

Anchorage Air Traffic Control Center (ZAN)

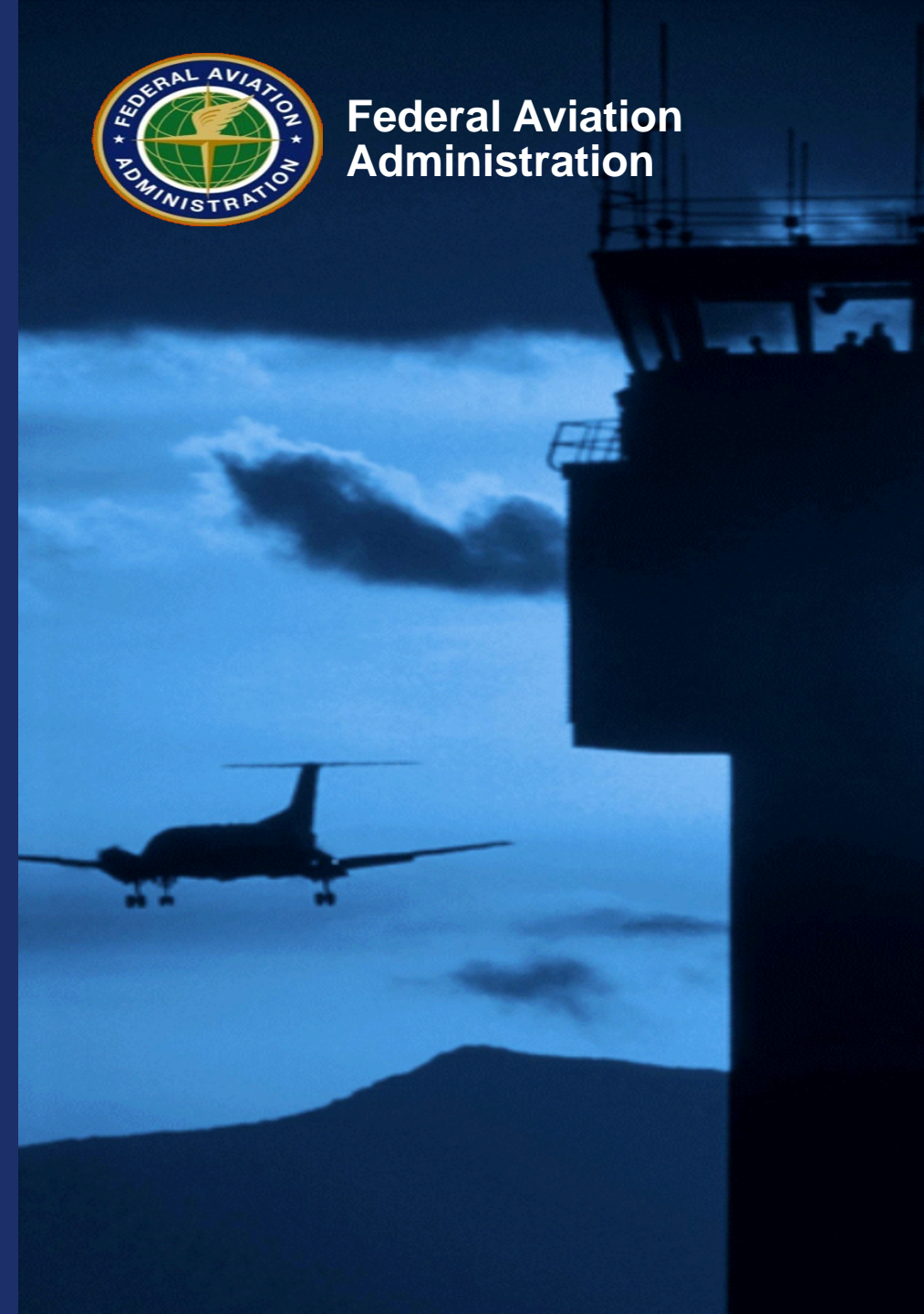


Federal Aviation
Administration



By: Rob Stephenson

Anchorage ARTCC Quality Control Manager



Anchorage Air Route Traffic Control Center Flight Information Regions

- **Oceanic** **229,067 Miles² (593,280.8 Km²)**
- **Continental** **1,647,105 Miles² (4,265,982 Km²)**
- **Arctic** **551,971 Miles² (1,429,598 Km²)**
- **Total** **2,427,971 Miles² (6,288,416 Km²)**



Facilities in ZAN's Airspace

- *Approach Controls*

- *ANC (Level 8)*
- *FAI (Level 7) up/down*

- *Towers*

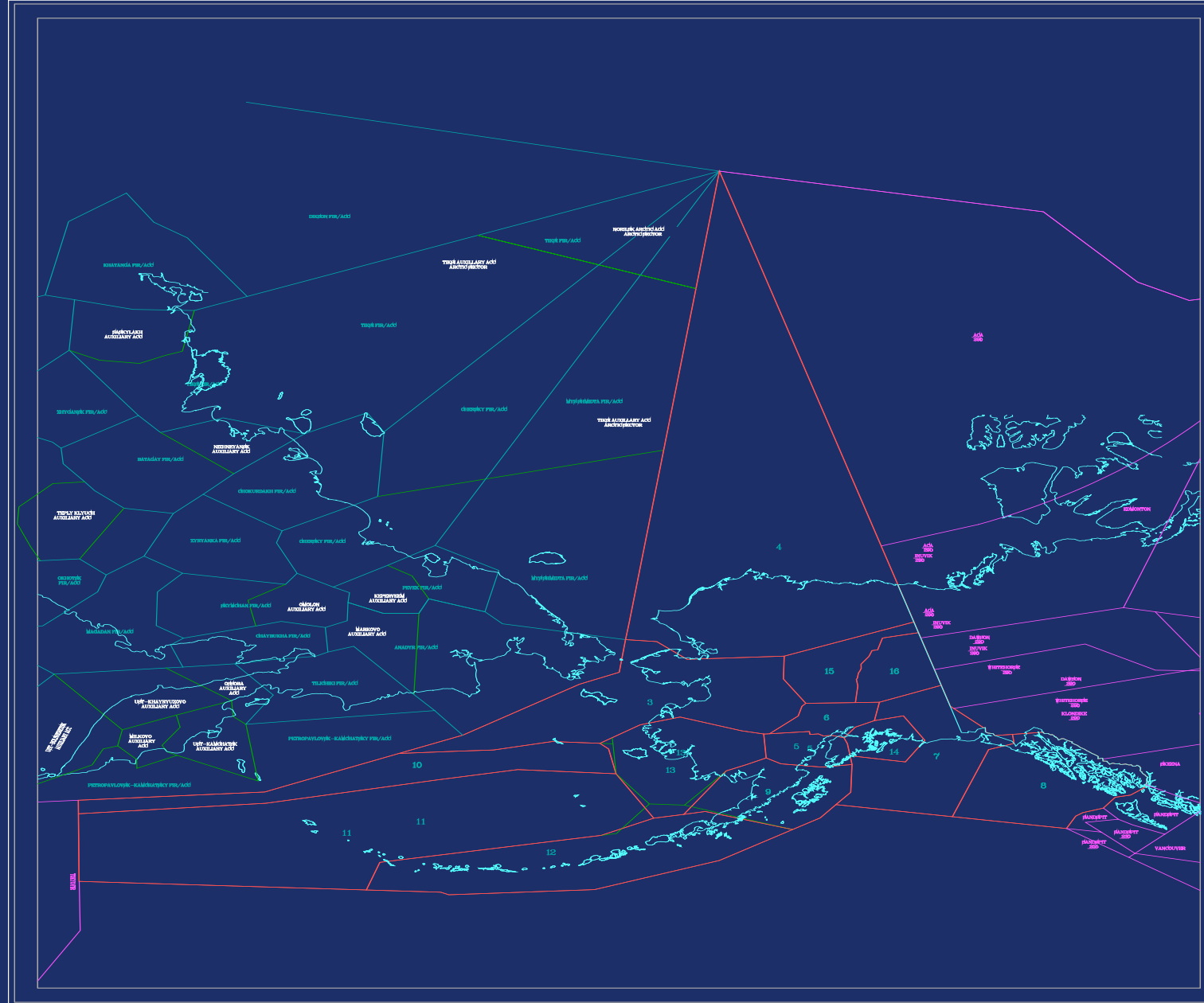
- | | | |
|------------------|-------------------------|--------------------------------|
| – <i>ANC (8)</i> | – <i>AKN (contract)</i> | – <i>Bryant (Army/JBER)</i> |
| – <i>FAI (7)</i> | – <i>ADQ (contract)</i> | – <i>EIL (Air Force)</i> |
| – <i>JNU (5)</i> | – <i>ENA (contract)</i> | – <i>EDF (AF/JBER)</i> |
| – <i>MRI (6)</i> | – <i>BET(contract)</i> | – <i>Ladd (Ft. Wainwright)</i> |

- *AFSS/FSS - 18 across the state (3 Major Hubs FAI/ENA/JNU)*
- *Airports – Over 169 airports served by ZAN (over 750 airports with NAS or ICAO identifications in Alaska)*

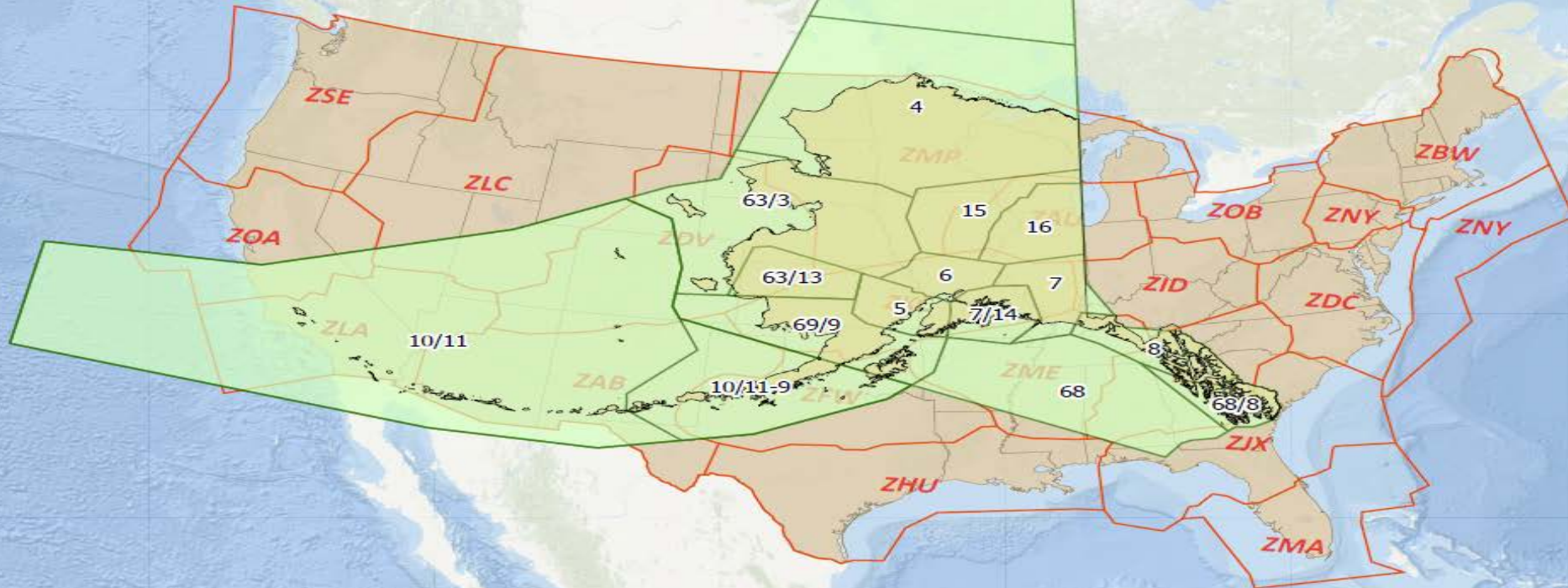


- Anchorage ARTCC shares a common boundary with 8 Area Control Centers in the international community:

- Tokyo, Japan
- Vancouver, Edmonton, Canada
- Murmansk, Magadan, Anadyr, Petropavlovsk-Kamchatsky, Russian Federation
- Reykjavik, Iceland
- Oakland, United States



Perspective





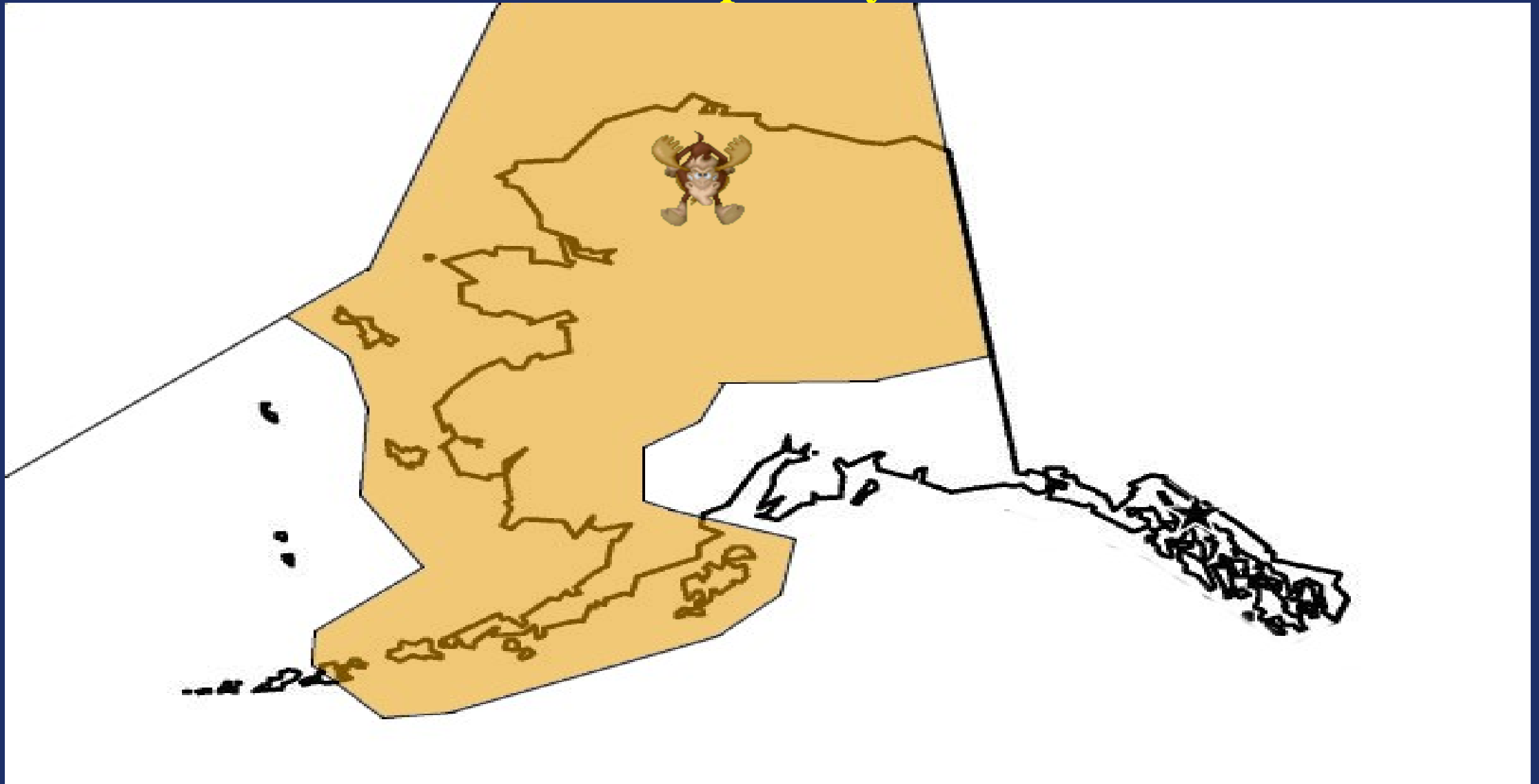
Anchorage Air Route Traffic Control Center

Airspace and Sector Structure

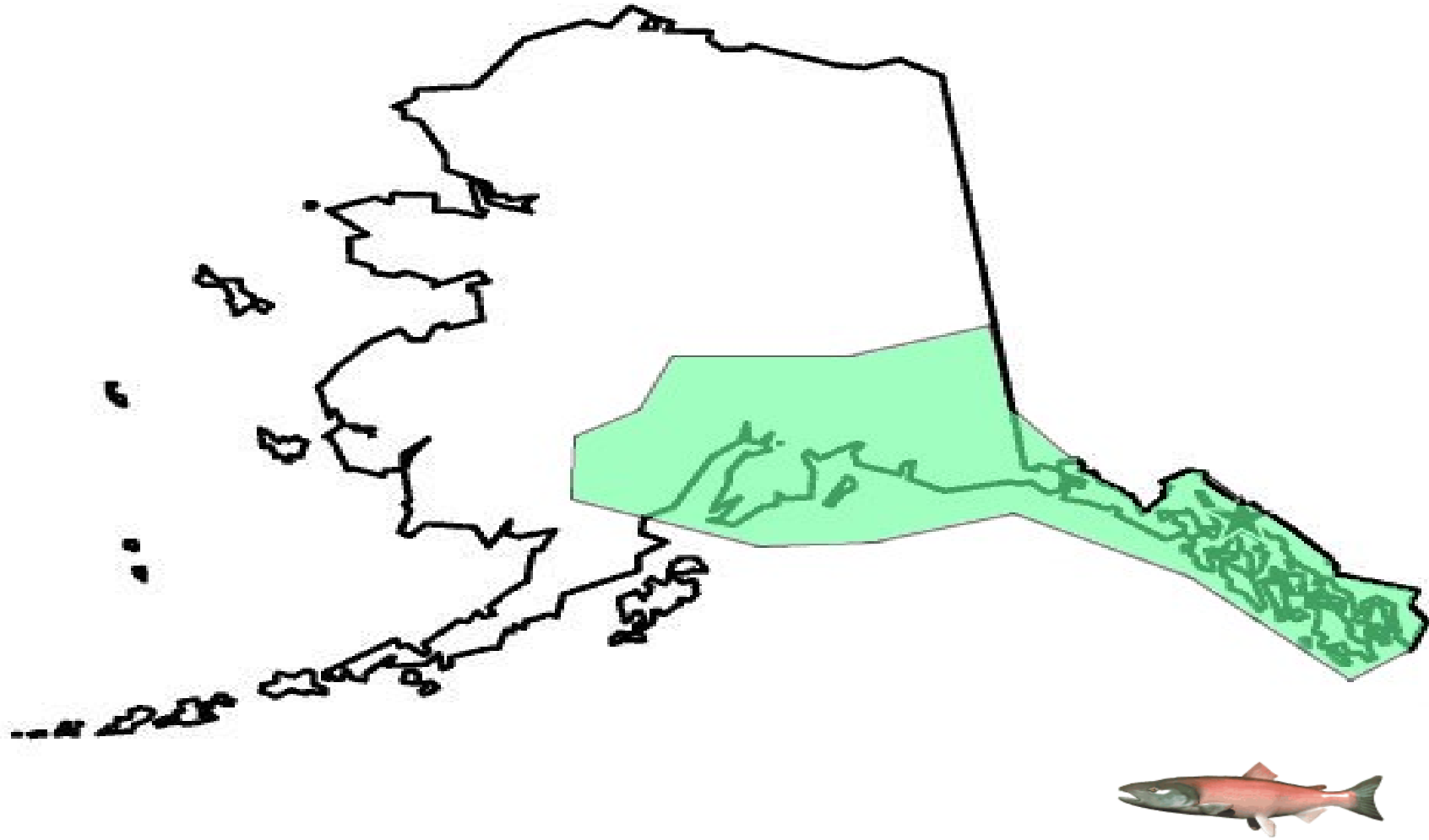
Three Areas of Specialization

- * North*
- * South*
- * High*

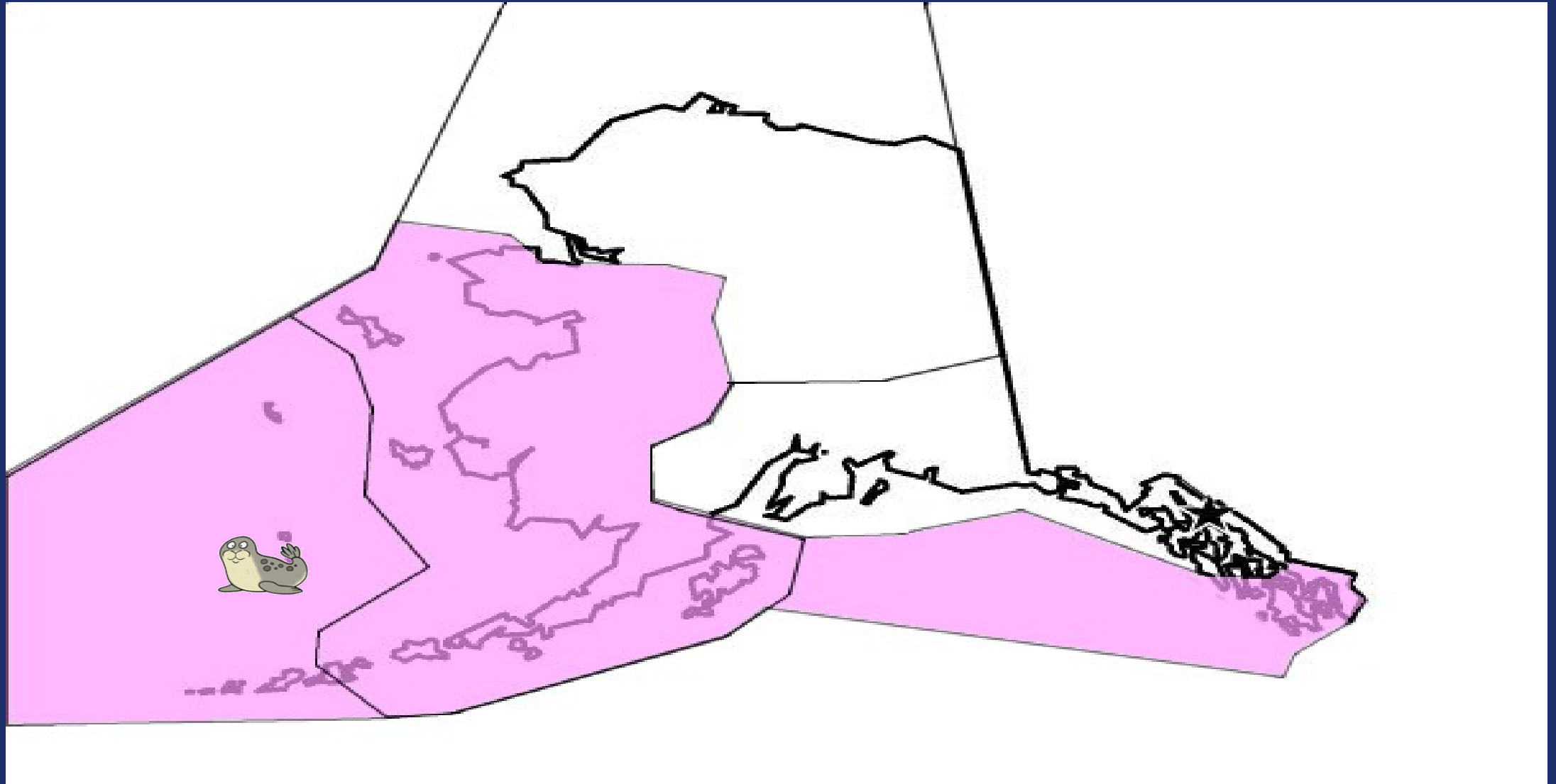
North Specialty



South Specialty



High Specialty



Trigger Event – September 2012

- ERR874, DH8A, ANC to ENA, upon entering ZAN's airspace from A11 at 10,000, the pilot reported moderate mixed icing. They immediately requested and were issued a block altitude of 100B140*
- Upon reaching 120, the aircraft requested a 270 heading and descent to 050. The D-side coordinated with A11 that ERR874 was having issues due to icing and it appeared he was returning to ANC descending to 060*



ERR874

- *5R cleared ERR874 to 060 at pilots discretion. The pilot then requested multiple vectors, in which 5R issued a clearance to deviate as necessary*
- *The aircraft had descended approximately 5,000 feet before the pilot regained control of the aircraft*
- *The significant altitude change was not noticed by the controllers because it was so fast and they were working several other aircraft*



ERR874

- *The primary lesson learned from this event was that the pilot had initially given an Urgent PIREP to the previous controller at A11. That PIREP was not forwarded to ZAN. Situational awareness was not shared between the controllers*
- *Anchorage Approach and ZAN implemented a Standard Operating Procedure requirement for both facilities to exchange important information such as PIREPs*



ZAN did not pass an audit regarding PIREP collection and dissemination until 2015.

Solutions

- *Change the culture in Operations*
- *Demonstrate customer (pilot) impact*
- *Focus on supporting a PIREP improvement effort*
- *Develop a performance review process that creates feedback at all levels of the facility*



How did we do that?

- *Develop and brief expectations for PIREP process*
- *Collaborate with NATCA and develop support for controllers and supervisors to meet PIREP requirements*
- *Engage Airline/Pilot representatives by soliciting and scheduling direct briefings with controllers*
- *Create and implement a Corrective Action Plan that has all levels of the facility involved*



Pilot Outreach

- *Pilot outreach was another method to engage our customers*
- *We have a controller and Manager assigned to work as a collaborative team*
- *They are very active in the aviation community in Alaska and have been successful with assimilating pilot perspective as well as sharing information with the local pilots*



Pilot Outreach (cont)

- *ZAN delivered several crew briefings by visiting senior pilots from both Alaska Airlines and PenAir, discussing a wide array of topics including PIREPs*
- *Crew briefings are conducted every day through the year and allow for direct dialogue*
- *These interactions are designed to increase empathy for our customers and enhance controller understanding of how PIREPs influence pilot decision making*



PIREP Webpage

- *ZAN collaboratively created a PIREP webpage for Operations in 2012*
- *The PIREP information was displayed at the sectors with up to date PIREP data from AISR*
- *The ZAN PIREP webpage is no longer functional but NWS has a similar version available on the Web*



Locally Adapted PIREP Form

- *ZAN collaboratively created an official PIREP form ZAN 7110-1. The form is very similar to the National form. The front is for data entry and the back includes all the applicable coding for PIREPs*
- *This form is still in use*



PIREP FORM

Pilot Weather Report

3-Letter SA Identifier

1.	UA	→	Location:
		→	Time:
		→	Altitude/Flight Level:
		→	Aircraft Type:

Items 1 through 5 are mandatory for all PIREP's

2.	/OV	→	Location:
3.	/TM	→	Time:
4.	/FL	→	Altitude/Flight Level:
5.	/TP	→	Aircraft Type:
6.	/SK	→	Sky Cover:
7.	/WX	→	Flight Visibility and Weather:
8.	/TA	→	Temperature (Celsius):
9.	WV	→	Wind:
10.	/TB	→	Turbulence:
11.	/IC	→	Icing:
12.	/RM	→	Remarks:

ZAN Form 7110-1 (2-10)



PIREP Worksheet

- *In 2013 ZAN Quality Control created a PIREP Worksheet for the Front Line Managers*
- *They have area specific airports included as a checkbox item making it easier for FLMs to check for PIREPs at specific airports*
- *Quality Control has used this form for feedback and performance reviews*



PIREP Worksheet (cont)

- *Feedback to all levels of ATC on performance*
- *The worksheets were collected by QC every day, reviewed and compared to the previous days AISR PIREP data*
- *The PIREP Worksheets were a requirement for FLMs and controllers in charge for three years until ZAN was in compliance with the PIREP National Emphasis Item and Safety Goals*



PIREP WORKSHEET

FLM/CIC: COX
 0730 WX BRIEFING

AREA: HIGH
 0930 WX BRIEFING

DATE: 2/3/15
 1515 WX BRIEFING

Solicit PIREPs when requested or when any of the following conditions exists or is forecast to exist:

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Ceilings at or below 5,000 feet
- at least one descent/climb-out PIREP per hour
- include cloud base/top reports when feasible 2. Visibility (surface/aloft) at or less than 5 miles 3. Turbulence of moderate degree or greater 4. Icing of light degree or greater | <ol style="list-style-type: none"> 5. Thunderstorms, strong frontal activity, squall lines and other related phenomena 6. Wind shear 7. Volcanic ash clouds 8. Braking action advisories are in effect 9. Any other conditions pertinent to flight safety |
|--|--|

AREA/LOCATIONS:

NORTH:

- FAI
- SCC
- BRW
- OTZ
- BTI
- TAL
- BIG
- OME
- UNK
- GAL
- MCG
- BET
- DUT
- CDB
- DLG
- AKN
- ADQ

SOUTH:

- ANC
- ILI
- HOM
- ENA
- TKA
- PAQ
- ORT
- GKN
- VDZ
- CDV
- YAK
- SGY
- GST
- JNU
- PSG
- WRG
- KTN
- SIT

HIGH:

- SNP
- PBV
- ADK
- SYA

ICING: OCUL MOD 0-14k - 32-14

TURB: OCUL MOD 23k-33k - 50-14

LLWS: _____

BRAAIE: _____

SIGMET: R555 TR - 2k-14/11

AIRMET: _____

CWA: _____

OTHER: AAE-28 / Speed Air
TRK CND

LOCATION	TIME (Z)	PIREP	OPS INITIALS
SNP	1455	3 MOD	TE
DLG	1502	9 OCUL MOD - TURB MOD	CB
SYA	1504	3 OCUL MOD	TE
SYA	1510	3 LGT-MOD	TE
SYA	1520	3 LGT-OCUL MOD	TE
SYA	1521	3 LGT-OCUL MOD	TE
ADQ	1538	3 LGT-MOD	CN/EL
SYA	1625	3 CONT LGT-8100	JS
EHM	1635	3 LGT-MOD	CN
SYA	1830	3 MOD	CN
SYA	1836	3 MOD	CN
SYA	2115	3 OCUL - CONT MOD	JS
SYA	2115	3 OCUL - CONT MOD	JS
SYA	2150	3 MOD-SEV	JO
SIT	2218	9 CONT LGT	XO
SIT	2218	9 CONT LGT	XO
SIT	2225	3 CONT MOD	XO
YAK	2252	3 OCUL LGT - ⁴⁰⁰ TURB	XO
YAK	2255	3 LGT-MOD	XO



PIREP WORKSHEET

FLM/CIC: ME

AREA: North

DATE: 1/31/95

0730 WX BRIEFING

0930 WX BRIEFING

1515 WX BRIEFING

Solicit PIREPs when requested or when any of the following conditions exists or is forecast to exist:

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Ceilings at or below 5,000 feet
- at least one descent/climb-out PIREP per hour
- include cloud base/top reports when feasible 2. Visibility (surface/aloft) at or less than 5 miles 3. Turbulence of moderate degree or greater 4. Icing of light degree or greater | <ol style="list-style-type: none"> 5. Thunderstorms, strong frontal activity, squall lines and other related phenomena 6. Wind shear 7. Volcanic ash clouds 8. Braking action advisories are in effect 9. Any other conditions pertinent to flight safety |
|--|--|

AREA/LOCATIONS:

NORTH:

- FAI
- SCC
- BRW
- OTZ
- BTT
- TAL
- BIG
- OME
- UNK
- GAL
- MCG
- BET
- DUT
- CDB
- DLG
- AKN
- ADQ

SOUTH:

- ANC
- ILI
- HOM
- ENA
- TKA
- PAQ
- ORT
- GKN
- VDZ
- CDV
- YAK
- SGY
- GST
- JNU
- PSG
- WRG
- KTN
- SIT

HIGH:

- SNP
- PBV
- ADK
- SYA

ICING:

TURB: low level @ CDB/DUT + OTZ

LLWS:

BRAAIE:

SIGMET:

AIRMET:

CWA:

OTHER:

LOCATION	TIME (Z)	PIREP	OPS INITIALS
ADD	1705	Light Turb / Trace Mixed	ME
UNK	1840	Tops 30	ME
DUT	1840	Tops 032 Base 010	ME
OME	1848	Smooth	ME
OME	1855	OME Tops 022	ME
GAL	1910	LOT RIME ⁰³⁰⁻⁰¹¹ M4	ME
FAI	1925	FAI 260035 Clear	ME
OME	1855	Tops 022	ME
GAM	1923	NEG ICE / TURB	ME
MLG	1920	BRAP	ME
OTZ	1948	BASE 011 ^{NEG ICE} TOPS 030	ME
SCL	1948	BLSN / NEG ICE / TURB	ME
GAL	1953	^{TOPS 028} BASE 012 NEG ICE	ME
DUT	2127	1	AA
P40	2130	1, 4	AA
SOP	2212	LLWS +/- 10	AA
DUT	2232	1	AA
BDP	2255	3	AA
DUT	2300	3	AA
DUT	2321	LG TURB	AA



PIREP WORKSHEET

FLM/CIC: ZIP

AREA: SOUTH

DATE: 14 JAN 2015

0730 WX BRIEFING

0930 WX BRIEFING

1515 WX BRIEFING

- Solicit PIREPs when requested or when any of the following conditions exists or is forecast to exist:
- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Ceilings at or below 5,000 feet
- at least one descent/climb-out PIREP per hour
- include cloud base/top reports when feasible 2. Visibility (surface/aloft) at or less than 5 miles 3. Turbulence of moderate degree or greater 4. Icing of light degree or greater | <ol style="list-style-type: none"> 5. Thunderstorms, strong frontal activity, squall lines and other related phenomena 6. Wind shear 7. Volcanic ash clouds 8. Braking action advisories are in effect 9. Any other conditions pertinent to flight safety |
|--|--|

AREA/LOCATIONS:

- | | | |
|---|---|--|
| <p>NORTH:</p> <ul style="list-style-type: none"> <input type="checkbox"/> FAI <input type="checkbox"/> SCC <input type="checkbox"/> BRW <input type="checkbox"/> OTZ <input type="checkbox"/> BTT <input type="checkbox"/> TAL <input type="checkbox"/> BIG <input type="checkbox"/> OME <input type="checkbox"/> UNK <input type="checkbox"/> GAL <input type="checkbox"/> MCG <input type="checkbox"/> BET <input type="checkbox"/> DUT <input type="checkbox"/> CDB <input type="checkbox"/> DLG <input type="checkbox"/> AKN <input type="checkbox"/> ADQ | <p>SOUTH:</p> <ul style="list-style-type: none"> <input type="checkbox"/> ANC <input checked="" type="checkbox"/> ILI <input type="checkbox"/> HOM <input type="checkbox"/> ENA <input type="checkbox"/> TKA <input type="checkbox"/> PAQ <input type="checkbox"/> ORT <input type="checkbox"/> GKN <input checked="" type="checkbox"/> VDZ <input type="checkbox"/> CDV <input checked="" type="checkbox"/> YAK <input checked="" type="checkbox"/> SGY <input checked="" type="checkbox"/> GST <input checked="" type="checkbox"/> JNU <input checked="" type="checkbox"/> PSG <input checked="" type="checkbox"/> WRG <input checked="" type="checkbox"/> KTN <input checked="" type="checkbox"/> SIT | <p>HIGH:</p> <ul style="list-style-type: none"> <input type="checkbox"/> SNP <input type="checkbox"/> PBV <input type="checkbox"/> ADK <input type="checkbox"/> SYA |
|---|---|--|

ICING: JNU 050-120

TURB: SFC-060 & 250-400

LLWS: JNU AREA

BRAAIE: _____

SIGMET: _____

AIRMET: _____

CWA: _____

OTHER: _____

LOCATION	TIME (Z)	PIREP	OPS INITIALS
ANC	1510	MOD TURB 360	
ANC	1521	MOD TURB 350	
ENN	1524	MOD TURB 270	
ANC	1530	MOD CHOP 250	
SQA	1530	MOD TURB 340	
SQA	1533	MOD TURB 350	
SQA	1535	SMOOTH 350	
ANC	1548	MOD TURB 320	
SQA	1551	LGT CHOP 280	
ILI	1607	LGT TURB 220	
ORT	1610	LGT TURB 370	
KTN	1619	OVC 015 TOP 100	
AKW	1610	OVC 010 TOP 070	
TKA	1713	LGT TURB 230	
CDV	1650	MOD TURB 400	
GKN	1650	LGT TURB 370	
ENA	1750	LGT RIME ICE 100	
JNU	1738	LGT TURB TURG C	
ENA	1800	MOD CHOP 105	
AKW	185	MOD TURB 010	



PIREPs: Local Emphasis Item

- *PIREPs have been a part of the ZAN local Emphasis Items in the QC Operational Skills Assessments (QC OSAs) since 2013*



PIREPs: National Emphasis Item

- FAA required PIREPs as a National Emphasis Item on all Operational Skill Assessments (QC OSAs) in July 2014*
- The National Safety Guidance on this requirement has also included additional specific system service reviews (SSRs) on PIREPs or any event that included PIREPs or lack there-of as a causal factor*



Alaska PIREP Improvement Initiative

- *A wide group of participants that include Alaska Flight Service, ZAN, AK Terminal District, NOAA, AOPA, National Airmen's Association, AFSIAG, Alaska Airlines, Everts Air, NWS, ZAN CWSU, etc*



Alaska PIREP Improvement Initiative

- This group demonstrates a wide ranging effort to make significant improvements to collecting and disseminating PIREPs to pilots*
- The group is lead by Alaska Flight Service and continues to meet once per month to provide information and updates on current initiatives. The team has many on-going projects to improve PIREPs*



Perpetual Challenges

- *Evaluating facility effectiveness is an onerous process for ZAN's Quality Control office*
- *Lack of automation for interfaces between pilot/controller and data entry*
- *Sustaining a focus on PIREPs*
- *Maintaining meaningful and timely communication with operational workforce on PIREP performance metrics*





*Alaska – The Last Frontier in more ways
than one*