Government/Industry Aeronautical Charting Forum 07-01
May 2-3, 2007

MINUTES

I. Opening Remarks

The Aeronautical Charting Forum (ACF) was held at the U.S Geological Survey (USGS) office in Reston, Virginia. Mr. John Moore, NACO, ACF Co-Chair and Chair of the Aeronautical Charting Forum, Charting Group, opened the Forum on May 2, 2007. Mr. Moore welcomed the ACF participants to the USGS office and acknowledged ACF Co-Chair Mr. Tom Schneider, AFS-420. Mr. Schneider chaired the ACF Instrument Procedures Group meeting held on May 1, 2007. Minutes of that meeting will be distributed separately.

II. Review of Minutes from Last Meeting

The minutes from the 06-02 ACF meeting were accepted as submitted with no changes or corrections.

III. Agenda Approval

The agenda for the 07-01 meeting was approved as submitted.

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

ATA Charting Committees
Mr. Mitch Scott, Continental Airlines and Chair of the ATA Chart and Data Display Working Group, reported that the group continues to meet on an ad-hoc basis and in the months to come the group will start to migrate toward EFB issues.
ACTION: Mr. Mitch Scott will report on the ATA Chart and Data Display Working Group at the next forum.

SAE G-10 Electronic Symbology Committee Report
Mr. Ted Thompson, Jeppesen, updated the ACF on the Society of Automotive Engineers (SAE) G-10 Committee. Mr. Thompson provided a brief overview of the committee's ongoing efforts, sponsored by the FAA, to develop a basic and intuitive set of symbols for use in electronic aeronautical displays. The group has been working with VOLPE NTSC, which has been providing human factors support. Representatives from Honeywell, Lido, Boeing, Jeppesen, NACO, FAA Cert, NorthWest Airlines, ICAO, Avidine, and ALPA attended the last meeting.

The group has worked out some of the basic recommendations on NAVAIDS, airspace fixes, and airports. VOLPE is in the process of collecting different symbology for airspace and boundary symbols from different manufacturers and working with pilots to see which symbols are most intuitive rather than completely

reinventing new symbols. Mr. Ted Thompson added that the core issue the FAA is trying to address is to have standardized symbols that have some basic intuitive and cognitive value.
ACTION: Mr. Ted Thompson will report on the SAE G-10 Committee at the next forum.

RNAV Airway Program Sub-group
Mr. Tom Schneider, AFS-420, reported that work is essentially complete. All RNAV low altitude routes, including the former RITTRs, will now be referred to as Tango Routes. The original policy memorandum has recently been rescinded and replaced with a new flight standards policy memorandum dated April 4, 2007 removing the RITTR terminology and providing the policy to AVN, etc. to develop Tango Routes. The policy memorandum is available on the AFS-420 website. This information is being incorporated into Order 8260.19D.

John Moore asked if Mr. Schneider wanted to comment on any of the policy changes that were made to the old RITTR Routes, which are now Tango Routes. Mr. Schneider replied that under the new T-Routes policy, a route does not have to terminate at a NAVAID, they may terminate at a terminal fix or IAF. They can overlap existing Victor airways.

Frank Flood, Air Canada asked a question regarding the T-routes as they apply to AC-90-100A. Mike Webb responded that, in the PARC there was an effort to revise the 90-100 into the 90-100A. The issue of the default RNP values in different FMS's came up and it was agreed that use of the default RNP value was okay. Even though they are RNP-2 design they are RNAV-2, so there are no containment requirements on these routes like you have on an RNP-route. There should be some language in the 90-100-A that says the default values are okay; therefore no adjustment is necessary to the FMS for an RNAV route.

ACTION: Mr. Thomas Schneider, AFS-420, will report on the RNAV Airway Program Sub-group at the next forum.

ICAO/OCP Committee Report
Mr. Eric Secretan, NACO, briefed on the issues being discussed in the ICAO Instrument Flight Procedures Panel (IFPP) and the Charting Working Group. The IFPP was previously known as the Obstacle Clearance Panel (OCP). The Charting Working Group is currently looking at how charting guidance material and the ICAO Annex 4 have to be updated to reflect/respond to IFPP decisions. One of the highest priorities right now is Performance Based Navigation. The IFPP is also looking at possibly providing two different leg lengths on RNAV holding, leg distance for automated systems and leg-distance for non-automated systems. There are some people who feel that you need both distances or timing on a holding pattern fix and that it could be a human factors issue on when you begin your inbound turn.

Mr. Tom Schneider, AFS-420, commented that AFS-440 is currently undergoing an extensive study for holding patterns and holding pattern analysis in the Instrument Procedures Group. Once their study, which will include looking at timing as opposed to using the outbound distance leg, is complete on July 2, 2007, they may consider bringing it to the IFPP. .

The IFPP is about ready to approve the use of State/Country issued alphanumeric waypoints for the terminal areas. These waypoints would not have any ATC or global function. Mr. Ted Thompson, Jeppesen, commented that the Australia Transportation Safety Board (ATSB) distributed a lengthy report concerning the use of a 3-letter airport identifier plus two trailing numeric-characters as a waypoint naming convention. . The report was critical in that pilots could lose situational awareness because they could confuse these fixes by using the two trailing characters to key off of. The ATSB will be taking their report to Air Services so that they may revisit the naming convention for waypoints.

Mr. Secretan also noted that the IFPP will most likely adopt a position that all step-down fixes be named. This is not an ICAO requirement right now but will probably be adopted within a year. He added that perhaps the thing that is driving the naming of each and every fix are the avionics systems.

There is also some discussion within the IFPP as well as the PARC about creating some RNAV RNP procedures that are neither SAAAR nor AR. These would be a simplified version of the current RNP SAAAR type of procedure that would be open to anyone meeting the general requirements for flying those procedures.

There has been a IFPP proposal to add True course and headings to RNAV procedures in addition to Magnetic. He believes this to be the first step in order to get into a True course environment in RNAV. Mr. Frank Flood, Air Canada, was concerned that different systems have different embedded ways of getting the MAGVAR. Mr. Brad Rush, AVN-100, commented that the FMS is going to read a magnetic course based on either a set table in the FMS or something else and it won’t match what they used for developing the procedure. Mr. Secretan replied that IFPP discussion has been consistent in saying that if you want to add True values you must also have Magnetic. The official reason for the proposal was as a way to not require immediate updating of charts because of a small MAGVAR change. A second unofficial or unstated reason was to try to drive toward a True course environment.

The Aeronautical Charting Forum issue of charting NAVAID, waypoint, fix hierarchy and charting of a symbol to indicate the base function of any fix is still making its way through ICAO. It has been looked at in various Panels, and so far everybody is pretty much in agreement. The proposal should be included in a ICAO State Letter in the near future.

There was a proposal to limit the amount that states could sub-divide their Minimum Sector Altitudes (MSA) mainly due to the fact that if they are divided too small you can't effectively depict them. In ICAO, the MSA is used the same as a TAA on an RNAV procedure in the U.S.

ICAO/IFPP looks like it will agree to the MEA-G (GNSS MEA) for a new type of MEA like we have here in the states.

The IFPP has agreed that all RNAV holds will use a Flyby waypoint symbol, the same as we agreed to here at the Charting Forum. If that waypoint has a flyover function for a different part of the procedure, then it will have a circle around it to indicate that separate flyover function.

ACTION: Mr. Eric Secretan will report on ICAO/IFPP activities at the next forum.

Temporary NAVAID Outages
Ms. Valarie Watson, NFDC, briefed on issues associated with temporary NAVAID outages. When a NAVAID goes out of service, a NOTAM-D is issued. If the outage is expected to last for an extended period of time, that information is forwarded to NFDC and a NAVAID remark is put into NASR. It comes out in the National Flight Data Digest (NFDD), and that prompts publication of that outage in the Airport/Facility Directory (A/FD). NOTAM Order 7930.2 says that once that information is published in the A/FD, then the NOTAM-D will be cancelled. The NOTAM-D is cancelled even though the NAVAID has not been returned to service or decommissioned. Due to this action, all kinds of problems have occurred.

Everyone agreed that NAVAID outages should remain in the NOTAM system until the NAVAID is either returned to service or decommissioned. This is going to require a modification to the 7930.2.

Ms. Watson suggested that when NFDC gets notification of a NAVAID out of service, they could just not publish it. This might not take care of the two hundred or so that currently exist but it would not exacerbate the current problem. Ms. Watson will provide Mr. Rush a list of NAVAIDs which are currently out of service. NFDC will work toward not publishing any additional outages in the A/FD.

ACTION: Val Watson will coordinate the above suggestion with Dick Powell.
ACTION: Val Watson to send current list of NAVAID out-of-service and return-to-service to Brad Rush.

FMS Lateral Path Differences
Mr. Al Herndon, MITRE, provided a briefing on problems with FMS systems flying the same lateral path differently. (see ACF FMS Differences Brief & OP Survey) MITRE has been asked to do several studies on the differences on Flight Management Computers (FMCs). Air Traffic Controllers have noted that RNAV aircraft were not all following the exact same path.

The paths were different because the FMCs in different airplanes don't perform in the exact same way. One recommendation to help resolve this was to start using RF for terminal and en route airspace. There are some ARINC 424 coding issues for RF at altitude, but Europeans are already talking about fixed radius turns, and they have already been identified in RTCA DO236 and DO283. ARINC 424 Version 16 addresses RF legs, but currently only one manufacturer is able to do that in their boxes. The PARC's FMS Standards Action Team, which includes members from the FAA, the airlines, and avionics manufactures, is working this issue and trying to coordinate this capability among providers.

MITRE also studied the vertical path generated by FMCs, using a conventional departure out of San Diego (Paradise Four). All the major manufacturers of FMCs, including Smiths, Honeywell, Rockwell Collins, etc. provided test FMCs. Panel-mounted GPS units were not tested. Some FMCs cannot do in-between altitudes, so this may have to be considered in procedure design. Since this data had just been collected, its evaluation was not ready for briefing.

Airport Source Data Committee

Mr. Dave Goehler, Jeppesen, briefed this issue. (see ASD – ACF 050207) This is an ad-hoc committee started more than 3 ½ years ago with input from NACO, Jeppesen and the FAA Airports Office to address the issue of source data coming in for airports. Airport charts are difficult in some ways because updates are infrequent and there seems to be a process issue. The problem appears to be a disconnect between airport operators & chart producers. There are many offices which have to get involved with a change to an airport before that change gets to the NFDC so that they can be published for everyone to use. The current process would appear to be quite inefficient and not always followed. The point was made that airports need clear guidance to submit changes directly to the NFDC to be data based and made available to all NAS users.

Another item was the development of a new process to meet the growing requirement for digital, near real time, graphical changes to support Electronic Flight Bags (EFBs) and cockpit displays.

Mr. Henry Felices, AAS-330, made a comment that the inside cover of the A/FD mentions how to report changes to the A/FD. Perhaps there should be additional guidance published in the directory legend somewhere for airport operators to describe what their role is and who to report to.

Mr. Felices also said that the reason airport sketches were pulled from the airport safety data program was that it became a budget issue of collecting data from the states for their services.

Mr. Ted Thompson, Jeppesen, remarked that the one system that worked, even though it wasn't ideal, had been replaced with no system whatsoever. They were receiving airport information from aircrews. They have been asking the airport

authorities to contact the National Flight Data Center, but many of the airport authorities had no idea who NFDC was or how to contact them. Additional discussion ensued regarding poor airport source collection processes and the lack of timely information and lack of accountability.

Mr. Brad Rush, NFPO, remarked that it is not just an air carrier problem any more. Air carriers are moving toward having an even bigger problem, as they are moving toward an electronic flight bag (EFB). It is getting to the point where you won't have anything but electronic files. When an airport operator puts an extension on the end of a runway and doesn't tell anybody about it until the last second, NFPOs only option is to N/A the procedure because the operator has just changed the geometry of that procedure. This is going to be happening daily unless these operators are educated as to where they should be submitting this information.

Mr. Felices suggested that Terry Laydon create a group of cartographers to maintain airport diagrams and airport sketches. Ms. Valerie Watson, NFDC, answered that NACO has people to do this already but that the problem is the source. The airport operators are not providing the source through FAA Headquarters, then to George Sempeles, so that he can disseminate that information to Jeppesen and NACO.

Mr. Moore asked Mr. Dave Bennett, FAA Airport Office, if a requirement currently exists for airport operators to submit changes to their respective airports. Mr. Bennett responded that there is guidance in the form of Advisory Circulars (ACs) for these operators that could be expanded on. Mr. Thompson asked since there are 500 or so federally funded airports, if there could be some rulemaking to require these airports, if they are served by an instrument procedure, that they would be required to provide runway, taxiway, etc. information.

A question was asked if the FAA is linked-in with the states aviation agencies that have programs that mirror the FAA's. Since many of airport expansions are accomplished with state dollars. Mr. Schneider responded that we need a regulatory process like our OE notification process today when a tower or building is constructed. This same methodology should be followed when an aircraft movement area is modified.

Mr. Dave Goehler (Jeppesen) and Mr. Dave Bennett (FAA Airports) will collaborate and continue to work the issue within the committee.

Mr. Goehler reminded the group that the next meeting would be sometime in June and invited anyone who was interested in participating to let him know. (Dave.Goehler@Jeppesen.com)

ACTION: Mr. Dave Goehler (Jeppesen) will provide an update at the next ACF.

STAAV Three RNAV SID Implementation
Brian Townsend ALPA, provided a briefing on the Las Vegas STAAV Three RNAV SID. (see RNAV Charting Issues-ACF-2007-05-03) The problem is that speed restriction notes (e.g. Do not exceed 220 kts) are getting missed. It was discovered that Boeing-Honeywell boxes are exceeding the speed restrictions when using automation. These systems automatically delete the speed restriction and accelerate upon reaching a coded "at or above" altitude. This is a problem when the aircraft reaches altitude prior to a waypoint where the speed restriction applies. The database should be compared to the chart, but this is a problem when the chart does not indicate a speed restriction, but it is coded into the box. Mr. Townsend gave examples of two coded departures, which have speed restrictions "buried" in the notes on the charts. Additional discussion ensued regarding speed restrictions and "patch altitudes".

Mr. Townsend also brought up the issue of chart clutter with the addition of altitude restrictions (in order to address the issue of the Honeywell boxes). Mr. Townsend mentioned that a possible positive by-product of providing these top altitudes is that the pilot has a quick reference for his top altitude.

Mr. Ted Thompson Jeppesen, suggested consideration of the ICAO "window or block altitude" concept (to be provided on source and shown on charts). Example: "Cross BATIS at or above 6000', below 19,000', at or below 220 kts".

Mr. Tom Schneider, AFS-420, asked what the manufacturer (Boeing-Honeywell) is doing about this and if this was a hardware or software issue for Honeywell. Mr. Al Herndon, MITRE/CAASD, answered that the older Honeywell boxes can't be fixed but the newer ones can. The issue is one of cost, to update all of these older systems. Mr. Brad Rush, NFPO, asked why can't we make this one FMS manufacturer comply rather than doctoring-up the charts.

Mr. Frank Flood, Air Canada, said pilots should be required to meet all of the requirements of RNAV 1 Procedures. Mr. Townsend responded by saying that VNAV is not required to fly these procedures. If a pilot chooses to fly all of these speed and altitude restrictions manually, he is still in compliance with AC9100-A. Mr. Richard Boll, NBAA, added that perhaps a column for "speed" restrictions in the SID Routing Box at the bottom of the Jepp chart could be added to these as well.

Mr. Tom Schneider proposed that a work group be started to address the issue.

RTCA Special Committee 203 Unmanned Aircraft System
Mr. John Walker, JSWalkerGroup, briefed on the work of RTCA Special Committee 203 (SC-203). (see Aerochart-5-3-7) At the request of the Aircraft Owners and Pilots Association and the Federal Aviation Administration, the committee is developing Minimum Aviation System Performance Standards (MASPS) that will assure the safe operation of UAVs within the National Airspace System.

The U.S. is the only country in the world that currently allows Unmanned Aircraft Vehicles (UAVs) to operate in its civil airspace. Most UAVs are operated by the Department of Homeland Security (DHS) within special use airspace or TFRs, but eventually UAVs will move outside SUAs. Some local police authorities also operate UAVs. Commercial operation of UAVs is increasing (GIS applications; scientific, environmental, surveying, photogrammetry, etc.).

The FAA's position is that UAV operations should not harm or impede civilian operations, and should operate within the scope of existing FARs and regulations. RTCA SC 203 first deliverable is a document titled "Guidance for the Operation of Unmanned Aircraft Vehicles".

V. Outstanding Issues

04-01-167 Charting of Altitude Constraints on SIDs and STARs
Mr. John Moore, NACO, provided a brief history of the issue. Requirement Document (RD) 616, signed by the IACC in May 2006, established the requirement for using over line and underline bars to depict maximum/minimum altitudes and airspeeds on SIDs, STARs and Instrument Approach Procedure (IAP) Charts. NACO could not determine an implementation date due to unresolved issues with verbiage on the source documentation and the 7100.9 Star Order. The 8260 Order is specific in regard to the language used for describing altitudes, constraints and criteria; however, the 7100.9 Star Order does not provide clear guidance for mandatory and recommended altitudes on STARs and Charted Visual Flight Procedures. Mr. Paul Ewing, ATO-R commented that 'expect' altitudes have not been eliminated from the STAR Order. Val Watson, NFDC, asked if there would ever be a recommended altitude. Mr. Ewing responded that there is no reference to recommended altitude in the STAR Order, only expect altitudes. Brad Rush concurred and added that all altitudes are Minimum unless otherwise stated. All altitudes are at or above. **OPEN.**

ACTION: IACC to write an EC to remove the word "recommended" on the SID/STAR legend.

04-01-168 Identifiers for Heliports and Helipads
Mr. John Moore, NACO, provided a brief recap of the issue. The FAA is working to create location identifiers for heliports and helipads in order to support helicopter operations. The initiative is intended to provide the required NOTAM support to private use heliports and helipads. Mr. Gary Prock, ATO-R, reported at the last meeting that the FS21 System should be in service this July but if the new system didn't support these identifiers, a system change would need to be implemented at an additional cost to the FAA. At this meeting, Mr. Prock reported that the FS21 System is up and running at a few locations but that the FS21 equation got taken out of the issue and another solution is being developed

Mike Webb reported that this wasn't just a heliports issue and that it was also a special locations issue. Special locations have instrument approaches associated with them are not in the system and therefore not receiving NOTAMs. Of 700 Special Instrument Approaches throughout the country, there were approximately 230 locations that were not being covered by NOTAMs, but thanks to Gary Prock's and Val Watson's assistance the number has now been reduced to 25.

For Heliport IDs, information is being submitted to NFDC where a reserved ID is being assigned while the paperwork is going through the airport process. Brad Rush asked where the new process was documented. Tom Schneider remarked that the processing of these IDs didn't belong in the 8260.19, but that the process should reside in the NFDC Order. Ms. Valerie Watson agreed.

Henry Felices AAS-330, said that there is already a process in place for the processing and establishing of a new landing area, whether it is a private heliport, public airport, etc. The proponent is supposed to file FAA Form 7480-1, Notice of Landing Area Proposal, essentially requesting airspace from the FAA. When the heliport proponent doesn't file the proper documentation through the Airports Division, they don't get airspace registered. NFDC has a well documented process for assigning a LOC ID. The problem is that it can take as much as 3 to 4 years to get a private heliport LOC ID.

Mike Webb remarked that this is not just an Airports Division problem. There are many offices and funding issues to consider.
OPEN.

ACTION: Mike Webb to report on the documentation issue at the next ACF. He will work together with Val Watson, NFDC and the Mr. Henry Felices.

04-02-170 Idents and Coordinates for Parachute Jump Areas
Mr. George Sempeles, Cartographic Standards, briefed that there are two parts to this issue, first how data is presented in the NASR database verses the requirement of GNSS aircraft displays expressed in degrees, minutes and seconds, and the second part of this issue is where do we get new data or updates to these areas?

The original request was to have the NASR database modified to display the data in geographic positions (GPs). The October-November release of the NASR database has been updated to include data elements of PAJA information to support aircraft electronic display and navigational systems. All of the bearing and distances have been calculated into GPs. Each PJA has a manufactured identifier beginning with a "P" followed by the two-letter state code followed by a three digit number (e.g. PMD001, PVA001, etc.) USPA had originally agreed to provide this data. Just during the past week NFDC finally received the list of USPA jump area data. This data is listed by state, then by the club, the name of the airport it is associated with and listed by the distance from the central business district of the associated city. This data is not in the format that NFDC currently has. Mr. Sempeles is going to have to

compare what USPA has provided with what currently exists in NASR. The problem is that NFDC is not comfortable publishing private organization's data. NFDC will have to inform those air traffic facilities that have jurisdiction over the airspace to check and report the data to NFDC. Flight Services do not have jurisdiction over related airspace.
Mr. Eric Secretan, NACO, asked if USPA was going to act as the sponsor for the information and supply a yearly data dump to possibly keep the data more current than in the past. Mr. Sempeles stated that the data received was USPA's yearly review, but that some clubs and organizations are not associated with USPA. Once Mr. Sempeles finds the differences between the list and NASR, he will forward the information to the facilities that have jurisdiction over that airspace. Non-responses from these facilities mean nothing can be done. Because USPA data is not official information, changes and updates have to come from a Terminal or ARTCC facility to NFDC. **OPEN.**

ACTION: Mr. George Sempeles will provide an update at the next ACF.

05-01-173 ASR Symbol on Visual Charts
Mr. John Moore NACO, provided a recap of the issue from the last meeting.
Mr. Jim Grant, NACO, spoke with a representative from the NTSB who said that they consider the issue closed because the FAA satisfied the NTSB recommendation by placing the Ⓡ on the charts where Airport Surveillance Radar existed. At the last ACF, a comment was made that placing a boxed note on each chart informing pilots of flight following services should be common knowledge and therefore should not be necessary. The problem is if we remove the Ⓡ from the charts and don't put a boxed note, we will no longer be satisfying the recommendation of the NTSB. The NTSB has said that placing the boxed note in the margin will still satisfy the intent of the NTSB recommendation and the issue will be considered closed. The boxed note will say, "Flight Following Services are available on request and highly recommended in and around Class B, C and TRSA Areas."

Valerie Watson added that RD-640 on this issue had been signed by the IACC. **CLOSED.**

05-01-174 Top Altitude Note on Standard Instrument Departures (SIDs)
Mr. Brian Townsend, ALPA, is currently working with Jeppesen to put out a prototype chart to do validation testing in Vegas. Brian will coordinate with Don Porter, ATO-R RNP. **OPEN**.

ACTION: Mr. Brian Townsend will provide an update at the next ACF.

05-02-177 Identifiers for Copter Point-in-Space Procedures
Mr. Mike Webb, AFS-420 reported that they have not come up with any standardized way on naming heliports. This issue is still being worked. **OPEN.**

ACTION: Mr. Mike Webb will provide an update at the next ACF.

05-02-179 Attention All-users Page for Simultaneous, Parallel RNAV Departures and PRM Approaches
Mr. Mark Steinbicker, AFS-410, (via email to John Moore) stated that he was going to address the AAUP for Simultaneous Departures but he didn't have enough information to submit –the details such as who provides or maintains the information. Mr. Moore asked Mr. Ernie Skiver AFS-410, to touch base with Mark Steinbicker AFS-410 to see if any updates were available.

Mr. Tom Schneider, AFS-420, commented that the only AAUP page is for PRM procedures and that we are moving toward a single AAUP for those PRM operations to reduce the number of procedures having multiple AAUP pages.

Ms. Valerie Watson, NFDC, stated that the Requirement Document has been signed but we are still coordinating on a generic description for each airport. We will need amendments to remove individual AAUPs and then a replacement page can be added from a NFDD item. The indexing issue has been implemented by NACO.

How would the information be disseminated for use by commercial charting entities? One option discussed was how the FAA would publish the information – in the Airport/Facility Directory (A/FD) or as a text page in the relevant TPP? ALPA and NBAA prefer to have the advisory notices published with the procedures. The underlying issue is who is responsible for the content, and how would the information be disseminated. **OPEN**.

ACTION: Mr. Steinbicker will provide an update at the next ACF.
ACTION: Mr. Frank Flood, Air Canada, and Ted Thompson, Jeppesen, to provide a published series to Mark Steinbicker.

06-01-181 Declared Distance Information on Airport Charts
Mr. John Moore, NACO, provided a brief history of the issue. From the last meeting, declared distances will not be shown on NACO airport charts, but instead will be provided in text form in the A/FD. The IACC was also working Requirement Document 649 to delete the publication of LDA and this was now in MPOC Staffing.

Mr. Ted Thompson, Jeppesen, reported that they are moving forward with putting the reported distances on the airport diagrams and that they will be working with NBAA, ALPA and the airlines to further develop the recommendation as it applies to the Jeppesen Airway Manual. Target date for the Working Group to meet at Jeppesen is June or July 2007. Mr. Richard Boll, NBAA, confirmed that he is in concurrence with the proposal. ALPA's opinion is that they just want the information readily available and will work with Jeppesen to make sure they are getting the information they need. Mr. Boll asked whether NACO was still planning on placing a

note near the Airport Diagram saying check the A/FD for declared distances. The issue is still under discussion within the MPOC and at NACO. **CLOSED.**

06-01-182 Alternate Missed Approach Holding Pattern
Mr. John Moore, NACO, provided a brief recap of the issue. Basically, how do you depict alternate missed approach holding instructions when established? Mr. Eric Secretan, NACO, provided additional background, saying that Alternate Missed Approach (AMA) Holding Pattern information should be provided on the chart, vice getting the information from a controller. The controller would still be required to provide the information to get the pilot to the holding fix but the holding information would be provided on the chart if that alternate missed approach were assigned by ATC. NACO was charting these AMA Holding Patterns the same way they were charting the primary ones. It was proposed that NACO depict these differently, perhaps as a shaded version. Mr. Moore showed some options and reiterated that the important part is that the "Alternate Missed Approach Fix" is labeled as such. Whether or not the AMA Holding Pattern is within the to-scale portion of the Plan view, it will have a box around it.

Pamela Coopwood, ATO-T stated that controllers are required to give instructions for alternate procedures if it is non-standard and didn't see the advantage of this. Ms. Coopwood reiterated that placing the alternate missed approach on the chart might lead to confusion between the pilot and controller.

Mr. Bill Hammett, AFS-420, responded that these alternate missed approach procedures are on the 8260 form. Originally initiated by ALPA, they wanted AMA instructions published. This proposal would be easier on the controller and the pilot.

Mr. John Timmerman, ATO, noted that in the 7110, in a radar environment the alternate missed approach instructions issued by a controller may be different than both primary and alternate published on the 8260. The word "Alternate" may mean something different from the formal alternate missed approach on 8260. Mr. Timmerman highly recommended that the 7110.65 be modified to reduce controller verbiage. Ms. Pamela Coopwood volunteered to take action on getting the 7110.65 reworded, but that alone wouldn't change the way that controllers operate in the field.

Discussions continued as to whether or not the AMA should be charted or not. Mr. Rich Bolls, NBAA stated that the AMA should be charted from pilot's perspective. Mr. John Moore replied that it is not a matter of whether to chart the AMA Holding Procedure. The ACF has decided that AMA needs to be charted. The question now is how will they be charted. Mr. Secretan commented that the primary missed approach might not always be in a box, as seen in the example. Mr. Lance Christian, NGA commented, are we adding value or causing confusion? Grayscale doesn't show-up on FMSs. A hashed box is preferred by the military. Mr. Peter Lehmann, AOPA, stated that the AMA hashed box option looked like Special Use Airspace. Mr. Moore said as long as DoD insists on putting a hashed-mark around the AMA, or if

they don't agree that a box around the AMA means it is off of the chart, we will have to continue to chart it the way we currently do now. This however is confusing to pilots, since there is no label on it. Mr. Ted Thompson, Jeppesen, stated that they put a box and a label and haven't had any customer confusion.

Mr. Moore said to label it alternate missed approach. DoD will take the RD back to the Services.

Leave Agenda item open until new RD is written. **OPEN.**

ACTION: New RD to be written. Report at the next ACF.

06-01-184 Missed Approach Leg Length and Direction
Mr. John Moore NACO, reported that RD-635 was submitted and signed by IACC. Mr. Eric Secretan NACO, stated that it would be implemented shortly.
CLOSED.

06-01-185 RNAV-1 and RNAV-2 Descriptors for DPs, STARs and Routes
Implementation of RNAV 1 and 2 designations (replacing Type A and B) went into effect 15 March, 2007 according to AC 90-100a. All affected terminal procedures were concurrently modified and reissued by both NACO and Jeppesen. Brad Rush provided all the Type 1 and Type 2 notes. He mentioned hybrid STARs that don't have the RNAV notes because they technically weren't RNAV procedures. Mr. Richard Boll NBAA, asked if there were plans to convert the FMS SIDs to RNAV AC90-100 compliance? Mr. Brad Rush responded yes.

RD 644 was signed and implemented.
CLOSED*.*

06-01-186 STAR Procedures and their Terminations
Mr. John Moore, NACO, provided a brief history of the issue. Published headings should follow a terminus fix and if they're on the form NACO will chart them. STARs should contain standard formatted lost communication procedure information boxes. NACO and Jeppesen both have these but they are slightly different. There is no intent to standardize the two. A letter written to ATPAC Chair Wilson Riggan from the Co-Chair of the ACF, John Moore, stated that when headings are provided on procedure forms, they will be charted. Regarding a standard format for lost communication procedures, "both government and private charts provide lost comm procedure information in somewhat similar and yet unique manners. To our collective knowledge there have been no user concerns with either the government or the private chart formats, so the determination was made to keep them separate formats." The letter closed out the issue as far as the Charting Forum was

concerned. Since this concern was submitted by the ATPAC and we have answered their concerns, Mr. Moore recommended closing the issue.

Mr. Brian Townsend's ALPA, reiterated that his intent was to encourage facilities, when possible, to provide specific guidelines as to what they want an aircraft to do in the event of lost communications. Mr. Moore noted that a new FAA Order 7100.9E covering STARs is in work and is expected to address the situation covering STAR terminations. Mr. Kevin Comstock, ALPA, commented that perhaps this issue is an arrival procedure design issue and it should be transferred over to the Instrument Procedures Group rather than remain a charting issue. ALPA should submit responses to the new STAR order, or submit a separate RD to the Instrument Procedures Group of the ACF.

The consensus was that this issue should be closed and another RD can be submitted by ALPA, as needed, to the IPG.
CLOSED.

06-02-187 Obstructions on World Aeronautical Charts
Mr. John Moore, NACO, provided the following recap of the issue. The World Aeronautical Charts (WAC), because of their smaller scale, do not show as much detailed information as appears on the Sectional and Terminal Area Chart series. Because some information is not shown, WACs are not recommended for use by pilots of low speed, low altitude aircraft. Currently, obstructions greater than 200 feet AGL in height (300 feet AGL or more in built up areas) are charted on the WAC if the location is critical and space permits. Charting these low level obstructions provides limited value to the pilot during cross country flight and greatly adds to chart clutter. With the advancements in onboard databases the aviation community is requesting that additional information be added to the WAC to support these database systems. However, congestion on the World Aeronautical Chart will need to be decreased prior to adding new information. The recommendation is to increase the criteria for charting low-level obstructions to 500' AGL on the World Aeronautical Charts. The Sectionals and Terminal Area Charts will continue to chart obstacles 201 feet AGL and above.

Copies of prototype charts were made available for review at the last ACF. Chart users were polled. AOPA had no objections. At NACO seminars, 1276 pilots were polled; 1270 were in favor, 6 were against.

George Sempeles, NFDC, mentioned Part 77 and from a legal aspect how all obstacles 200 feet and higher should be reported to the Administrator. Also ICAO Annex 4 recommends charting obstructions when they are 100 meter (300 ft) or more. Mr. Moore responded that the primary intended purpose of a chart should be considered. WACs, Sectional and TACs have different primary intended purposes. Specifications are modified based on user requirements. Removing obstacles less than 500' from the WACs is a potential solution to chart clutter because NACO still

produces Sectional charts that depict obstacles greater than 200'. Mr. Moore continued that international requirements are recommendations.

Mr. John Timmerman, ATO System Ops, suggested that following ICAO is becoming more of a cultural change. Changes to the NAS require a Formalized Safety Analysis. Mr. Moore responded that the Safety Management System (SMS) states that when it comes to charting, the IACC Specs will be followed. Mr. Eric Secretan, NACO, added that the IACC process is outside of the sole control of the FAA therefore it is outside of the SMS process.

The ACF consensus was that obstacles less than 500' on WAC charts is approved and passed on to the IACC. **OPEN.**

ACTION: Mr. Eric Secretan will provide an update at the next forum.

06-02-188 Non-Standard Traffic Patterns on TPP Airport Sketch
Mr. John Moore, NACO, recapped the issue and provided the following briefing. A pilot using U.S. Government charts can and should derive airport traffic pattern information from the Airport/Facility Directory. However, when IFR en route (especially single-pilot and operating in IFR weather conditions) it may be difficult to get the A/FD out to check the airport details. A pilot made a recommendation to add some type of symbol or note shown in the airport sketch on the instrument approach chart to alert the pilot of right traffic pattern situations. The pilot believed this inclusion might be helpful to pilots and improve safety.

Mr. Eric Secretan, NACO, presented the issue to the forum because it was submitted from a user. An action was taken by NACO to see what this issue would entail. This effort will affect about 1400 charts/sketches, 2100 personnel hours and $80,000 in cost. Mr. Secretan added that this project would not be able to be completed in a rapid manner. It would need to be implemented over time. Mr. Hal Becker, AOPA, commented that there could be confusion from a pilot's perspective if this is implement over time.

Ms. Janet Myers, Manager IAP Sub-Team, commented that since there were several jobs in the works at present, she would need to know what projects were highest in priority if a new RD were to implemented. Mr. Secretan asked the group how big of a priority this issue was.

Mr. Secretan commented that we currently put RP (RP = right pattern) information on Visual Charts and some pilots were confused when they saw an RP*. They assume it means something it doesn't. The same confusion would result if the RP* was included on an airport sketch on an IAP. It may be a safety issue if pilots start to rely on it rather than consult the A/FD or Supplement.

Mr. Lance Christian, NGA, commented that they don't really care since their pilots are required to consult the A/FD or Supplements anyway.

There was continued discussion that conversion of the charts over time might result in confusion. The question posed to the ACF is would the response possibly make the situation better or worse? **OPEN.**

ACTION: AOPA will review the recommendation given the latest information from NACO and consider the recommendation based on pros and cons.

06-02-190 Use of the Word Transition in the SID Procedure Text
Mr. Mitch Scott, Continental Airlines, pulled the LaGuardia transition/climb issue from the ACF and recommended closing the issue. **CLOSED.**

VI. New Charting Topics

07-01-191 Excessive Verbiage on NACO Airport Diagrams
Mr. Jonathan Greenway, AOPA Air Safety Foundation, was unable to attend. Mr. John Moore, NACO explained the issue briefly. AOPA is concerned about excessive verbiage (in the form of notes) that cause clutter on the Airport Diagrams. One note that should be considered for deletion is: 'Caution: Be alert to runway crossing clearances. Read-back of all runway holding instructions is required.'

Mr. Hal Becker, AOPA, said the note is the result of an NTSB Recommendation. This is a compromise between charting and rulemaking. Ms. Pamela Coopwood, Air Traffic, wants to keep the note in place. The Air Traffic perspective is to support runway incursions safety issues. Mr. John Timmerman, ATO System Ops, asked about a regulatory requirement. Mr. Becker said that Air Traffic is required by their handbook to have the read-back, not the pilot. He believed that by having the note on the chart pilots would be more aware that they have to do this

Mr. Eric Secretan, NACO, said the note was put there at the same time as a requirement was imposed upon pilots to read back all crossing clearances. Prior to that time, crossing clearances did not have to be read back. This came about due to some runway incursion incidents of the time. Mr. Secretan believed the intent was to put the note there for a limited period of time until the new requirement was well known. The group consensus was that pilots should now know this requirement. The DoD perspective was that the issue is well covered in the AIM and other comments could go in its place on the diagram. Jeppesen does not put this note on their charts. A comment was made that the NTSB Recommendation should be researched. **OPEN**

ACTION: Pamela Coopwood, Air Traffic, was asked to review and provide a position at the next ACF meeting.

07-01-192 Recording, Reporting and Dissemination of Usable Lengths for Takeoff and Landing
Mr. Richard Boll, NBAA provided the following briefing. Some airports report a runway distance at a displaced threshold runway. This is done by giving the total

runway length and then providing the amount the runway is displaced. In some instances a runway may have a declared distance, which can further shorten the amount of runway available for takeoff and landing. In some cases you'll have an inconsistency, reporting the amount of usable runway length available for takeoff and landing.

The process starts with the airport survey (FAA 5010 form). Survey information recorded on the 5010 form goes into the A/FD. Several examples of inconsistency were shown. In one block of information, a pilot is told what his Landing Distance Available is, and in another block he is given the displaced threshold to subtract that from the total runway length to determine the amount of landing distance available. ALPA's recommendation is that in addition to publishing the displaced threshold distance, anytime you have less than the full runway length useable, the declared distance format be used to report the available runway length for take-off and landing using the terms defined for these.

Ms. Valerie Watson, NFDC, remarked that what the FAA has done in the past is publish a Landing Distance LDG on the Airport Diagram, which was either the published LDA, or the runway distance minus the displaced threshold, whichever was least.

Mr. Moore asks for recommendations on how to move forward on this issue. The ACF may need to establish a sub-group to better address the issue. Do any FAA policies need to be revised in order to provide the source needed? Mr. Terry Page responded that airports report current conditions on the airport and any displaced threshold, although they don't fill out the table (i.e. compute Landing or Take-off distances) (see Charting Declared Distances May 2007). Many airports have no federal funding and little FAA involvement. Airport authorities are responsible for establishing their own declared distances. The correlation between landing beyond threshold distances and declared distances must be carefully evaluated, as they represent different values and must be labeled appropriately.

The FAA needs to establish a special FAA/Industry group to investigate the matter. Representatives of the Airports division would like to have a clear statement of work and the group's objective. **OPEN.**

ACTION: Mr. Richard Boll will chair a sub-committee to address this issue and will discuss at next ACF. Participants can be found on the Declared Distance Committee page following these minutes.

07-01-193 Charting Helicopter RNAV Routes

Mr. Paul Ewing, ATO-R, submitted this issue to the forum and Mr. John Moore, NACO, recapped the issue. In June 1979, an Advisory Circular was issued titled IFR Helicopter Operations in the Northeast corridor. This AC was used to provide routes for helicopters flying between Washington DC and Boston, MA. The AC was recently cancelled and the helicopter community is looking for a way to have area

navigation (RNAV) routes published that would provide them safe operations from fixed wing traffic and provide efficient flight operations for helicopters, fixed wing aircraft and air traffic control. It would be desirable to have these routes published as public routes and not as Special Operations.

Some recommendations:
a. Publish as Tango "T" routes with equipment or speed proposal/requirement.
b. Publish as T routes with annotations in the legend to restrict for helicopter use only.
c. Develop a separate designator for helicopter routes such as "Y" or "Z" which are ICAO approved designators.

Mr. Moore stated that as far as charting is concerned, we shouldn't have any problems with the specifications but wondered what impact would the addition of these routes have on our charts. Mr. Ted Thompson, Jeppesen, suggested that the entire list of helicopter issues be addressed as a group since they are interrelated. Issues were raised such as the need to address the subject from a greater perspective including the need for official heliport/helipad idents, integration with conventional fixed wing Victor routes, route designation, rulemaking, integration into conventional IFR Enroute charts or create new special helicopter-only chart series. Jeppesen's position is that helicopter routes must have unique identifiers (Y or Z) to differentiate them from conventional fixed wing routes (databases, electronic data-driven charts, flight planning, etc.).

Mr. Paul Ewing will ask HAI to write a letter to the ATO. Mr. Ewing will chair a subcommittee to address any HAI requirements. Certain questions will need to be addressed such as, will these be Regulatory or ATS Routes? Mr. Eric Secretan, NACO, stated that in today's budget environment, NACO could not take on the unfunded mandate of creating a new series of charts. Mr. Ewing responded by saying that they would prefer the routes be published on existing charts. Mr. Tom Schneider, AFS-420, asked what are the options given no new chart series, change scale of existing charts? Another question asked was, how many routes could be developed? Mr. John Timmerman remarked that if these were deemed regulatory routes, then rule making would be an issue.

Mr. John Moore acknowledged the need the more information on the table before any decisions can be made. Mr. John Timmerman stated that he believes the charting forum is the wrong place to start. HAI needs to write to ATO to request a new capability that doesn't exist today.
Mr. Paul Ewing will proceed by committee, including Mike Webb and Barb Cassidy. Mr. Ewing said that he could take the issue back and have HAI write a letter to ATO and work in parallel with the ACF. **OPEN**

ACTION: Paul Ewing will ask HAI to write a letter to ATO.
ACTION: Paul Ewing to chair a Helicopter RNAV route to meet as necessary. This sub-workgroup will work in parallel with the ACF to deal with the issues

07-01-194 Charting Tango "T" Routes in Congested Terminal Areas
Mr. John Moore, NACO, recapped the issue by stating as more Tango routes are proposed for publication around and through busy terminal areas, the charting of these routes on Low Altitude En Route Charts have created several areas of concern. The Los Angeles proposed Tango routes have presented several issues. First, two of the LAX Tango routes terminate at an IAF. Current guidance needs to be revised to allow Tango routes to terminate at a fix. Second, one of the proposed LAX Tango routes overlaps Victor airways. Alaska Tango routes also overlapped Victor airways but charting and Tango routes guidance need to be reviewed because of issues created. Finally, the Tango routes are in a congested area and chart readability may be an issue. Both ATC and the LAX users agree that these proposed Tango routes would enhance operations. The ACF should look at providing guidance and discuss charting options to get these and future Tango routes published on Low Altitude En Route charts.

It was recommended that AFS provide interim guidance to AVN for publishing Tango routes that terminate at a fix and overlap existing Victor airways. FAA Orders 8260.19D and 7400.2 should replace the interim guidance when published. Mr. Tom Schneider, AFS-420, remarked that the Enroute Policy Memorandum was signed April 4, 2007. Once the AJR0 and the AJE0 are resolved the 8260.19D will be published. The policy memorandums will go away and that will be finished.

The Charting Forum should have an open discussion on how charting Tango routes on Low Altitude charts impact readability and make recommendations to help solve this issue. The use of Area charts for some congested areas might be possible.

Eric Secretan, NACO, stated that NACO is going from 28 Low Altitude IFR Charts to 36 in October 2007 due mainly to the addition of RNAV information. He added that it might become another Charting Forum issue on how enroute charts are skeletonized. Mr. Greg Yamamoto Manager, Enroute Charting Team, stated that in August we will do a dry-run and should be able to provide the ACF some samples at the next meeting in October. **OPEN**

ACTION: NACO to bring the 36 reschemed enroute low charts to the next ACF for further discussion.

07-01-195 Charting and AFD Information Re: Class E Surface Areas
Mr. John Moore, NACO, recapped this issue by stating airports that have part-time control towers, in some cases the Class D surface airspace becomes a Class E Surface Area during the hours the tower is closed. In other cases the Class D airspace becomes Class G airspace. These variables also can affect airport-associated Class E extensions that protect terminal instrument procedures.

Mr. Richard Boll, NBAA, provided examples including Carlsbad Airport. The A/FD should address both classes of airspace. His recommendation was that the A/FD be specific in addressing the extensions.
Ms. Debbie Copeland, Manager, Data Evaluation Sub-Team, NACO, had the legal description for the two airports in question. The A/FD states "NOTE: AIRSPACE SVC 'TIMES' INCLUDE ALL ASSOCIATED EXTENSIONS. Arrival extensions for instrument approach procedures become part of the primary core surface area. These extensions may be either Class D or Class E airspace and are effective concurrent with the times of the primary core surface area. "

Mr. Richard Boll, NBAA wasn't aware of A/FD legend note. He recommended changing the note in A/FD to eliminate any confusion. **OPEN**

ACTION: John Timmerman to ask what the rulemaking aspect is.
ACTION: Scott Jerdan, Manager NACO Aeronautical Information Team will see if there are any exceptions

07-01-196 Q Route DME/DME IRU MEA
Mr. John Moore, NACO, recapped the issue stating that many of the "Q-Routes" on "High" IFR Enroute charts have MEAs that only apply to DME/DME IRU operations; however, some chart users do not realize that GNSS aircraft can normally operate along those routes at FL180 and above. While the chart legend clearly explains MEA charting methodology for Q Routes, it is not intuitively obvious looking at the chart that the charted MEA generally only applies to DME/DME IRU operations. Whether it is because the chart user forgot, misunderstood or didn't read the legend, the effectiveness of the charting to convey GNSS MEA information could be improved.

The recommendation is to consider a change to how these MEA limitations are depicted. NACO's application does not include a unique qualifier or suffix code. Jeppesen took an alternate approach and provides a DME/DME/IRU suffix to the MEA's. It does not seem to extensively clutter their charts

Mr. Eric Secretan NACO, added that he would rather use a different letter than put two different MEAs where they're not necessary. It may be adding more confusion rather that clarification. Mr. Moore recalled a conversation with Mr. Mark Steinbicker asking how many iterations of these RNAV route MEAs could you have? DME/DME/IRU is the most common but if you have GNSS the G is indicated. Mr. Timmerman commented that the only other MEAs on the charts that don't have a suffix apply to everything; that's where the fundamental confusion is coming from.

Mr. Ted Thompson, Jeppesen, stated that they use DME/DME/IRU below the MEA on their charts. They would like to see some standardization between government and private industry charts. One possible idea would be to come up with a simple suffix code such as a "D" similar to the "G" used for GPS MEAs (2500G).

Mr. Secretan added that this needs to be looked at as well as RNAV 1, 2, 5 and the enroute environment as well. Mr. Paul Ewing, Air Traffic, stated that a blue MEA was understood to be GPS. The exception was the D.

Mr. Moore stated that we can be proactive to put a suffix on the blue MEA depending on what it is, or change the definition of what a blue MEA means, using a D suffix rather than a G suffix. Mr. Moore would like to talk with the Ops side of the house to get their opinion.
OPEN

ACTION: NACO to develop prototypes in cooperation with Jeppesen.
ACTION: Pamela Coopwood to supply an opinion from an Air Traffic point of view.

07-01-197 Graphic Airport NOTAMs
Mr. Roy Maxwell, Delta Airlines, provided some background information and summarized the information given in the Recommendation Document (07-01-197) and CertAlert 07-01. Delta relies upon the NOTAM system as well as back channel methods to get airport changes. Since their operators and pilots are at these airports they know of airport construction activities and this information is disseminated informally to other operators. The first thing that we need to do is take a look at the NOTAM process we have in place and try and make it work. The second is version control. As we're moving into electronic media, version control is more difficult. The third issue is passive verses active dissemination. Legacy systems are incapable of handling graphics. Getting those airport graphics to a flight crew, either in flight or before a flight is something they will have to address. They need a mechanism of not just pushing information out, but they need a mechanism of getting that information flow into the proper channels and having some compatible system so they can update the source documents. Mr. Maxwell gave his appreciation to the group and expressed his interest in putting together a working group to look at the various issues and get a better information flow that is needed.

Mr. Ted Thompson, Jeppesen, commented that most if not all of the topics listed in RD 07-01-197 apply to the state of airport data in general. If we work through each of these issues we would find a foundation for improving airport source. The fact is that there is no central repository for airport information.

Mr. Moore asked if Mr. Dave Goehler would be willing to work the seven issues within the Airport Source Information working group that Roy Maxwell outlined in the RD. Mr. Goehler replied that he would do what he can although his group may have to do something differently given the fact that the committee has been working for three years with little progress. Mr. Goehler believed that more people in the trade organizations need to get involved.

Mr. Eric Secretan NACO, commented that it doesn't matter whether you have a new NOTAM, an AXIM digital NOTAM or graphical NOTAM system in place, the valid

source data is still not getting disseminated, and nobody has the resources to proactively gather that source data.

Responsibility for the issue will be transferred to the Airport Source Information committee led by Mr. Dave Goehler. A sign up sheet will be circulated.
OPEN

ACTION: Mr. Dave Goehler to report at the next ACF meeting.

VII. Closing Remarks

Mr. John Moore thanked NGA for hosting the meeting and everybody for their participation.

VIII. Next Meeting

The next meeting of the ACF is scheduled for meeting will be held October 23-25, 2007 at the Air Line Pilots Association (ALPA) facility in Herndon, Virginia.

Please note the attached Office of Primary Responsibility (OPR) listing for action items. It is requested that all OPRs provide the Chair, John Moore, (with an information copy to Jim Grant) a written status update on open issues no later than October 1, 2007. **Note – These status reports will be used to compile the minutes of the meeting and will be the "for the record" statement of your presentation.** A reminder notice will be provided.

IX. Attachments

1. Attendees/Mailing List
2. Committee Sign-up Lists
3. ACF FMS Differences Brief & OP Survey
4. ASD – ACF 050207
5. RNAV Charting Issues-ACF-2007-05-03
6. Aerochart-5-3-7
7. Charting Declared Distances May 2007
8. Office of Primary Responsibility
9. CertAlert 07-01