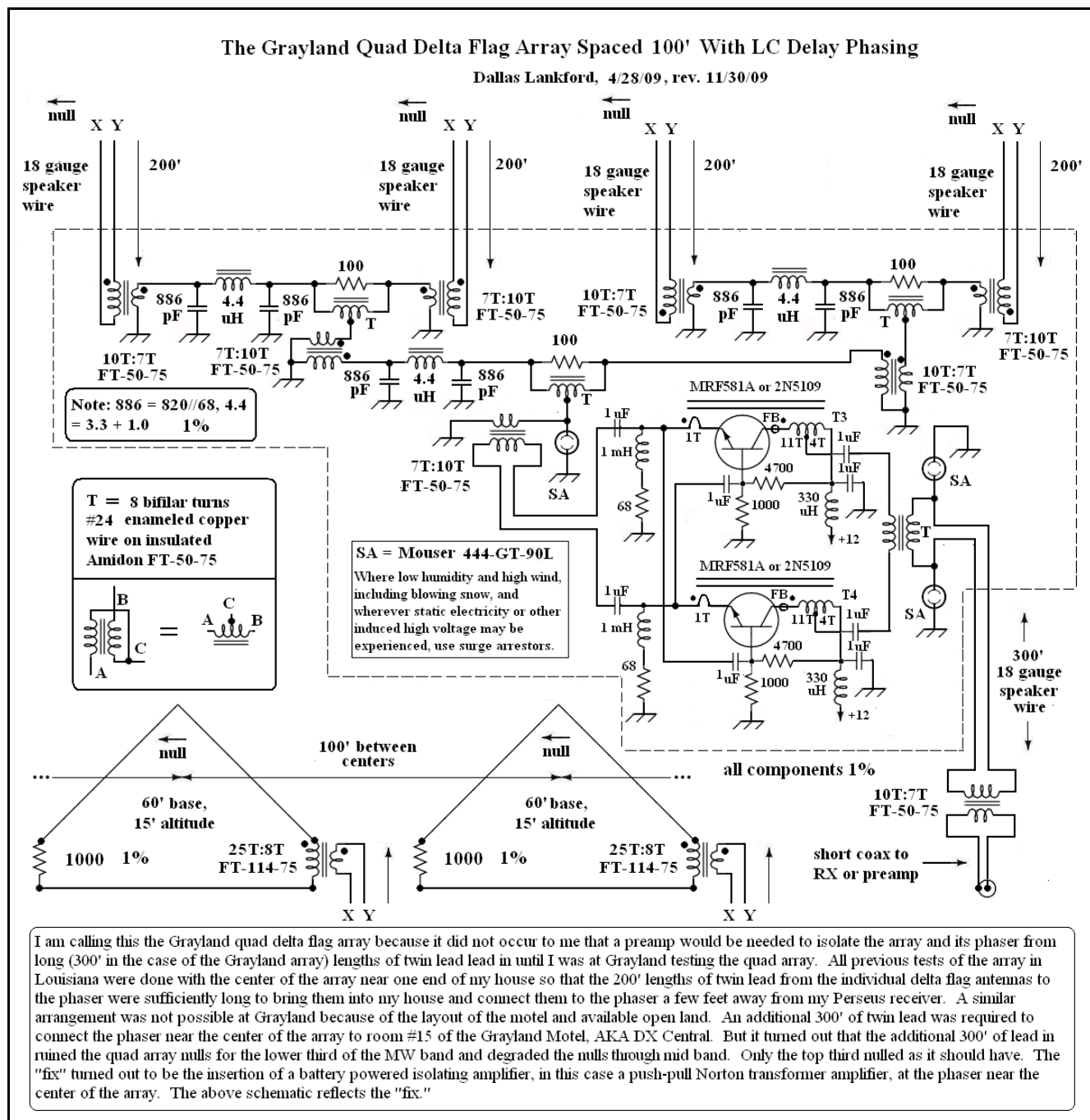


Grayland 4/19-22/09 DXpedition: Dual And Quad Delta Flag Arrays

Dallas Lankford, 4/23/09, rev. 4/23/10



The schematic above is an improved version of the addition of an isolating amplifier which was made to the original quad delta flag array (QDFA) which was brought to Grayland. The change was necessary to correct the defective performance of the original QDFA, namely poor to nonexistent low band nulls. The amp used at Grayland to isolate the phaser from the 300' of twin lead was a standard Norton with about 10.3 dB gain. That amp has been changed in the schematic below to my 14 db gain Norton-Rohde amp. The gas discharge surge arrestors were added after the amp in a copy of the Grayland QDFA failed during tests at Kongsfjord, Norway,

presumably due to static caused by blowing snow. The Kongsfjord QDFA also required radials for good nulls, presumably because of the bad (rocky) ground at Kongsfjord. All resistors, capacitors, and inductors should be 1% tolerance or better. All transformers should also be made 1% by measuring the inductances of the windings.



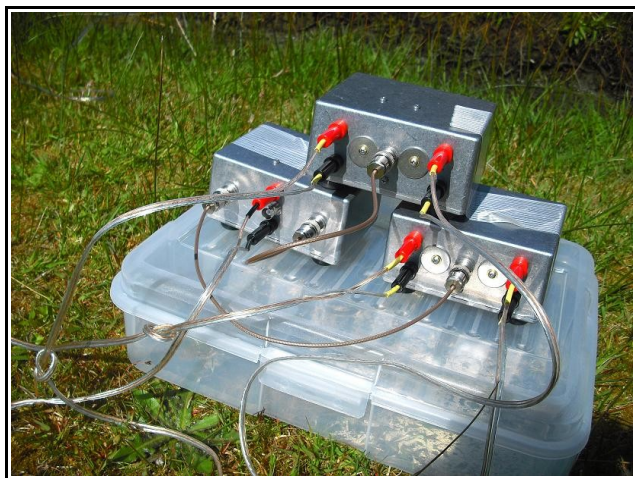
The QDFA was installed in between the Grayland Motel and the Pacific Ocean as indicated by the red line in the graphic at right. The DDFA was in the same location, but half the length of the QDFA.

DDFA Test

A dual delta flag array using the first two delta flag antenna elements was also tested at Grayland on 4/21. All of the receptions on 4/21 in the Grayland log below were made with the DDFA.

QDFA Photos

The photo on the next page shows the QDFA stretching out across the Grayland back 40 towards the Pacific Ocean about 800 feet away. It was a beautiful day with a blue sky and bright sunshine. The photos on this page show me beside the phaser (phaser = 3 metal boxes) on top of a plastic box to keep the phaser above rain water. The phaser and plastic box were covered with a larger plastic box (not shown) to protect them from rain. The 3 boxes, with rubber feet, were taped together to prevent contact with each other during windy conditions.



Acknowledgment

I would like to express my appreciation to Guy Atkins for his help with the April 2009 Grayland DXpedition which tested the dual delta flag and quad delta flag antenna arrays.

References

For additional information about dual flag, quad flag, dual delta flag, and quad delta flag arrays, see The Dallas Files at the [Kongsfjord](#) web site.



The Grayland QDFA

Note that the ground is saturated soil.

Some Of The 4/19-22/09 Grayland Loggings

receiver = Perseus,
computer = Clevo D901C quad w/ 3x500 Gb internal HD's,
recordings = BlacX eSATA external caddy, IOGear eSATA 3 Gbps Express Card /34, 1.5 Tb ext.l HD's,
antennas = 4/19, 4/20 QDFA not fully operational, 4/21 DDFA, 4/22 QDFA fully operational

- 531 Japan**, Morioka + two other low power synchros, //594//603, Japanese talk and short music selection, way under someone, 1130 and later, 4/22
- 549 Australia**, Orange, presumed, distinctive fanfare just after 1100, 4/22, poor
- 550 Alaska**, Anchorage, KTZN, IDed as "AM Five Fifty KTZN Anchorage, This is The Zone," about 1200, 4/21
- 550 Hawaii**, Wailuku, KMVI, IDed as "[unintelligible] ESPN Radio Station KMVI [unintelligible] Five Fifty Wailuku" about 0700, 4/22
- 558 South Korea**, Yeong-il, //603, presumed Korean talk and some pop music, underneath someone, 1130 and later, 4/22
- 560 Alaska**, Kodiak, KVOK, IDed as "AM Five Sixty KVOK Kodiak," about 1300, 4/21
- 567 New Zealand**, Wellington, English male talker, EZ listening song and music, //675, 0835 and later, 4/22
- 567 Japan**, Saporro, male Japanese singer, //594//666//675, about 1125 and later, 4/22
- 576 Russia**, Oyash, R. Mayak (at 1 MW Oyash dominates the other Russians on this frequency), good Moscow Nights interval signal, about 1200, 4/22; also about 1100, 4/21, with Moscow Nights interval signal, weak but the IS was easily heard and the language had the right sound and cadence for Russian
- 576 Australia**, Sydney, ABC National, // 585, about 1325, 4/22
- 580 Alaska**, Petersburg, KRSA, about 0500, 4/22, with "KRSA Petersburg" ID
- 585 Australia**, Hobart (Tasmania), ABC National, // 576, about 1325, 4/22
- 590 Alaska**, Anchorage, KHAR, IDed as "KHAR Five Ninety, Anchorage," about 1000, 4/21
- 594 Australia**, Horsham, 3WV, male and female English talkers, distinctive fanfare at top of the hour, //612, poor to fair, about 0900, 4/22
- 594 Japan**, Tokyo, //531//603, Japanese talk and short music selection, way under someone, 1130 and later, 4/22
- 603 Japan**, Obihiro, //531//594 established definitely with time pips at 1200, 4/22
- 603 South Korea**, Namyang, //558 at 1132:20, 4/22
- 603 Australia**, various, distinctive fanfare just after 1100, 4/22, poor
- 612 Australia**, Brisbane, 4QR, male and female English talkers, distinctive fanfare at top of the hour, //594, fair to good, about 0900, 4/22, distinctive fanfare just after 1100, 4/22, good
- 620 Alaska**, Homer, KGTL, 0859, 4/21, IDed as "KGTL Homer," strong interference from at least two others on frequency, a mess
- 621 China**, Harbin, presumed (200 kW which vastly overpowers all other Chinese on this frequency per asiawaves), good, yet another (a 3rd) CRI or CNR interval signal, about 1200, 4/22, which is strange because Harbin is an RGD station, as are all the others on this frequency except Yichang (10 kW) which is not explicitly affiliated with CNR or CRI
- 630 Alaska**, Juneau, KJNO, IDed "The Capital's Information Station, Six Thirty, KJNO, Juneau, Alaska," about 1200, 4/21
- 639 Japan**, Shizuoka, Japanese talker //774, mixing with Fiji about 1259 and later, 4/22
- 639 Fiji**, R. Fiji 1, Lautoka, good to excellent dawn enhanced island music from about 1259 to after 1330, very clear harmony style island music after 1315, 4/22
- 640 Alaska**, Bethel, KYUK, IDed as "Hello, I am [unintelligible name] from Bethel, Alaska, [unintelligible] KYUK Six Forty AM in Bethel, Alaska," about 1100, 4/21
- 648 Russia**, Ussuriysk, VoR, poor, interval signal (Pictures at an Exhibition, AKA "Great Gate of Kiev") at 1100, 4/22, later fair to good, same interval signal just before 1200
- 650 Alaska**, Anchorage, KENI, IDed as "News Radio Six Fifty KENI," about 0700, 4/21

650 Hawaii, Honolulu, KRTR, about 0539, 4/22, with “This is Hawaii’s place for great news.” ID, strong but with frequent shallow fades, mostly in the clear, sometimes trading places with CISL Vancouver

657 New Zealand, Wellington, //882//909//963, EZ listening music, 0815 and later, 4/22, male and female talkers, 1050 and later, “Radio New Zealand ” ID at 1056, 4/22

666 Japan, Osaka, male Japanese singer, //567//594//675, about 1125 and later, 4/22

670 Alaska, Dillingham, KDLG, about 0629, 4/21, “KDLG” ID followed by the weather report, strong over KBOI Boise

670 Hawaii, Hilo, KPUA, IDed as “I am Gordon Deal reminding you that The Wall Street Journal This Morning will continue right after the latest news on Sixty Seven AM KPUA Hilo, your source for news, sports, and information,” about 1300, 4/21, strong, clear, and almost alone on the frequency

675 New Zealand, Christchurch, //756, semi-classical music, 0957 and later, 4/22

675 Japan, various, male Japanese singer, //567//594//666, about 1125 and later, 4/22

680 Alaska, Barrow, KBRW, IDed as “You are tuned to North [unintelligible] Public Radio, Six Eighty KBRW Barrow,” about 1312, 4/21, but now I can’t find this ID on the 4/21 recording anywhere near 1312, I know I heard Barrow, but apparently I made an error in the time or date or both when writing my notes

693 Japan, Tokyo, loud with female talker in Japanese about 1100, 4/22

700 Alaska, Anchorage, KBYR, about 0600, 4/22, “KBYR Anchorage” ID

702 Australia, Sydney, presumed, poor, English female talker, //738, about 1039, 4/22, later distinctive fanfare just after 1100, 4/22, poor

711 Korea, Sorae, HLKA, //891, about 1200, 4/22

720 Hawaii, Eleele, KUAI, ID “Just about 10 o’clock. You are listening to Kauai’s Radio Station from Eleele, Seven Twenty,” about 0800, 4/22, strong, no sign of KDWN Las Vegas

738 Australia, Grafton, presumed, English female talker, //702, about 1039, distinctive fanfare just after 1100, 4/22, poor

738 Tahiti, Papeete, already producing fair to good audio on the “uncrippled” QDFA at 0430, 4/22 (*never any audio with the “crippled” QDFA on 4/19 and 4/20*), audio quite good by 0700 with a female and male French talkers, finally some music around 0730, but it could hardly be called island music, more like a French ballad, reception continued to be good to excellent until other signals began to appear on frequency after 0900 or so

738 Taiwan, Baisha, BEL2, 100 kW, Yuye Guangbo Diantai (Taiwan Area Fishery Broadcasting Station), nice male or female Chinese singing with EZ listening music, 1252 and later, 4/21, mostly extremely weak, //1143

747 Japan, Sapporo, // 1125 // 1152 // 1386 // 1467, NHK2 interval signal, about 1100, 4/22

750 Alaska, Anchorage, KFQD, IDed as “Seven fifty KFQD News Talk, Seven Fifty,” about 0700, 4/21

756 New Zealand, Auckland, //675 confirmed @ 1046, semi-classical music and talk, 4/22

760 Hawaii, Honolulu, KGU, on the DDFA, IDed with “You are listening to AM Seven Sixty, KGU, Hawaii’s Christian Talk,” 0559, 7/21

770 Alaska, Valdez, KCHU, IDed as “KCHU, Public Radio for Valdez, Prince William Sound, and the Copper River Valley,” about 0700, 4/21

774 Australia, Melbourne, presumed, distinctive fanfare just after 1100, 4/22, weak but clear way under Japan

774 China, various, CNR/CRI interval signal, about 1200, 4/22

774 Japan, Akita, powerful when tuned about 1015 with English lesson, 4/22, // 1017

780 Alaska, Nome, KNOM, IDed as “KNOM in Nome,” about 0900, 4/21

790 Alaska, Glennallen, KCAM, IDed as “Great radio for the great land, this is The Voice Of The Copper River Valley, KCAM, Glennallen,” about 0900, 4/21

792 Australia, Brisbane, weak or faded most of the 4/21 recording, but fair to good around 1300 with distinctive fanfare and into ABC news; distinctive fanfare just after 1100, 4/22, poor

792 New Zealand, Hamilton, //1287, talk, “Welcome to Sport Radio” ID at 0810:10, 4/22

800 Alaska, Juneau, KINY, IDed as “Alaska’s Capital City, Hometown Radio,” about 0900, 4/21

801 Guam, KTWG, Agana, religious programming faded up out of an empty channel except for weak splatter, weak but quite clear “KTWG” ID embedded in a religious sermonette by female announcer in American English about 1324, 4/22, followed by religious song by female in American English, a beautiful dawn enhanced reception

820 Alaska, Fairbanks, KCBF, ESPN program, IDed as “Eight Twenty Sports Fairbanks,” about 0700 4-21
819 Korea, Gwangji, HLCN, MBC interval signal, about 1200, 4/22
828 Japan, Osaka, English lessons, 0930 4/19, // 774
828 Australia, presumed, distinctive fanfare just after 1100, 4/22, poor
830 Alaska, Sand Point, KSDP, long weather report followed by ID “KSDP Sand Point, Alaska,” 0709, 4/22
830 Hawaii, Honolulu, KHVH, IDed as “From the big island Maui and covering the entire Aloha State, this is news radio Eight Three KHVH,” about 0706, 4/22. I was unable to associate the station identification with programming because there were at least two other stations on frequency. Despite this, the ID was crystal clear. I guess the others went silent or faded momentarily. I heard them and verified them many years ago when I lived in Texas and they were on 1040 kHz.

837 Australia, various, distinctive fanfare just after 1100, 4/22, almost inaudible

846 Australia, Canberra, distinctive fanfare just after 1100, 4/22, poor, weak but in the clear, about 1335, 4/22, //792, nice song “I remember you,” also heard earlier around 1000 while accumulating information on Kiribati

846 Kiribati, Betio, carrier appeared about 0600, audio beginning to appear about 0640, fair to good audio by 0700, with male and female talkers, presumably in *te taetae ni Kiribati* (the Kiribati language), then music and brief singing by a male followed by more music (but did not sound like island music), very clear male talker about 0725 to 0730 and shortly after 0730, mostly male and female talkers throughout the reception, one island music selection noted around 0920, recovered audio poor to fair to good to very good from 0640 to after 0930 when other signals began to appear on frequency, 4/22, on the “uncrippled” QDFA (*not heard at all on 4/19 and 4/20 with the “crippled” QDFA; heard poorly on 4/21 with the dual DFA*)



These four Kiribati receptions and non-receptions make it abundantly clear how important it is to reduce splatter even at a coastal location where MW DX signal levels are considerably higher than, say, a mile inland, and, I believe, also demonstrates how the QDFA beats the DDFA in some situations. It is unlikely that propagation conditions during the 4 nights I recorded at Grayland were significantly above or below average for late April.

850 Alaska, Nome, KICY, Voice Of The Arctic, religious song just before 1300, 4/21, then IDed by a fast talking female as “[unintelligible] KICY Nome”

850 Hawaii, Hilo, KHLO, IDed as “KHLO Hilo,” then into Sports Center, about 1300, 4/22

873 Japan, //774//828 about 1100, 4/22, good strength, female Japanese talker before the hour, then brief interval signal like music at the top of the hour

882 New Zealand, Auckland, //657//909//963, EZ listening music, 0815 and later, 4/22

891 Japan, Sendai, JOHK, // 594, Japanese male talker, good, but with some splatter, 4/22

891 Korea, Busan, HLKB, //711, about 1200, 4/22

900 Hawaii, Kahului, KNUI, from before 1300, 4/22, and later, Fox Newstalk program, IDed about 1321 as “Fox News, Nine Hundred KNUI, The Talk Of Maui”

909 New Zealand, Napier, //657//882//963, EZ listening music, 0815 and later, 4/22

920 Alaska, Soldotna, KSRM, IDed as “News Talk Ninety Two KSRM,” about 0700, 4/21

930 Alaska, Ketchikan, KTKN, IDed as “Nine Thirty Ketchikan, Alaska,” about 0700, 4/21

940 Hawaii, Waipahu, KKNE, off key female singer in Hawaiian with accompanying music, non-stop through the top of the 0600 hour, continued for quite some time, then a second (?) female singer, signal strength fair to poor, finally a male singer in Hawaiian with music, very nice, signal much stronger, continued through top of the

hour again with no ID, but eventually about 0703 an English ID “AM Nine Forty KKNE Waipahu, Hawaii”

963 China, usually given as unknown location, but Dalian is 5 times as strong as any other Chinese on this frequency, also, Dalian has been reported in the past as a CNR or CRI station on 963, time pips 3 low and 1 high, CNR or CRI interval signal, about 1300, 4/19

963 New Zealand, Christchurch, //657//882//909, EZ listening music, 0815 and later, 4/22

972 South Korea, Dangjin, HLCA, one note interval signal at about 1200, 4/22, male and female (presumed) Korean talkers, //1134 (but I want to recheck this; see the following); again 4/21 about 1300, partial KBS interval signal after time pips at the top of the hour, not //1134 but the 1134 interval signal was the same

981 China, various (but virtually certainly Changchun and Nanchang because they are lots higher power than the others), there was a slight echo at times, “different” CRI or CNR interval signal just after 1200, 4/22, //1035//1375//1593

990 Hawaii, Honolulu, KHBZ, IDed as “You are listening to KHBZ Honolulu,” about 0700, 4/22

1008 New Zealand, Tauranga, //1035//1044//1098//1278, talk, 0650 and later, 4/22

1017 China, Changchun, quite clear audio 1254 and later with very off key male singer in oriental language, CNR or CRI interval signal at about 1300 on 4/22

1017 Japan, Fukuoka, JOLB, with EE lesson, 1015 and later, 4/22, // 0774

1017 Philippines, Davao City, DXAM, faded up to excellent level with nice musical selection “Dancing Queen” in American English followed by fast talking male in Filipino (sometimes referred to as Tagalog Plus), then IDed as “Radyo Rapido,” 1235:32, 4/19, and later at 1238:14 IDed as “DXAM, Radyo Rapido, diyes disisiyete (ten seventeen),” *notice the call letters!!!* I begged for the Philippines and I received them.

1017 Philippines, Davao City, DXAM, faded up about 1250, 4/20 (maybe earlier, I have not listened continuously). I did not hear any definite ID's (apparently they all occurred during fades), but the announcer's voice was unmistakable, and the lotto drawing starting about 1314 was as good as a positive ID.

1017 Philippines, Davao City, DXAM, here it is August 21 and just yesterday I got around to listening for DXAM on my 4/21 recording from the dual delta flag array, and about 1248 a fast male Filipino talker appeared, followed by a somewhat off key female singer, then about 1259 a “Radyo Rapido” ID, followed by a badly off key female singer “Falling In Love With You” in English, and about 1301 “DXAM, Radyo Rapido, diyes disisiyete (ten seventeen)” ID, after which the signal weakened until about 1310 when another off key singer was noted, followed by a lengthy announcement of “winning numbers,” namely various one digit lottery numbers, a mention of Super Lotto, and a lottery number consisting of six 2 digit numbers, also mentioned was “9 pm drawing” which is consistent with a 1300 UTC drawing, more details could have been included, this was the clearest of the 4 receptions of DXAM.

1017 Philippines, Davao City, DXAM, faded up from out of nowhere with “Radyo Rapido” ID and then shortly afterwards “DXAM, Radyo Rapido, diyes disisiyete (ten seventeen)” ID about 10:59:30, 4/22, later about 1110 quite good with a fast talking male in Filipino, then weakened somewhat, and later perhaps a female Filipino vocal about 1120, afterward mostly faded for about 40 minutes, though occasional clear fast talking male in Filipino and at one point a badly off key male (?) Filipino singer, still later another “Radyo Rapido” ID again about 12:57, but faded fast until about 1309:20 when a male Filipino talker began reciting “winning numbers” (3 single digit, 4 single digit, and 6 two digit) in both English and Filipino, no religious programming noted at any time on 4/22, what a treat this was many weeks after my DXpedition to Grayland, thanks to Perseus, no religious programming noted on any of DXAM programming from the four nights of recording. Based on these four loggings, the lotto drawings at about 1314 are a nightly feature of DXAM.

1017 Philippines (t), unidentified, believed to be a male Filipino talker between about 1100 and 1300, 4/22 mixing with DXAM

1017 Tonga, Nuku'alofa, presumed, sign off in presumed Tongan with anthem, 0958, 4/19 with the “crippled” QDFA, much clearer 4/22 with the “uncrippled” QDFA with music and talking in presumed Tongan from before 0830 to 1015 when they were virtually suddenly replaced by JOLB (propagation discontinuity?)

1035 China, various, but likely Dalian because its power is 14 dB greater than the others, “different” CRI or CNR interval signal just after 1200, 4/22, //981//1377//1593, poor signal, underneath someone

1035 New Zealand, Wellington, //1008//1044//1098//1278, talk, 0650 and later, 4/22

1035 Solomon Islands, Honaira, R. Hapi Isles, Solomon Is. BC Corp., 0737, 4/19, island music with male

singer, 0742 nice music and male singer, followed by male and female talkers, then faded, then reappeared at 0813 with male and female talkers, followed by music and male singer, all on the “crippled” QDFA

1040 Hawaii, Honolulu, KLHT, The Pure Light of Hawaii, K-light, Christian programming, including religious songs (one in Hawaiian) and preaching while I was listening from before 0600 to after 1400, 4/22, but never an ID, although I did not listen continuously

1044 China, Changzhou, presumed because it is 10 times the power of the other Chinese on frequency, about 1300, 4/19, time pips 3 low 1 high, CNR or CRI interval signal

1044 New Zealand, Dunedin, //1008//1035//1098//1278, talk, 0650 and later, 4/22

1080 Alaska, Anchorage, KUDO, IDed as “This is Alaskan Progressive Voice News Ten Eighty KUDO Anchorage,” about 0700, 4/21

1080 Korea, Yeosu, HLAT, MBC interval signal, about 1200, 4/22

1089 Japan, Sendai, // 774, about 1200, 4/22

1098 Marshall Islands, Majuru, V7AB, Radio Marshalls, island music and singing just before 0700, 4/19, time pips (5 + 1 long), talking and more island music and singing which faded about 0711, good after 1100, all this on the “crippled” QDFA

1098 New Zealand, Christchurch, //1008//1035//1044//1278, talk, 0650 and later, 4/22

1110 Alaska, Big Lake – Houston, about 0600, 4/22, “KAGV Eleven Ten Alaska” ID

1110 Hawaii, Kiehei-Maui, IDed as “It's 4 o'clock. KAOI AM Seven Ten,” about 1400, 4/22

1116 Australia, Brisbane, 4BC, first noted before 0900 quite weak, mostly talk with some advertisements, slowly gained strength throughout the evening, local advertisement mentioned Brisbane about 0950, “Eleven Sixteen 4BC” ID at about 0954, 4/22

1125 Japan, various, // 747 // 1152 // 1386 // 1467 about 1100, 4/22

1134 South Korea, Hwaseong, KCBS, one note interval signal at about 1200, 4/22, male and female (presumed) Korean talkers, //972, but PAL says Kimpo

1140 Alaska, Soldotna, KSLD, IDed as “This is Eleven Forty KSLD, The King, Soldotna,” about 0700, 4/21

1143 Taiwan, Baisha, BEL3, 100 kW, Yuye Guangbo Diantai (Taiwan Area Fishery Broadcasting Station), heard with classic American English song “Love Letters In The Sand” a few minutes before 1300 (another American English song before 1258 believed to be Taiwan), 4/19, followed by a female Chinese talker at the top of the hour who continued in the clear for many minutes thereafter, // 1593.

From the RealDX reflector: "Hello Guys, I heard this sound now. It's Amoy and ID of Fishery Radio Station in Taiwan. Announcer gave "Hi Giap Kon Po Den Tai" at after 15 second "Hi Giap Yuye." Shin Thanks to Bjarne for putting a short audio clip I made for this reception onto the RealDX reflector, and thanks to Shin for explaining the voice ID.

1152 Japan, various, // 747 // 1125 // 1386 // 1467 about 1100, 4/22

1161 New Zealand, Wellington, presumed, 0720 and later 4/22, non-EE male talker, only occasional bits of audio, but I did not stay with them non stop, 24h Maori per PAL, also noted 0630 and later 4/19 with the “crippled” QDFA

1161 Korea, Busan, HLKU interval signal per on line list and “MBC” ID about 1300 on 4/19

1170 Alaska, North Pole, KJNP, “You are tuned to One One Seven O, your Gospel Radio, KJNP, North Pole, Alaska,” about 0700, 4/21, strong and clear, not nearly as strong or clear an hour earlier, but nevertheless IDable with phrases like “Tonight at North Pole is [unintelligible],” “Not all Alaska,” and “This is Alaska.”

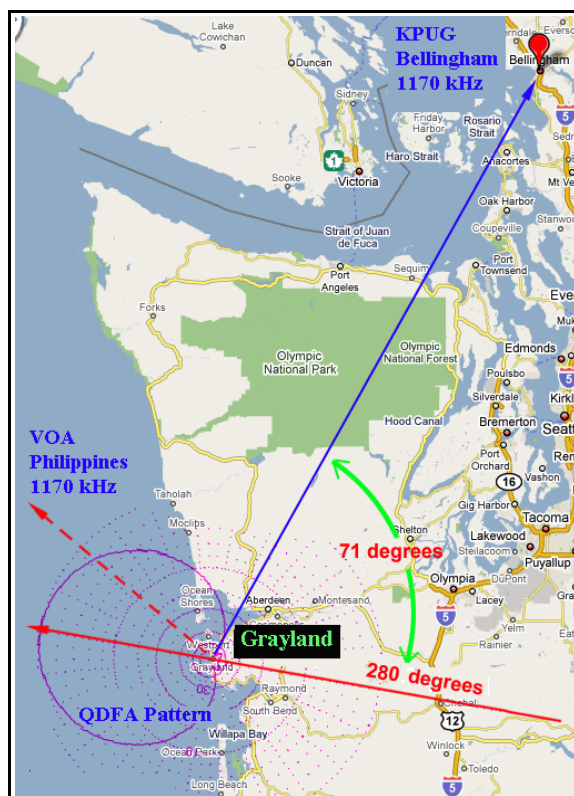
1170 Korea, Gimje, HLSR, “KBS World Radio” just after time pips at the top of 1100, 4/22, while concentrating on VOA Philippines

1170 Philippines, Poro Point, DWVA, Voice of America, first noted with the VOA interval signal partly obscured by Korea about 1100, 4/19, after few minutes a 2nd weak oriental talker was noted way under Korea, perhaps VOA in Chinese per PAL, then later at about 1230 a mention of VOA was heard, followed by their In The News program featuring Martin Tran (sp?), continuing with news commentary in English until about 1247, then a very clear announcement, “From Washington, the nation's capitol, the Voice of America has brought you [unintelligible] In The News. You can email your questions or comments to our panelists. Send them to VOA News at voanews.com. ... Join us next week at this time for [unintelligible] In The News,” followed by another

very clear announcement starting about 1258, 4/19: “It’s coming up on 13 hours universal time. Jazz America will be broadcast during the next hour on the following frequencies: 7.575, 9.51, and 9.76 MHz shortwave. You can also hear our program from the internet at voanews.com.” Curiously, the announcer did not say www.voanews.com. Also, no jazz was heard during spot checks of the 1300 – 1400 time period, but a 2nd oriental talker was heard mostly under Korea, perhaps VOA in Chinese per PAL.

1170 Philippines, Poro Point, DWVA, Voice of America, complete interval signal with a few notes missing under splatter at about 1100, 4/21, on the dual delta flag array (not the quad), 7 note part of the VOA IS with 2 notes missing due to splatter at about 1300, all underneath Bellingham, WA, a Korean (presumed), and a 3rd very weak English language station, or maybe it was VOA in English as some of their announcements are in English, but at times before and after 1100 there was a 2nd oriental talker which may have been VOA

1170 Philippines, Poro Point, DWVA, Voice of America, complete interval signal at about 1100, 4/22 with the QDFA, clearer than on the 4/21 recording, Korea on top this time with a nice clear “KBS World Radio” ID just after 1100, Bellingham waaayyy down, probably below VOA most of the time, the better audio recovery due to the QDFA compared to the DDFA was blatantly obvious



There are 5 loggings of VOA Philippines 1143 kHz in the Grayland Master Log, all of them dated 2001 or earlier, and none of VOA Philippines 1170 kHz in the Grayland Master Log. The Grayland Master Log seems to be incomplete and to have been discontinued by the end of 2007. All on line Grayland logs from 2004 to present were also searched for VOA Philippines 1170 kHz, and just one tentative was found, although it is likely to have been heard a few other times, but not well because Grayland beverages would not attenuate Bellingham significantly. It is very unlikely that far above average propagation between WCNA and the Philippines were responsible for these rare receptions; it is virtually certain that the DDFA and QDFA were responsible. At first I wondered why this 1000 kW VOA signal was not heard at every Grayland DXpedition. But then I noticed in the PAL that the VOA antenna is directional, presumably highly directional, and pointed at China or Southeast Asia, depending on the time. Maybe very little of the signal makes it in the direction of Grayland. In any case, to me these VOA receptions are among the high points of my Grayland adventure, even if heard for the first time long after the fact. What a great receiver Perseus is.

1188 South Korea, Inchon, HLKX ID at about 1200, 4/22

1205.970 China, Yanbian, 200 kW, presumed (although there is no other Chinese with anything like that power), per asiawaves, Chinese (presumed) male and female talkers from before 1000 to after 1300, quite good at times (forgot to write down the day)

1215 China, Zhuhai (location per asiawaves and LEM239), IDed with a catchy jingle “You gotta have 7” in English and additional “7” vocalizations followed by “China National Radio 7” in English about 1232, 4/19, lots of Chinese (presumed) talk and a little EZ listening music from before 1100 to after 1300

1242 Japan, Tokyo, JOLF, Japanese male talkers, 3 low coo coo pips and one high at about 1200, 4/22

1251 New Zealand, Auckland, English talker about 0900, 4/22, VoR is in English at that time, but no VoR interval signal was heard at the top of the hour, only an English talker through the top of the hour and nothing else, weak, I backed up to 0733 (don’t you love Perseus recording capability?) and got better audio with a woman in English discussing God, and then followed the programming back to 0900, so there is no doubt about

it, this was the New Zealand Christian station

1251 Russia, Razdolnoye, 500 kW per asiawaves, VoR interval signal (Pictures at an Exhibition) at about 1200, 4/22. however 2008 PAL says Ussuriysk with no power listed

1269 Japan, various, // 1287, about 1100, 4/19

1270 Hawaii, Honolulu, KNDI, IDed as “KNDI Twelve Seventy,” about 0631, 4/22, Pacific island language programming from before 0500 to after 0632, including male and female talker, some music with singing which seemed to be mostly island music, also one religious musical selection with singing

1278 New Zealand, Eltham or Napier-Hastings, //1008//1035//1044//1098, (only Napier reported once previously from Grayland), NZ, talk, 0650 and later, 4/22

1287 Japan, Sapporo, “HCB Radio, Hokkaido” ID, about 1300, 4/19

1287 New Zealand, Westport, talk, //792 at 0817:30, 4/22

1314 South Korea, Jeonju, , religious music and singing, and preaching in English, about 1254, 4/19

1323 China, Huadian, 600 kW per new asiawaves addition April 2009, //963, faded up 1157, nice, clear (classical?) Chinese music, CRI or CNR chimes at about 1200, faded down just after the chimes, back up later around 1205 with (believed) Russian male talkers, still //963

1330 Alaska, KXLJ, Juneau, IDed as “KXLJ Juneau, the all new Thirteen Thirty,” 0800, 4/20

1332 Japan, Nagoya, // 1134, about 1100, 4/19

1332 China, various, CRI or CNR interval signal, about 1300, 4/19

1341 Japan, various, presumed, ID sounded like “You are listening to the NHK network,” about 1300, 4/19

1359 China, various, CRI or CNR interval signal, about 1300, 4/19

1377 China, Xingyang, “different” CRI or CNR interval signal just after 1200, 4/22, //981//1035// 1593, poor to fair signal

1386 Japan, various, // 747 // 1125 // 1152 // 1467 about 1100, 4/22

1386 New Zealand, Auckland, R. Tarana, male Hindi talker, nice Indian music, 0649 and later, 4/22

1386 South Korea, Mokpo, HLAM, MBC chimes interval signal, about 1200, 4/21

1404 Japan, Kishiro, JOQL, //1449//1287, about 1300, 4/19

1420 Hawaii, Honolulu, KKEA, IDed as “[unintelligible] Hawaii's sports KKEA [unintelligible] ESPN Fourteen Twenty,” about 1300 4/22

1440 Japan, Sapporo, JOWF, presumed, Japanese male talker, 4/22, at about 1000, not //1287, no one on the channel with them, nothing audible on 1197

1449 Japan, Abashiro, JOQM, //1287//1404, about 1300, 4/19

1467 Japan, various, // 747 // 1125 // 1152 // 1386 about 1100, 4/22

1475 Malaysia, Kota Kinabalu, transmitter on with 1 kHz tone about 1047, 4/19, with the “crippled” QDFA, transmitter off about 1334:50, fair, sometimes good, audio about 50% of the time from about 1057 to about 1327, music, singing, and talking in presumed Tagalog (Filipino) with occasional very accented English words and phrases, perhaps a short program entirely in very accented English, 5 low time pips + 1 high time pip at the top of the 1100 and 1300 hours (the top of the 1200 hour faded), frequent QRM from 1476 and 1476.1, depending on the origin of the splatter sometimes off tuned (low) AM was was used, sometimes USB with Perseus' wonderful notch filter was used, not heard on a dual ALA-100 array which was being recorded at the same time on a separate Perseus receiver, the word “Malaysia” was heard during sign on, but not much else because of low signal strength, although a native speaker would probably have heard more, sign off with choir version of Malaysian national anthem about 1333:50, transmitter off about 1334:50 shortly after the anthem finished

1475 Malaysia, Kota Kinabalu, transmitter on with 1 kHz tone about 1047, 4/22, with the “uncrippled” QDFA, beautiful clear sign on starting about 1057 with “You are listening to... [the first 4 words in English, followed by an as yet unidentified language, perhaps Malay, with a mention of Malaysia and maybe Kota Kinabalu.” Audio quality varied among faded (nonexistent), poor, fair, and excellent throughout the 1047 to 1332+ broadcast of 4/22, arm chair listening at times, especially around 1330, with presumed Tagalog talkers and music, ending with choir version of the Malaysian national anthem starting about 1332:50, carrier cut about 1037. Time pips at 1300 on 4/22 were 3 high and one low. *WRT this 2nd Malaysia reception, Bjarne said, “Very good! Actually, Malaysia 1475 is rarely heard anywhere [outside of Asia, dl] (with the possibly exception of*

Malaysia). I recall hearing it once (for OJ's reference: When Torgeir Nyen was here), and very weak at that. A very good catch." The Malaysia 1475 sign on has never been reported in over 10 years of reports in the "Grayland Master Log" and most of the Grayland Master Log Reports have been for a carrier only, with no audio. Clearly this outstanding reception was due almost entirely to the Grayland ("fixed") QDFA, perhaps with a little help from above average propagation conditions.

1475 Malaysia, Kota Kinabalu, transmitter on with 1 kHz tone about 1047, 4/20, with the "crippled" QDFA, little or nothing of the sign on was heard because the signal was

weak, but was stronger at times over the next hour, quite clear at times, mainly presumed Tagalog (Filipino) talkers, and from before 1300 to about 1330 beautiful clear singing with accompanying music for the most part, sign off with the choir version of the Malaysian national anthem starting about 1330:50 and finishing about 1331:40, transmitter off immediately. *It is virtually certain that the QDFA was mainly responsible for these receptions of 1475 Malaysia.*

1475 Malaysia, Kota Kinabalu, (I am not surprised!) transmitter on with 1 kHz tone about 1047, 4/21, few details at sign on because of weak signal strength, poor to fair to occasional good signal strength throughout the 1047 to about 1334 transmission period, sign off with weak but audible choir version of the Malaysian national anthem starting about 1332, transmitter off immediately about 1334.

1476.1 Philippines, Iligan City, DXRJ (Radyo Asencion / Radyo Asenso ?), presumed, 100 Hz het on 1476 heard many times when tuning Malaysia, no attempt has been made to obtain audio, DXRJ is definitely on 1476.1 per [Pilipinasdx](#) as of summer 2008

1500 Hawaii, Honolulu, KUMU, IDed as "You are listening to AM Fifteen Hundred Na-Too (not Koo-Moo as often reported, unless my ears suddenly failed), Honolulu" about 1400, 4/22

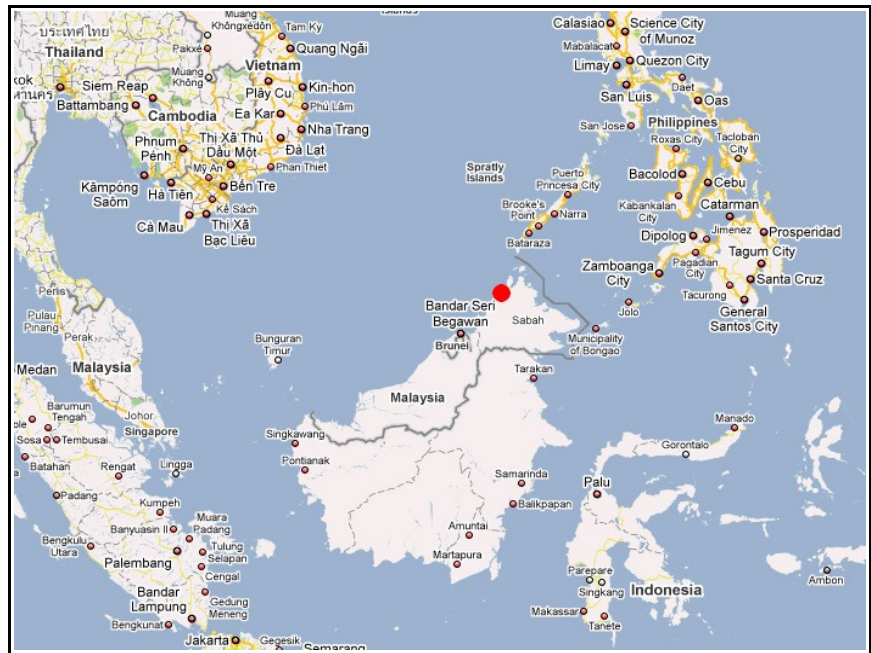
1503 Japan, NHK1, Akita (with other synchros perhaps helping a little), JOKU, // 594, very strong and clear about 1200, 4/22

1503 Micronesia, Kosrae Island, Tofal, V6AJ, Voice of Kosrae, faded up about 0711, 4/21 with harmony singing island music using the DDFA, weakened and then faded completely by 716, reappeared weakly with island music and singing about 0753, brief male talker about 0758 followed by female talker, quite strong at times, heavy Seattle splatter which started just before the top of the hour spoiled any chance for an ID, weak island music again after 0800, faded until island music with singing in harmony slowly faded up again around 0938, quite good at times by 0941, faded completely by 0955, but then appeared again about 1014 sporadically with brief episodes of island music and singing in harmony, sometimes way under Japan. V6AJ was also heard on the 3 other days I was at Grayland, albeit poorly on 4/20 and 4/22, but reasonably well on 4/19 with the "crippled" QDFA from 0712 until after 1037. Even though no definite ID was heard, who else could it be? These 1 kW Micronesian receptions are among the high points of my trip to Grayland.

1540 Hawaii, Honolulu, KREA, broadcasting in Korean, Korean talker before 1400, then MBC interval signal about 1400, 4/22

1548 Australia, Emerald, weak or faded on most of the 4/21 recording, but occasional crystal clear audio such as around 1345

1556.975 Taiwan, Kouhu, CBS-RTI-VoTaiwan, Family Radio, at least three distinctive Family Radio interval



signals about 1200, 1223, and 1300, 4/19, on the “crippled” QDFA, talking and singing, presumably in Chinese, poor to fair to good signal strength

1566 South Korea, Cheju Island, “HLAZ” ID at about 1100, Christian programming and talk, from before 0915 to after 1400, 4/22

1566 Australia, Wangaratta, presumed, way under South Korea, 1258 and later, 4/22, good around 1330 and later, mostly male and female English talkers occasional short music selection, but that format does not fit Wangaratta, a weak Chinese (?) was also there adding to the mix, after 1300 EE talk and music such as Mr. Tambourine Man, to after 1400, 4/22

1575 Thailand, Ban Phachi, Voice of America, around 1330, 4/19, quite clear, “You are listening to the Voice of America in Vietnamese,” “You are listening to the Voice of America, Washington, DC,” “Welcome to the Voice of America in Vietnamese,” and then into Vietnamese programming. There was a VOA interval signal in there somewhere but I could not figure out where it went from my notes. I will listen to the 4/19 Perseus recording again later.

1575 Japan, 3 low power AFN stations here, Iwakuni most likely, male and female American English talkers, IDed as “AM Fifteen Seventy Five,” and mentioned “watch cable TV channel 8,” about 1055, 4/22, then a few minutes later IDed again as “AM Fifteen Seventy Five,” just after 1100, 4/22

1593 China, Changzhou, “different” CRI or CNR interval signal just after 1200, 4/22, strong signal

1593 Japan, NHK2 synchros, with English lessons, //774, about 1300, 4/21

1593 New Zealand, R. Samoa, Auckland, presumed, with nice island music around 0635, 4/22, later talk and singing in unknown language, 0730 and later, probably New Zealand, but could be **Micronesia**

1593 New Zealand, Christchurch, presumed, EZ listening American rock and roll, 0711 – 0715 and later, 4/21

1593 Taiwan, Tocheng, 1 kW, Yuye Guangbo Diantai (Taiwan Area Fishery Broadcasting Station), difficult but definite // 1143, about 1300, 4/19, location and power from PAL, note that other sources do not agree with this location or power, or even that there is still a Taiwan station on 1593, only 4 previous loggings of Taiwan 1593 at or near Grayland were found in the Grayland Master List or other logs in Oct04, Mar07, Mar08, and Dec08. Perhaps Taiwan 1593 has increased power to 3 kW as stated by some sources. In general the other (738 and 1143) Taiwan FBS's have mainly been heard during the October Grayland DXped's, and none in August or early September which would most closely correspond to my late April reception. In any case, this is a nice catch, if I do say so myself, and again demonstrates the power of the QDFA, even when it was not fully functional.



1602 Japan, Yokote, //774, about 1100, 4/19

1628.990 Australia, various, presumed, country western song through the top of the 1300 hour, 4/22

1638 Australia, Melbourne or Sydney or both, presumed, male Arabic singer accompanied by middle East music, Big Ben chimes at 1300 top of the hour, last chime apparently synchronized with the hour, then the clock struck 1 o'clock, 4/22

1683.2 Australia, Sydney (Lakemba), Radio Club AM, presumed, lots of talking around 1300, 4/22, but the signal was too weak to provide any program details, reported previously as being on 1683.2 kHz in 2003 per PAL, as late as 2004 in DX Clusive 6/20/05, and in Yokohama DX! in 2006

1701.030 Australia, Brisbane, Radio Brisvaani 400 W, female Hindi singer surfaced briefly after 1251, quite good sporadically around 1258, 4/22, female leading group chanting started just before 1300, afterward several songs, not at all Indian sounding, slow and sung by a female in an undetermined language, strange, one and perhaps two others on 1700 kHz including the Arab chanter listed below

1701 Australia, Melbourne, Islamic Voice Radio, 400 W, male Arabic chanter, presumably the Qur'an, from before 1100 to after 1200, 4/22, at least one, maybe two others on frequency, but the Arabic chanter often dominated, quite clear 1251 and later

These four low power Australian receptions demonstrate that the QDFA is quite capable of capturing low power MW DX, not to mention 1 kW Micronesia 1503 and the low power AFN Japan 1575.

On 4/22 the QDFA also did very well on the Alaskans and Hawaiians (with a little help from the DDFA on 4/21 and the “crippled” QDFA on 4/20), perhaps better than any previous DXpedition to Grayland, with 26 Alaskans and 16 Hawaiians. The 10/05 Grayland DXped which was called the best ever for Alaskans had only 24 Alaskans (not counting tentatives) and a meager 4 Hawaiians. Either the QDFA was mainly responsible for the outstanding Alaskan and Hawaiian loggings, or propagation conditions for Alaska and Hawaii were the best ever for Grayland on 4/22/09, with a little help on 4/20 and 4/21. The odds of it being the latter are just about nil.

What was my favorite logging?

Actually four of them, the DXAM 1017 Philippines loggings of 4/19 (QDFA not fully operational), 4/20 (no call letters or slogan, but their lotto program IDed them), 4/21 (dual delta flag array only, QDFA not operational), and 4/22 (QDFA fully operational).

Some Log Statistics

The April 09 Grayland QDFA did very well on Australians with a total of 21. The average number of Australians for October Grayland DXpeditions from 04 to 07 was 10. The QDFA caught 19 New Zealands, while the Oct. 04 – 07 Grayland DXpeds caught a total of 4, for an average of 1. I am stunned. Apparently there were no attempts to log Alaskans or Hawaiians during the Oct 07 Grayland DXped, so only 04 – 06 were used for comparison: QDFA A = 25 and H = 16, while Oct. Grayland 04 – 06 averages were A = 14 and H = 2. In all of these cases, the April 09 Grayland QDFA performed well above the average for recent October Grayland DXpeditions with multiple beverages for Australians, New Zealands, Alaskans, and Hawaiians. The end of April is not considered to be a good time to DX the MW band from Grayland, while October is considered to be prime time for MW DXing at Grayland, which gives an advantage to the Oct. 04 – 07 DXped's. So it is virtually certain that the superior April 09 Grayland QDFA performance was not due to exceptional propagation conditions, but rather to the QDFA itself. Individual examples of the superior QDFA performance could also be given, such as receptions of VOA Philippines 1170 on 3 out of the 4 nights (one with just a dual delta flag array), and DXAM 1017 positively IDed on 3 of the 4 nights (on one night with only a DDFA), but they are already documented in the log above. Just to be complete, the numbers for Japan and China were Apr 09 QDFA J = 32 and C = 17, while the Oct 04-07 Bevs produced J = 46 and C = 32. No surprises here. The October Grayland high latitude paths had more hours of darkness than the late April Grayland high latitude paths. The only Grayland DXped I could find for a fair high latitude comparison was the one for Aug. 20-22, 2004 which had J = 14 and C = 4. In this case the QDFA with J = 32 and C = 17 came out on top.

Dare I Say It?

Yes, I will. At coastal sites where splatter is a problem for MW DXers, the quad delta flag array will leave the 700' Grayland (and longer!!!) beverages in the dust. Never mind what beverage true believers say. I was at Quoddy Head, ME where most undesirable signals were behind me or to the side of me, with a 1500' BOG, and I had a great DXpedition at QH, nevertheless it was splatter that limited what I could hear. Phasing the beverage helped some, but not enough. No beverages were compared to the QDFA at Grayland because no beverages needed to be compared. It had already been established by previous that a dual broadband unterminated loop array was generally equal to and often better than the typical 700' Grayland beverages. The QDFA is definitely superior to a dual broadband unterminated loop array. It is likely that that a DFA or DDFA is also superior to a 700' Grayland beverage, though no direct comparisons were made during the April 2009 DXpedition.