

November 26, 2008

Dear Forum Participant

Attached are the minutes of the Aeronautical Charting Forum, Instrument Procedures Group (ACF-IPG) held on October 21, 2008 and sponsored by the FAA National Aeronautical Charting Office, Silver Spring, MD. An office of primary responsibility (OPR) action listing (Atch 1) and an attendance listing (Atch 2) are attached to the minutes.

Please 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:

http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs420/acfipg/

This site contains copies of past meeting minutes 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. We encourage participants to use this site for reference in preparation for future meetings.

ACF Meeting 09-01 is scheduled for **April 28-30, 2009** with the National Geospatial-Intelligence Agency (NGA) as host at the US Geological Survey (USGS) facility, Reston, VA. Meeting 09-02 is scheduled for **October 27-29, 2009** with the Air Line Pilots Association (ALPA) as host.

Please note that the **meetings begin promptly at 8:30 AM**. Please forward new issue items for the 09-01 IPG meeting to the above addressees not later than April 10th. 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

Attachment: ACF-IPG minutes

**GOVERNMENT/INDUSTRY AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP**

Meeting 08-02 Silver Spring, MD

October 21, 2008

1. Opening Remarks:


Mr. 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 October 21, 2008. The FAA National Aeronautical Charting Office (NACO) hosted the meeting at their Silver Spring, MD facility. Mr. Terry Laydon, Manager, National Aeronautical Charting Group, made welcoming and administrative comments on behalf of NACO. A listing of attendees is included as attachment 2.

2. Review of Minutes of Last Meeting:

Bill Hammett, AFS-420 (ISI) briefed that the minutes of ACF-IPG 08-01, which was held on April 22 were initially electronically distributed to all attendees as well as the ACF-IPG Master Mailing List on May 23, 2008. However, there were problems with this initial distribution and revised minutes were forwarded on May 28, 2008. The revised minutes were accepted as distributed.



3. Old Business (Open Issues):

- a. 92-02-105:** Review Adequacy of TERPS Circling Approach Maneuvering Areas and Circling at Airports with High Heights Above Airports (HAAs).

Bill Hammett, AFS-420 (ISI), provided an update on the proposed new TERPS criteria for circling that was briefed at meeting 06-02. The new circling criterion has been finalized and is included in TERPS change 21, which is currently undergoing final editing for the formal coordination process. Slight modifications were made to the circling exclusion area to include a splay to provide an overshoot buffer for the turn to final. Additionally, the NBAA recommendation to conduct a second evaluation whenever the resulting HAA is higher than the value used in the formula has been included. The new criterion was provided with the meeting handout material so the attendees may have additional time for review. A copy is also included here  so that those that receive minutes may also have an opportunity to preview the criteria. Additional comments on the new criteria are welcome and may be forwarded directly to TJ Nichols at thomas.j.nichols@faa.gov. John Moore, NACO, asked whether the issue mentioned at the last meeting, regarding determination of a maximum HAA at which circling would not be authorized was resolved. Bill responded no; this was not considered for the current criteria release, but may be considered at a later date depending on comments received.

Status: AFS-420 to keep the group apprised of progress on criteria coordination.
Item Open – Pending Publication (AFS-420).

b. 92-02-110: Cold Station Altimeter Settings (Includes Issue 04-01-251).

Mark Steinbicker, AFS-470, provided a briefing on the MITRE study as provided by Mike Cramer. The purpose of the study is to assess cold temperature impact on required obstacle clearance (ROC) for instrument procedures in the lower 48 states. The results will then be used to base a decision for a course of action to mitigate the issue if required. The impact analysis assessed airports with and without climate reporting stations. The report provided statistics only for approaches where full ROC was lost in the initial, intermediate, or final segments. A copy of Mark's briefing slides is included here . Mark Ingram, ALPA, questioned why there was only concern when all ROC was lost, which results in a relatively low number of procedures impacted. For example when 500' of ROC is required, it appears that the study indicates a problem only when the cold temperature adjustment is 500' or greater; however a 490' loss of ROC where only 10' of ROC is provided is not shown as a problem. Mark recommended the study identify all procedures where the TERPS required clearance was not provided. Anytime TERPS **required** obstruction clearance is compromised presents a problem. This opinion was supported by several other attendees. Tom Loney, Canadian Air Force (CAF), stated that the US was overly complicating the issue. Criterion is regulatory and it is known that cold temperature impacts ROC; therefore, adjustments must be made to ensure design requirements are maintained. As a quick and easy methodology, the CAF applies cold temperature corrections, using the ICAO cold temperature table, to the final segment whenever the temperature is at zero or below and to all segments when the temperature is -30 or below. Tom Schneider introduced Canadian cold temperature guidance from the Canada AIP noting that both ATC and pilots are involved in the adjustment process. It should also be noted that ATC minimum vectoring charts are compensated for cold temperature. A copy of the extract from the Canada AIP is included here . Bill Hammett, AFS-420 (ISI) stated that he had attempted to input cold temperature corrections when developing criteria for minimum vectoring altitude charts (MVACs); however, this was not acceptable to ATC. Mark Ingram, ALPA, also noted that some US carrier pilots fly over Canada and Russia daily without thought of cold temperature impact. On the other hand, other carriers have mandated an additive of 1000' to initial segment altitudes and 500' to the intermediate fix altitude to compensate for cold temperature altimetry. Bill Hammett, AFS-420 (ISI), again questioned why we were analyzing the lower 48 first and not Alaska where we know the problem exists. We have reports included in the ACF history of this issue where pilots have reported GPWS alerts while on approach to Fairbanks during cold temperature conditions and the ATC response is "happens all the time". He reminded Mark that several industry groups have volunteered to assist the FAA in the study and in developing cold temperature procedures for the US. Mike Frank, AJT-22, responded that his organization is looking into cold temperature adjustments in the terminal environment. Mark stated that he will have MITRE do further analysis. The study has shown that there are instances where all ROC could be lost; it needs to be determined whether there is a point prior to total ROC loss where adjustments should be made. Lance Christian, NGA, stated once again that Canada and the DOD realize there is a problem in a cold temperature environment, why expend more money on further study. Rich Boll, NBAA, questioned the end result of the studies; e.g., "will it determine what is an acceptable amount of ROC loss; will it lead to procedure adjustments, recommendations or requirements in the AIM for the pilot to apply cold temp compensation; etc." Kevin Comstock, ALPA, said there already is a consolidated industry position from the PARC to AVS-1 to apply the charted temperature limit currently present on some approaches to all segments of all approaches. Kevin, Rich, James Taylor, AFFSA; Tom Loney, CAF; and Frank Flood, Air Canada, (at previous meetings) have offered to assist Mark in developing a plan to address temperature compensation.

Editor's Note: The following pertinent extracts from the October 31, 2006 PARC letter to AVS-1 are included at ALPA's request:

Cold Temperature Policy: Current procedure design policy uses the controlling obstacle on the final approach segment as the basis for calculating minimum temperature for the procedure. The team recommends that this policy be reviewed so that obstacle clearance on any segment would be maintained. Attachment 4 contains proposed text for a revised policy.

Attachment 4 - Cold Temperature Policy: The team recommends that the criteria for establishing the charted cold temperature limit be changed to analyze the appropriateness of that limit in all segments of the approach rather than only the final segment. While this recommendation is applicable to all approaches, not just basic RNP, the team recommends that the criteria be developed first for basic RNP and then applied to TERPs for all procedures."

Status: AFS-470 will continue to work the issue and report. **Item Open (AFS-470).**

c. 96-01-166: Determining Descent Point on Flyby Waypoints (Originally: Definition of "On Course").

Mark Steinbicker, AFS-470, briefed that they are still working the issue although it is on the 'back burner'. Analysis by MITRE is on-going with solutions for both automated and non-automated aircraft under consideration. Tom Schneider, AFS-420, stated that AC 90-RNP, which has been coordinated, will address RNP operations. Mark responded that comments received on AC 90-RNP, which will cancel AC 90-94 and 90-97, have been adjudicated and higher policy decisions are in progress. The AC is targeted to enter the AFS-1 signatory process in November. Mark added that AIM information must still be developed.

Status: AFS-470 to continue to provide status of 90-RNP and develop AIM material.
Item Open (AFS-470).


d. 98-01-197: Air Carrier Compliance with FAA-specified Climb Gradients.

Tom Schneider, AFS-420, briefed that since the last meeting, he has continually followed up on this issue via emails and phone calls; however, he has been unable to elicit a response from anyone. He also brought the subject to the attention of the US IFPP, who suggested the Takeoff and Landing Performance Assessment Aviation Rulemaking Committee (TALPA ARC) should address the issue. However, Roy Maxwell, Delta, advised prior to the meeting via email that he presented the issue to the TALPA ARC; but, that group stated it was beyond the scope of the committee. Tom, considering the total lack of response over the past ten years and uncertainty as to which industry working group or committee is best suited or willing to address the issue, suggested the issue be closed. Mark Ingram, ALPA, and Rich Boll, NBAA, objected and requested the issue remain open. Mark Steinbicker, AFS-470, briefed that he raised the issue before the PARC at the last face-to-face meeting and the PARC has formed an ad hoc committee under Frank Alexander, Northwest Airlines, to look into the issue. The PARC wants a consolidated industry opinion (ATA, RAA, ALPA, NBAA, etc.) on whether the issue is important enough to pursue rulemaking. Requestors must realize that there will be expenses related to getting the information, training costs, implementation, etc., and a commitment is required. Mark Ingram, ALPA, stated that the PARC had written a letter to AVR expressing concern over high RNP missed approach climb gradients.

Mark Steinbicker, AFS-470, stated he had requested MITRE to conduct some analysis, which prompted the current 500 Ft/NM maximum prior to having Flight Standards approval.

Status: AFS-470 to monitor PARC progress and report. [Item Open \(AFS-470\)](#).

e. 02-01-238: Part 97 “Basic” Minima; ATC DP Minima, and DP NOTAMs.

Bill Hammett, AFS-420 (ISI), briefed that AFS-420 has drafted and forwarded policy for inclusion in Order 7930.2 that will place all instrument flight procedure NOTAMs under a single ICAO series (tentatively Series P). The draft material was designed to accommodate the re-vamp of the US NOTAM System to use the ICAO series format vice the current FDC and D NOTAMs used in the U.S. Bill also provided a brief history on the issue of getting SID and STAR NOTAMs under the FDC format. Basically, DP NOTAMs fall under AFS for policy and the NFPO for issuance while STAR NOTAMs are the under ATO System Operations (AJR) for policy and ARTCCs (AJE) for issuance. Air Traffic has previously gone on record as not objecting to SIDs and STARs being under the FDC process provided both are changed concurrently. The problem is that AFS has had little success in getting Systems Operations to coordinate the change through the ATO. Gary Prock, AJR-32 provided a briefing on the status of the NOTAM system update thus far. The project to consolidate the US civil and military NOTAM systems into one consolidated federal system with full ICAO implementation is progressing well, albeit slowly. The primary goal is to provide a single source for all NOTAMs with a single collection and distribution point for all information. Gary further briefed that the biggest initiative is architectural stabilization with a secondary goal to consolidate inefficient legacy systems for improved customer service. FAA Order 7930.2, *Notices to Airmen (NOTAMs)* has been re-drafted with input from all concerned agencies and will be circulated for comment soon. The NOTAM modernization initiative has been expanded to include Canada to provide continuity across the border. A joint FAA/NAV Canada meeting is scheduled for October 27-28 to finalize policy. The target date for the NOTAM system upgrade is 2010. Mark Ingram, ALPA, asked whether the new system will include non-public airports and heliports. Gary replied yes and that this issue is being worked with AFS-420. Valerie Watson, NACO, asked whether all current Special IAPs are covered. Gary replied yes; when he receives the airport/heliport ID, he creates the necessary modification to the current system ensure these locations are covered. The process is slow, but is working. A copy of Gary’s presentation slides is included here 

Status: AJR-32 to continue to track efforts to revise Order 7930.2 to include all instrument flight procedure NOTAMs under a common format and continue to provide periodic updates on the NOTAM system upgrade. [Item Open \(AJR-32\)](#).

f. 02-01-241: Non Radar Level and Climb-in-hold (CIH) Patterns.

Mike Frank, AJT-22, briefed that Dan Diggins, AJT-22, is pursuing this issue and will have an update at the next meeting.

Status: AJT-22 will ensure controller training on impromptu climb-in-hold assignment. [Item Open \(AJT-22\)](#).

g. 03-01-247: Holding Pattern Criteria Selection and Holding Pattern Climb-in-Hold Issues.

Tom Schneider, AFS-420, briefed the following update as received from Steve Barnes, Manager, AFS-450. "Numerous issues continued to arise from attempts to utilize the original holding tool for a broader application than it was originally intended. As a result, this past summer AFS-450 elected to take a new approach and have a new holding tool developed to better meet our present needs. The initial date for completion of this new holding tool was October. Due to other requirements during this time frame, that date was not met. We are anticipating something to look at and evaluate in December. As was presented/requested at the last meeting, AFS-450 is in search of the proper FMS logic to utilize in our modeling for appropriate simulations. Any support the ACF attendees can provide Dr. Sherri Avery in this matter would be appreciated." Mark Ingram, ALPA, asked whether any residual data from the MITRE study on RNAV tracks would be of value. Al Herndon, MITRE, responded that data could not be released due to contractual requirements between FAA and MITRE.

Status: AFS-450 to continue ASAT/simulator analysis and report. Item Open (AFS-450).

h. 04-01-250: RNAV and Climb Gradient Missed Approach Procedures.

Tom Schneider, AFS-420, briefed that he followed up his requests to AFS-600 and 800 on June 6 and again on August 25; however only AFS-600 responded. Tom read the response to the group and the group believed AFS-600 completely misunderstood what was requested. Tom agreed to contact them again and restate the ACF's request. Kevin Comstock, ALPA, stated that FAA has previously published educational material and revised PTS standards when necessary; for example, runway incursion education and training produced by the Commercial Aviation Safety Team (CAST). He doesn't understand the reluctance to accommodate this issue.

Status: The Chair will formally follow up the initial letter to AFS-600 and 800 with the ACF's concerns. Item Open (ACF-IPG Chair).

i. 04-02-258: Vertical Navigation (VNAV) Approach Procedures Using DA(H); OpSpec C073.

Tom Schneider, AFS-420, provided the group a copy of an October 7 memorandum from Harry Hodges, Chair of the US-IFPP to John McGraw, Manager AFS-400. The memorandum was prepared in response to a request for the US-IFPP to review the issue of treating a MDA as a DA without proper evaluation of the procedure. Currently, the operator is required to conduct a visual segment evaluation; however, there has been no requirement to conduct a missed approach evaluation. This is especially significant when a turn is required as the missed approach is made earlier when using the MDA as a DA. The memorandum provides draft guidance & criteria for operators to analyze the area below MDA to runway threshold and also to evaluate the missed approach. Further refinement of the 'DA in lieu of MDA' criteria is planned. Mark Steinbicker, AFS-470, briefed that his office will evaluate the US-IFPP memorandum and develop operational guidance. He added that his office is working on draft AC 120-CDFA (constant descent final approach), which will define CDFA and address general operations per TERPS Change 20 and Op Specs. Once the draft is further developed, Mark stated that industry input and comments would be requested. There is no definite timeline for completion, but the end of the year is targeted. Mike Frank asked why the memorandum only

relates to FMS and does not include GPS. Tom agreed to take this question back to the US-IFPP. Mark also noted that charting specifications would have to be developed to indicate which procedures qualify for CDFA. Ted Thompson, Jeppesen, requested that the FAA approach procedure source be clear when the criteria for the maneuver is met so that Jeppesen chart notes are correct. Rich Boll, NBAA, questioned why the "DA in lieu of MDA" maneuver is only allowed for Part 121 & 135 operators. His organization requests that Part 91 operators also be allowed to use the maneuver. This position is also supported by AOPA. Mark responded that they are considering expansion to include Part 91. Tom added that Part 91 operators can currently get authorization through a LOA from their FSDO. He added that the US-IFPP memorandum was only the beginning step to resolve this issue. There are many tentacles that have yet to be addressed

Status: 1) AFS-420 to take the FMS vs. GPS question to the US-IFPP, and 2) AFS-470 to: evaluate the US-IFPP memorandum and develop guidance. [Item Open \(AFS-420 and 470\).](#)

j. 05-01-259: Visual Climb Over Airport (VCOA).

Tom Schneider, AFS-420, briefed the following update as provided by Phil Prasse, the AFS-420 departure criteria specialist. "A criteria review group is addressing this issue as well as other departure related criteria and policy issues. This criteria review group has been meeting regularly, most recently on October 1st and 2nd. The comments received regarding VCOA criteria and policy are both extensive and substantial and affect large portions of the current VCOA criteria. A total re-write of TERPS Volume 4, Chapter 4, which includes VCOA criteria, is in progress. The concepts for that re-write were discussed at the October 1st and 2nd meetings with representatives of AFS-420 and 460. While there is agreement on several points, some issues need further review. An updated draft of TERPS Volume 4, Chapter 4 will be completed shortly and then put out for coordination with the departure working group under the USIFPP."

Status: AFS-420 will continue to track the VCOA issue and report. [Item Open \(AFS-420\).](#)

k. 06-02-267: Pilot Option to Use Standard Timing for RNAV IAP Holding Patterns

Tom Schneider, AFS-420, briefed the following update as received from Steve Barnes, Manager, AFS-450, which applies to all open issues relating to holding. "Numerous issues continued to arise from attempts to utilize the original holding tool for a broader application than it was originally intended. As a result, this past summer AFS-450 elected to take a new approach and have a new holding tool developed to better meet our present needs. The initial date for completion of this new holding tool was October. Due to other requirements during this time frame, that date was not met. We are anticipating something to look at and evaluate in December. As was presented/requested at the last meeting, AFS-450 is in search of the proper FMS logic to utilize in our modeling for appropriate simulations. Any support the ACF attendees can provide Dr. Sherri Avery in this matter would be appreciated" - also see related issues 03-01-247 and 07-02-278.

Status: AFS-450 to include timing for RNAV holding in the study. [Item Open \(AFS-450\).](#)

l. 06-02-268: Lack of Graphic Obstacle Departure Procedures (ODPs).

Brad Rush briefed that the NFPO is still addressing the complex ODP lists submitted by NBAA and Continental Airlines as well as correcting the discrepancies noted in the AFS-420 memorandum of September 15, 2006. He provided a production schedule, which is attached

here — Brad further briefed that the NFPO's first action was to conduct an evaluation to see if the identified procedures qualified for graphic portrayal under the guidelines of Order 8260.46C. Once that evaluation was completed the selected ODPs were put into production. Rich Boll, NBAA, then pointed out several ODPs (Scottsdale, Pocatello, Durango and Cold Bay) that were on the NFPO list as "does not qualify" appear to be complex by the Order's definition. Brad agreed to re-evaluate the airports in question. Roy Maxwell, Delta, recommended the specifications be re-evaluated and that all ODPs be published graphically. This would assure pilot understanding. Mark Ingram, ALPA, added that graphic ODPs are included in the avionics database, whereas textual ODPs are not. Roy added that there are real problems when "flatland" pilots transition to flying in mountainous areas. He further asked whether there is a process to change the standards. Bill Hammett, AFS-420 (ISI), responded that the current standards for graphic depiction in Order 8260.46 (more than one turn, one altitude change, one climb gradient) have been in effect for quite a few years without question. The Order is currently undergoing revision and, as is normal, government, as well as industry will have an opportunity to provide comments. This would be the time to request changes to the standard; however, Bill added that some ODPs are too simple; e.g., "Climb runway heading to 1000 before turning left"; "Climb direct ABC VOR, then proceed on course"; etc. to require graphic depiction.

Status: The NFPO re-evaluate airports in question and continue efforts to graphically chart complex ODPs and report progress. [Item Open \(AJW-321\)](#).

***Editor's Note:** After the meeting, Brad Rush, NFPO, advised they reviewed the locations in question again and only one runway at Scottsdale meets requirements for a graphic ODP. It was added to the NFPO production schedule.*

m. 07-01-269: Diverse Vector Areas (DVAs).

Brad Rush reported that, as requested at the last meeting, he, jointly with representatives from the Strategic Operations Group, AJT-22, conducted a survey of the FPOs and there have been no DVAs processed through the NFPO for evaluation. Mike Frank, AJT-22, briefed that a Notice has been drafted to address DVA development and application by ATC facilities. It has been sent to selected field facilities, the En Route Service Unit, and AFS-420 for review. Comments are being resolved and the Notice should be released soon. Brad added that sample DVAs have been developed using the current TERPS criteria at Las Vegas, St. Paul, and Santa Monica. He provided a briefing with graphics to demonstrate how the criterion is applied. A copy of Brad's briefing slides is attached here — Tom Schneider briefed at the last meeting that the revision to order 8260.46, which is currently under development, will include policy for documenting DVA information on FAA Form 8260-15; however, a firm decision has not been made whether to chart the information. The plan is to develop DVA policy first, then address the charting issues. Rich Boll, NBAA, asked what the chances of DVA information getting charted are and Tom replied 50/50. Rich then questioned whether an assigned vector took preference over an ODP for those carriers for which an ODP is mandatory under Part 91.175(f). Tom replied that current AIM guidance is that the ODP must be flown unless a vector or SID is assigned by ATC. Rich responded that the AIM is not regulatory and questioned whether a vector is considered a legal substitute in lieu of compliance with the ODP. Tom agreed to research this. Kevin Comstock, ALPA, stated that the language in Order 7110.65, Paragraph 5-6-3 may need revision as it gives the impression that ATC can vector within 3 NM of an obstacle as long as it is depicted on the scope. Bill Hammett, AFS-420 (ISI), responded that, in most cases, it is impossible to depict all obstacles that penetrate a 40:1 departure surface especially those close to an on-airport antenna. Brad

Rush then, without any prior coordination, presented a new charting concept for depicting low, close-in obstacles, takeoff minimums, DP instructions and DVA information as a simple matrix. The primary change is that only 3 departure obstructions would be provided; the nearest to the departure end of runway (DER), the highest above the DER, and the obstacle requiring the highest climb gradient. This is a major change from the current methodology of listing all close-in obstacles. The matrix was well received and provides a less cluttered presentation than the current methodology. It will also accommodate DVA authorized headings and climb gradients, if required; however, it will require much intra/inter-agency coordination before acceptance.

Status: 1) AJT-22 will jointly with AJE-31 ensure controller guidance is developed for radar vectoring departures at airports where an ODP is established; and, 2) AFS-420 will continue to track DVA documentation and charting requirements during the re-write of Order 8260.46. Item Open (AJT-22, AJE-31, and AFS-420).

n. 07-01-270: Course Change Limitation Notes on SIAPs.

Tom Schneider, AFS-420, briefed that after the last meeting, he forwarded the issue to the USIFPP. The following update from Jack Corman, Executive Director of the US-IFPP, is provided: "The US-IFPP is currently working on TERPS Change 21, FAA Order 8260.52A, and AC 90-RNP. Current staffing levels and national program initiatives that are afforded priorities will probably place changes to TERPS Chapters 15 & 17 in the 2009/2010 time frame."

Status: AFS-420 to monitor progress through the USIFPP. Item Open (AFS-420).

o. 07-01-272: Using an ODP in lieu of the Published Missed Approach Procedure.

Tom Schneider, AFS-420, briefed that after the last meeting, revised AIM language was coordinated through AFS-400, AJT-22, AJE-31, and AJR-32. However, prior to the revision being forwarded for publication, language published in the Federal Register on January 8, 1981, regarding Part 91.116(e) which is now Part 91.175(e) (unchanged) prompted a second look at the AIM verbiage. The following is quoted from the preamble (emphasis added):

"Another subject on which comments were received relates to the § 91.116(e) requirement to immediately initiate an "appropriate" missed approach if visual reference is lost. The commenters correctly note that it is unsafe in some cases to initiate an immediate missed approach which strictly follows the published procedure. This, however, is the reason why the word "appropriate" missed approach is used. Under § 91.116(e) pilots must continue to be aware that the published missed approach procedure provides obstacle clearance only when the missed approach is conducted on the missed approach segment from or above the missed approach point. If the aircraft initiates a missed approach at a point prior to the missed approach point, from below MDA or DH, or on a circling approach, obstacle clearance is not necessarily provided by following the published missed approach procedure. In this situation obstacle clearance is the pilot's responsibility. When a missed approach is initiated in this situation, the pilot must consider other factors such as the aircraft's geographical location with respect to the prescribed missed approach point, direction of flight and/or minimum turning altitudes in the prescribed missed approach procedure, aircraft performance, visual climb restrictions, charted obstacles, IFR departure procedures, takeoff visual climb requirements as expressed by nonstandard takeoff minima, or other factors not specifically expressed by the approach procedures. During a missed approach, the aircraft must be on, or must re-intercept, a published segment of the procedure at or above the altitude specified in the procedure, and must maintain a climb gradient equal to or greater than the standard (1:40 or 2.5%) unless otherwise published, for

obstacle clearance to be ensured by the published missed approach procedure alone. For these reasons the wording of former § 91.117(b)(2) with respect to an "appropriate" missed approach is retained in § 91.116(e).

The emphasis on the word "appropriate" prompted AFS-420 to draft another revision to the verbiage for AIM paragraph 5-4-21. The following recommended revision was presented to the ACF-IPG for discussion:

"Initiating a go-around after passing the published MAP (for example, a balked landing) may result in total loss of obstacle clearance because the aircraft flight path may not fall within missed approach procedure protected area. To compensate for the possibility of reduced obstacle clearance during a balked landing or go-around, the pilot becomes responsible for obstacle clearance and should consider the airport operating environment, including known natural (trees/vegetation) and man-made obstacles. At some airports, pilots may wish to refer to airport obstacle and departure data prior to initiating an instrument approach procedure. Such information may be found in the "TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES" section of the US TERMINAL PROCEDURES publication. Depending on the airport operating environment, characteristics of the published missed approach procedure, overall aircraft performance capability, and other relevant considerations, pilots may wish to take one or more of the following actions after initiating a balked landing/go-around beyond the published MAP:

1. Contact ATC as soon as possible and comply with ATC instructions when RADAR vectors have been issued or can be requested.
2. Where practical, re-establish the aircraft laterally and vertically on the published missed approach procedure, (i.e., straight ahead climb as rapidly as possible, may be all that is necessary to re-join the missed approach segment. Re-joining a turning missed approach may also be possible if the turn point has not yet been reached.).
3. Adjust aircraft climb performance as necessary for the local environment (i.e., climb as rapidly as possible to avoid obstructions that were not a factor in the design of the published missed approach procedure).
4. Maintain visual conditions and re-attempt landing, if practicable.
5. Where available consider executing the published ODP for the relevant runway.

NOTE: *ATC applies separation between an aircraft making an instrument approach (including the corresponding missed approach procedure, and the missed approach holding pattern and altitude) and other subsequent arrivals and other known IFR aircraft. A published ODP for the relevant runway does not always correspond with the missed approach procedure. Additionally, the published ODP does not always specify an altitude and/or fix at which to hold. It is imperative that pilots advise ATC as soon as possible of his or her intended actions if a landing cannot be completed. Pilots must be aware that separation between the aircraft and other traffic may not be maintained if the pilot executes a maneuver other than the published missed approach procedure."*

This version also prompted much discussion. Kevin Comstock, ALPA, expressed concern that the language requires the pilot to be responsible for obstacle clearance when flying a published procedure. Rich Boll, NBAA, stated that after reading the preamble, NBAA agrees that further change is required and offered his assistance in developing the language. He also stated that changes are required to other associated pilot educational material and ATC directives. Roy Maxwell recommended the change include verbiage for Part 121 and 135 operators. John Swigart, AFS-470, stated that the language should support what pilots are trained to do. Tom Schneider, AFS-420, expressed concern that the cautionary note emphasizing that ATC separation with other traffic may be lost, could cause pilots to chase a published missed approach in lieu of conducting a more "appropriate" maneuver to execute a go-around. Lastly, Paul Ewing, AJR-37 (AMTI), emphasized that any changes must be

coordinated through the En Route Service Unit, AJE-31, as they had objected to the original proposal. Tom Schneider, agreed to prepare a revised draft in unison with the ALPA and NBAA representatives for further AFS-400 - ATO coordination. Rich Boll, NBAA, agreed to prepare a listing of associated Orders and directives that also require change.

Status: 1) AFS-420 to develop revised language in concert with ALPA, NBAA, and Delta, and forward to AFS-400 for coordination and publication; and 2) NBAA to provide recommendations for changes to associated ATC Orders, the AIM, IPH, etc.

Item Open - (AFS-420 and NBAA).

Editor's Note: After the meeting, the following recommended verbiage was developed jointly by AFS-420, NBAA, and ALPA, and forwarded to AFS-400 for coordination within AFS and the ATO - changes to the current AIM are shown in red text:

Proposed AIM language for AIM paragraph 5-4-21 (11-4-2008)

"Initiating a go-around after passing the Missed Approach Point (MAP) (for example, a balked landing) may result in total loss of obstacle clearance because the aircraft flight path may not fall within published missed approach procedure protected area and the pilot becomes responsible for obstacle clearance. To compensate for this situation, consider the airport operating environment, including known natural (trees/vegetation) and man-made obstacles when choosing a path to fly. Title 14, Code of Federal Regulations Part 91.175(e) recognizes this possibility and intentionally uses the word "appropriate" when describing the missed approach procedure. Therefore, at some airports, pilots should refer to airport obstacle and departure data prior to initiating an instrument approach procedure. Such information may be found in the "TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES" section of the US TERMINAL PROCEDURES publication. Depending on the airport operating environment, characteristics of the published missed approach procedure, overall aircraft performance capability, and other relevant considerations, pilots may choose to take one or more of the following actions when initiating a go-around after passing the published MAP:

- 1. Contact ATC as soon as possible and comply with ATC instructions when RADAR vectors have been issued or can be requested.*
- 2. Where practical, re-establish the aircraft laterally and vertically on the published missed approach procedure, (i.e., straight ahead climb as rapidly as possible, may be all that is necessary to re-join the missed approach segment. Re-joining a turning missed approach segment may also be possible if the turn point has not yet been reached.).*
- 3. Adjust aircraft climb performance as necessary for the local environment (i.e., climb as rapidly as possible to avoid obstructions that were not a factor in the design of the published missed approach procedure).*
- 4. Maintain visual conditions and re-attempt landing, if practicable.*
- 5. Where available, consider executing the published Obstacle Departure Procedure (ODP) (or operator established one engine inoperative departure procedure per 14 CFR Part 91.175(f)(4)) for the relevant runway.*

NOTE: ATC applies separation between an aircraft making an instrument approach (including the corresponding published missed approach procedure, and the missed approach holding pattern and altitude) and other subsequent arrivals and other known IFR

aircraft. A published ODP for the relevant runway does not always correspond with the published missed approach procedure. Additionally, the published ODP does not always specify an altitude and/or fix at which to hold. Pilots must be aware that separation between the aircraft and other traffic may not be maintained regardless of the procedure chosen if the pilot executes a go-around from a point beyond the MAP. Therefore, it is imperative that pilots advise ATC as soon as possible of his or her intended actions if a landing cannot be completed."

p. 07-01-274: AIM Information Regarding ODP Minimum Crossing Altitudes

Tom Schneider, AFS-420, briefed that as requested at the last meeting, he chaired an ad hoc DP working group that met via telcon on July 8, 2008 to discuss procedure source, charting and database coding when dual (ATC and MCA) altitudes are required at the same fix. After lengthy discussion the participants all agreed that the FAA procedure source (8260-Series Forms) will clearly indicate the purpose when dual restrictions are required at the same location. All agreed to retain and expand the use of existing policy in FAA Order 8260.46C, Appendices 5 and 6, which requires that when 2 altitudes are necessary (support both an ATC altitude and a Minimum Crossing Altitude (MCA)), the "(ATC)" and "(MCA)" suffix icons be placed adjacent to the altitude on the procedure source and charted accordingly. In situations where only a single altitude is necessary (lowest altitude available that supports obstacle clearance, NAVAID and/or Communications reception, and/or airspace requirements), the "(MCA)" suffix icon(s) will not be published. This methodology would not require any changes to existing charts published with only the one altitude at a fix. It will; however, require a change to Order 7110.65 and training to ensure controllers are aware that published altitude restrictions which are not specifically labeled as (ATC) are mandatory and cannot be canceled. It will also require ATC facilities to review all their SIDs to insure altitude restrictions are properly defined by determining if they are there for ATC purposes or for other procedure design requirements. Once that has been determined, the procedure may require revision to come into compliance with the current standards and criteria. Order 8260.46D, which is currently under revision will provide expanded guidance. During the discussions, the question was brought up as to which altitude should be coded into the avionics database when there are 2 altitudes at the fix (ATC and MCA). It was agreed that the higher ("(ATC)") altitude value should be coded because this is what is expected to be flown all the time. If ATC were to delete the ATC altitude restriction, the pilot can then cross no lower than the charted "(MCA)" altitude at that fix. This would require manual intervention to select the lower altitude if the avionics system supports both altitudes in the database, or the pilot must comply with the altitude manually. A follow-on DP working group meeting is planned to finalize any outstanding issues.

Status: AFS-420 will revise policy and documentation requirements in Order 8260.46D. **Item Open - (AFS-420).**

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

Tom Schneider, AFS-420, briefed the following update as received from Steve Barnes, Manager, AFS-450, which applies to all open issues relating to holding: "Numerous issues continued to arise from attempts to utilize the original holding tool for a broader application than it was originally intended. As a result, this past summer AFS-450 elected to take a new approach and have a new holding tool developed to better meet our present needs. The initial date for completion of this new holding tool was October. Due to other requirements during

this time frame, that date was not met. We are anticipating something to look at and evaluate in December. As was presented/requested at the last meeting, AFS-450 is in search of the proper FMS logic to utilize in our modeling for appropriate simulations. Any support the ACF attendees can provide Dr. Sherri Avery in this matter would be appreciated” - also see related issues 03-01-247 and 06-02-267.

Status: AFS-450 to continue to work the issue with input from AFS-470 and provide updates.
Item Open (AFS-450/470).

r. 08-01-279: Expected Airplane Performance on Instrument Departure Procedures

Bruce McGray, AFS-410, briefed that the recommended AIM changes presented by Rich Boll, NBAA, at the last meeting were coordinated through AFS-400 and with slight modifications will be forwarded for publication in the August 27, 2009 AIM change. The revised text with changes shown in red is shown below:

Add the new paragraph as 5-2-8(b)2 and re-number current paragraphs accordingly:

ODPs and SIDs assume normal aircraft performance, and that all engines are operating. Development of contingency procedures, required to cover the case of an engine failure or other emergency in flight that may occur after liftoff, is the responsibility of the operator. (More detailed information on this subject is available in Advisory Circular AC 120-91, Airport Obstacle Analysis, and in the “Departure Procedures” section of chapter 2 in the Instrument Procedures Handbook, FAA-H-8261-1.)”

Amend paragraph 5-2-8(e)4 to read as follows:

Consider the effect of degraded climb performance and the actions to take in the event of an engine loss during the departure. *Pilots should notify ATC as soon as possible of reduced climb capability in that circumstance.*

NOTE- Guidance concerning contingency procedures that address an engine failure on takeoff after V1 speed on a large or turbine-powered transport category airplane may be found in AC 120-91, Airport Obstacle Analysis.

Rich agreed the revised language satisfied the NBAA concern.

Status: AFS-410 will track the requested AIM change for August 27, 2009 publication.
Item Open – Pending Publication (AFS-410).

s. 08-01-281: Cold Temperature Annotations on RNAV (GPS) Approaches

The ACF believes the current guidance in Order 8260.19 satisfies Boeing’s concerns and that issue can be closed. Mark Ingram will ensure the ACF’s position is relayed to Bill Royce.

Status: **Item CLOSED.**

4. New Business: There were no new issues presented at this meeting.

5. Next Meeting: ACF Meeting 09-01 is scheduled for **April 28-30, 2009** with NGA as host at the USGS facility in Herndon, VA. Meeting 09-02 is tentatively scheduled for **October 27-29, 2009** with ALPA as host at their Herndon facility.

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 (with an information copy to Bill Hammett), a written status update on open issues not later than April 10, 2009 - a reminder notice will be provided.*

- 6. Attachments (2):**
1. OPR/Action Listing.
 2. Attendance Listing.

**AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP
OPEN AGENDA ITEMS FROM MEETING 08-02**

<u>OPR</u>	<u>AGENDA ITEM (ISSUE)</u>	<u>REQUIRED ACTION</u>
AFS-420	92-02-105 (Circling Areas)	Provide update on draft criteria coordination.
AFS-470	92-02-110 (Cold Weather Altimetry)	Continue to track issue and develop consolidated position for PARC.
AFS-470	96-01-166 (Descent Point on Flyby Waypoints. Originally "on course")	Develop AIM material and provide status report on draft AC 90-RNP.
AFS-470	98-01-197 (Air Carrier Compliance With Climb Gradients)	AFS-470: Monitor PARC actions report progress.
AJR-32	02-01-238 (Departure Minimums and DP NOTAMs)	Revise Order 7930.2 to include SID/STAR NOTAMs with all other instrument flight procedure (IFP) NOTAMs. Report progress on NOTAM system upgrade.
AJT-22	02-01-241 (Non-radar Level and Climbing Holding Patterns)	Ensure controller awareness and education on what holding patterns are authorized for CIH.
AFS-450	03-01-247 (Holding Pattern Selection Criteria)	Continue research/evaluation on the issue and report.
ACF-IPG Chair	04-01-250 (RNAV and Climb Gradient Missed Approach procedures)	Follow up ACF-IPG concerns with AFS-600 and AFS-800.
AFS-470 AFS-420	04-02-258 (VNAV IAPs using DA(H) and OpSpec C073)	<u>AFS-470</u> : Evaluate US-IFPP memorandum and develop operational guidance. <u>AFS-420</u> : Forward FMS vs. GPS question to US-IFPP.
AFS-420	05-01-259 (Visual Climb Over Airport)	Continue working the issue through the USIFPP and report.
AFS-450	06-02-267 (Option to Use Standard Timing for RNAV Holding Patterns)	Assess use of timing in lieu of ATD for RNAV in holding pattern study.
AJW-321	06-02-268 (Lack of Graphic Depiction of Complex ODPs)	<u>AJW-321</u> : Continue efforts to correct DP discrepancies and chart complex ODPs.
AJT-22 AJE-31 AFS-420	07-01-269 (Diverse Vector Areas)	<u>AJT-22 and AJE-31</u> : Jointly develop controller guidance for vectoring departures. <u>AFS-420</u> : Develop DVA documentation policy for Order 8260.46 and track charting specifications

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AFS-420	07-01-270 (Course Change Limitation Notes on IAPs)	Monitor issue through the USIFPP.
AFS-420 NBAA	07-01-272 (Use of ODP in Lieu of Published Missed Approach)	<u>AFS-420</u> : Jointly, with ALPA and NBAA develop AIM language to resolve the issue and forward for publication in August 2009 AIM change. <u>NBAA</u> : Provide recommended changes to associated ATC rules and pilot guidance.
AFS-420	07-01-274 (AIM Information Regarding ODP Minimum Crossing Altitudes). Also includes Issue 08-01-280 (Minimum Obstruction Clearance Altitudes Depicted on SIDs)	Revise policy and documentation requirements in Order 8260.46D. Ensure the ad-hoc working group addresses pilot and ATC training issues and guidance.
AFS-450 AFS-470	07-02-278 (Advanced RNAV (FMS/GPS) Holding Patterns Defined by Leg Length)	<u>AFS-450</u> : Address the issue in conjunction with the holding pattern study. <u>AFS-470</u> : Provide input on the issue for the study.
AFS-410	08-01-279 (Expected Airplane Performance on DPs)	Coordinate the NBAA recommended AIM changes for publication in August 2009

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