



ARASWF

NEWSLETTER



Vol. XXI No. 4 The Journal of the Amateur Radio Association of Southwest Florida April 2005

Club Information

Meeting Time:
4th Tuesday at 7:30 p.m.
Red Cross Chapter House
Northbrooke Plaza Dr.
Naples FL
Club Repeater:
K4YHB—146.670 (-600)
EOC Repeater:
WB2WPA—147.030 (+600)
Club Home Page
<http://www.araswf.org>
Club Officers/ Chairmen
President: KB4ETT
Corey Mugas
Vice President: KI4AI
Carl Pacini
Secretary: KG4ZLB
David Worboys
Treasurer: K2ZEL
Bill Reynolds
Past President: WB2QLP
Jordan Mash
Technical Director: WA9ZIF
Carl Foust
Ops. Director: KI4DBI
Rodney Smith
Public Info. Officer: KI4HQP
Elio Hernandez
Awards Manager: KD4VRZ
Gary Randall
VE Liaison: AA4RX
Howard Roux
Newsletter: WD8RFL
Mike Welsh
Webmaster: KI4AIM
Rik Conklin
Social Chair: W2JQ
Sigi Boernet

From the Presidents Shack:

Easter is several weeks in the past and a hot summer in Naples is on the horizon. As our winter visitors begin their exodus, it seems that HF propagation is leaving us too! I have had a few DX contacts on HF, but the activity is sporadic.

I have heard some great reports from club members of 2 meter DX contacts and the occasional opening on 6 meters. One thing about this hobby that fascinates me is the multi-faceted nature of Amateur Radio. If HF is lousy, well then try some VHF or UHF, or perhaps a different mode than we normally use. A change in propagation seems to renew our spark for other bands and modes. (I don't know about you, but I may do nothing but HF DX for a while, then switch to VHF, or something else.)

The club is keeping busy with other activities as well: We now have a new Icom 746-PRO at the club shack.

Planning and ground work for the Space Station contact continues.

We are one step further in the process of acquiring a new repeater site and we hope to deliver good news very soon! Get ready for a work party to install the repeater.

Volunteers are needed for a Mass Casualty Drill at Naples Airport on Thursday May 05. The club needs to provide 4 or 5 people to provide voice communications for the Red Cross and someone with Packet radio experience is needed to set up a packet link from the airport to the Red Cross or the E.O.C.

A work party is being planned for work to be done on the club tower and antenna systems.

(Whew!! There is a lot going on!!) Please forgive me if I forgot something.
Stay tuned for more information. (pun intended)

I wish to send a heartfelt 'Thank You' to everyone working hard at these and other projects.

73,

Capt. Corey Mugaas KB4ETT
President ARASWF

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Treasurer's Report:

As ordered, the treasurer ordered the ICOM 746 pro for the club. Unit received and installed at club station.

Balance at beginning of period	\$4343.97
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Income this period

Dues	\$250.00
Kenwood 2m sale	40.00
50-50	55.00
dues correction	<u>12.50</u>

Total Income	\$357.50
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Total funds this period	\$4701.47
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Disbursements this period

Tower Bracket	\$55.12
Bank Fee	<u>6.00</u>

Total this period	\$61.12
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Balance at end of period	\$4640.35
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Submitted this Date: 22 March 2005

G. William Reynolds, K2ZEL
Treasurer, ARASWF

Amateur Radio Association of South West Florida

Club meeting held at the Red Cross Building, Naples, FL on Tuesday March 22nd 2005.

In attendance:

Corey Mugaas, KB4ETT- President
G. William Reynolds, K2ZEL – Treasurer
Carl Foust, WA9ZIF – Technical Director
Jordan Mash, WB2QLP – Past President
David Worboys, KG4ZLB – Secretary
Carl Pacini, KI4AII – Vice President

Apologies:

Rodney Smith, KI4DBI – Operations Director

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MEETING MINUTES

Corey, KB4ETT (President), acted as Chairman of the meeting and there being a quorum present, called the meeting to order at 7.30pm.

Welcome: The Chairman welcomed the members to the meeting and introductions were made by all members and visitors.

Guest Speaker: In a departure to the normal course of club business, Corey opted to delay the meeting proper until after the guest speakers presentation whereupon he introduced to the meeting Joe Goggin, K9KNW who was to talk about meteor scatter communications. Joe showed the meeting a power point presentation which he freely admitted to "borrowing" from a fellow ham and friend of his! Joe described the WSJT software package which can be used on 2m, 220m, 440m and 6m which has proved very popular recently with the sporadic openings that 6m has for regular SSB phone QSO's. The program had been written by Joe Taylor, K1JT and supports two digital modes, FSK441 for meteor scatter and JT65 for extremely weak signal. The software utilises the computers sound card and requires no other equipment except for an interface such as the RigBlaster made by West Mountain Radio. Joe explained that meteor scatter is actually pieces of space dust that enter the earth's atmosphere at high speed and provide a very short communication window for SSB and fast CW (in excess of 30wpm). "Overdense" bursts were caused by bigger meteors with longer QSO times possible. With "underdense" bursts, smaller meteors were coming through the atmosphere and could provide a signal possibility of less than half a second which was hardly practical for SSB or CW. Whilst High Speed CW (HSCW) was an option, there was a lot of energy wasted in keying the sidebands. Therefore the solution to this problem was the use of FSK441 which uses a high speed loop to complete the QSO over several short meteor bursts although this did involve the radio having a 100% duty cycle. The FSK screen was however user friendly. Typical QSO's were made up of a 30 second transmission followed by a 30 second listening period and the program looks for spikes in the amplitude which could be QRN or a "ping". A ping is the term used for the transmission and the transmissions only consist of call signs, signal reports etc. JT65 on the other hand was for really weak signal communications and used signal averaging in the noise floor. JT65 also utilises a synch tone that provides a frequency reference for the data. Joe explained that QSO's were in the main already arranged by sked and that both operators' computers had to have the clocks in synch. He suggested www.thinkman.com/dimension4/ as a good site to download the clock updates; he himself had his clock updated every 2 seconds! He also provided the website for the WSJT program, which is freeware, at www.pulsar.princeton.edu/~joe/K1JT/ and that another website called "ping jockey" was used for weak signal operators to make pre-arranged skeds. Joe shared with the meeting the details of his station, this being a yagi array and 1kw of power although he said that 100w minimum would suffice. Joe then played a selection of recordings encompassing

EME and weak signal communications and explained by way of the power point slides what the program was seeing and deciphering.

Secretary's Note: The above notes are less than I would have liked to be able to record but due to the lights in the room being dimmed for the presentation!

Treasurers Report: Bill, K2ZEL presented the Treasurers report for the period to March 22nd 2005. During the period the club had gross receipts of \$357.50 made up of membership subscriptions, an additional receipt from the club auction and the proceeds of last months 50-50 donation. Expenses totalled \$61.12 made up of the purchase of a new tower bracket and bank fees. The net total in club funds amounted to \$4640.35.

Meeting Minutes: The Minutes of the previous meeting had already been published in the March 2005 newsletter and were taken as read.

New HF transceiver: Corey, KB4ETT, presented the results of the price discovery exercise undertaken by Jordan, details of which had already been published in the Club Newsletter. Jordan then explained that the prices were quoted ahead of the March 1st price increase which had occurred due to the exchange rate of the yen versus the dollar. It was reported that the Board had met previously and after due consideration had decided to approve the purchase of an Icom 746Pro subject to the general agreement of the membership as it was felt that the radio was more user friendly than the other radio's under consideration. A general discussion ensued whereby the new price of approximately \$1900 was reported but that figure included a free Icom PSU and free shipping if purchased from HRO. Additionally, HRO were offering a \$200 rebate on the radio bringing the price down to approximately \$1700. Peter, KK4PG asked if the Board had considered a Ten-Tec Jupiter and Corey responded by saying that it had been considered but the radio was without 2 and 6m capability and the club would still have to purchase an additional radio to cover those missing bands. Bill, K2ZEL, added that as regards the Ten-Tec, for ease of use, reliability and pricing, he still thought that the optimum purchase was the aforementioned Icom. Fred, KF4MJJ, proposed a motion from the floor that the Board be authorised to purchase the Icom 746Pro and this motion was seconded by Corey, KB4ETT. An amendment to the motion was tabled, by John, NS0I, that the radio be purchased through HRO but after further discussion, the membership gave discretion to the Board to purchase the radio from whichever source it though fit. The amendment to the original motion was not seconded. Irv, W1ERE, suggested that in his opinion, the radio should have the optional 1.9 SSB filter but again, after due consideration it was agreed that the situation concerning an additional filter should be left until the radio had been purchased, installed and operated for a time. The motion to purchase the Icom 746Pro was voted on by the members of the club present and the motion was carried by a unanimous show of hands.

Club Repeater: Jordan, WB2QLP, advised the members that a meeting had been scheduled for Tuesday March 29th with the management of the Marbella condo association and it was hoped that after this the club would be able to proceed with the installation of the 670 machine at the new location.

ARISS: Jordan, WB2QLP, advised that the second meeting to discuss the proposed ISS contact with Pine Ridge Middle School would be held on Friday March 25th at 7.30pm at the Red Cross. Any members who wished could attend. Jordan reported that the first meeting had produced a number of sub-committees of the membership who were charged with various aspects of the task, from finalising the application on behalf of the school to the actual logistics of the contact itself. David, KG4ZLB, offered to let any member who was interested have a copy of the minutes of the previous meeting upon receipt of an e-mail address.

Work Party: Jordan, WB2QLP, advised the members that a work party needed to be assembled for the first or second Saturday in April to change out the bracket holding the tower and the

beam antenna at the Red Cross building. This was due to damage caused by the hurricanes during the previous year. It was anticipated that approximately 6 people would be needed to undertake this.

50/50 Raffle: The 50/50 raffle was won by Irv, W1ERE who donated his winnings (\$20) to Club funds

A motion to close the meeting was proposed by Fred, KF4MJJ, and seconded by George, N3ISH, and there being no further business, the meeting was adjourned at 8.40pm

David A. Worboys
KG4ZLB
Secretary

From Vice President, Carl Pacini, KI4All:

This month our featured guest speaker will be Ray LaRue. He will talk about a World War II spy transmitter. In May, the featured speaker is the former Director of Space Communications for NASA. He will discuss the basics of space communications.

73's, Carl KI4All

From Operations Director, Rodney Smith, KI4DBI:

With the dry season come the fires. Here are some forestry frequencies to listen in on when you see the big black plums of smoke!

*159.315 159.225 159.240 159.270 159.330 159.390 159.405 *159.450 *151.235
151.295 159.285 151.235 151.295 169.175 169.900 *154.265 *154.280 154.295
159.300 159.375 123.450 159.370 154.385 154.010 154.370 172.275

* has been used in Collier County

73's, Rodney KI4DBI

~ OF INTEREST TO ALL ~

From Jeff Buerger, N2JF:

Florida QSO Party Rules

2005 Florida QSO Party (FQP)
Sponsored by the Florida Contest Group

1) Object: For amateurs outside of the state of Florida to make contact with as many Florida stations as possible. Florida stations, activating as many counties as possible, work everyone.

2) Contest Period: 4th full weekend of April. There are two operating periods. 1600Z April 23 - 0159Z April 24 and 1200Z - 2159Z April 24. 20 hours total. All stations may operate the full 20 hours.

3) Categories:

(A) Single operator. One person performs all operating and logging functions. Use of spotting nets (operator arrangements involving assistance through DX-alerting nets, Packet Cluster, etc) is not permitted. Only one (1) transmitted signal on the air at any time.

(B) Multi-operator. Those obtaining any form of assistance, such as relief operators, loggers, or use of spotting nets. NOTE - Multi-operator stations do not have to remain on a band for 10 minutes before changing bands.

(1) Multi-Single. Only one (1) transmitted signal on the air at any time.

(2) Multi-Multi. More than one (1) transmitted signal on the air at any time. No simultaneous SSB/CW signals on one band at the same time.

(C) Mobile. Mobile is a station that is self-contained (radio, antenna, power source) capable of motion. Motion is optional. The Mobile category is not limited by the number of operators for competition purposes. Mobile entrants may be either Single Operator or Multioperator. There are two classes of Single Operator for mobiles.

(1) Single Operator. One person performs all operating, logging, and driving functions. NOTE - Operating in this category does not require simultaneous operating, logging and driving. Operators who choose to simultaneously operate, log and drive are reminded that doing so can be extremely dangerous. Operators in this category are encouraged to do so with utmost attention to driving safety.

(2) Single Operator Plus Driver. The entrant performs all operating and logging functions and has a separate driver who need not be a licensed Amateur. The driver

may not assist in any operating or logging functions. Please note the driver in your entry.

(D) School (University, College, High School, etc.). Operation is to take place from a station on campus. Operation from a club members home station is ONLY allowed if there is no station on campus. Operators can be Students, Faculty, Staff and Alumni from the School. Awards will be issued to top Florida and top non-Florida School. For award purposes, there is no distinction between Single and Multi operator stations or power levels in this category.

(E) SWL.

4) Power. Three power output categories for all categories. Logs not showing power output category will be listed as high power.

(A) QRP - 5W output or less

(B) Low Power - 150W output or less

(C) High Power - more than 150W output

5) Modes:

(A) All entrants may operate:

(1) Mixed mode (phone and CW)

(2) Phone only

(3) CW Only

6) Contest Exchange:

(A) Florida stations send signal report and county.

(B) W/VE stations (including KH6/KL7) send signal report and state or province.

(C) DX stations (including KH2/KP4, etc.) send signal report and DXCC prefix.

7) Scoring:

(A) QSO Points: Each complete non-duplicate Phone contact is worth 1 point, per band. Each complete non-duplicate CW contact is worth 2 points, per band. No partial contact credit. No duplicate contact credit. The loss of the incorrect QSO plus a penalty of one additional QSO is assessed for an incorrectly copied callsign or QTH. If that was the only one with that QTH, then the multiplier is also lost (no penalty multipliers, however).

(B) Multipliers:

(1) For Florida stations, 50 states (including Florida); Canada MAR (VE1, VE9, VY2), NF (VO1, VO2), QC (VE2), ON (VE3), MB (VE4), SK (VE5), AB (VE6), BC (VE7), NW (VE8, VY0), YT (VY1); DXCC Countries (except the US, Canada, KH6 and KL7);

Maritime Mobile (ITU Regions, R1, R2, R3). A multiplier can be counted once per mode, regardless of the number of bands on which it is worked.

(2) All others work Florida counties (a maximum of 67). Florida mobile stations that change counties are considered to be a new station and may be contacted again for point and multiplier credit. Florida stations on a county line may be claimed as a QSO and a multiplier from each county (2 QSO's and 2 multipliers). County lines, whether land or water, are defined as per "County Hunter" rules. Mobiles should sign callsign/cty. Mobiles use only one call per county. A Florida county multiplier can be counted once per mode, regardless of the number of bands on which it is worked.

(C) Final Score: Multiply QSO Points by total multipliers by the power multiplier (see below). Florida mobile operations must submit separate logs for each county activated; a mobile entrant's score will be the cumulative total of multipliers and QSO's. This will be determined by the log checkers.

(1) Power Multiplier: If all QSO's were made using 5W or less, multiply your score by 3; if all QSO's were made using less than 150W, multiply your score by 2; if any or all QSO's were made using more than 150W, multiply your score by 1. No power multiplier for SWL's.

8) Suggested frequencies: CW - plus or minus 35 khz up. Phone - plus or minus 7.260, 14.260, 21.335, and 28.470 MHz. Look for SSB activity on the hour and CW on the half hour. No 160 or 80 meters, WARC bands, or VHF bands.

(A) Mobile Windows. Florida "home" stations should not call CQ or "run" stations in this mobile "window".

(1) CW 7.025-7.030, 14.040-14.050, 21.040-21.050, 28.040-28.050 MHZ

(2) SSB 7.265-7.275, 14.265-14.275, 21.340-21.350, 28.480-28.490 MHZ

9) Miscellaneous:

(A) Call signs and exchange information must be received by each station for a complete QSO.

(B) No cross-mode contacts; CW contacts must be made in the CW portion of the band.

(C) Stations may be worked once per mode, per band (and mobiles in each new county), i.e., WC4E may be worked on both 20 CW and 20 SSB for credit.

(D) Your call sign must indicate your DXCC country (also, portables in Hawaii and Alaska must sign /KH6 or /KL7).

(E) Club competition, as per ARRL Club definitions. Please indicate your club affiliation on your summary sheet and/or log.

10) Reporting:

(A) Entries must be received (or postmarked for mailed in logs) no later than 30 days after the end of the contest (May 24, 2005). All entrants are encouraged to submit their logs electronically (e-mail, Web Page, 3.5-inch floppy disk, etc.). The file format for electronic logs is Cabrillo.

(1) E-Mail. You may submit your contest logs via e-mail to logs@floridaqsoparty.org.

(2) Web Page. Entrants who do not use computer logging are encouraged to use the log-entry web form, to enter the QSO info from their paper logs.

(3) On Disk. You may submit your logs on diskettes instead of paper logs. The floppy diskette must be IBM compatible, MS-DOS formatted, 3.5 inch.

(4) Via Regular Mail. Contest logs (paper or diskette) may be submitted via postal mail to: Florida QSO Party, c/o Ron Wetjen, WD4AHZ, 5362 Castleman Dr., Sarasota, FL 34232.

(B) Logs must indicate band, mode, date, time in UTC, calls, sent and received exchange (SWL's log senders report).

(1) Entry forms (rules, summary sheet, log sheet, and county abbreviations) are available for downloading.

(2) You may also receive entry forms (rules, summary sheet, log sheet, and county abbreviations) by mail. Please send a business sized SAE, with a \$1.00 donation to help defray costs of printing and mailing, to Florida QSO Party, c/o Ron Wetjen, WD4AHZ, 5362 Castleman Dr., Sarasota, FL 34232.

(C) Logs that have been received will be listed on the Florida QSO Party Web site no more than 48 hours after receipt.

(D) Final results will be posted on the Florida QSO Party Web site.

(E) If you wish a hard copy of the results, please send a 9" X 12" self addressed envelope with a \$1.00 donation to help defray costs of printing and mailing, to Florida QSO Party, c/o Ron Wetjen, WD4AHZ, 5362 Castleman Dr., Sarasota, FL 34232.

11) Awards:

(A) Plaques will be awarded in various categories. See the current list of available plaques and sponsors here. Certificates will be awarded to top scorers in each category

from each Florida county, State, Canadian province, and DXCC country.

(B) Special awards may be awarded at the discretion of the Florida QSO Party Contest Committee.

12) Condition of Entry: Each entrant agrees to be bound by the provisions, as well as the intent, of this announcement, the regulations of his or her licensing authority and the decisions of the Florida QSO Party Contest Committee.

From Jordan Mash, WB2QLP:

**Comparison of Commercial 6m antennas
Issue 35, October 1992 Six News**

For full details of M2 Enterprises series of 6m beams see:

<http://www.uksmg.org/m2.htm>

Following the discussion on antenna stacking in the last issue of Six News, we thought it was about time to look at 6m antennas. For practical reasons this review is limited to antennas that are available in the UK and to manufacturers of good standing who are able to provide adequate after sales support.

There are several related issues to consider when choosing an antenna: electrical performance, boom length, cost, and quality of manufacture. Very rarely, if ever, do any of us have an opportunity to select an antenna without entering into a compromise on one or more of the above points. The first three are directly related, as a quick scan of the table will show. With regard to the latter, there are no concerns with any of the manufacturers listed so far as we are aware.

Comparison Objectivity

It is always very difficult to objectively compare competitive products when undertaking any purchase but, to act as a starting point, we have plotted graphs in Figure 1 of forward gain and boom length on the same axis. This provides a straightforward way of looking at the trade-off of gain versus boom length. To provide a trustworthy reference we have plotted the forward gains of several NBS designs and joined them together as a reference. Although it is possible to better the NBS design profile, a manufacturer is unlikely to do so by several dBs for a similar length! Which brings us to the most contentious issue, can the gain figures claimed by manufacturers be trusted? First of all, at least one specifies their gain in dBi (i.e. the gain compared to an isotropic radiator). Using this method, manufacturers can seemingly 'obtain' an extra 2.1 dB. The standard way of quoting gain is dBd where the gain is relative to a dipole. In my view a manufacturer claiming in dBi does lose credibility and has a ring of specification enhancement to trap the unwary. There is nothing actually wrong with using dBi as long as the manufacturer states so clearly in the specification. Tonna does this, so to enable comparison with other antennas we have taken 2.1dB off the gain claimed. Two other manufacturers seem to claim unusually high forward gains; Create and Cushcraft.

Create only state their gains in dB, not dBi or dBd. Looking at the gains claimed by Create in comparison to NBS designs, we take the view that they are really using dBi and we have therefor subtracted 2.1dB from their figures. Cushcraft actually state their gains are dBd however, all of their antennas claim gains greater than NBS designs. For example, their excellent 6m Boomer is claimed to have a forward gain of 14dBd on a boom length of 34 feet. While their competitor, KLM, with a the 6M-14 requires a boom length of 61 feet to achieve the same gain! I leave it to your discretion to decide which is correct! We have split the graph into three sections: economy, serious, and the seriously rich! Here are our recommendations. Remember, choose the best and the biggest antenna you can afford and fit into your garden - you cannot make up for low gain in your antenna no matter how much you spend on your transceiver and mast head amplifier!

Manufacturer	Origin	Range	Number	Ele	Gain	F/B	Beam	Boom	Longest	Turning	Weight	Price
					dBd	Ratio	Width	Length	Element	Radius	Kg	UK £
						dB	Degress	Metre	Metre	Metre		
Maleol			HB9CV	2	5.00	16.0	70	0.76	2.90	-	0.85	35.75
Cushcraft	USA		A50-3S	3	8.00	20.0	76	1.80	3.00	1.80	3.20	73.00
Dee Comm	UK		3-ele Yag	3	7.00	>20	-	1.80	3.00	-	2.20	30.95
		IIBS	IIBS-3	3	7.10	-	-	2.70	-	-	-	-
Jaybeam	UK	Dual band	DB4-4/6	4	6.00	16.0	-	3.06	2.98	2.10	9.70	165.00
Tonna	France	-	20505	5	7.85	23.8	55	3.45	-	-	6.50	59.00
Dee Comm	UK		5-ele Yag	5	9.00	>20	-	3.60	3.00	-	3.50	39.95
KLM	USA	-	6M-5	5	9.70	30.0	40	3.60	1.47	1.50	4.10	170.00
Cushcraft	USA		A50-5S	5	10.50	22.0	58	3.70	3.00	2.30	5.00	120.00
Hy-Gain	USA	-	64DX	4	8.20	25.0	-	3.70	3.00	2.40	4.50	108.00
Jaybeam	UK		4Y/6M	4	6.50	12.0	58	3.81	2.90	2.30	4.80	69.32
		IIBS	IIBS-5	5	9.20	-	-	4.80	-	-	-	-
M2	USA	-	6M5	5	9.30	12.0	-	4.85	-	-	-	129.00
Create	Japan	-	CL6DX	6	10.90	22.0	48	5.80	3.07	3.50	6.00	-
Cushcraft	USA		A50-6S	6	11.20	24.0	-	6.10	3.00	3.40	8.20	195.00
KLM	USA	-	6M-7LD	7	10.50	30.0	39	6.10	1.54	3.96	5.50	190.00
Create	Japan	-	CL6DXX	7	11.90	24.0	-	7.20	3.07	4.00	9.00	172.65
		IIBS	IIBS-6	6	10.20	-	-	7.20	-	-	-	-
Hy-Gain	USA	-	66DX	6	10.30	25.0	-	7.46	2.97	3.81	7.70	204.00
M2	USA	-	6M7	7	10.50	23.0	42	8.00	-	-	7.70	197.00
KLM	USA	-	6M-7LB	7	11.50	30.0	39	7.85	1.54	4.87	10.00	253.00
Create	Japan	-	CLXDXZ	8	12.40	20.0	-	9.30	3.10	4.80	12.00	-
Cushcraft	USA	Boomer	617-6B	6	14.00	30.0	38	10.36	3.00	5.39	11.79	281.00
KLM	USA	-	6M-10	10	11.70	25.0	40	10.36	3.10	5.94	13.20	365.00
		IIBS	IIBS-12	12	12.25	-	-	11.96	-	-	-	-
M2	USA	-	6M2WL	9	12.40	25.0	36	12.14	-	-	14.10	327.00
M2	USA	-	6M2.5WL	11	13.00	22.0	33	15.20	-	-	17.30	386.00
KLM	USA	-	6M-14	14	14.00	26.0	33	18.60	3.10	10.90	33.20	499.00

TEXAS YOUNGSTERS LOG 170TH ARISS SCHOOL GROUP QSO

A group of elementary schoolers in Denton, Texas, used ham radio to quiz International Space Station Expedition 10 Commander Leroy Chiao, KE5BRW, about life in space March 29. The direct VHF contact between W5NGU at the Science Discovery Center at Pecan Creek Elementary School and NA1SS was

arranged by the Amateur Radio on the International Space Station (ARISS) program. It marked the 170th ARISS school group contact since the first crew came aboard the ISS in 2000. Chiao told the pupils he believes the development of human space travel will parallel the earlier development of air travel.

"In the beginning of the airplane, there were only a few people that got to fly in them, and now we've got air travel, it's pretty commonplace for everyone," Chiao replied. "The same thing's going to happen with space. It's just taking a little bit longer because it's a little harder and a little more challenging to get up into space." Noting ventures under way to privatize space travel, Chiao said he thinks that's the direction human space flight will take in the future.

Among other things, Chiao also told the kids that education is very important to becoming an astronaut. Most members of the NASA Astronaut Corps, he said, have advanced degrees, and training in various aspects of technology is ongoing. "We're always kind of in school," he remarked.

One youngster wanted to know if the ISS crew members log all the new things they see or learn during their duty tours for later study. Chiao said that some astronauts keep journals as part of one of the science experiments aboard the ISS.

"I've been keeping a journal that I put in my thoughts maybe two or three times a week, depending on how much time I have, and those will be used later to study different social aspects of being on board a space station for so long," he said. Chiao and his Expedition 10 crewmate, cosmonaut Salizhan Sharipov of Russia, have been aboard the ISS since last October. They're due to return to Earth later this month.

In all, the Pecan Creek students put 15 questions to Chiao before the ISS went out of range. At one point during the contact, Chiao looked out the window and observed that the spacecraft was passing directly over the Dallas area. He commented that looking at Earth and taking photographs was a favorite spare-time activity aboard the ISS.

Amateur satellite veteran Keith Pugh, W5IU, served as mentor for the ARISS contact. Members of the Denton County Amateur Radio Club, W5NGU, set up the ground station equipment and handled control operator duties. They also arranged for other schools to view the contact live via amateur TV.

About 50 parents and guests along with members of the school faculty joined some 300 of the participating pupils' schoolmates to witness the contact. The Science Development Center contact got media coverage from two TV stations and two newspapers.

Let's Hope this doesn't happen to Us !

The school contact with Goffstown N.H. was a bust. I assume there was technical difficulty with the ground station (it was a direct). I heard CDR Chiao repeatedly calling for the school station but no joy. He did report hearing carrier. This was monitored from FN42 near Boston. Goffstown is only a few miles north of here so I could cover the entire pass. Oh well too bad, I'm sure the students are disappointed!
Glenn - KB1GUE

The Worry and Apprehension of VHF Antenna Polarization By John Wendt, WA6BFH

While this article will primarily address the bands of 10 and 6 Meters, I will add some thoughts on other VHF and UHF wavelengths as we get into the meat of the issue. Probably the first wavelength band that I need to address is in reference to my mention of 10 Meters! You see 6 Meters is often referred to as the "Magic Wavelength Band"; and this is because it often works like an HF wavelength band, when it is in fact a VHF band. Well 10 Meters, an HF band, often works like a VHF band in terms of its signal propagation. So I guess some of that magical pixie dust has just sprinkled on down frequency almost one octave!

Now with this next band, 6 Meters, I have lots of experience, about 38 years worth! It is a truly magic band, although I feel the same way about several bands above it! Anyway, 6 Meters will avail itself of all of these below listed forms of distant (DX) communication:

F-layer skip every 11 years at or near the Solar peak-- along with the HF spectrum.

E-layer skip, regularly at the Spring of every year, and other times; also seen on 10 Meters

Meteor Scatter (skip) several times each and every year (at regularly noted meteor showers.

Auroral Skip, at times when major solar events ionize the D-layer of the ionosphere.

Tropospheric Ducting, at weather plus maybe E, or F layer events.

Knife Edge Refraction over mountain tops, not too great for distance, but fun!

These are the physical elements that make the Magic! You see when you have bands of frequencies that can be propagated by ducts of differential air temperature, that's pretty magic. When you can have bands of frequencies where signal propagation can be facilitated by the exhaust gasses of jet aircraft, that's Magic, and of course I don't mean that in a literal sense. My point is that it is fun and interesting to exploit these methods of signal propagation, and learn about them.

The counterpoint of this is when we run into people who will tell us that this is not important, fun, or that there are only certain ways that WE MUST PROCEED in these endeavors. Noted fables that I have heard through the years are:

- 1) You must use horizontally polarized antennas!
- 2) Cubical Quads don't work on VHF!
- 3) Vertical omni-directional antennas will not work on 6 Meters for DX!
- 4) "J" or J-pole antennas are less efficient than Ground Plane antennas!

I think that part of the fun is to de-bunk such ideas! It is also fun to learn the perspective of any amount or shred of truth that might be contained in such broad statements! Let's take a look at each one of these; and see what might have been meant by any negative aspersion, and lets see if we can benefit from the contrasting truths.

Why must you use a horizontal antenna? This is often done so as to improve "Signal to Noise Ratio". It is true that much, or maybe even most, electrical noise has a vertical component. This is "pulse noise" generated by ignition sparkplugs, or other arc bursts of energy. Remember though that pulse noise is the easiest sort of electrical noise to effectively cancel!

In any case, while this noise is most notable, in larger cities, where overhead power lines are prevalent, horizontal noise will be the most obvious! It will be so predominant that it will virtually make a blanket of noise at relatively high signal levels. When this S3, S4, S5 or higher noise level exists, many radio signals or VHF band openings may get lost in the noise.

I know of many practical instances over the years when I with either a vertical quarter wavelength Ground Plane, or a home-made copper "J" antenna -- both of which don't work on 6 Meters -- was able to work either E-layer openings, Meteor Scatter, Auroral, or F-layer skip, before many 'big gun' horizontal Ham's could hear the DX signals. Why was this?

A vertical antenna has a lower angle of radiation than does a horizontal antenna. That is in fact why horizontal Yagi's etc must be raised to appropriate height to provide an optimum launch angle. Most 6 Meter Ham's who are serious about working DX will have an antenna tower of some 60 feet or better, and one or more Yagi beam antennas of at least 1.5 wavelength booms. Or, perhaps better to say, they will try to at least provide a good 10 dBd of antenna gain. A 25-foot boom Yagi will do that, as will two 4 element Yagi's on 12-foot booms.

So if a simple unity gain, or less than unity gain (the Ground Plane) antenna will work quite nicely for 6 Meter DX, after all, I worked 50 states and several countries with such verticals, what would be the best beam antenna configuration.

You can stack multiple beams on a tower and improve radiation angle. If you want to keep things simpler though, put two Yagi's up vertically polarized. Two 4 element Yagi's as I mentioned before will yield 11.2 dBd of gain. Subtract about 1 dB for transmission line loss, and you still have better than 10 dB's at a very nice low angle of radiation. This also works with even shorter tower heights. A short tower will kill horizontal antenna performance but not when they are vertical!

How about that statement that Cubical Quads don't work on VHF! This was said in all seriousness once at a VHF/UHF conference in the California town of Santa Maria. This conference even sponsored "an Antenna Gain Contest" on Sunday near the close of the conference. After the statement had been made, Saturday, a hasty visit to the local hardware store garnered some 12-gauge wire, some wooden furring strips, and an S-239 coax connector was obtained from somewhere.

After a few fevered hours of sawing, drilling, assembling and testing, the 4 element Quad was produced that you will see in the web posted article below. The winning entrant is that antenna that has the greatest gain, for the shortest boom length. That is the advantage of quads, they produce much higher gain, over relatively short boom lengths. They do unfortunately develop "I squared R" losses pretty quickly as well, such that after the 5th or 6th element, further gain is minimal. Yagi's by contrast can be as long as is mechanically practical, and they will just keep developing gain!

This quad did won the contest by the way! The next best antenna a "KLM Band-pass Log Fed Yagi" produce 13 dB's of gain but it was more than twice as long!

<http://www.geocities.com/SiliconValley/2775/quad.html>

I have already touched on vertical Omni's but, I thought that comment about "J" or J-pole antennas being less efficient really tossed me for a loop. A "J" antenna is simply an end-fed dipole, with a Q-line matching device. There is no more efficient matching method other than the Q-line transformer! Take a nice vertical half-wave antenna, match it to any desired impedance -- with practically no loss -- how can that be bad!

<http://www.geocities.com/SiliconValley/2775/6mjant01.html>

What about the other bands? I'm not so certain, as I have not had nearly as much or as broad experiences on 2 Meters, 135, 70, 33, or 23 centimeters. Experience and self-learning is key! It would be nice to find out and test these concepts however. I guess most Ham's don't do this because they don't want to take a chance. I'm getting to be a little long in the tooth, with gray chin whiskers, and legs that don't climb antenna towers as easily as I used to. I know one Ham on 135 centimeters that tries things just to find out! Now to me, that's what Ham radio is all about!

***Pictures from the March Meeting
From Public Information Officer, Elio Hernandez, KI4HQP:***



And the Last Word comes from David Worboys, KG4ZLB,

Ten Undeniable Ham Truths

I know these have been here before, but it is fun to revisit them. I can relate to 9 out of 10!

1. That antenna is only temporary . . .
2. "If my wife ever finds out what this stuff cost, I'm a dead man...."
3. The worthless stuff thrown away today shows up on eBay tomorrow.
4. If you can't sneak it in through the basement window, bring it in through the front door wrapped in a fur coat.
5. You have absolutely no trouble finding your car in a crowded parking lot. (Unless you're at a Hamfest.)
6. One of your antennas or piece of gear that you seldom ever if at all use develops a problem, now all of a sudden you must get it fixed as if you use it daily.
7. The XYL will ALWAYS need help with something DURING a QSO, never before or after the QSO.
8. During tornado watches and warnings, we are more concerned about our antennas coming down than we are about our house being blown up.
9. Computer Nerds think that Hams are the real weirdo's.
10. "Christmas" and or "birthday" come about 15 times per year (or whenever an unbudgeted radio purchase comes up). Technically, I shouldn't be getting any more "presents" for the next 10 years!

Visit our Club Web Site at: www.araswf.org

<p>NEXT MEETING - TUESDAY - APRIL 26, 2005 7:30 PM - RED CROSS CHAPTER HOUSE</p>
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