

FAA Anchorage ARTCC



Presented to: Cross Polar Working Group / 18

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Anchorage ARTCC

Date: December 16-19, 2014



Federal Aviation
Administration



Anchorage ARTCC (ZAN) Overview

- **Anchorage ARTCC Facts**
- **ZAN Sector “64”**
- **Space Launch Activities**
- **UAS Operations**
- **Large Scale Military Exercises**
- **ZAN Traffic Count**



Anchorage ARTCC (ZAN) Overview

Anchorage ARTCC Facts

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



Anchorage ARTCC (ZAN) Overview

Anchorage ARTCC Facts

Air Traffic Facility Personnel

- 146 Employees total
- 64 Controller Work Force
- 30 Trainees
- 19 Front Line Managers (include STMC)
- 3 Operations Managers
- 4 Support Managers
- 9 Support Staff
- 4 Traffic Management Coordinators
- 9 Flight Data Unit
- 4 CWSU Weather Unit

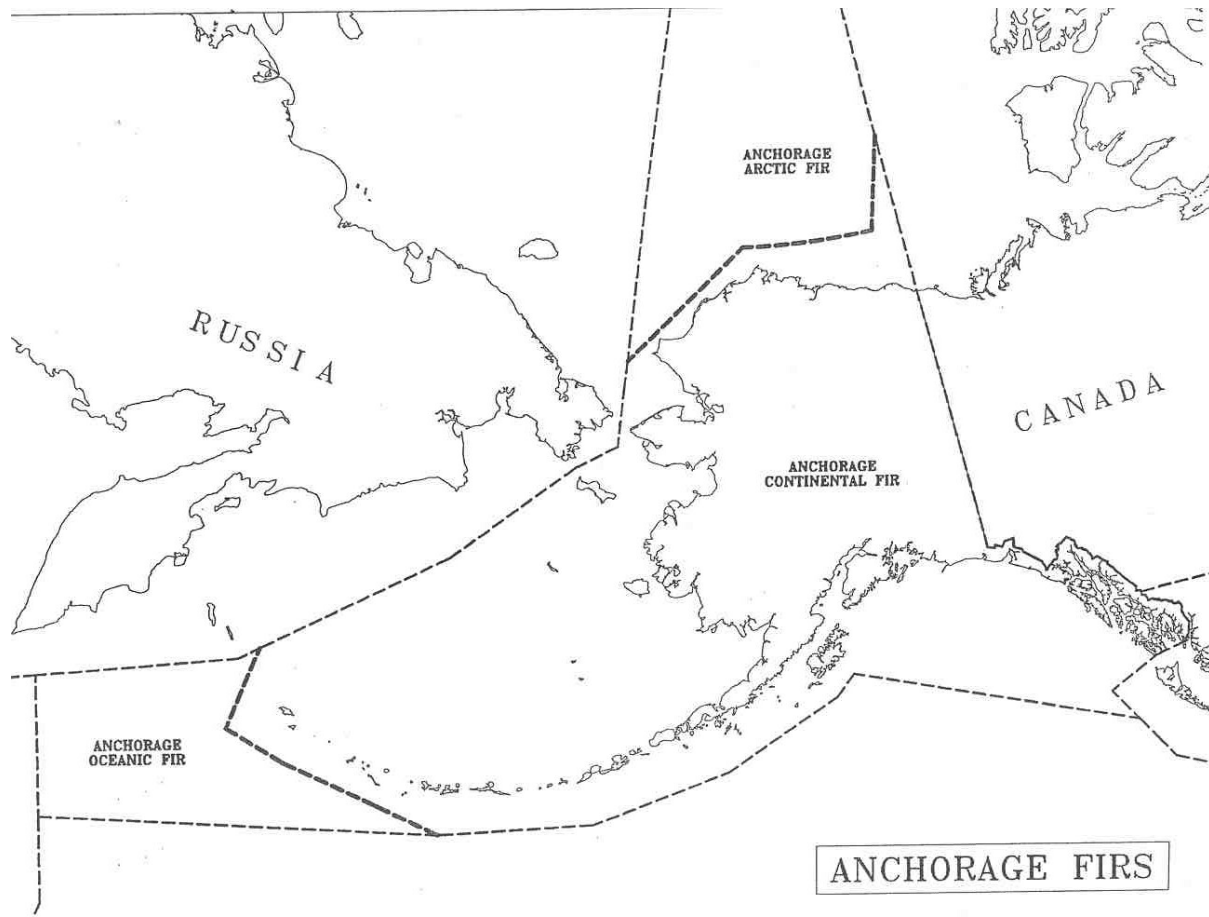


Anchorage ARTCC (ZAN) Overview

Anchorage ARTCC Facts

- Three Flight Information Regions (FIR)

- Anchorage Continental FIR
- Anchorage Arctic FIR
- Anchorage Oceanic FIR



Anchorage ARTCC (ZAN) Overview

Anchorage ARTCC Facts

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)**



Anchorage ARTCC (ZAN) Overview

Anchorage ARTCC Facts

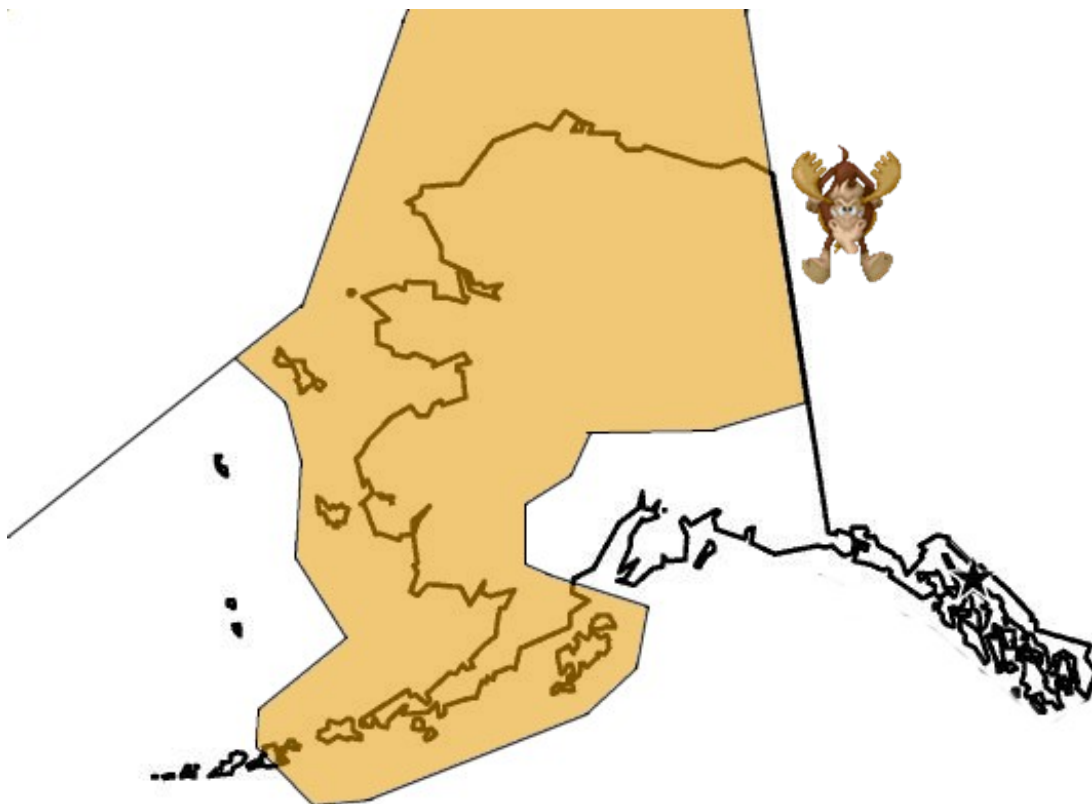
Airspace and Sector Structure

- Three Areas of Specialization
 - North
 - South
 - High

Anchorage ARTCC (ZAN) Overview

Anchorage ARTCC Facts

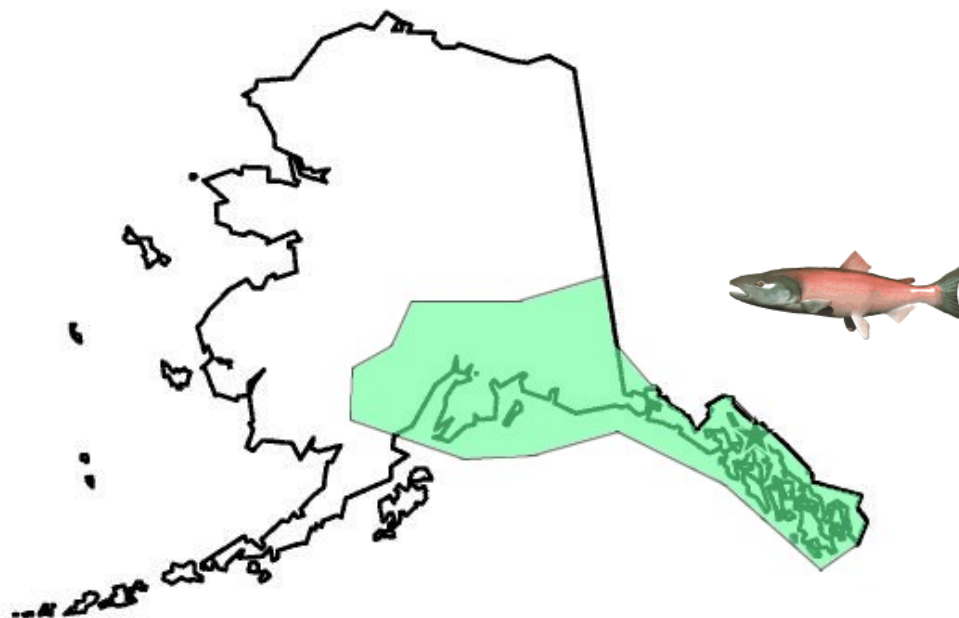
North Specialty



Anchorage ARTCC (ZAN) Overview

Anchorage ARTCC Facts

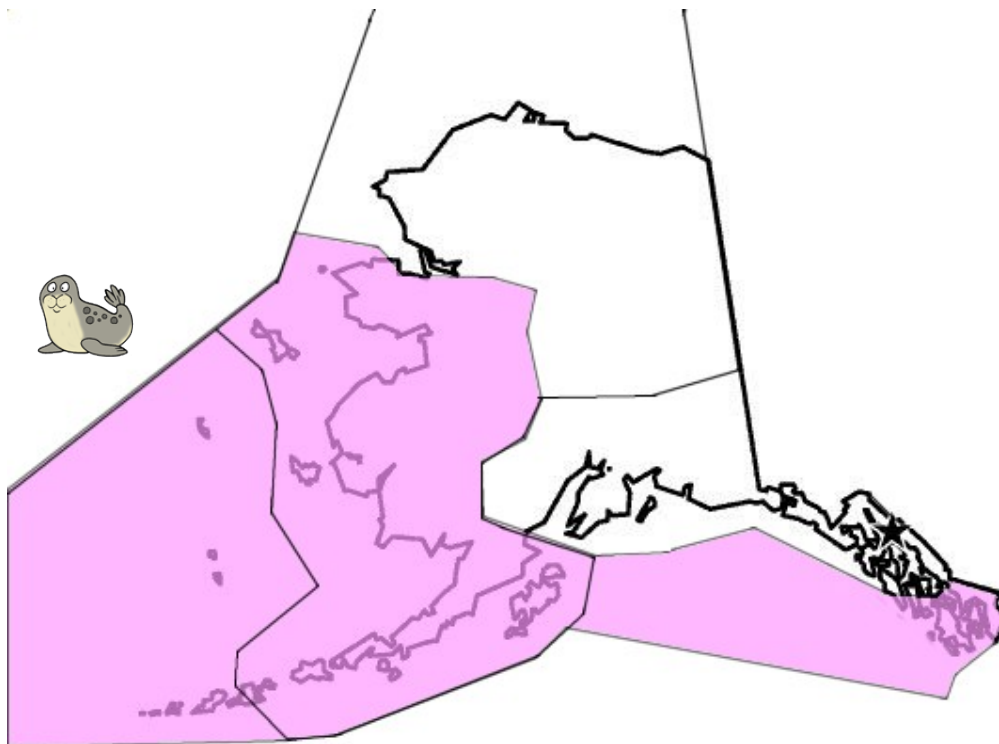
South Specialty



Anchorage ARTCC (ZAN) Overview

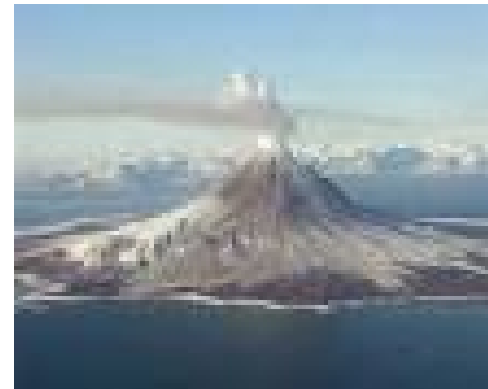
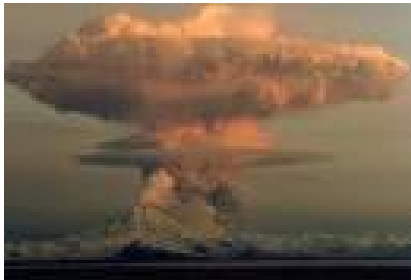
Anchorage ARTCC Facts

High Specialty



Anchorage ARTCC (ZAN) Overview

Volcanoes



Anchorage ARTCC (ZAN) Overview

Volcanoes

Active volcanoes of Kamchatka and the northern Kurile Islands

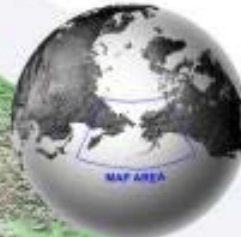
Ksudach
Zhelovskiy
Iliynskiy
Koshelev
Kambalny
Alaid (11)
Ebeko
Chikurachki
Fuss Peak
Karpinsky Group

Komarov
Gamchen
Kronotsky
Krashenninnikov
Uzon
Kikhpinyoh
Bolshoi Semichik
Maly Semichik

Karymsky (6)
Dzenzursky
Zhupanovsky
Koryaksky (7)
Avachinsky (8)
Gorely (9)
Opala
Mutnovsky (10)

Sheveluch (1)
Ushkovsky
Klyuchevskoy (2)
Bezmianny (3)
Plosky Tolbachik (4)
Ichinsky
New Tolbachik
Kizimen (5)

Volcanoes in **bold-underline** are systematically monitored.
Numbers in parentheses refer to map locations below.

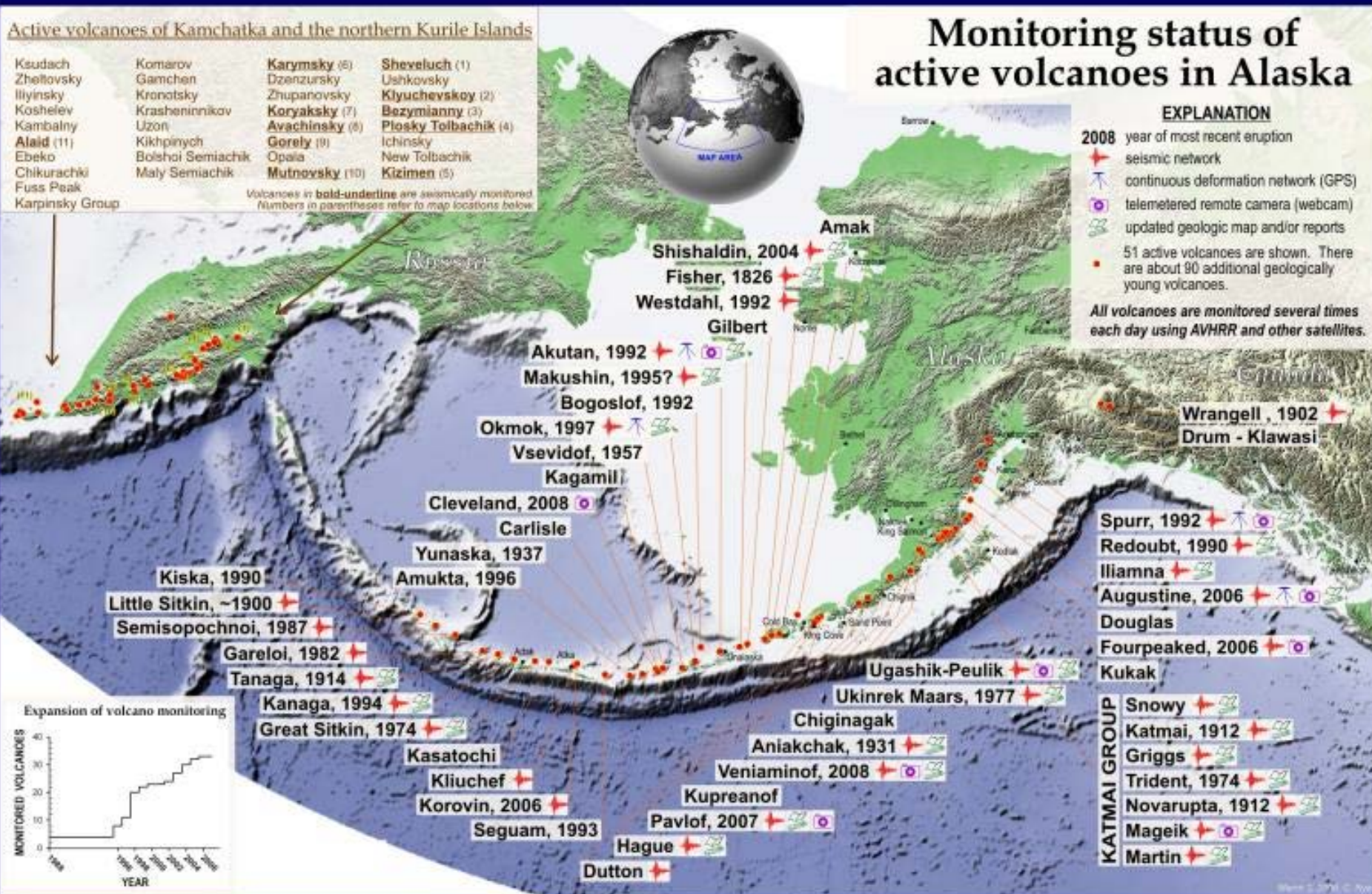


Monitoring status of active volcanoes in Alaska

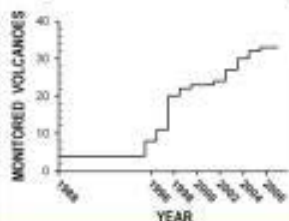
EXPLANATION

- 2008 year of most recent eruption
- seismic network
 - continuous deformation network (GPS)
 - telemetered remote camera (webcam)
 - updated geologic map and/or reports
- 51 active volcanoes are shown. There are about 90 additional geologically young volcanoes.

All volcanoes are monitored several times each day using AVHRR and other satellites.

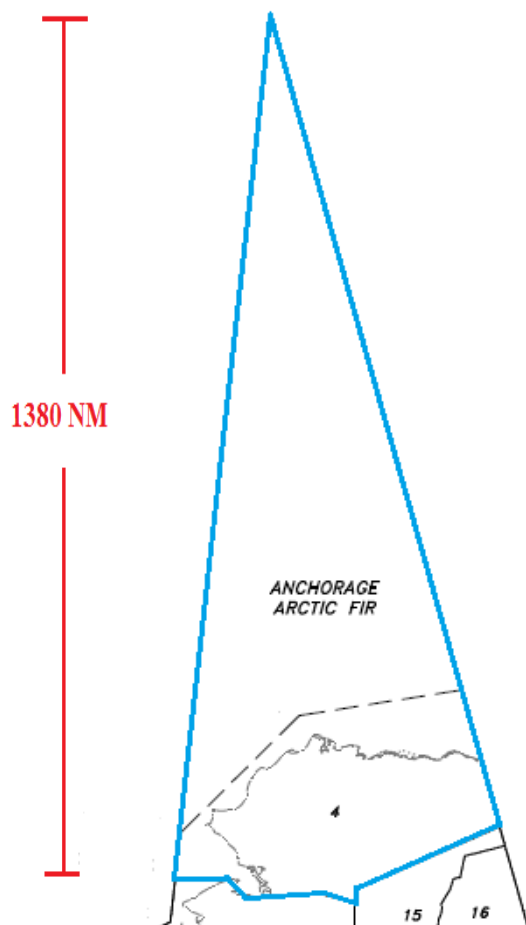


Expansion of volcano monitoring



13

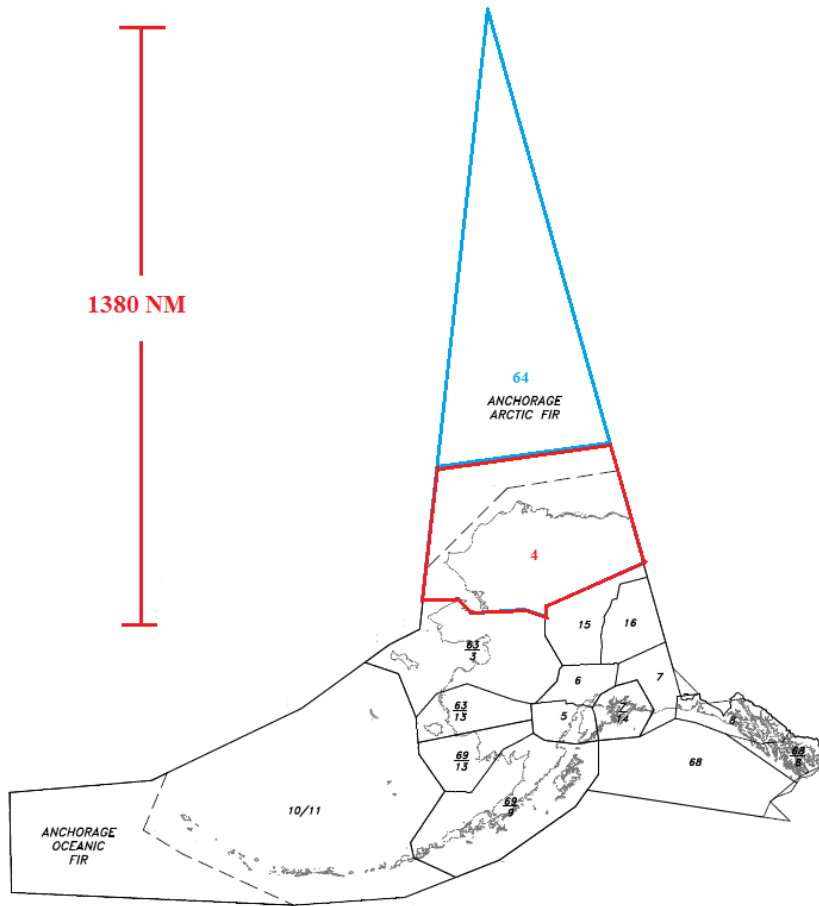
Current - ZAN Sector “4”



- Current Sector 4 utilizes Flight Data Processor 2000 (FDP2K) and Micro En Route Automated Radar Tracking System (MEARTS).
- FDP2K supports Controller / Pilot Data Link (CPDLC) and Air Traffic Services Inter-facility Data Coordination (AIDC).
- MEARTS radar surveillance limited to land based radar sensors.
- FDP2K does not provide conflict detection. MEARTS provides short term, (tactical), conflict “alert.”
- FDP2K does not support FANS Automatic Dependent Surveillance – Contract (ADS-C).
- Unique geometry limits the scale of paper diagrams, i.e. controller charts, thereby limiting the controller’s ability to chart flight paths and determine lateral conflicts and/or flight path de-confliction points.

Result – the need, in the Arctic FIR, for proceduralized airspace.

Future – ZAN Sectors “4” and “64”



- Sector 4 divided into Sectors 4 and 64.
- Division line tentatively set at 73° N.
- Sector 4 continues with FDP2K and MEARTS
- Sector 64 will utilize Advanced Technologies and Oceanic Procedures Ocean 21 system, (ATOP/OC21).
- ATOP supports CPDLC, AIDC and ADS-C.
- Implementation of Sector 64 requires controller staffing + controller training + modification of systems' adaptation (i.e. database) + system testing (stand alone and inter-facility) + correction of any discovered deficiencies.
- Sum total of above variables yields tentative implementation date end of 2nd Qtr. CY 2015.

Space Launch Activities



Courtesy www.akaerospace.com

Unmanned Aircraft Systems (UAS)



Military Exercises



Military Exercises

- **3 Large scale military exercises planned for 2015 (dates tentative):**
 - Red Flag 15-2 30 Apr - 15 May 2015
 - Northern Edge 15 11 Jun - 26 Jun 2015
 - Red Flag 15-3 6 Aug - 21 Aug 2015
- **Exercises involve 50 plus aircraft and numerous Military Operations Areas (MOAs), ATC Assigned Airspaces (ATCAAs), and Restricted Areas.**
- **Traffic Management Initiatives (TMIs) will be issued to accommodate non-participating aircraft.**



Military Exercises

Red Flag TMI

1) ALL WESTBOUND FLIGHTS ENTERING THE ANCHORAGE FIR NORTH OF 62N141W MUST BE ESTABLISHED ON ONE OF THE FOLLOWING ROUTES: (A) ON OR NORTH OF NCA30 (B) OVER OR SOUTH OF ORT. IF ROUTING VIA ORT, UTILIZE ONE OF THE FOLLOWING TRANSITIONS:

- (1) ORT J124 BGQ NODLE R220**
- (2) ORT J124 BGQ NODLE NICH0 R580**
- (3) ORT J124 GKN 6140N151W MCG**

2) ALL EASTBOUND FLIGHTS TRANSITING THE ANCHORAGE FIR SHALL FLIGHT PLAN VIA ONE OF THE FOLLOWING:

- (A) ON OR NORTH OF FYU J167 POTAT NCA30**
- (B) OVER OR SOUTH OF ANC J511 GKN J124 ORT**

Military Exercises

Red Flag TMI

3) THE FOLLOWING ROUTES ARE **NOT** AVAILABLE:

(A) *NCA28, NCA24, NCA19 AND NCA22*

(B) J167 BETWEEN GKN AND FYU

(C) *J502/J515 BETWEEN FAI AND ORT*

(D) V481 BETWEEN BIG AND FYU

(E) J507 BETWEEN ORT AND FYU

4) FROM 1700-1800 UTC, 2030-2100 UTC, 2300-0000 UTC AND 0230-0300 UTC WEEKDAYS
AIRCRAFT LANDING/DEPARTING FAI AND LOW ALTITUDE AIRCRAFT FILED BETWEEN BIG AND ORT OR BIG AND GKN WILL BE RESTRICTED AT OR BELOW 17000 MSL.

Military Exercises

Red Flag TMLs

5) FROM 1800-2030 UTC AND 0000-0230 UTC WEEKDAYS, THE FOLLOWING ROUTES ARE NOT AVAILABLE:

(A) A2, A15 AND B25

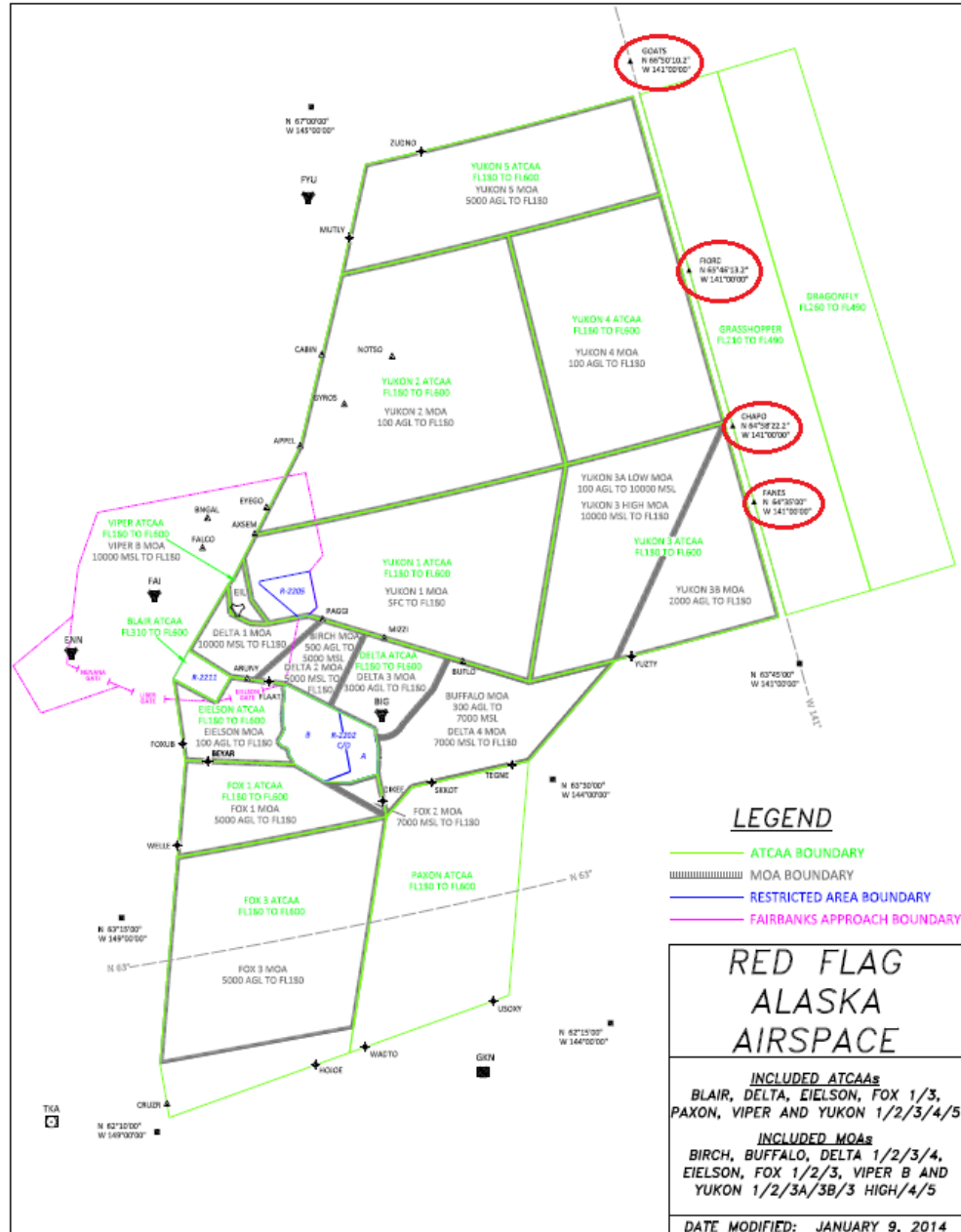
(B) V444, V481 AND V515

(C) T232 AND T226

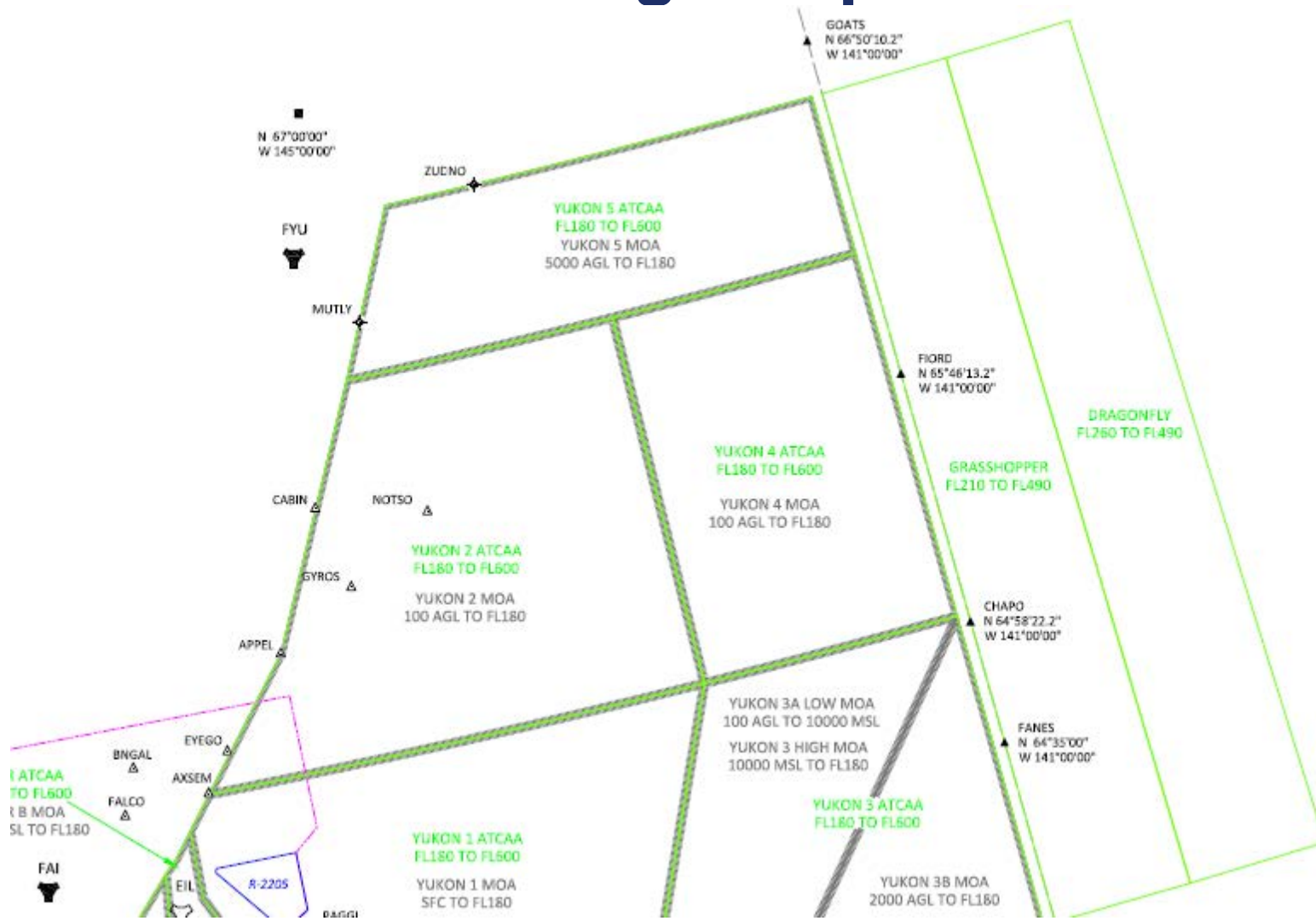
(D) ***DIRECT ROUTES OVER OR IN THE VICINITY OF BIG.***

6) FROM 1800-2030 UTC AND 0000-0230 UTC, IFR ARRIVALS/DEPARTURES TO/FROM ALLEN AAF ARE UNAVAILABLE.

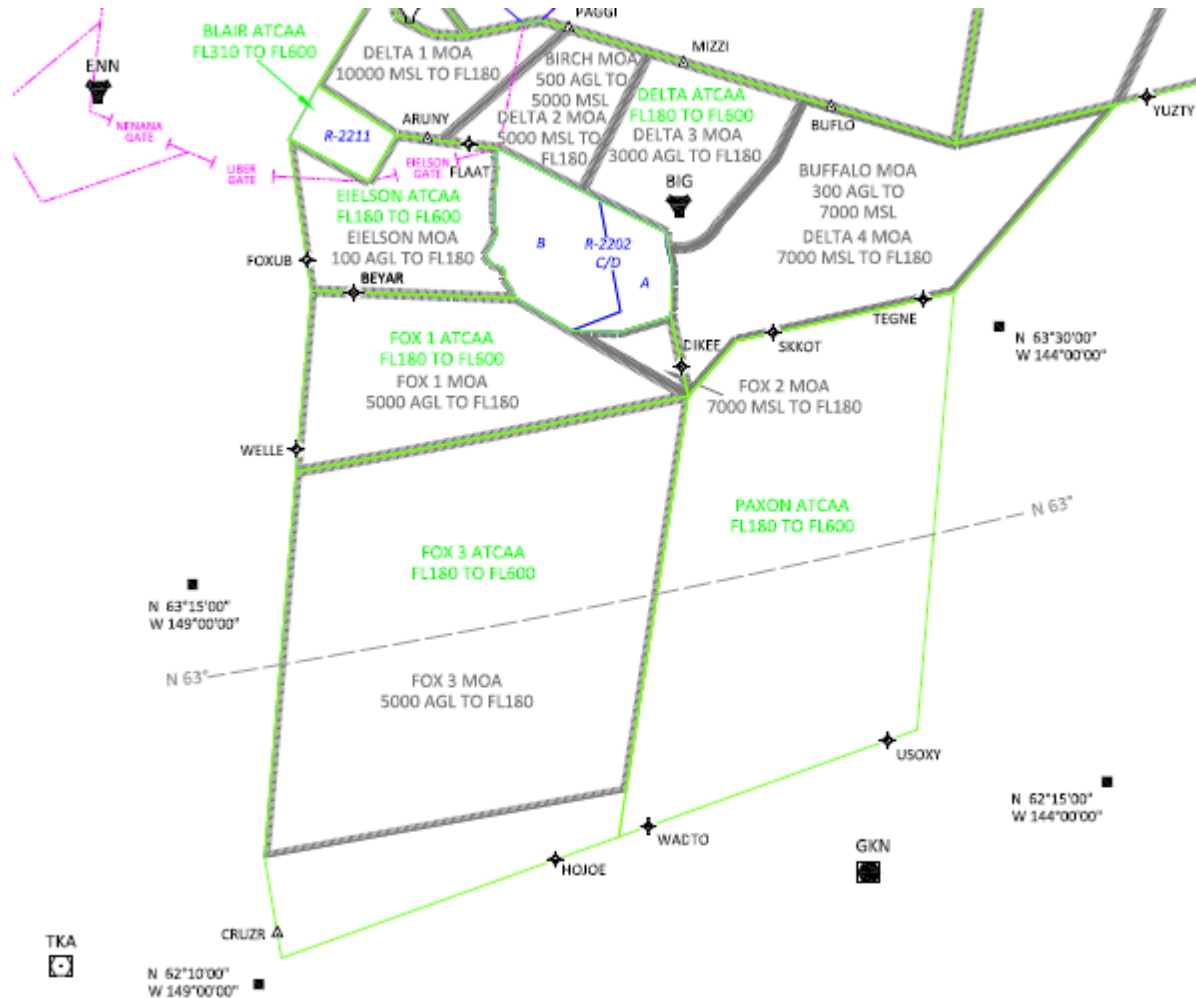




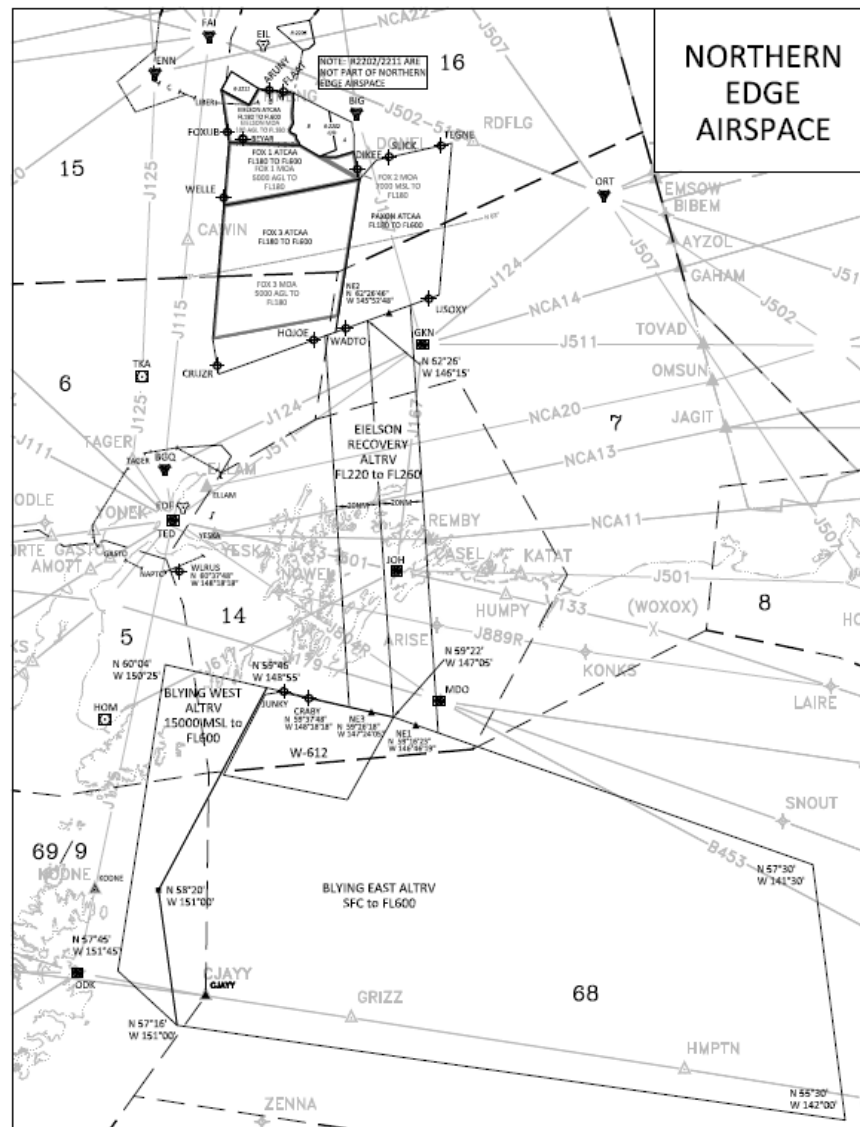
Red Flag Airspace



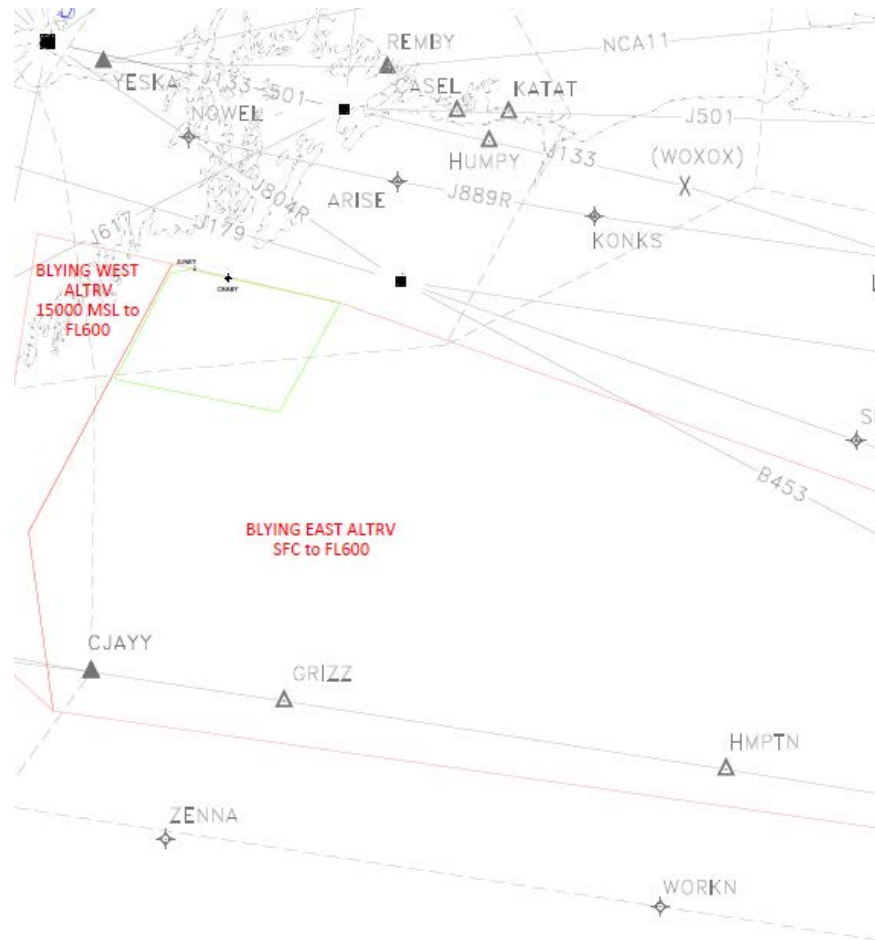
Red Flag Airspace



Northern Edge Airspace



Northern Edge Airspace



Military Exercises

Refer to NOTAMs and FAA's "SUA" website for updated Special Use Airspace information - <http://sua.faa.gov>



ZAN Traffic Count

1

%

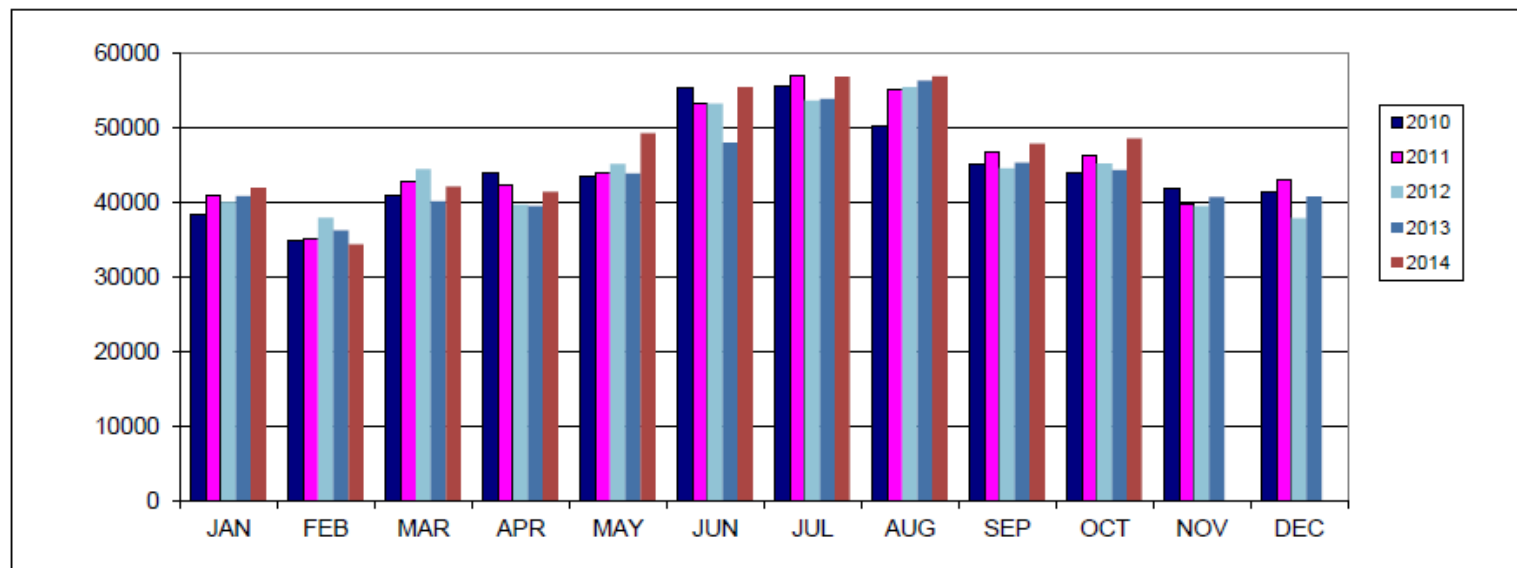
2

7

ZAN Traffic Count

Total Facility +6% YTD

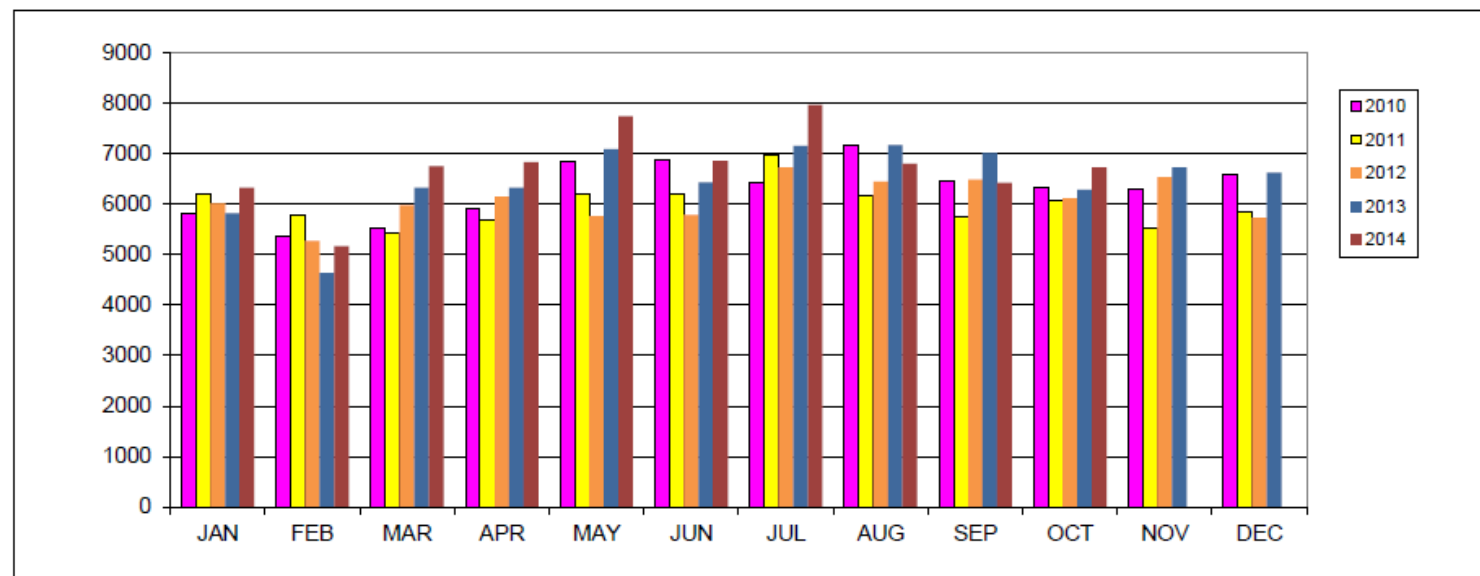
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
JAN	41405	43374	41700	43148	42717	46048	41930	44466	44310	37972	38266	40841	39982	40761	41896
FEB	39261	39678	37730	40907	42718	43678	38336	38979	39557	35092	34911	35074	37909	36213	34342
MAR	44612	46923	40890	41358	46028	49399	45706	44768	44568	36122	40790	42750	44344	40090	42091
APR	40207	44481	44187	41855	46067	47702	46003	48241	47655	37785	43796	42285	39622	39482	41358
MAY	43191	52088	49579	45500	47920	51771	47517	48098	47961	39798	43565	43866	45085	43815	49224
JUN	50265	56049	58893	52559	57367	59561	54231	55641	54009	48129	55374	53225	53173	47914	55353
JUL	59388	67084	65741	58916	66492	62311	57619	60125	55944	50701	55470	56989	53573	53756	56752
AUG	60506	64659	63693	53579	64694	67390	60477	55778	52898	51310	50135	54995	55355	56217	56797
SEP	49648	45344	49493	47570	51638	54891	49012	50360	46216	44483	45007	46635	44524	45292	47812
OCT	50534	46642	50614	48684	52788	51666	48885	49589	45960	45356	43825	46187	45132	44277	48511
NOV	43242	42161	44632	44540	46006	44410	43945	45404	40016	39013	41858	39616	39457	40642	
DEC	42951	32458	44292	45820	47686	45327	44614	43393	38735	40096	41232	42907	37824	40738	
Total	565210	580941	591444	564436	612121	624154	578275	584842	557829	505857	534229	545370	535980	529197	474136
% Change		3%	2%	-5%	8%	2%	-7%	1%	-5%	-9%	6%	2%	-2%	-1%	



ZAN Traffic Count

Oceanic +5.2 YTD

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
JAN	5202	5282	4697	5820	5596	6694	5484	5647	6079	5397	5826	6205	6016	5825	6331
FEB	4898	4836	4258	5133	5548	5913	5047	5376	5858	4723	5385	5783	5281	4637	5169
MAR	5465	5651	5086	5382	5783	6433	6440	8051	6871	5320	5525	5437	5986	6334	6752
APR	5356	5538	4993	4967	5843	6773	6513	7401	6755	4842	5912	5684	6150	6330	6842
MAY	5184	5414	5427	4966	5878	6400	5874	7674	6326	5339	6845	6207	5772	7096	7752
JUN	5187	5598	5841	5248	6434	6424	6414	7832	5772	4912	6886	6199	5792	6433	6864
JUL	5731	5566	6064	5669	6726	6931	6580	7881	6452	6173	6445	6984	6738	7166	7977
AUG	5950	5877	5597	5324	6722	7410	6621	8139	6299	6442	7175	6161	6458	7179	6803
SEP	5998	4805	5502	5616	6492	6612	6203	8113	6167	5879	6476	5752	6489	7018	6430
OCT	5824	5118	6497	5716	7044	6436	6450	7469	5743	5890	6353	6072	6116	6291	6731
NOV	5535	4993	6021	5758	6277	6204	6228	6843	5331	5816	6302	5536	6540	6733	
DEC	5779	3925	5490	5522	5954	6135	5525	5817	5329	6048	6602	5859	5738	6635	
Total	66109	62603	65473	65121	74297	78365	73379	86243	72982	66781	75732	71879	73076	77677	67651
% Change		-5%	5%	-1%	14%	5%	-6%	18%	-15%	-8%	13%	-5%	2%	6%	



ZAN Traffic Count

NOPAC* +1.7% YTD

	2006	2007	2008	2009	2010	2011	2012	2013	2014
JAN	5122	5103	5047	4769	5188	5336	5354	4668	4167
FEB	4609	5021	4381	4043	4765	4925	4428	3708	4288
MAR	6022	7632	6365	4513	4682	4564	4888	4896	5547
APR	6083	6923	6107	4109	4967	4908	5214	5284	5780
MAY	5394	7224	5461	4563	6094	5304	4749	5938	6289
JUN	6088	7440	4947	3958	6050	5225	4853	5489	5649
JUL	6144	7540	5583	5279	5524	5947	5737	6020	6409
AUG	6273	7584	5385	5524	6192	4892	5479	5991	5188
SEP	5772	7462	5322	5147	5514	4711	5316	5761	5021
OCT	5782	6750	4928	5131	5291	5018	5203	4887	5192
NOV	5796	6231	4600	5044	5321	4363	5598	5627	
DEC	4933	5204	4662	5354	5710	4678	4588	5145	
Total	68018	80114	62788	57434	65298	59871	61407	63414	53530
% Change		18%	-22%	-9%	14%	-8%	3%	3%	

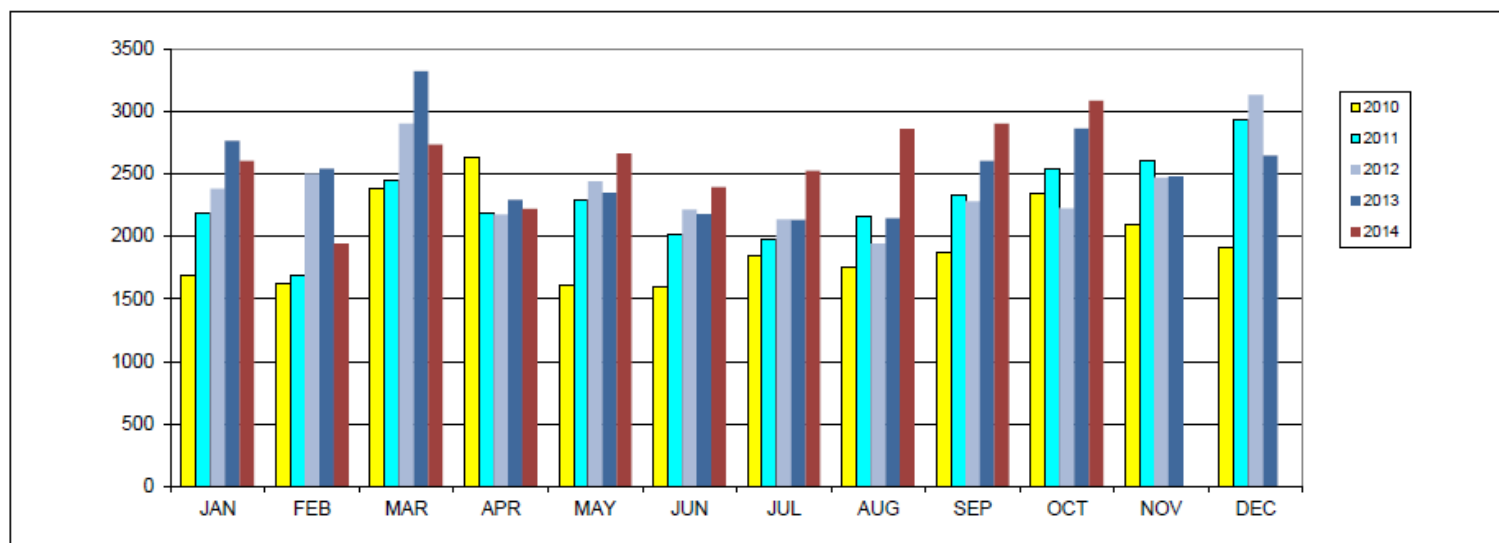
* “NOPAC” equals “Oceanic” minus “Cross Polar”

ZAN Traffic Count

Cross Polar and RFE +2.9% YTD

*Effective May 2008, includes Eastbound count

	2000	2001	2002	2003	2004	2005	2006	2007	2008*	2009	2010	2011	2012	2013	2014
JAN	384	493	457	477	483	750	1119	1818	2234	1760	1686	2188	2383	2768	2605
FEB	366	558	306	356	497	723	1279	1119	1690	1914	1619	1690	2499	2544	1943
MAR	470	464	476	390	574	930	1546	1306	1583	1622	2379	2453	2904	3326	2738
APR	403	544	421	292	633	698	1277	1634	1602	1466	2630	2184	2176	2294	2223
MAY	336	246	447	218	578	748	1310	1530	2151	1607	1614	2297	2442	2351	2664
JUN	449	438	400	189	583	799	1057	996	2122	1900	1598	2016	2215	2179	2395
JUL	352	410	363	220	408	707	1175	924	1819	1696	1841	1983	2136	2134	2529
AUG	369	427	361	357	535	758	810	1275	2162	1720	1761	2159	1942	2148	2861
SEP	378	452	441	370	657	1134	1112	1406	1923	2000	1870	2333	2280	2608	2905
OCT	588	417	518	466	1038	1233	1521	2036	2217	1855	2346	2538	2225	2867	3089
NOV	593	409	544	521	1029	964	1195	2188	2141	2167	2099	2603	2473	2482	
DEC	617	525	552	670	1163	1055	2056	2525	1851	1836	1908	2939	3134	2647	
Total	5305	5383	5286	4526	8178	10499	15457	18757	23495	21543	23351	27383	28809	30348	25952
% Increase		1%	-2%	-14%	81%	28%	47%	21%	25%	-8%	8%	17%	5%	5%	



ZAN Traffic Count

Cross Polar Distribution

2013	DEVID		NALIM		LURUN		RAMEL		PINAG		NIKIN		ORVIT		AMATI		PILUN		LISKI		TOTAL
	E	W	E	W	E	W	E	W	E	W	E	W	E	W	E	W	E	W	E	W	
JAN	1	14	0	3	0	25	10	185	0	33	7	12	32	255	1	9	48	130	49	231	1045
FEB	1	24	0	0	0	32	10	149	0	14	6	96	37	173	1	5	37	92	35	217	929
MAR	5	25	0	0	2	41	15	154	0	32	8	111	21	307	1	14	28	256	29	389	1438
APR	3	35	0	3	4	37	8	142	3	33	18	109	36	210	1	5	65	97	54	183	1046
MAY	3	12	1	8	7	73	35	139	2	32	28	72	92	202	1	3	109	141	70	134	1164
JUN	7	8	2	0	33	36	47	64	8	17	27	34	181	135	6	0	126	66	58	89	944
JUL	5	28	1	5	13	20	61	100	9	25	24	54	151	193	16	4	121	89	75	152	1146
AUG	4	15	4	9	6	52	37	141	4	42	10	69	114	239	7	12	101	111	72	139	1188
SEP	4	32	0	2	0	29	13	150	3	62	8	116	72	234	9	29	82	91	109	212	1257
OCT	2	25	0	8	1	66	14	120	1	31	13	108	59	280	12	24	73	191	69	307	1404
NOV	0	21	0	6	0	27	0	141	3	23	1	153	21	230	10	13	70	110	59	218	1106
DEC	0	16	0	0	1	71	6	144	3	32	7	104	22	260	9	18	69	138	68	222	1190
TOTAL	35	255	8	44	67	509	256	1629	36	376	157	1038	838	2718	74	136	929	1512	747	2493	13857

2014	DEVID		NALIM		LURUN		RAMEL		PINAG		NIKIN		ORVIT		AMATI		PILUN		LISKI		TOTAL
	E	W	E	W	E	W	E	W	E	W	E	W	E	W	E	W	E	W	E	W	
JAN	0	31	0	1	0	40	1	117	0	23	6	112	40	171	10	11	81	134	86	218	1082
FEB	0	25	0	1	0	13	6	53	2	28	11	81	58	153	11	8	97	42	87	205	881
MAR	0	26	0	3	2	45	3	107	5	53	4	164	49	158	16	2	118	127	67	256	1205
APR	0	8	0	7	3	29	10	122	3	70	8	114	36	235	5	13	99	110	92	98	1062
MAY	0	11	0	3	3	104	20	200	10	67	11	112	43	274	3	18	127	130	150	177	1463
JUN	4	4	5	5	3	62	54	106	23	13	42	54	70	231	9	15	102	156	79	178	1215
JUL	7	7	1	10	16	95	28	222	6	39	10	106	101	270	16	18	214	64	225	113	1568
AUG	4	22	2	4	7	39	94	115	19	54	34	80	81	292	26	29	194	197	116	206	1615
SEP	1	47	0	4	0	78	10	27	4	54	13	162	70	226	22	32	160	127	154	218	1409
OCT	1	29	0	1	4	33	6	99	2	65	4	116	39	292	14	39	135	223	104	333	1539
NOV																					0
DEC																					0
TOTAL	17	210	8	39	38	538	232	1168	74	466	143	1101	587	2302	132	185	1327	1310	1160	2002	13039



ZAN Traffic Count

Cross Polar Distribution

- **Initial Data for SALET and BARIP available at CPWG/19**



ZAN Traffic Count

RFE Distribution

2013	FRENK		KUTAL		VALDA		ERNIK		RUSOR		BESAT		BAMOK		KOKES		LUMES		KUNAD		TOTAL
	E	W	E	W	E	W	E	W	E	W	E	W	E	W	E	W	E	W	E	W	
JAN	73	48	10	151	40	641	3	261	11	7	32	281	6	15	0	20	0	12	0	0	1611
FEB	50	61	3	261	1	542	2	214	24	9	44	303	17	17	1	29	0	35	0	2	1615
MAR	70	73	12	323	7	718	0	280	13	7	61	267	19	3	0	28	0	7	0	0	1888
APR	64	79	22	83	5	436	1	101	39	13	63	214	16	33	0	24	0	52	0	3	1248
MAY	52	54	2	61	8	390	4	119	52	10	121	194	31	14	1	26	0	48	0	6	1193
JUN	25	78	1	46	16	440	6	242	23	7	62	256	19	9	1	20	0	12	0	2	1265
JUL	26	71	5	35	12	408	3	99	39	4	96	134	39	1	0	4	0	10	0	2	988
AUG	31	58	5	53	12	398	8	94	37	4	103	121	20	6	0	5	0	4	0	1	960
SEP	34	103	7	58	11	513	6	152	56	15	174	144	59	3	4	6	0	6	0	0	1351
OCT	45	64	11	142	13	622	8	203	55	10	78	150	43	6	2	5	0	5	0	1	1463
NOV	34	94	7	160	9	547	2	121	36	4	74	150	26	17	0	29	0	65	0	1	1376
DEC	45	71	6	144	6	588	0	182	20	20	30	194	20	28	1	45	0	50	0	6	1456
TOTAL	549	854	91	1517	140	6243	43	2068	405	110	938	2408	315	152	10	241	0	306	0	9	16414

2014	FRENK		KUTAL		VALDA		ERNIK		RUSOR		BESAT		BAMOK		KOKES		LUMES		KUNAD		TOTAL
	E	W	E	W	E	W	E	W	E	W	E	W	E	W	E	W	E	W	E	W	
JAN	28	70	2	161	14	549	1	300	20	44	17	199	16	15	1	37	0	49	0	0	1523
FEB	24	93	7	77	15	406	2	109	18	15	26	160	14	20	3	31	0	39	0	3	1062
MAR	12	104	10	137	10	601	0	220	16	23	36	241	15	7	0	48	0	50	0	2	1532
APR	33	66	11	44	22	485	3	101	20	15	69	189	7	16	0	32	0	35	0	3	1151
MAY	41	68	12	110	18	467	3	111	37	3	78	117	24	17	1	37	0	55	0	2	1201
JUN	21	118	5	109	33	464	10	100	34	15	93	127	21	11	0	5	0	10	0	4	1180
JUL	35	36	19	33	16	401	10	71	41	10	96	116	24	15	4	12	0	16	0	6	961
AUG	26	101	11	64	7	464	6	142	33	29	95	182	49	18	0	10	0	9	0	0	1246
SEP	38	113	26	62	17	454	6	204	35	23	87	306	39	27	3	40	0	16	0	0	1496
OCT	28	101	24	158	12	595	9	170	40	19	93	183	57	18	2	26	0	15	0	0	1550
NOV																					0
DEC																					0
TOTAL	286	870	127	955	164	4886	50	1528	294	196	690	1820	266	164	14	278	0	294	0	0	12902



Anchorage ARTCC Contact Information



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Questions?

