

To: Oceanic Work Group Members

From: Dennis Addison, Support Manager - Oceanic Airspace and Procedures

Subject: Synopsis, Oceanic Work Group (OWG) Meeting, October 8, 2014

Introduction

Dennis Addison, Support Manager, Oceanic Airspace and Procedures at Oakland Center welcomed the members of the Oceanic Work Group to the meeting.

Oakland ARTCC Update: Dennis Addison

▪ **Oakland ARTCC Website:** The Oakland Air Route Traffic Control Center (ARTCC) website has a brief overview of Oakland ARTCC and 3 links: ZOA Domestic ATC Operations, KZAK Oceanic ATC Operations, NOTAMs TFRs SUAs. There are items from the Pacific Chart Supplement located there with Track Advisory User's Guide (TAUG), and Pacific Meetings links. The URL for the Oakland ARTCC web page is below. There were a couple of personnel and phone number changes under the domestic ATC Operations. The oceanic work group meeting presentation from June 18th 2014 is on the website with a draft synopsis.

http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/air_traffic_services/artcc/oakland/

▪ **ADS-B In Trail Procedure (ITP):** Dennis briefly described what the ITP project was and how it was used climbing or descending aircraft through traffic using reduced separation standards. The FAA and United Airlines signed an agreement for the trial on April 2009. United Airlines retrofitted 12 B747-400 aircraft to be eligible for the procedure. In April 2013, 100% of their pilots completed training on the equipment. After the completion of the training there was a dramatic spike in the usage. Dennis showed a graph illustrating the amount of requests and usage of the ITP climb/descent during the trial period. Data collection started August 15, 2011 in the Southern Pacific (SOPAC). The trial was expanded to include the entire Oakland Flight Information Region (FIR) on December 9, 2011. The trial fell under a notice which only lasts 1 year and due to the lack of FAA funding there was a 2 month lapse in the trial late 2013. A new Order was created to circumvent any more delays in the trials.

○ Using the ITP is very time consuming for controllers due to the manual checklist and the need to override a conflict probe. Currently the ITP mileage separation is set at 18nm but will decrease to 15nm when the manual checklist is automated. Dennis said that he sees the procedure as an advantage but the ITP software isn't expected to be delivered until mid FY16.

○ Gene Cameron stated that the release date given in the previous OWG was Feb 2016 and inquired about the reliability of the new estimate. John Moore addressed Gene's question and said that he was planning on the ITP NCP delivered for operational use at the three sites by the end of January 2016. John stated that there was also a goal, with a buffer built in, to ensure at least one of the sites is operationally ready to provide the service by June 2016. The normal intent when they have these software releases available is for all the sites to be on the same software build. Dennis added that once the software is available to Oakland Center and is proven to be stable, Oakland will use it immediately.

▪ **ADS-C Climb/Descent Procedure (CDP):** Dennis went over the differences between ADS-C CDP (Climb/Descend Procedure) and ADS-B ITP. ADS-B ITP is a pilot initiated procedure whereas ADS-C CDP is a controller initiated procedure. ADS-C CDP works by demanding both aircraft, measuring the distance between them, and issuing climbs or descends through traffic; based on a reduced separation minimum. In the presentation there are slides that show what a clearance window would look like using the new software. Oakland Center implemented a 2 year trial for ADS-C CDP which ended February 2013 and was deemed as a benefit. The ADS-C CDP software will be coming with the ITP software mid FY16.

- Gene Cameron stated that IATA has gone on record as being in favor of the ADS-C CDP procedure. Dennis added that over 60% of the aircraft flying in the Oakland FIR have the equipment needed for the procedure. The ADS-C figures jump to around 90% in the Anchorage FIR. Julia Fuller gathered data on FANS aircraft which were denied climbs/descent because of traffic 15nm-35nm apart. Of the 15 days there were 65 instances that aircraft were unable to get their requested altitude.
- Wayne Aleshire asked to expand on the 60% and what it included; are those aircraft ADS-C, RNP4, RNP10, CPDLC, etc. Dennis advised that the data was based on FANS equipped aircraft that could be capable of RNP4. Sixty three percent of aircraft have ADS-C, and CPDLC, and 58% have RNP4. Wayne followed up by asking if the aircraft needed to be RNP4 certified to take part in ADS-C CDP. Dennis advised that during the initial trial it was a requirement but speculated that based on the software RNP10 ADS-C aircraft could take part. Patricia Chavez asked if the controller had to use 30/30 aka RNP4 ADS-C and CPDLC separation. Dennis answered that there is a logic check built in to acquire position reports simultaneously but would verify it.
- **User Preferred Routes (UPRs):** Dennis stated that Oakland Center has been reducing the number of PACOTS routes and replacing them with UPRs procedures. The original number of PACOTS routes was 22 and most have since been provided with alternate UPR procedures including Track K, Tracks 1, 3, 11, 12, 14, 15, F, H, I, and the Hawaii to Japan routes. The only tracks that don't have a UPR procedures are Tracks C, E, and J. Track J is created and used during the night which conflicts with numerous flights headed east bound. Overall 18 of 22 PACOT routes have been replaced by UPR procedures. The UPR fuel savings throughout the entire Pacific has a potential savings of over 32.8mil Kg annually but not all operators are using the procedures. At the last IPACG meeting, IATA presented a paper for an unrestricted UPR trial using 550 flights crossing the Pacific each day (approximate) and assuming a fuel cost of \$944USD/1000kg. The savings of 500kgs (from the study) of fuel would generate a system wide savings of \$260,000USD every day, and annually \$95 million USD.
 - At the last meeting it was concluded that eastbound PACOT UPRs are easier to accommodate than westbound PACOTS UPRs because of the converging routes towards Asia. Oakland Center is still looking into different UPRs however there are safety risks involved. (i.e. controller workload) A UPR study is being conducted by JCAB on Track divergence. Hopefully the study will support an agreement to allow UPRs to diverge from Track 2.
 - Korrer UPRs started on July 25, 2013 one operator stated that they saved 67,000-68,000lbs of fuel in the first few weeks of the trial.
 - There is a proposal for High Level UPR trials. The newer composite aircraft can climb higher, earlier in flight, than most other aircraft in the Oakland FIR. The concept is that if there are less aircraft up high then the aircraft that can fly that high shouldn't be as restricted. Anchorage started a trial where they allow aircraft above F400 by 170W to UPR up to NIPPI or OMOTO. IATA requested that Oakland and Fukuoka consider the high level UPRs as an alternative to the westbound PACOTS. Oakland is developing the guidelines for a High Level UPR Trial as an alternative to westbound PACOTS and the trial will have an indefinite lifespan.
 - The Oakland Center Oceanic website gives UPR guidelines and more information.
- **Merging PACOTS Tracks C and E:** March 13, 2013 began an operational trial of merging tracks C and E when it provided an advantage. Of the first 38 days of the operational trial Tracks C & E were merged for 14 days. The average fuel savings per flight was 1120 lbs. On April 26, 2013 Oakland suspended the operational trial due to merging and conflicting aircraft. The merging traffic problems occurred mainly from time errors from operator Track Advisory reservations. Had the other facilities been unable to accept aircraft at other than appropriate altitudes for direction of flight there would have been a larger problem. Those two factors caused an increase in controller workload which raised concerns and the trial had to be discontinued. Extreme cases of missed reservations were from 220 to 300 minutes with average times between 25-100 minutes.
 - The errors in the Track Advisory reservations created numerous traffic conflicts that required Oakland to negotiate with Japan and Anchorage for the use of non-standard altitudes. The three ATSU's quickly realized that there was a need to be congruent on separation standards and the ability to know if non-standard altitudes were available.

- When the trial resumes, Operators must do a better job at meeting their Gateway Fix reservation times. Merging C/E will still require the use of some non-standard altitudes even with accurate TA reservations due to the mix of different aircraft types/speeds.
 - When the trial resumes Oakland will coordinate with the next facility for the use of non-standard altitudes when there is potential to merge the tracks. If prior approval for the use of the necessary non-standard altitudes can be obtained, the tracks will be published with a merge. If prior approval for the use of the necessary non-standard altitudes cannot be obtained, the tracks will be published without a merge in the Oakland FIR. If the routes go from Oakland's FIR to Fukuoka's FIR the tracks cannot be merged because Fukuoka is not able to approve non-standard altitudes in advance. The tentative resume date is November 2014 (*Note: the date has been delayed until February 2015*).
 - Oakland and Anchorage Centers implemented a procedure on February 19, 2014 to use ADS-C distance based separation for aircraft crossing their common FIR. With the use of ADS-C distance based separation ATC is able to put more aircraft at a single altitude and help mitigate congestion for merging tracks.
 - Gene Cameron pointed out to the group that crossing times were advisory times only prior to the merge and asked Dennis to fully explain the importance of the crossing times. Dennis advised that when there are merged tracks that the times are very important to help mitigate traffic situations and to keep aircraft at altitude.
 - The overall merging of the two tracks has been a real challenge for Oakland center and controllers are willing to work together to try again.
- **Track Advisory Early Intent Trial:** One of the things that came out from looking at merging tracks was Track Advisory Early Intent. Dennis has checked with the DOTS+ tracks advisory people and they indicated it would be possible but would like to check first to make sure it works. The Early Intent Gateway Reservation EIGR is not the actual GRL. While the EIGR might show an aircraft with their first choice of their Flight Request Messages TKF for an altitude, it might not be the same reservation on the actual published GRL. If an operator shifts their times expecting a better outcome there might be unforeseen differences (jumping another operator). Oakland Center would like to target a trial for December 9th 2014.
 - Gene Cameron asked how the airlines would access or send the Early Intent message. Dennis Addison advised that the operators would send the TKFs in as normal prior to 1650 and could look at the EIGR. At 1650 the actual GRL would be published and could be different. There are things to work out for the trial and more details will follow after some testing. Patricia Chavez asked if there would be a need to change anything in DOTS+ for this. Dennis said he was advised that they could setup the system to compile the data for different times. For Westbound PACOTS the TKF reservation requests for the day are compiled at 1650UTC and a Gateway Reservation List (GRL) is published. Gene posed the question if the EIGR was going to only apply to Oakland Center. Dennis said this trial is only for Oakland Center and would share the findings with other facilities.
 - **Aircraft Equipage and Separation Standards:** Dennis went over data acquired on RNP and FANS equipped aircraft. The first graph displayed the comparison between RNP10 and RNP4 equipage based on aircraft type. Then Dennis went into specific aircraft types and their equipage RNP4 versus RNP10. The next slides depicted the percentage of traffic flows around the Oakland FIR and percentage of FANS equipped aircraft within that traffic flow.
 - The greatest amount of traffic in the Oakland FIR use the Central Eastern Pacific routes (CEP) which is from California to Hawaii. Around 40% of Oakland Oceanic air traffic use the CEP and of that number 35% of those aircraft are FANS equipped. The routes between Asia and Hawaii make up about 9% of traffic and are about 90% FANS equipped. The PACOTS traffic (US to Asia) is about 28% of Oakland Center's traffic with 90% FANS equipped aircraft. The South Pacific traffic is roughly 8% of Oakland's traffic of which 88% of aircraft are FANS equipped. Nearly 100% of the commercial flights or aircraft that operate in the upper altitude stratum are RNP10 equipped. As of last month there were 62% FANS and 52% RNP4 equipped aircraft operating in the Oakland FIR. When FANS aircraft make an altitude request about 84% of the time the request is granted. HF aircraft are less likely to get requested altitudes due to increased

separation standards. There are on average 800 altitude change requests handled daily, 600 of them are from CPDLC aircraft.

- Overall in the Oakland FIR about 5% of the aircraft use FANS over Iridium versus Inmarsat or MTSAT. Last April we observed a decline in the performance of FANS over Iridium. In April the Actual Surveillance Performance (ASP) measured performance fell below the 95% standard. The problem was discovered and corrected. By June it was back over the 95% criteria. The GOLD standard is used as a performance monitor on FANS equipment. Fukuoka is starting to do their evaluation of FANS over Iridium, distance based separation, however Fukuoka is not applying ADS-C distance based separation between FANS over Iridium aircraft.
- There was a brief discussion on the reasons why there might have been poor performance during April-June. It was identified that there was a band width and data transfer issue. Another point was touched on about the use of FANS over Iridium and how it may be more cost effective for air carriers.
- On September 23, 2014 the Pacific experienced a 220 minute long Inmarsat data link outage. Data link outages have a huge impact on the workload for ARINC operators and Oakland controllers.
- The benefits for RNP4 and FANS equipment are smaller lateral/longitudinal separation standards. A non-FANS RNP10 aircraft is protected by a rectangle 80nm in front and 80nm behind with 50nm either side. The protected airspace for a FANS RNP10 equipped aircraft is protected by a 50nm ellipse. RNP4 equipped FANS aircraft are protected by a 30nm ellipse. In 2012 half of all aircraft in the Oakland FIR were FANS equipped while the percentage of RNP4 equipped aircraft was around 38%. Through fuel savings presentations and awareness the percentage of FANS equipped aircraft has increased and is around 63% and 58% of Oakland FIR aircraft are RNP4 certified
- Oakland has developed a program to calculate the cost of increased fuel burn due to lack of RNP4 and FANS equipage. Oakland worked with the operators to determine the extra fuel burn when operating below the optimum altitude (requested altitude). Oakland was able to create a graph for various types of aircraft showing the extra fuel burn. Data samples or "Snap shots" taken over 15 day periods on the extra fuel burn (done 5 times over 2 years) due to lack of FANS and RNP4 shows a peak of over 27,000kg with a slow decline in the extra fuel burn likely due to the increase of RNP4 equipage. Additional benefits of RNP4 equipped aircraft that are not tracked are the use of 30nm separation once opposite direction aircraft have passed each other; the development of route systems based on 30nm separation. The extra fuel burn "Snap Shots" only cover aircraft in the Oakland FIR, the extra fuel burn would be much higher if it was calculated for all FIRs. The meeting is requested to:
 - Recognize the benefits of RNP 4 and FANS equipage;
 - Consider certifying FANS equipped aircraft as RNP 4; and
 - Consider equipping aircraft with satellite FANS and RNP 4 certification.
- The current ATC application of ADS distance based separation is used in Anchorage, Fukuoka, Vancouver, ZSE/ZOA/ZLA/HCF/Guam, Auckland, Nadi, and Brisbane.
- **Flight Planned Mach Speeds:** The FAA has presented papers at IPACG and ISPACG which outline the dangers of unannounced speed changes. The ISPACG Working Group has been working on this issue to try and develop a unified regional procedure. The current ICAO rule is from Annex 2 3.6.2.2 and it states:
 - *b) Variation in true airspeed: if the average true airspeed at cruising level between reporting points varies or is expected to vary by plus or minus 5 per cent of the true airspeed, from that given in the flight plan, the appropriate air traffic services unit shall be so informed.*
- ICAO requires pilots to notify ATC of a 5% or greater speed change from their filed flight plan speed. This means that an aircraft flight planned at 500kts can adjust their speed by 24kts above and below their FPL speed without advising ATC. The pilot could do a speed change of 48kts without advising ATC.
- Dennis showed an example of speed changes in a FPL where the aircraft had filed an initial speed of 0.73mach and increased to 0.84 mach along its route. The Air Traffic Controller could be surprised by this large speed increase.

- In the Pacific, FIRs are applying 30nm longitudinal separation standards for RNP4 aircraft and use an ADS-C reporting rate of 10 minutes (Oakland uses 14min). With that being said a 48 knot speed change by one aircraft could result in an 8nm closure of two aircraft between those 10min ADS-C reports. If a controller is applying ADS-C 30nm longitudinal separation between two aircraft and the lead aircraft slows down because they hit turbulence, ATC could experience an 8nm separation reduction between the ADS position reports. In the Pacific, Oakland Center wants to allow cost index flight planned speeds, but controllers just need to know when aircraft are making speed changes to be able to plan for it.
- Australia has put out an AIP Amendment that follows:
 - AIP ENR 1.1 para 21:
 - A pilot must inform ATS if the average cruising speed, either TAS or Mach whichever is applicable, between reporting points, varies or is expected to vary, by a value equal to or greater than:
 - a. 5% TAS
 - b. 0.01 Mach from that given in the flight plan.
- Dennis advised the group that there is an ISPACG action item to develop a Pacific procedure for announcing speed changes. The proposed draft NOTAM for ANSPs is as follows:
- IN ORDER TO PREVENT UNANNOUNCED SPEED CHANGES AIRCREWS ARE REQUIRED TO USE THE FOLLOWING PROCEDURES IN THE (*insert FIR name*) FIR. UPON CROSSING THE (*insert FIR name*) FIR BOUNDARY, AIRCRAFT ARE REQUIRED TO REPORT THEIR SPEED VIA CPDLC OR HF VOICE. TURBOJET AIRCRAFT ARE TO REPORT THEIR MACH NUMBER (AND NON-TURBOJET AIRCRAFT ARE TO REPORT A TRUE AIRSPEED.)
- A PILOT MUST INFORM ATS EACH TIME THE CRUISING (SPEED, EITHER TAS OR) MACH NUMBER (WHICHEVER IS APPLICABLE) VARIES OR IS EXPECTED TO VARY BY A VALUE EQUAL TO OR GREATER THAN:
 - (A. 10 KNOTS TAS FROM THE PREVIOUSLY REPORTED SPEED - Non-Turbojet)
 - B. 0.02 MACH FROM THE PREVIOUSLY REPORTED SPEED (- Turbojet.)
- (AIRCREWS ARE ALSO REQUIRED TO REPORT THEIR PRESENT MACH NUMBER WHEN DIFFERS 0.02 MACH NUMBER OR MORE FROM THE FLIGHT PLANNED SPEED)
- Wayne Aleshire asked if there were any discussions on using a 4th dimension (time) based ADS report. Dennis advised that there had been no discussions to his knowledge. Gene Cameron asked if the NOTAM was a Fukuoka suggested NOTAM and what if any was the FAA's NOTAM. Dennis said that it is still being looked at and it would be taken to ISPACG in November to be discussed. The current NOTAM is evolving and any input is welcome but the idea is to have a singular NOTAM for the Pacific.
- **Pacific Island Traffic:** Dennis discussed the major Pacific Island airports that Oakland Oceanic provides approach control services to. Overall there are about 400 flights that go in and out of the islands with an 100-150 flight increase last August. During October 2010, it was recorded that 4% of flights were being delayed with an average time of 18 minutes. Oakland Center developed procedures to mitigate those delays. Currently, the statistical data for departure delays show that only 0.015% of departures are delayed with an average delay of 10.6 minutes. A graph was used to show the number of actual departure and arrival delays which indicated that even with limited tools available, controllers were providing exceptional service. The FAA is investigating the possibility of using ADS-B at selected oceanic island airports to facilitate improved aircraft operations. The FAA is also investigating the feasibility of Space Based ADS-B Surveillance. In conjunction with CPDLC the possibility exists to greatly reduce separation standards. Potentially there could be a reduction in separation standards and figuratively it might be reduced to 15nm.
- **CEP Route Structure:** Dennis presented a concept for increasing the available routes within the CEP by changing the lateral distance between them to 30NM. Dennis stated that the new route structure would further help aircraft achieve optimal fuel savings. Around 40% of the aircraft that fly the CEP are FANS equipped. At some point it will make sense to consider 30nm spaced CEP routes. Gene Cameron added that there is a cost associated with equipping aircraft and ADS-B space based might help.

- **Tailored Arrivals:** Dennis went over the Oceanic Tailored Arrivals (TA) into San Francisco (Pacific 2) and Los Angeles (Catalina 1). The Catalina 1 TA has since been overshadowed by the BUFIE arrival and the usage of the Catalina 1 TA has decreased substantially. Wayne Aleshire added that there was a big difference in savings when using the TA. One of the things that Oakland Center is developing is a new RNAV PIRAT1 STAR which mirrors the Pacific 2 TA and has an OPD which can be used by non-FANS, RNAV equipped aircraft. Oakland Center would like to move “Tailored Arrivals” to be more tailored. When time based metering into SFO is in place aircraft are more frequently vectored off the TA. Dennis explained that with the addition of speed control and route stretching with a couple waypoints the TA could be used more effectively with Time Based Metering.
- Steve Pinkerton added that there were three key sites that started using TAs Oakland L.A. and Miami. Miami had to stop due to issues with phraseology and the KLAX issues are with airspace design. Right now the FAA is waiting for procedural review (in the Flight Standards office) and publication of a new order for Tailored Arrivals which might increase the availability of the TA to other airports. There was a question if Honolulu would be included into that order. Steve advised the group that the limitation was with uploading the arrival in the FMS which would have to be done by Oakland Center. Dennis added that Honolulu created many different OPDs which might be a stumbling block. Dennis asked Steve if the TA order had been progressing because there was a time where it was “on the Shelf”. Steve said that it was progressing and is moving forward, it is currently in the hands of Flight Standards office.
- **Port Moresby 50nm RNP10 Lateral Separation:** November 14, 2013 Port Moresby started using 50nm distance based separation standards. Dennis went on to talk about new routes that had been developed but not incorporated for the new separation standard. Oakland Center is currently working with Port Moresby and Brisbane to resolve any issues on the new routes. There is no projected implementation date.
- **Mazatlán AIDC:** Dennis reported that the FAA is working to establish an AIDC connection between Oakland Center and Mazatlán ACC. The AIDC connection plan is moving forward, the FAA Technical Center has been testing the connection and passing flight plans back and forth. Dennis is working on an LOA for the use of AIDC. Additionally, Mazatlán has announced that they are working to convert their Class G airspace (east of 120W) into controlled airspace targeted early 2015.
- **Impacts from Missile Defense Testing:** Oakland Center has been working with MDA to mitigate the impacts of their testing in the Pacific. Dennis displayed an airspace request proposed operation and the modified actual airspace usage. This first picture outlined the initial request for airspace with time frame of 8hrs and a single corridor through it. Through negotiation and communication the FAA and MDA were able to reduce the huge foot print of airspace and create two corridors through it. A question was directed to Steve Kessler when will the Russia work with the FAA on their testing. Steve said that the FAA does make requests on behalf of the users and tries to further negotiations, however there’s no guarantee for collaboration.
- **Volcanic Ash and PACOTS generation:** ICAO Doc 9974 chapter 2.4 Responsibilities states that “*The operator is responsible for the safety of its operations*”. From an ATC perspective ICAO chapter 2.10 states “The operator should not be prevented from operating through, under or over, airspace forecast to be affected by a VAA, VAG or SIGMET provided it has demonstrated in its SMS the capability to do so safely”. ATC advises the aircrew of contaminated areas and the risk associated with them but ultimately let the flight crews determine their course of action. There have been VOLKAM exercises to test the current procedures in place and how it might impact flight operations. The findings were published under VOLKAM13 (IPACG39 Paper IP11). In October 2013 Klyuchevskoy erupted and there was an Ad-hoc telecon to discuss the proximity of the PACOTS to the ash plume. Dennis presented a chart of an actual volcanic eruption and how the PACOTS were affected. During IPACG40 there was a discussion on how to help mitigate risk in the event of an Ash Plume and here were their findings:
 - Critical Event Contact List (CECL)
 - 24 Hour Emergency Contact List
 - Emails
 - Cell Phone #, Text Notification
 - Collaborative Decision Making (CDM)
 - When time allows
 - Allow 1 hour lead time when possible

- Online Meetings
 - No Cost Phone Calls
 - Control extraneous noise
 - Visual Impact Display
 - Discuss Options
 - Reach Consensus Plan
- This is just the basic frame work for an event that could interchange the parties (ANSPs) as necessary. Steve Pinkerton added that this is an important item for the Cross Polar Work Group and is being discussed in further detail.
 - **Oceanic Navigation Error Reporting ONERs:** ICAO Annex 2 3.6.2.2 states: c) Change in time estimate: if the time estimate for the next applicable reporting point, flight information region boundary or destination aerodrome, whichever comes first, is found to be in error in excess of 2 minutes from that notified to air traffic services, or such other period of time as is prescribed by the appropriate ATS authority or on the basis of air navigation regional agreements, a revised estimated time shall be notified as soon as possible to the appropriate air traffic services unit.
 - ONER or GNE (Gross Navigation Error) are considered when there are one or more of the following:
 - GNE (Gross Navigation Error) 25nm or more off route.
 - Intervention: Aircraft on different route than expected by ATC.
 - Height Error: 300 feet or more difference between assigned altitude and actual altitude.
 - Time Errors: Pacific = More than 3 minutes
 - ONER reports are forwarded to Flight Standards and the Technical Center and are used for airspace safety calculations. Oakland has recently experienced aircraft deviating off course without making weather deviation requests or receiving clearances. The number of time errors has gone down since Oakland began tracking the data, due in part of the decrease in transcription errors. All of the time errors are based on HF reports. Rockwell Collins ARINC formed a new method of reading back key parts of position reports to help prevent transcription errors. Dennis then showed a graph of de-identified operators with their individual number of ONERs. If individual air carriers would like to know their numbers they can contact Dennis. Flight Standards is working with the operators to reduce the number of ONER Time Errors.
 - Patricia Chavez asked if there was something that the pilots could do to lower the number of time errors. Dennis said that the numbers were coming down but as of right now the procedures in place are working. When there is an increase in the data it is usually due to military and general aviation aircraft.
 - **ATOP/OCEAN21 ATC system in use:** John Moore the ATOP Program Manager stated that the ATOP capital budget was established in 2001 to deploy the ATOP system through 2015. The Capital budget of \$548M established in 2001 was and is used to support the deployment of the ATOP system (2005 to 2007), tech refresh (2009), and enhancement development through FY15. At this juncture the FAA requires that they do an investment analysis to establish a new capital budget. The business case includes shortfalls and benefits. Kevin King presented an ATOP overview and Work Package 1 items. In 2015 the ATOP program office will be out of capital funding for enhancements to the system. The investment Analysis Readiness Decision is projected for January 2015 and includes: Development of Program Requirements and Concept of Operations for candidate enhancement, Development of ROM life cycle cost model, and the Development of Shortfalls and Benefits. The final investment decision is projected for January 2016 and will establish a multiyear funding stream. Kevin King opened a discussion on shortfalls to make sure they haven't mischaracterized them and to help his team understand what the challenges are if missed. The shortfalls introduced were:
 - Enhanced Controller Coordination
 - Inefficiencies in controller coordination within the ATOP system for flights persisting in the vicinity of FIR boundaries affecting routing of aircraft and increasing costs to the air carriers.

Even though there are UPRs that air carriers can file the limitation of the system doesn't allow an unrestricted (or true) UPR.

- Data exchange via SWIM
 - SWIM is the back bone for sharing data in the air traffic system. The shortfalls are the inability of the ATOP system to provide real-time flight data, SAR and SYNC data to authorized users. The advantage would be to optimize the real-time knowledge of SAAs and NOTAMs.
- Expanded Oceanic International Interfaces
 - Inefficiencies in controller coordination between the ATOP system and external ANSPs.
- Enhanced Conflict Probe for ATOP Surveillance Airspace
 - Manual conflict detection and resolution in surveillance airspace.
- ATOP in Stratified Surveillance Sectors
 - Inefficiencies in controller coordination between the ATOP system and operating systems of adjacent stratified surveillance sectors
- Auto Re-Probe
 - Inefficient use of airspace capacity resulting from manual controller process to keep track of denied altitude clearance requests.
- Conflict Resolution Advisory
 - Inefficient use of airspace capacity resulting from manual processing for conflict resolution.
- **Dynamic Airborne Reroute Program (DARP):** Data shows that the number of DARP requests almost coincide with the number of DARP clearances issued. Currently facilities that can receive DARP aircraft include, YBBN, NTTT, KZSE, KZOA, KZLA, HCF, and Guam CERAP. The facilities that can both receive DARP flights and allow aircraft to initiate DARPs are RJTG, NZZO, NFFF, and KZAK. DARP procedures require CPDLC and AIDC between all facilities to destination. Operators must not request a DARP reroute into FIRs that do not support it. ATC is unable to issue DARPs into FIRs where AIDC is not available.
 - Based on ANA actual DARP Trials from PACOTS aircraft utilizing the DARP prior to 180W savings were 6,900lbs or 24min. But when PACOTS aircraft can DARP earlier prior to 160E the potential savings were 10,400lbs or 36min.
 - Oakland Center looked at the reason why DARPs requests were being turned down and found the causal factors to be: aircraft too close to an FIR boundary, traffic, military airspace, and controller work load.
 - Fukuoka's (JCAB's) operational trial for DARP started 19 September 2013 0000 UTC. Current requirements for DARP usage between either Hawaii or North America to Japan include:
 - DARP clearance is limited to aircraft bound for Hawaii at this time.
 - Operational CPDLC is required for aircraft requesting a DARP
 - DARP requests must be made:
 - At or east of 145E.
 - By the pilot at least 20 minutes before the divergence waypoint fix to allow processing time by ATC and pilot
 - At least 1 hour prior to crossing the Fukuoka/Oakland FIR boundary.
 - ATMC will issue DARP clearances with the identical route to the requested route from aircraft, or uplink "UNABLE". (ATMC cannot issue a clearance with any modification to the requested route.)

- Operators wishing to employ DARP trial initiated in the Fukuoka FIR must pre-coordinate with ATMC office by email (atmc_ocean@cab.mlit.go.jp).
 - For further questions
 - The Fukuoka Air Traffic Management Center (The Fukuoka AMTC)
 - Office TEL: +81-92-608-8869
 - Oceanic supervisor TEL: +81-92-608-8890
 - Note: Operational questions should be directed to the oceanic supervisor.
- All Nippon Airways (ANA) presented a paper at IPACG from their current DARP trials. DARPs between Honolulu and Tokyo with average fuel savings of 670lbs or 3 minutes. The reverse in flight showed 610lbs or 4minutes of average fuel savings. ANA also started a trial from Tokyo to LAX which resulted in 770lbs average fuel savings. Total aircraft that used the DARP were 28 out of 85 or 33%.
- **Boeing DARP Presentation:** Vivek Sharma gave a presentation on the benefits and limitations of DARP. The major issue with DARPs is the increased workload on dispatchers/flight planners. The increased workload limits how often DARPs are created and requested which limits the fuel saving potential. If the flight planner workload is reduced (automated) there would be more DARP requests. There are two benefits that the Boeing OCEANS System can provide: fuel savings and lowering dispatcher workload. What OCEANS does is collect and compile information then displays a message on the dispatcher screen advising of the new route. The dispatcher decides whether or not it is a viable outcome (route) and if the answer is yes then it can be sent to the flight crew and if no it is discarded. The trials showed that dispatchers over time were able to decide on a DARP and send it in a couple of minutes.
 - The question was asked what was/is the difference in time from OCEANS processing information on a DARP versus a dispatcher. Vivek advised the group that OCEANS processes the information in about 5 minutes but they have seen up to 17 minutes.
 - **Anchorage ARTCC update:** Steve Kessler started with giving background on separation standards to help the group understand the issues with R220. The issue with R220 is that it falls within 25nm from Petropavlosk-Kamchatsky which requires coordination (increasing workload). Anchorage has been unable to create a standing agreement with Petropavlosk-Kamchatsky so they are exploring two solutions:
 - Proscribe RNP4 and FANS 1/A equipage for R220 between NATES and NIPPI.
 - Reorient portions of the NOPAC so as to achieve continuous, appropriate, lateral spacing with the UHPP FIR boundary. Gene Cameron added that aircraft equipped and capable of RNP4 should not be penalized and reorienting the ATS routes isn't the best option.
 - Effective 9/29/2014, Anchorage ARTCC has begun utilizing Automatic Dependent Surveillance – Broadcast (ADS-B) data, (transmitted from suitably equipped aircraft* and captured by terrestrial ground based radio stations), as surveillance data for the provision of radar separation services within Anchorage's Advanced Technologies and Oceanic Procedures / Ocean 21 (ATOP/OC21) airspace. Anchorage ARTCC also provides radar separation services, using ADS-B data, via the Micro Enroute Automated Radar Tracking System (MEARTS) in Anchorage Domestic Airspace. Gene Cameron asked if they were communicating with data transfer with Canada? Steve advised that he was unaware at this time.

*I.E. Equipped with Mode S transponder and/or Universal Access Transceiver (UAT)
 - Anchorage is using 30/30 separation between Oakland Center and Fukuoka currently. Anchorage ARTCC utilizes the Flight Data Processor 2000 (FDP2000) automation system in the airspace east of the 164° West meridian. Due to the two facilities' experience level with the 30/30 separation minima, and certain operating limitations within the FDP2000 system, the initial use of ADS-C 30/30 for cross boundary transfers between Oakland and Anchorage did not include that portion of the common FIR boundary where FDP2000 is used. Anchorage ARTCC is now working on a project to extend the use of the Ocean21 system into the airspace east of the 164°W meridian. The expansion of the Ocean21 system into Anchorage's "Sector 69" will provide for an even more seamless operation for aircraft crossing the

Anchorage / Oakland FIR boundary. The completion date of this project has not yet been determined, but updates will be provided as, and when, they become available.

- Steve mentioned the annual Red Flag military exercise that will be conducted 4/30/2015 - 5/15/2015, 6/11/2015 - 6/26/2015, and 8/3/2015 – 8/21/2015. The address for daily updates on special use airspace is <http://sua.faa.gov/sua>.
- **NAV CANADA Update:** Greg Down from Vancouver Center advised the group that they are working closely with Oakland center on getting the NAM ICD and AIDC working. The CATs system is getting upgraded with a conflict prediction mid-2015. The question was asked about the ability for UPRs through Vancouver's airspace. Greg told the group that some UPRs are ok but with the new conflict prediction software there would be more opportunity for them. Mike Lavery added that it was a training issue and once the software was up and running and the controllers are trained on it the full potential could be realized.
- **Oceanic and Offshore Operations AJE-32:** Steve Pinkerton advised the group that the new code of Oceanic and Offshore Operations is AJV-84. There are two meetings coming up where the Tailored Arrivals will be discussed the first is TRASAS at the end of the month being held in Bangkok and the second is the Cross Polar Work Group.
- **Charter Update:** Last meeting Dennis proposed an update to the OWG Charter and was put out for comments and requested changes. Dennis showed the group the changes and proposed that the group read through the updated charter and forward any comments or changes within a week's time. If there are no objections by next Wednesday the group will accept the updated charter. Dennis asked if there were any objections to the proposed process and none were given.
- **Pacific Island Update:** Gene Cameron advised that Air New Zealand at the IATA RCG brought up that the World Bank was funding some of the South Pacific islands as far as enhancements and improvements. Cassidy International was one of the airports receiving funding and could significantly enhance the capability of the airport to handle larger aircraft (772,783, 787's). There is a lot of construction plans at Honolulu the biggest concerns are the RSA on Lihue, the eventual reconstruction at Kahului with runways 2 and 20.
- **Next Meetings:**
 - IPACG 41 September 2015
 - ISPACG PT November 12-13, 2014 Fiji
 - ISPACG 29 Date TBD Santiago Chile
 - OWG: The next OWG meeting was agreed upon to be held **January 21, 2015**. The meeting will also be available on-line and via telecon.

October 8, 2014 OWG Attendance Sheet

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