the repository for airport surface movement data, but NFDC is not willing to accept that data if there is not a mechanism in place for that data to be maintained.

Valerie Watson, FAA/AJV-553, commented that at present, the FAA doesn't have or publish the data and has filed a difference to ICAO Annex for not charting this type of detailed aerodrome chart. Valerie added that aside from the lack of source, AJV-5 could not currently show this level of detail on FAA-produced airport diagrams as the size constraint of the TPP would make them illegible. In the future, when the data/charting

becomes strictly digital, expanded and highly detailed airport/aerodrome chart files are likely to be produced.

Kemal understood the current FAA limitations and though not pleased, agreed to close the issue.

STATUS: CLOSED

VII. Closing Remarks

Valerie Watson, AJV-553, thanked the attendees for their participation and voiced special appreciation to Darrell Pennington and ALPA for hosting the ACF.

Notices of the official minutes will be announced via email and provided via the Internet. The two website addresses (CG and IPG) are provided below:

- Charting Group – http://www.faa.gov/air_traffic/flight_info/aeronav/acf/
- Instrument Procedures Group – http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs420/acfipg/

Please note the attached Office of Primary Responsibility (OPR) listing for action items. It is requested that all OPRs be prepared to provide verbal input at the next Forum or provide the Chair, Valerie Watson (with an informational copy to Alex Rushton, Contract Support), a written status update. These status reports will be used to compile the minutes of the meeting and will serve as a documented statement of your presentation.

Appreciation to Jennifer Hendi, AJV-553, for presentation assistance, for pre- and post-conference support and assistance with capturing the meeting minutes, to Alex Rushton, Contract Support to AJV-553, for pre- and post-conference support and taking the meeting minutes and to Ted Thompson, Jeppesen, for sharing his accurate and detailed meeting notes.

VIII. Next Meeting

ACF 16-02 is scheduled to be held on October 25-27, 2016, hosted by Pragmatics at their Reston, VA location.

ACF 17-01 is scheduled to be held on April 25-27, 2017, tentatively scheduled by ALPA at their Herndon, VA Headquarters.

IX. Attachments

a. 16-01 Attendee Roster
b. Office of Primary Responsibility (OPR)

AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 16-02 – October 26 - 26, 2016

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 16-02-307

Subject: Light Gun Chart on Sectional and Terminal Area VFR Charts

Background/Discussion:

I am an active CFRI and full time corporate pilot and I have witnessed pilots who have experienced a radio failure and find themselves without a light gun signal chart. This only adds to the stress of the situation for both the pilot and controller.

Recommendations:

I recommend that that blank white space located on the front panel of the Sectional and Terminal Area VFR Charts be utilized be utilized to print the light gun chart in color. Even if the chart(s) expire, the light gun signal chart does not. Pilots with a no radio situation can then simply pull out the chart and follow ATCs signals to safely get on the ground and off the runway. Examples attached.

Comments:

Submitted by: Tim Riley
Organization: **CFII and ATP Pilot**
Phone: 360-460-4655
E-mail: flyitfast4fun@gmail.com
Date: 20 April 2016

SAN DIEGO TAC

VFR TERMINAL AREA CHART SCALE 1:250,000

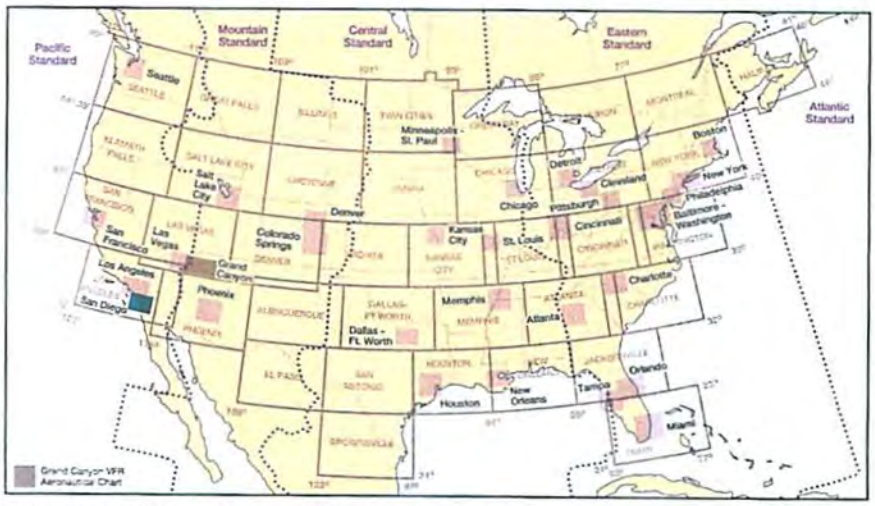
Federal Aviation Administration

TM

71ST EDITION EFFECTIVE 0901Z **10 DEC 2015**
TO 0901Z **23 JUN 2016**

Includes airspace amendments effective **10 DEC 2015**
and all other aeronautical data received by **15 OCT 2015**

Information on this chart will change; consolidated updates of chart changes are available every 56 days in the AIRPORT/FACILITY DIRECTORY Chart Bulletin section (online at http://faa.gov/go/ais). Also consult appropriate NOTICES TO AIRMEN (NOTAMs) and other FLIGHT INFORMATION PUBLICATIONS (FLIPs) for the latest changes.



PUBLISHED IN ACCORDANCE WITH INTERAGENCY AIR CARTOGRAPHIC COMMITTEE SPECIFICATIONS AND AGREEMENTS, APPROVED BY: DEPARTMENT OF DEFENSE * FEDERAL AVIATION ADMINISTRATION

ATC LIGHT GUN SIGNALS

in foreign airspace.

COLOR & TYPE	ON THE GROUND	IN FLIGHT
STEADY GREEN	Cleared for takeoff	Cleared to land
FLASHING GREEN	Cleared for taxi	Return for landing (to be followed by steady green)
STEADY RED	STOP!	Give way to other aircraft and continue circling
FLASHING RED	Taxi clear of the runway	Airport unsafe, do not land
FLASHING WHITE	Return to starting point	Not applicable
ALTERNATING RED/GREEN	Exercise extreme caution	Exercise extreme caution

FAA Product ID: TSD

NSN 7641014099795

NGA REF. NO. VFRTASANDIEGO

EFF. DATE 15344

AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 16-02 – October 26 - 27, 2016

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 16-02-308

Subject: Change operational altitudes on IFR Charts to coincide with current operational standards.

Background/Discussion:
1. Center Low Sector ceilings are typically FL230.
2. Center High Sector floors are typically FL230.
3. Regardless of Current Chart Information, most active MOA's ceilings are FL230.
4. A larger number of Turbo-Charged General aviation aircraft are utilizing the airspace above FL180 than ever before.

Recommendations:
1. Low Altitude IFR Enroute charts depict up to FL230 and high altitude charts depict above FL230.
2. Raise Victor Airways operating altitude up to FL230 & Jet Airways to FL240 and above.
3. Depict MOA's maximum operating altitude as appropriate on Low Altitude IFR Enroute Charts.

Comments:

The above changes would align IFR charts to current center operational practices in that Low Altitude Enroute Chart's would correctly depict borders of center's controlling "Low" sector.

This change will also provide a way for pilots operating up to FL230 a depiction of Military Operating Areas and other Special Use Airspace (SUA) that exceed FL180 and are not depicted on High Altitude Charts. This would allow for better flight planning and fewer re-routes being assigned, thereby reducing pilot and controller workloads and enhancing safety.

It would also allow Turbocharged General Aviation Aircraft that are increasingly using the lower Flight Levels a "One Map" capability, thereby reducing workload and allowing pilots to operate with charting they are more familiar with. Impact to Jet/Turbine aircraft is minimal since they typically operate well above FL230.

There should be no change to Airspace designations. Alpha would still begin at FL180.

Submitted by: Joseph D. Fabian, Aircraft Manager/Pilot

Organization: Eagle Air, LLC
1285 Muse Rd.
Florence, MS 39073

Phone: 601-937-1017
E-mail: dfco1@windstream.net
Date: 9/21/2016

AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 16-02 – October 26 - 27, 2016

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 16-02-309

Subject: Publication of approach control phone numbers for purposes of Clearance Delivery and/or IFR flight plan cancellation.

Background/Discussion: In accordance with the Administrator's NAS Efficient Streamlined Services Initiative Air Traffic, Flight Service, and NATCA have agreed that air traffic facilities currently providing clearances to pilots via telephone (informally) will have their numbers published in the appropriate *Chart Supplement, US*. These same facilities will have the option to have a separate phone line installed for IFR flight plan cancellations, which will also be published. The attached Policy Decision Memorandum identifies the affected 32 Air Traffic facilities and reflects approval by VP System Operations, VP Air Traffic Services, and VP Technical Operations. Also attached are the Scoping Document Workgroup Agreement, Safety Risk Management Document, and Implementation Plan.

Recommendations: Publish the approach control phone numbers for Clearance Delivery and/or IFR flight plan cancellation in the *Chart Supplement US*, for example:

For CLNC DEL CTC BOSTON APCH (603) 594-5551

And, when available, for those facilities with the IFR cancellation line

To CANCEL IFR CTC BOSTON APCH (603) 594-5552

Comments:

Submitted by: Jeff Black, Operations Team Lead, Flight Service NESS Initiative
Organization: FAA/AJR-B, Flight Service Directorate
Phone: DC: 202-267-6406 FTW: 940-584-0409
E-mail: jeff.black@faa.gov
Date: 9/26/16

Alternate Contact: Cindy Moran, Acting Deputy Director
Organization: AJR-B, Flight Service Directorate
Phone: 202-267-6447
E-mail: cindy.m.moran@faa.gov

Federal Aviation Administration

Memorandum

Date: June 7, 2016

To: Jennifer Post, Director of Operations - Headquarters, AJT-2

From: Steven Villanueva, Director, Flight Service, AJR-B

Prepared by: Alan Wilkes, Manager for Operations and Implementation, Flight Service National Airspace System Efficient Streamlined Service (FSNESS), AJR-B

Subject: Safety Risk Management Decision Memorandum (SRMDM) for Clearance Relay SRMDM-AJR-B-FSPO-FSNESS-Clearance Relay-Part 1-2016-6.0

Background:
Flight Service is the primary governmental link to safety-critical information for General Aviation (GA). Flight Service collects, processes, interprets, translates, and disseminates meteorological/aeronautical information and files both Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) flight plans. Preflight briefings, both standard and abbreviated, may accompany flight planning. Flight Service also collects and disseminates Notices to Airmen (NOTAMs), and Pilot Weather Reports (PIREPs), and coordinates Search and Rescue (SAR). Currently, when a pilot requests an IFR clearance from an uncontrolled airport, they contact Flight Service, who then requests the clearance from the Air Traffic Control facility serving that airport, then relays the clearance via radio or telephone to pilots.

National Airspace System (NAS) Change:
In response to the Federal Aviation Administration (FAA) Administrator's Strategic Sub initiative "NAS Efficient Streamlined Services," the Flight Service Directorate is defining the future delivery of its services within the Contiguous United States, Hawaii, and Puerto Rico. Flight Service can provide efficiencies and value for its stakeholders by realigning some activities within the Air Traffic Organization (ATO), eliminating obsolete activities, and expanding the use of existing and developing technologies for the remaining activities.

Working with representatives from Air Traffic Services (AJT), Flight Service (AJR-B), and National Air Traffic Controllers Association (NATCA), a method for air traffic facilities to deliver IFR clearances on the telephone is being developed in order to increase efficiency and reduce potential errors associated with the relaying of clearances and IFR cancellations.

Currently, there are thirty-two terminal Air Traffic Control (ATC) facilities that deliver clearances directly to the pilots via the telephone. When a pilot calls a Flight Service Specialist for a clearance departing an airport controlled by one of the ATC facilities listed below, Flight Service provides the facility's telephone number to the pilot. The facility then delivers the clearance directly to the pilot. This change, considered "part one" of the modifications to the Clearance Relay task performed by Flight Service, is to publish the telephone numbers of the thirty-two Air Traffic facilities that already deliver clearances over the phone in the *Chart Supplement, US* and other appropriate aeronautical publications. When published, pilots can access the required ATC facility telephone number instead of having to contact Flight Service to get the number.

Access to the published telephone numbers will also give pilots the option of cancelling IFR flight plans either with Flight Service or with the ATC facility, dependent on the instructions of the controller. In addition, the Flight Service Directorate will offer to provide the ATC facilities with an additional phone line specifically for IFR cancellations. A dedicated line for IFR flight plan cancellations would help reduce the possibility of the pilot getting a busy signal when calling to cancel an IFR flight plan.

The following TRACON and tower facilities issue clearances directly to pilots on the telephone :

1. A90 – Boston
2. C90 – Chicago
3. D10 – Dallas-Fort Worth
4. D21 – Detroit
5. F11 - Central Florida
6. I90 – Houston
7. L30 - Las Vegas
8. M03 – Memphis
9. N90 – New York
10. NCT – Northern California
11. P80 – Portland
12. R90 – Omaha
13. S46 – Seattle
14. S56 – Salt Lake
15. T75 – St. Louis
16. U90 – Tucson
17. Y90 – Yankee
18. ABE – Allentown, PA
19. AUS – Austin, TX
20. AVP – Scranton, PA
21. BNA – Nashville, TN
22. CLT – Charlotte,NC
23. CRP – Corpus Christie, TX
24. DAB – Daytona, FL

25. IND – Indianapolis, IN
26. MCI – Kansas City, MO
27. MDT – Harrisburg, PA
28. MSY – New Orleans, LA
29. ORF – Norfolk, VA
30. PHL - Philadelphia. PA
31. SAT – San Antonia, TX
32. PCT – Potomac, VA

Rationale For Not Requiring Further SRM Analysis:
A safety work group was convened on April 5, 2016 to assess this change. Subject matter experts from affected organizations reviewed the change, and all agreed that this change does not affect the safety of the National Airspace System (NAS). The thirty-two air traffic facilities already deliver clearances directly to users and receive IFR flight plan cancellations. Since these thirty-two facilities already issue clearances directly to the pilot and receive some IFR flight plan cancellations, the group determined that there are no safety risks with publishing the telephone numbers in the appropriate *Chart Supplement US (AFD)* and other appropriate aeronautical publications. They also determined that no additional risk is introduced by providing an additional phone line dedicated for the cancellation of IFR flight plans, and publishing that phone number.

We, the undersigned, assure that the NAS change described above does not introduce a hazard, address an existing hazard, or change the risk level of the affected operation or system.

Submitted by: _____ 6-24-16
Alan Wilkes, Manager Operations and Implementation, AJR-B Date
Flight Service National Airspace System Efficient Streamlined Service

Approved by: _____ 6/24/16
Monica Bradford, Manager, Flight Service Safety & Operations Date
AJR-B1

Approved by: _____ 6-30-16
Cindy Moran, Acting Deputy Director, Flight Service, AJR-B Date

Approved by _____ 7-7-16
Jennifer Post, Date
Director of Air Traffic Operations - Headquarters, AJT-2

Approved by: _____ 7/1/16
Steven Villanueva, Director, Flight Service, AJR-B Date

Approved by: _____ 7/14/16
Huan Nguyen, ATO Chief Safety Engineer, AJI-3 Date

Federal Aviation Administration

Memorandum

Date:

To: Timothy L. Arel, Vice President, Air Traffic Services, AJT-0
Vaughn A. Turner, Vice President, Technical Operations Services, AJW-0

From: Steven Villanueva, Director, Flight Service, AJR-B

Thru: Daniel E. Smiley, Vice President, System Operations Services, AJR-0

Subject: Policy Decision Memo: Clearance Relay and Instrument Flight Rules (IFR) Flight Plan Cancellation

Introduction: In response to the Federal Aviation Administration (FAA) Administrator's strategic sub-initiative, National Airspace System (NAS) Efficient Streamlined Services (NESS), the Flight Service directorate is refining the scope of their delivery of services within the contiguous United States, Hawaii, and Puerto Rico. Flight service can provide efficiencies and value for its stakeholders by realigning some activities within the Air Traffic Organization (ATO), eliminating obsolete activities, and leveraging existing and emerging technologies for the remaining activities. Clearance delivery is one area where we believe we can obtain operational efficiencies.

Background: Flight Service currently relays clearances to pilots via telephone at airports that lack direct radio communications with Air Traffic Control (ATC) or Flight Service. Flight Service also relays cancellations of IFR flight plans from pilots to ATC. The proposed change will allow pilots to cancel IFR flight plans and obtain clearance via telephone by calling the appropriate air traffic facility directly. Pilots requesting clearances or cancelling IFR flight plans by radio are not affected by this change.

There are 32 terminal ATC facilities that deliver clearances directly to pilots via telephone (See Attachment). When a pilot calls a Flight Service Specialist for a clearance which is departing an airport controlled by one of these ATC facilities, Flight Service provides the facility's telephone number to the pilot. In turn, the facility then delivers the clearance directly to the pilot.

Working with representatives from Air Traffic Services, Flight Service, and the National Air Traffic Controllers Association (NATCA) as part of a scoping document workgroup, we have developed a method for air traffic facilities to deliver IFR clearances on the telephone in order to increase efficiency, and reduce potential errors associated with the relaying of clearances and IFR cancellations. Flight Service will continue to relay clearances to pilots via telephone and radio until the system is deployed. Even after implementation, pilots will still be able to cancel IFR flight plans with Flight Service.

Change Description: This change, considered "Part One" of the modifications to the Clearance Relay task performed by Flight Service, is to publish the telephone numbers of the 32 Air Traffic facilities in the *Chart Supplement, US* (formerly Airport/Facility Directory). These facilities will also have an option to install an additional telephone line for pilots to use exclusively to cancel IFR flight plans. AJR-B will provide funding for the additional line if requested. An implementation plan will be developed in coordination with Engineering Services and Technical Operations. When published, pilots can access the required ATC facility telephone number instead of having to contact Flight Service.

Safety Analysis: A safety work group was convened on April 5, 2016 to assess this change. Subject matter experts from affected organizations reviewed the change and all agreed this change does not affect the safety of the NAS. Since these 32 facilities already issue clearances directly to the pilot and receive some IFR flight plan cancellations, the group determined that there are no safety risks with publishing the telephone numbers in the appropriate *Chart Supplement, US*. They also determined that there is no risk introduced by providing an additional phone line dedicated for the cancellation of IFR flight plans and publishing that phone number.

Recommendation: Discontinue the Flight Service telephone relay of IFR clearances from designated air traffic control facilities (See Attachment) and provide an alternative method for pilots to cancel IFR flight plans with those same facilities.

Implementation: The Scoping Document Workgroup developed an implementation plan for Part 1 of the Clearance Relay proposal. Facilities currently providing clearances to pilots via telephone will have their numbers published in the appropriate *Chart Supplement, US*. Facilities will have the option to have a separate phone line installed for IFR cancellations, which will also be published. Pilots will have the option of cancelling IFR flight plans with Flight Service or via the IFR cancellation line. An Article 7 briefing was conducted for NATCA with a Memorandum of Understanding signed by both parties. Flight Service proposes a multi-part approach to implementation. All other facilities (not to include facilities in Alaska) will be addressed in future agreements in accordance with the Scoping Document Workgroup Agreement.

Recommendation Approved by:

Daniel E. Smiley, Vice President, System Operations Services, AJR-0 — Date 9/9/16

Timothy L. Arel, Vice President, Air Traffic Services, AJT-0 — Date 9/9/16

Vaughn A. Turner, Vice President, Technical Operations Services, AJW-0 — Date 9/9/16

Attachment (1)

The following TRACON facilities issue clearances directly to pilots on the telephone:

1. A90 – Boston
2. C90 – Chicago
3. D10 – Dallas-Fort Worth
4. D21 – Detroit
5. F11 - Central Florida
6. I90 – Houston
7. L30 – Las Vegas
8. M03 – Memphis
9. N90 – New York
10. NCT – Northern California
11. P80 – Portland
12. R90 – Omaha
13. S46 – Seattle
14. S56 – Salt Lake
15. T75 – St. Louis
16. U90 – Tucson
17. Y90 – Yankee
18. ABE – Allentown, PA
19. AUS – Austin, TX
20. AVP – Scranton, PA
21. BNA – Nashville, TN
22. CLT – Charlotte, NC
23. CRP – Corpus Christie, TX
24. DAB – Daytona, FL
25. IND – Indianapolis, IN
26. MCI – Kansas City, MO
27. MDT – Harrisburg, PA
28. MSY – New Orleans, LA
29. ORF – Norfolk, VA
30. PHL – Philadelphia. PA
31. SAT – San Antonia, TX
32. PCT – Potomac, VA

Note: List is subject to change

Federal Aviation Administration

Memorandum

Date:

To: Timothy L. Arel, Vice President, Air Traffic Services, AJT-0
Vaughn A. Turner, Vice President, Technical Operations Services, AJW-0

From: Steven Villanueva, Director, Flight Service, AJR-B

Thru: Daniel E. Smiley, Vice President, System Operations Services, AJR-0

Subject: Policy Decision Memo: Clearance Relay and Instrument Flight Rules (IFR) Flight Plan Cancellation

CONCURRENCES	
ROUTING SYMBOL	AJR-B Black
INITIALS/SIG	
DATE	
ROUTING SYMBOL	AJR-B Gehring
INITIALS/SIG	
DATE	
ROUTING SYMBOL	AJR-B Moran
INITIALS/SIG	
DATE	
ROUTING SYMBOL	AJR-B Villanueva
INITIALS/SIG	SV
DATE	9/9/16
ROUTING SYMBOL	AJR-0
INITIALS/SIG	DES
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Introduction: In response to the Federal Aviation Administration (FAA) Administrator's strategic sub-initiative, NAS Efficient Streamlined Services (NESS), the Flight Service directorate is refining the scope of their delivery of services within the contiguous United States, Hawaii, and Puerto Rico. Flight service can provide efficiencies and value for its stakeholders by realigning some activities within the Air Traffic Organization (ATO), eliminating obsolete activities, and leveraging existing and emerging technologies for the remaining activities. Clearance delivery is one area where we believe we can obtain operational efficiencies.

Background: Flight Service currently relays clearances to pilots via telephone at airports that lack direct radio communications with Air Traffic Control (ATC) or Flight Service. Flight Service also relays cancellations of IFR flight plans from pilots to ATC. The proposed change will allow pilots to cancel IFR flight plans and obtain clearance via telephone by calling the appropriate air traffic facility directly. Pilots requesting clearances or cancelling IFR flight plans by radio are not affected by this change.

There are 32 terminal ATC facilities that deliver clearances directly to pilots via telephone (See Attachment). When a pilot calls a Flight Service Specialist for a clearance which is departing an airport controlled by one of these ATC facilities, Flight Service provides the facility's telephone number to the pilot. In turn, the facility then delivers the clearance directly to the pilot.

Working with representatives from Air Traffic Services, Flight Service, and the National Air Traffic Controllers Association (NATCA) as part of a scoping document workgroup, we have developed a method for air traffic facilities to deliver IFR clearances on the telephone in order to increase efficiency, and reduce potential errors associated with the relaying of clearances and IFR cancellations. Flight Service will continue to relay clearances to pilots via telephone and

Federal Aviation Administration

Memorandum

Date:

To: Timothy L. Arel, Vice President, Air Traffic Services, AJT-0
Vaughn A. Turner, Vice President, Technical Operations Services, AJW-0

From: Steven Villanueva, Director, Flight Service, AJR-B

Thru: Daniel E. Smiley, Vice President, System Operations Services, AJR-0

Subject: Policy Decision Memo: Clearance Relay and Instrument Flight Rules (IFR) Flight Plan Cancellation

CONCURRENCES	
ROUTING SYMBOL	AJR-B Black
INITIALS/SIG	
DATE	
ROUTING SYMBOL	AJR-B Gehring
INITIALS/SIG	
DATE	
ROUTING SYMBOL	AJR-B Moran
INITIALS/SIG	
DATE	
ROUTING SYMBOL	AJR-B Villanueva
INITIALS/SIG	SV
DATE	9/9/16
ROUTING SYMBOL	AJR-0
INITIALS/SIG	DES
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Implementation Plan

Clearance Relay, Part I

Introduction: Flight Service is engaged in an effort to modernize and streamline service delivery, with a goal of increasing efficiency and value for its stakeholders. Clearance Delivery is one area where it is believed that operational efficiencies can be obtained. The changes proposed in this plan will discontinue Flight Service telephone relay of IFR clearances from designated air traffic control facilities to pilots, and reduce the number of IFR flight plan cancellations handled by Flight Service.

Definition: An air traffic control clearance is an authorization for an aircraft to proceed under conditions specified by an air traffic control unit. A pilot is required to obtain a clearance before receiving air traffic services. Clearances can be delivered from air traffic control (ATC) directly to the pilot by telephone or radio; or through a Flight Service Specialist when direct communication with ATC is unavailable

Background: Flight Service currently relays clearances to pilots via telephone at airports lacking direct radio communications with ATC or Flight Service. Flight Service also relays IFR flight plan cancellations from pilots to ATC. Upon adoption of this change, pilots operating at non-towered airports controlled by 32 approach control facilities (see appendix A) will obtain a clearance and have the ability to cancel IFR flight plans by directly telephoning the control facility. Pilots requesting clearances or cancelling IFR flight plans via radio are not affected by this change.

Objective: Discontinue Flight Service telephone relay of IFR clearances from designated air traffic control facilities (see attached) to pilots; and provide an alternative method for pilots to cancel IFR flight plans with the designated facilities.

Proposed Solution: Working with representatives from AJT, AJR-B, and NATCA as part of a Scoping Document Workgroup, a telephone solution is to be deployed in phases to reduce the Flight Service role in the relaying of clearances. Flight Service will continue to relay clearances to pilots via telephone until such a system is deployed. After implementation, pilots will still be able to cancel IFR flight plans with Flight Service. Clearance relay by Flight Service via radio will not be affected by the change.

Methodology: The initial phase of the proposed change (Part 1) targeted fifty-seven TRACONs and Consolidated TRACON facilities. These facilities were surveyed to determine their suitability based on the following facility criteria:

- Operates 24 hours a day, 7 days a week.
- Does not divest control of any airports underneath their jurisdiction to another controlling facility.
- Regularly staffs a clearance delivery (or similar) position.

- Currently delivers clearances directly to the pilot via telephone

- Has a clearance delivery phone number published and/or has advised Lockheed Martin Flight Services (LMFS) to give the clearance delivery number to pilots rather than relay a clearance through LMFS.

Thirty-two (32) facilities (see attached) of the fifty-seven surveyed met the criteria.

All other facilities (not to include facilities in Alaska) will be addressed in future agreements in accordance with the working group scoping document.

Implementation Description: Facilities currently providing clearances to pilots via phone will have their numbers published in the Chart Supplement, US (formerly Airport/Facility Directory). Facilities will have the option of having a separate phone line installed for IFR cancellations which will also be published.

Requirements:

- All calls must be recorded.

- Clearance delivery and IFR cancellation phone numbers are to be published in the Chart Supplement, US.

- Any cancellation phone lines brought into a facility will be terminated at a position jointly agreed to by the facility Air Traffic Manager and the NATCA facility representative, or their designee.

Resource Roles & Responsibilities:

- Flight Service:

  Submit changes to Aeronautical Information Services for publication of telephone numbers.

  Communicate changes and update users on progress of clearance relay initiative (bi-monthly user group meetings).

  Initiate outreach to local pilots/pilot groups affected by changes (FAASTBlast, Letters to Airmen, Operation Raincheck, etc.).

  Facilitate installation of additional telephone lines via coordination with AJW, and PASS, (see appendix B)

  Flight Service will continue to provide the correct number to pilots when called for clearances.

- Air Traffic (AJT-2):

  Communicate plan with individual facilities.

Verify that all telephone numbers to be published are correct.

Ensure any changes to local procedures are reflected in facility directives.

- NATCA:

  Communicate plan with local NATCA facility representatives.

- AJT & NATCA:

  Contact the facility Air Traffic Manager and the NATCA facility representative, or their designee for all Part 1 facilities (see attached) to determine each facility's needs, including desire for dedicated flight plan cancellation line and, if applicable, where the line will terminate.

  Identify training needs, if any.

- PASS:

  Communicate plan with local PASS facility representatives.

Key Steps, Dependencies, and Dates*:

Scoping Document Workgroup Agreement signed: April 22, 2016
Implementation Plan completed: April 30
Article 7 Briefing: May 31
MOA signed: June 30
Facility level details determined: August 31
Policy Decision Memo Signed: September 15
Begin implementation: October 1
Complete implementation: June 30, 2017

*dates are estimates

Safety Risk Management: A Safety Workgroup determined that there are no hazards to the NAS associated with this change. AJR-B has prepared a Safety Risk Management Decision Memo and it is being reviewing by AJI-Safety.

Orders/Publications: Clearance Delivery and Flight Plan Cancellation telephone numbers will be published in the appropriate Chart Supplement, US.

8-30-16

Appendix A.

Designated Air Traffic Facilities* for part 1:

A90-Boston
C90-Chicago
D10-Dallas-Ft. Worth
D21-Detroit
F11-Central Florida
I90-Houston
L30-Las Vegas
M03-Memphis
N90-New York
NCT-Northern Cal
P80-Portland
R90-Omaha
S46-Seattle
S56-Salt Lake
T75-St. Louis
U90-Tucson
Y90-Yankee
ABE-Allentown, PA
AUS-Austin, TX
AVP-Scranton, PA
BNA-Nashville, TN
CLT-Charlotte, NC
CRP-Corpus Christi, TX
DAB-Daytona Beach, FL
IND-Indianapolis, IN
MCI-Kansas City, MO
MDT-Harrisburg, PA
MSY-New Orleans, LA
ORF-Norfolk, VA
PHL-Philadelphia, PA
SAT-San Antonio, TX
PCT – Potomac

*List is subject to change

Appendix B.

Facility Level Coordination Requirements:

Up to 15 of the 32 Tracons in Part 1 have requested that an IFR clearance cancellation number be provided.

Tellabs 6131B or FAVES channel bank will provide E&M signaling to the voice switch for the new telephone line.

The telephone line, PBX and Voice Switch upgrades will be funded byAJR-B (Flight Service).

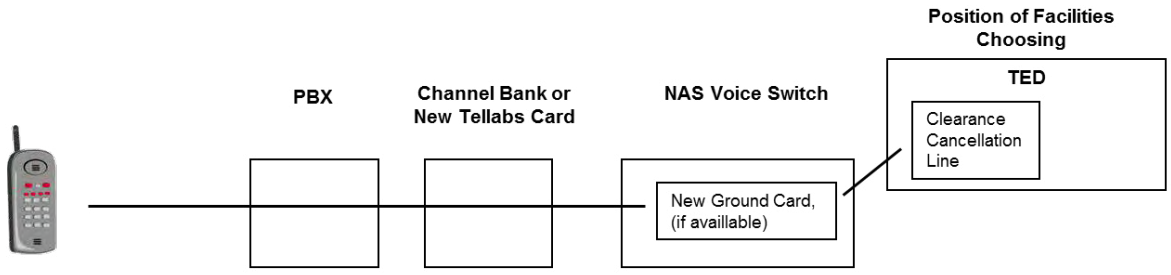
Coordination will include Engineering Services, AT and Tech OPS for the additional telephone line if ordered.

TSSC contractor support is available, however, installation can be via Tech Ops and/or contract support depending on local preference at each site.

Bi-weekly telecons are anticipated to enhance communication and progress during implementation.

Clearance Relay Part 1 – Option

Option - Obtain up to one telephone number per facility for clearance cancellation. All lines used for clearance cancellation must be recorded.



IFR Clearance Phone number(s) will be published in the Chart Supplement US (A/FD):
"For CLNC DEL CTC XXX APCH (XXX) XXX-XXXX"

(Optional) IFR Cancellation Phone number will also be published in the Chart Supplement US (A/FD):
"To CANCEL IFR CTC XXX APCH (XXX) XXX-XXXX"

8-30-16

Clearance Relay - Part 1 sites

32 Part 1 sites
1 new Clearance Cancellation #'s per Part 1 site
0.25 FTE contract support to coordinate ordering local lines and publishing changes in AFD
32 FAVES Configuration Charges (& poss channel bank additions)
1 new ground card in voice switch per Part 1 site
Travel & Misc cost per site

Qty	Description	MRC	NRC	FY'17 Extended	FY'18 Extended
32	Business Lines	$50	$200	$25,600	$19,200
32	FAVES config change		$15,000	$480,000	
3	EDAC (conn. PBX line to DALR)		$10,000	$30,000	
3	DALR expansion/reconfig		$5,000	$15,000	
0.25	Contract Support FTE		$144,000	$36,000	
32	Travel & Misc		$10,000	$320,000	
32	Voice Switch Grnd Cards		$2,000	$64,000	
	Total			$970,600	$19,200

Federal Aviation Administration

Memorandum

Date:

To: Timothy L. Arel, Vice President, Air Traffic Services, AJT-0
Vaughn A. Turner, Vice President, Technical Operations Services, AJW-0

From: Steven Villanueva, Director, Flight Service, AJR-B

Thru: Daniel E. Smiley, Vice President, System Operations Services, AJR-0

Subject: Policy Decision Memo: Clearance Relay and Instrument Flight Rules (IFR) Flight Plan Cancellation

Introduction: In response to the Federal Aviation Administration (FAA) Administrator's strategic sub-initiative, National Airspace System (NAS) Efficient Streamlined Services (NESS), the Flight Service directorate is refining the scope of their delivery of services within the contiguous United States, Hawaii, and Puerto Rico. Flight service can provide efficiencies and value for its stakeholders by realigning some activities within the Air Traffic Organization (ATO), eliminating obsolete activities, and leveraging existing and emerging technologies for the remaining activities. Clearance delivery is one area where we believe we can obtain operational efficiencies.

Background: Flight Service currently relays clearances to pilots via telephone at airports that lack direct radio communications with Air Traffic Control (ATC) or Flight Service. Flight Service also relays cancellations of IFR flight plans from pilots to ATC. The proposed change will allow pilots to cancel IFR flight plans and obtain clearance via telephone by calling the appropriate air traffic facility directly. Pilots requesting clearances or cancelling IFR flight plans by radio are not affected by this change.

There are 32 terminal ATC facilities that deliver clearances directly to pilots via telephone (See Attachment). When a pilot calls a Flight Service Specialist for a clearance which is departing an airport controlled by one of these ATC facilities, Flight Service provides the facility's telephone number to the pilot. In turn, the facility then delivers the clearance directly to the pilot.

Working with representatives from Air Traffic Services, Flight Service, and the National Air Traffic Controllers Association (NATCA) as part of a scoping document workgroup, we have developed a method for air traffic facilities to deliver IFR clearances on the telephone in order to increase efficiency, and reduce potential errors associated with the relaying of clearances and IFR cancellations. Flight Service will continue to relay clearances to pilots via telephone and radio until the system is deployed. Even after implementation, pilots will still be able to cancel IFR flight plans with Flight Service.

Change Description: This change, considered "Part One" of the modifications to the Clearance Relay task performed by Flight Service, is to publish the telephone numbers of the 32 Air Traffic facilities in the *Chart Supplement, US* (formerly Airport/Facility Directory). These facilities will also have an option to install an additional telephone line for pilots to use exclusively to cancel IFR flight plans. AJR-B will provide funding for the additional line if requested. An implementation plan will be developed in coordination with Engineering Services and Technical Operations. When published, pilots can access the required ATC facility telephone number instead of having to contact Flight Service.

Safety Analysis: A safety work group was convened on April 5, 2016 to assess this change. Subject matter experts from affected organizations reviewed the change and all agreed this change does not affect the safety of the NAS. Since these 32 facilities already issue clearances directly to the pilot and receive some IFR flight plan cancellations, the group determined that there are no safety risks with publishing the telephone numbers in the appropriate *Chart Supplement, US*. They also determined that there is no risk introduced by providing an additional phone line dedicated for the cancellation of IFR flight plans and publishing that phone number.

Recommendation: Discontinue the Flight Service telephone relay of IFR clearances from designated air traffic control facilities (See Attachment) and provide an alternative method for pilots to cancel IFR flight plans with those same facilities.

Implementation: The Scoping Document Workgroup developed an implementation plan for Part 1 of the Clearance Relay proposal. Facilities currently providing clearances to pilots via telephone will have their numbers published in the appropriate *Chart Supplement, US*. Facilities will have the option to have a separate phone line installed for IFR cancellations, which will also be published. Pilots will have the option of cancelling IFR flight plans with Flight Service or via the IFR cancellation line. An Article 7 briefing was conducted for NATCA with a Memorandum of Understanding signed by both parties. Flight Service proposes a multi-part approach to implementation. All other facilities (not to include facilities in Alaska) will be addressed in future agreements in accordance with the Scoping Document Workgroup Agreement.

Recommendation Approved by:

9/9/16

Daniel E. Smiley, Vice President, System Operations Services, AJR-0 Date

9/9/16

Timothy L. Arel, Vice President, Air Traffic Services, AJT-0 Date

9/9/16

Vaughn A. Turner, Vice President, Technical Operations Services, AJW-0 Date

Attachment (1)

The following TRACON facilities issue clearances directly to pilots on the telephone:

1. A90 – Boston
2. C90 – Chicago
3. D10 – Dallas-Fort Worth
4. D21 – Detroit
5. F11 - Central Florida
6. I90 – Houston
7. L30 – Las Vegas
8. M03 – Memphis
9. N90 – New York
10. NCT – Northern California
11. P80 – Portland
12. R90 – Omaha
13. S46 – Seattle
14. S56 – Salt Lake
15. T75 – St. Louis
16. U90 – Tucson
17. Y90 – Yankee
18. ABE – Allentown, PA
19. AUS – Austin, TX
20. AVP – Scranton, PA
21. BNA – Nashville, TN
22. CLT – Charlotte, NC
23. CRP – Corpus Christie, TX
24. DAB – Daytona, FL
25. IND – Indianapolis, IN
26. MCI – Kansas City, MO
27. MDT – Harrisburg, PA
28. MSY – New Orleans, LA
29. ORF – Norfolk, VA
30. PHL – Philadelphia. PA
31. SAT – San Antonia, TX
32. PCT – Potomac, VA

Note: List is subject to change

Federal Aviation Administration

Memorandum

Date:

To: Timothy L. Arel, Vice President, Air Traffic Services, AJT-0
Vaughn A. Turner, Vice President, Technical Operations Services, AJW-0

From: Steven Villanueva, Director, Flight Service, AJR-B

Thru: Daniel E. Smiley, Vice President, System Operations Services, AJR-0

Subject: Policy Decision Memo: Clearance Relay and Instrument Flight Rules (IFR) Flight Plan Cancellation

CONCURRENCES	
ROUTING SYMBOL	AJR-B Black
INITIALS/SIG	
DATE	
ROUTING SYMBOL	AJR-B Gehring
INITIALS/SIG	
DATE	
ROUTING SYMBOL	AJR-B Moran
INITIALS/SIG	
DATE	
ROUTING SYMBOL	AJR-B Villanueva
INITIALS/SIG	SV
DATE	9/9/16
ROUTING SYMBOL	AJR-0
INITIALS/SIG	DES
DATE	9/9/16
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Introduction: In response to the Federal Aviation Administration (FAA) Administrator's strategic sub-initiative, NAS Efficient Streamlined Services (NESS), the Flight Service directorate is refining the scope of their delivery of services within the contiguous United States, Hawaii, and Puerto Rico. Flight service can provide efficiencies and value for its stakeholders by realigning some activities within the Air Traffic Organization (ATO), eliminating obsolete activities, and leveraging existing and emerging technologies for the remaining activities. Clearance delivery is one area where we believe we can obtain operational efficiencies.

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There are 32 terminal ATC facilities that deliver clearances directly to pilots via telephone (See Attachment). When a pilot calls a Flight Service Specialist for a clearance which is departing an airport controlled by one of these ATC facilities, Flight Service provides the facility's telephone number to the pilot. In turn, the facility then delivers the clearance directly to the pilot.

Working with representatives from Air Traffic Services, Flight Service, and the National Air Traffic Controllers Association (NATCA) as part of a scoping document workgroup, we have developed a method for air traffic facilities to deliver IFR clearances on the telephone in order to increase efficiency, and reduce potential errors associated with the relaying of clearances and IFR cancellations. Flight Service will continue to relay clearances to pilots via telephone and

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INITIALS/SIG	
DATE	
ROUTING SYMBOL	AJR-B Gehring
INITIALS/SIG	
DATE	
ROUTING SYMBOL	AJR-B Moran
INITIALS/SIG	
DATE	
ROUTING SYMBOL	AJR-B Villanueva
INITIALS/SIG	SV
DATE	9/9/16
ROUTING SYMBOL	AJR-0
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AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 16-02 – October 26 - 27, 2016

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 16-02-310

Subject: Inclusion of MSA for ODPs, SIDs & STARs

Background/Discussion:

Minimum Sector Altitude (MSA) information is an essential and widely-accepted component of Instrument Approach Procedures (IAPs), worldwide.

The FAA does not provide MSA information for use in either Standard Instrument Departures (SIDs) or for Standard Terminal Arrivals (STAR) procedures.

Many State aviation authorities around the world do provide MSA information for SIDs and STARs in accordance with ICAO recommendations.

Results of a recently completed but yet-to-be published study conducted by the U.S. DOT Volpe Center, titled Subjective Complexity of Instrument Procedures (Divya Chandra, Ph.D. & Rebecca Grayhem, Ph.D.), indicated a large number of professional pilots involved in the study felt it would be beneficial to include Minimum Sector Altitude (MSA) information on SID and STAR charts.

In addition to inclusion of MSA on IAPs, ICAO Annex, Aeronautical Data, Chapter 9 (SID charts, Section 9.9.3) and Chapter 10 (STAR charts, Section 10.9.3) supports the inclusion of MSA on SID and STARs. The guidance in ICAO Annex 4, Chapters 9 and 10 states identically for each: *"The established minimum sector altitude shall be shown with a clear indication of the sector to which it applies."*

The idea to include MSA on SIDs and STARs is also supported by direct feedback received by Jeppesen from professional pilots through various feedback methods. Inclusion of MSA for SIDs and STARs is also supported through direct interactions with technical pilots and representatives from a number of large, U.S.-based airlines who operate throughout the U.S. NAS and internationally.

Recommendation:

1. Expand the scope of existing TERPS criteria for the establishment of MSA for IAPs to include SID (and ODPs) and STAR procedures.

2. Include MSA information for ODPs, SIDs and STARs on applicable, official FAA procedure source documents.

3. Methods and specifications for the depiction of MSA on IAPs can and should be used in order to provide consistency between the affected terminal chart types.

Comments:

The designation of MSA for Departure and Arrival charts in the U.S. NAS would address a subject of significant interest to pilots and operators across the industry. Doing so would also address another significant subject also found to be important to pilots: Consistency.

This recommendation involves expanding the scope of existing TERPS criteria. It is not expected that new criteria for MSA would be necessary.

The depiction of MSA on IAP charts is long-established. When provided by the FAA on official procedure source documents, government and commercial chart and data providers could quickly and easily adapt and deliver the MSA information on SIDs and STARs using existing processes, methods and chart depiction specifications.

(Refer to attachments for examples.)

Submitted by: Ted Thompson, Corporate Technical Leader, Aeronautical Charts & Displays
Organization: Jeppesen, Inc.
Phone: 303-328-4456
E-mail: Ted.Thompson@Jeppesen.com
Date: October 10, 2016

RD 16-02-310

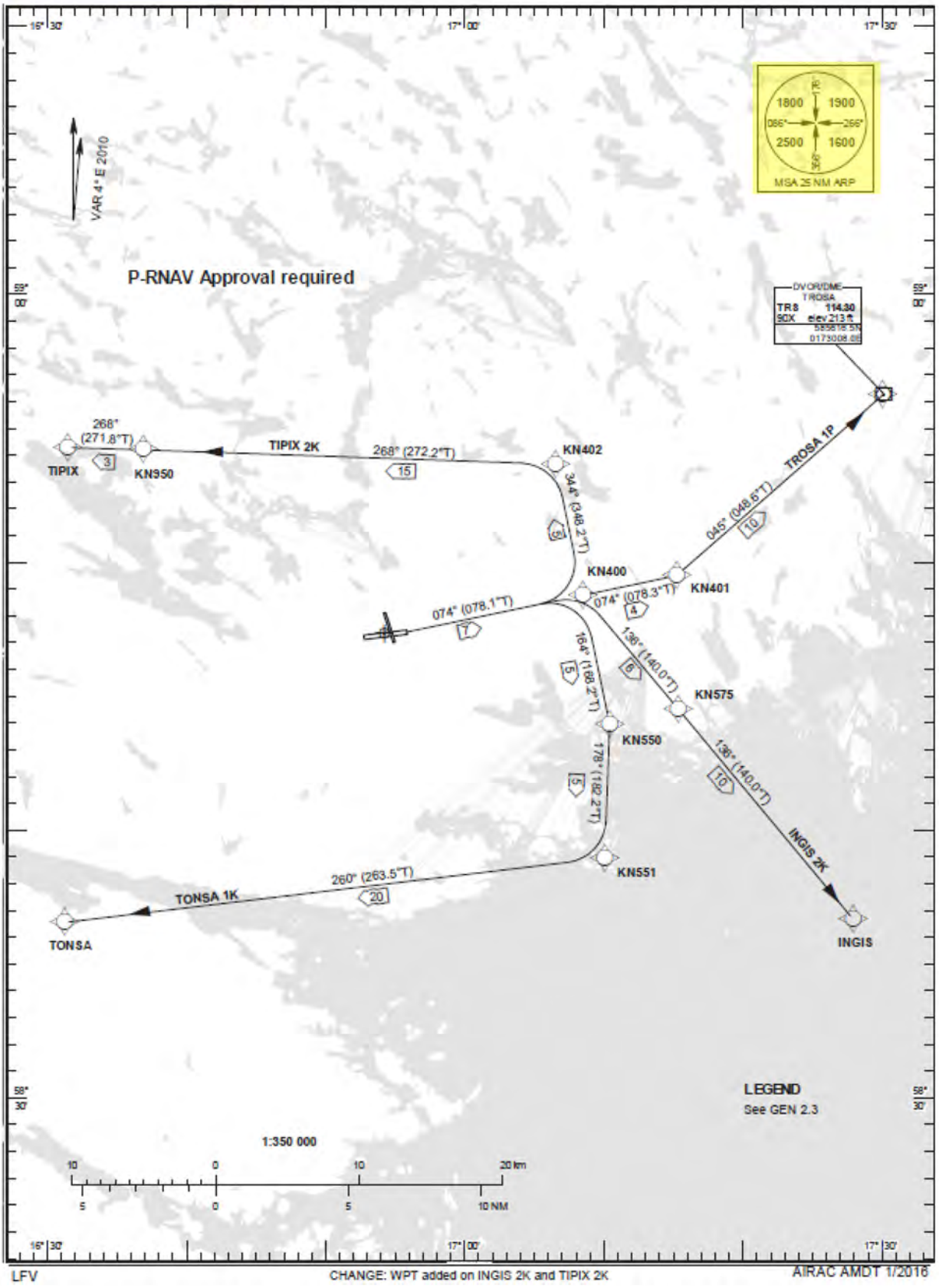
Jeppesen Chart
SID – Stockholm Example

STANDARD INSTRUMENT DEPARTURE CHART (SID) - ICAO

HGT and ALT in ft
BRG are MAG (True)
TA 5000 ft AMSL

SKAVSTA TOWER	127.700
ÖSTGÖTA CONTROL	132.950

RNAV (GNSS) SID RWY 08



Prescribed Coding of RNAV SID for RWY 08

INITIAL CLIMB CLEARANCE, Common to all RNAV SIDs:
Unless otherwise specified, climb to 5000 ft.

Note 1 MNM climb gradient required by ATC: Aircraft proceeding on SID shall use 6.6% (400 ft/NM) as a minimum gradient of climb up to 5000 ft MSL. Aircraft unable to conform to this procedure shall inform ATC accordingly.

Note 2 SID INGIS 2K: MNM average climb gradient is **7.2% (440 ft/nm)** in order to stay inside controlled airspace

RNAV SID	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Turn Direction	Altitude	Speed	VPA/ RDH	Rec Navaid	Navigation Spec
INGIS 2K	CF	KN400		074	R				TRS	RNAV 1
	TF	KN575								RNAV 1
	TF	INGIS								RNAV 1

SID instruction: KN400 – KN575 – INGIS

RNAV SID	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Turn Direction	Altitude	Speed	VPA/ RDH	Rec Navaid	Navigation Spec
TIPIX 2K	CF	KN400		074	L				TRS	RNAV 1
	TF	KN402				+2000	220			RNAV 1
	TF	KN950								RNAV 1
	TF	TIPIX								RNAV 1

SID instruction: KN400 – KN402 (max IAS 220 kt until KN402) – KN950 – TIPIX

RNAV SID	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Turn Direction	Altitude	Speed	VPA/ RDH	Rec Navaid	Navigation Spec
TONSA 1K	CF	KN400		074	R				TRS	RNAV 1
	TF	KN550				+2000	220			RNAV 1
	TF	KN551								RNAV 1
	TF	TONSA								RNAV 1

SID instruction: KN400 – KN550 (max IAS 220 kt until KN550) – KN551– TONSA

RNAV SID	Path Descriptor	Waypoint Identifier	Fly-over	Course °M(°T)	Turn Direction	Altitude	Speed	VPA/ RDH	Rec Navaid	Navigation Spec
TROSA 1P	CF	KN401		074	L				TRS	RNAV 1
	TF	TRS								RNAV 1

SID instruction: KN401 – ~~TROSA~~ TRS

RD 16-02-310

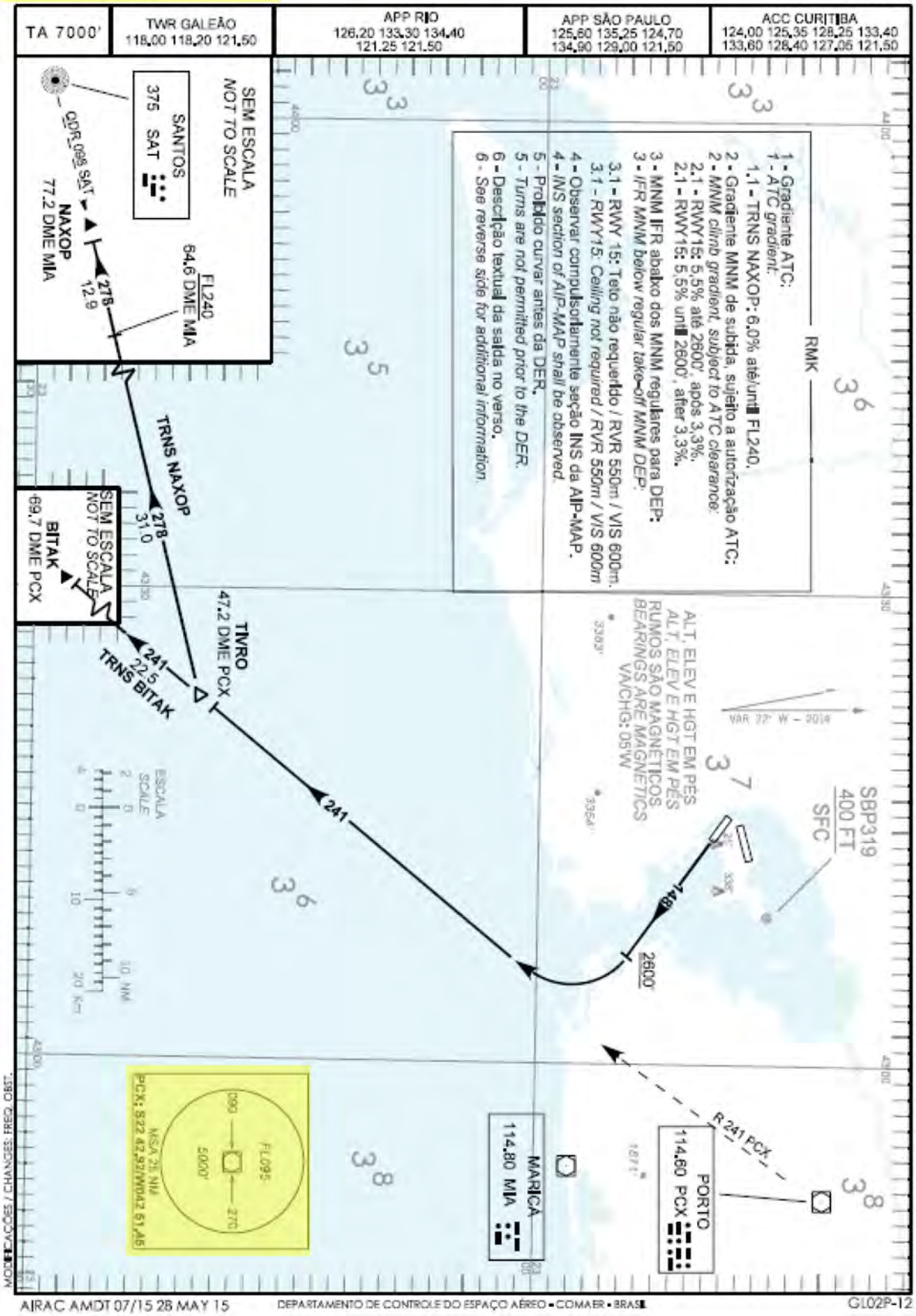
Jeppesen Chart
SID – Rio De Janeiro

CARTA DE SAÍDA PADRÃO POR INSTRUMENTOS (SID)

STANDARD DEPARTURE CHART INSTRUMENT (SID)

RIO DE JANEIRO / Galeão-Antônio Carlos Jobim, INTL (SBGL)

RWY 15
IH 2B



RD 16-02-310

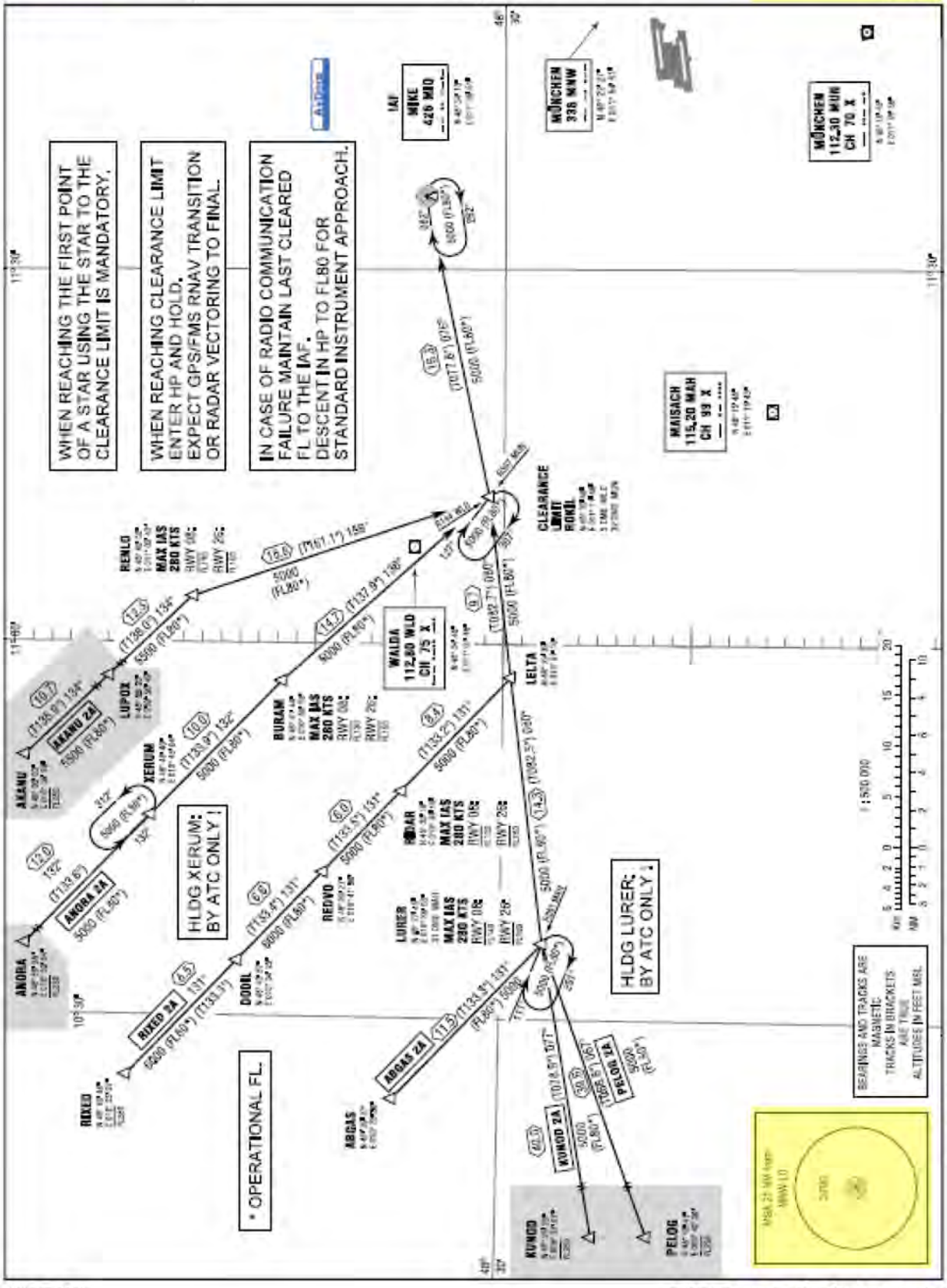
Jeppesen Chart
STAR– Munchen Example

MÜNCHEN
RWY 08/26 NW

ATIS	123,125	DIRECTOR	118,425 (N)
ARRIVAL	126,025 (N)		132,300 (S)
	120,775 (S)	TOWER	118,700 (N)
			120,500 (S)

TRANSITION
ALTITUDE 5000
VAR 2° E

STANDARD ARRIVAL CHART – INSTRUMENT (STAR)



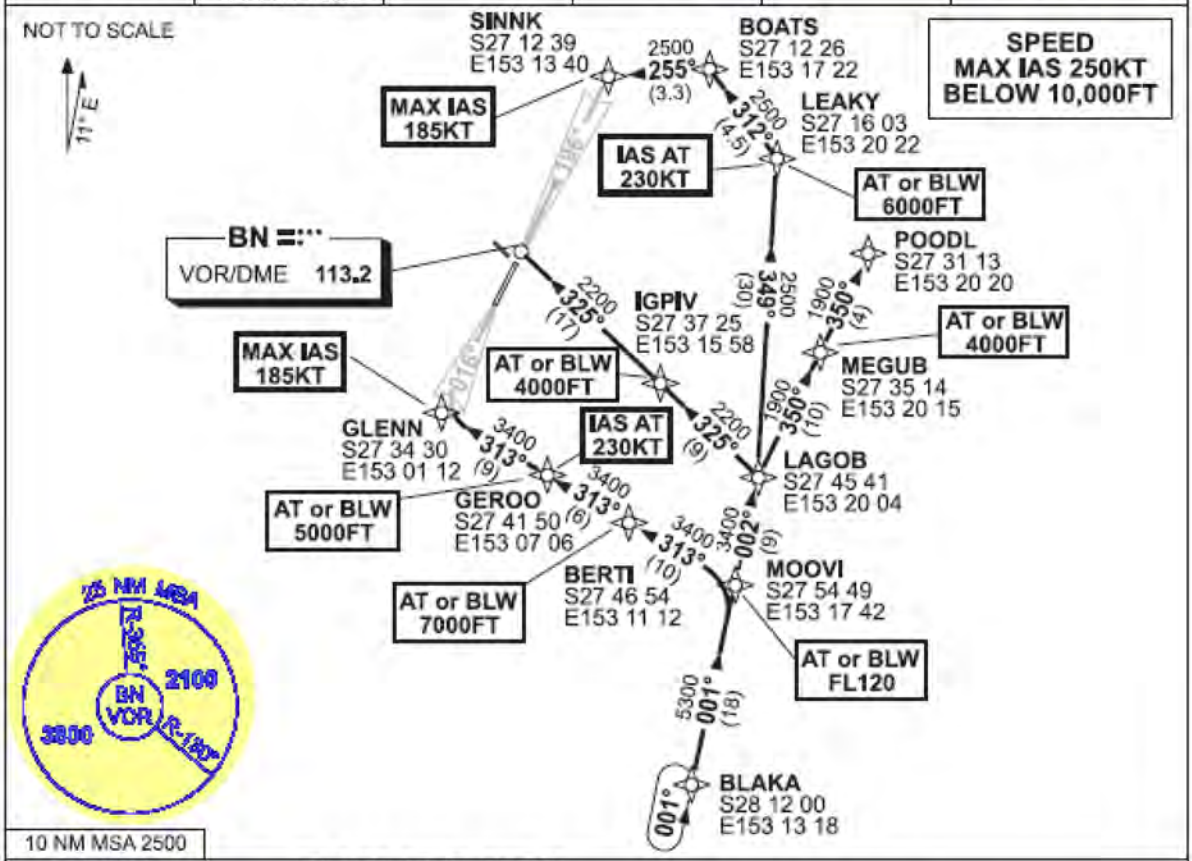
RD 16-02-310

Airservices Australia
RNAV STAR– Brisbane Example

STANDARD ARRIVAL ROUTE (STAR)
BLAKA NINE ALPHA ARRIVAL (RNAV)
BRISBANE, QLD (YBBN)

26 MAY 2016

ATIS	APP	TWR	SMC		
113.2 125.5	NORTH 124.7 SOUTH 125.6	120.5	121.7		Bearings are Magnetic Elevations in FEET AMSL



ARRIVAL: **BLAKA NINE ALPHA**

From BLAKA track 001° to MOOVI, **Cross** MOOVI AT or BLW FL120

RWY 01:
- Turn LEFT track 313° to BERTI. **Cross** BERTI AT or BLW 7000FT
- Track 313° to GEROO, IAS AT 230KT from GEROO
  Cross GEROO AT or BLW 5000FT
- Track 313° to GLENN, MAX IAS 185KT from GLENN for ILS, RNAV-Z (GNSS), LOC or VOR RWY 01 approach

RWY 14:
- From MOOVI, track 002° to LAGOB
- Turn LEFT track 325° to IGPIV. **Cross** IGPIV AT or BLW 4000FT
- Track 325° to BN VOR for VOR RWY 14 approach

RWY 19:
- From MOOVI, track 002° to LAGOB
- Turn LEFT track 349° to LEAKY. IAS AT 230KT from LEAKY
  Cross LEAKY AT or BLW 6000FT
- Turn LEFT track 312° to BOATS
- Turn LEFT track 255° to SINNK, MAX IAS 185KT from SINNK for ILS, RNAV-Z (GNSS), LOC or VOR RWY 19 approach

RWY 32:
- From MOOVI, track 002° to LAGOB
- Turn LEFT, track 350° to MEGUB. **Cross** MEGUB AT or BLW 4000FT
- Track 350° to POODL for RNAV-Z (GNSS) RWY 32 approach

COMMUNICATIONS FAILURE: PROCEDURE IN IMC
IF ABLE CTC BN ATC ON TEL: (07) 3866-3694

- Squawk 7600, comply with vertical navigation requirements, but not below MSA.
- Track via the latest STAR clearance to the nominated runway, then fly the most suitable approach in accordance with ERSA EMERG Section 1.5.

Changes: PROC NAME, LAGOB WPT. BBNSR21-147

airservices

RD 16-02-310

ICAO
Chapter 9 – Annex 4

9.9 Aeronautical data

9.9.1 Aerodromes

9.9.1.1 The aerodrome of departure shall be shown by the runway pattern.

9.9.1.2 All aerodromes which affect the designated standard departure route — instrument shall be shown and identified. Where appropriate, the aerodrome runway patterns shall be shown.

9.9.2 Prohibited, restricted and danger areas

Prohibited, restricted and danger areas which may affect the execution of the procedures shall be shown with their identification and vertical limits.

9.9.3 Minimum sector altitude

9.9.3.1 The established minimum sector altitude shall be shown with a clear indication of the sector to which it applies.

9.9.3.2 Where the minimum sector altitude has not been established, the chart shall be drawn to scale and area minimum altitudes shall be shown within quadrilaterals formed by the parallels and meridians. Area minimum altitudes shall also be shown in those parts of the chart not covered by the minimum sector altitude.

Note.— Depending on the selected chart scale, quadrilaterals formed by the parallels and meridians normally correspond to the half-degree of latitude and longitude.

9.9.4 Air traffic services system

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10.9.1.2 All aerodromes which affect the designated standard arrival route — instrument shall be shown and identified. Where appropriate, the aerodrome runway patterns shall be shown.

10.9.2 Prohibited, restricted and danger areas

Prohibited, restricted and danger areas which may affect the execution of the procedures shall be shown with their identification and vertical limits.

10.9.3 Minimum sector altitude

10.9.3.1 The established minimum sector altitude shall be shown with a clear indication of the sector to which it applies.

10.9.3.2 Where the minimum sector altitude has not been established, the chart shall be drawn to scale and area minimum altitudes shall be shown within quadrilaterals formed by the parallels and meridians. Area minimum altitudes shall also be shown in those parts of the chart not covered by the minimum sector altitude.

Note.— Depending on the selected chart scale, quadrilaterals formed by the parallels and meridians normally correspond to the half-degree of latitude and longitude.

10.9.4 Air traffic services system

10.9.4.1 The components of the established relevant air traffic services system shall be shown.

10.9.4.1.1 The components shall comprise the following: