

THE 6 METER NET CHRONICLES

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NOTE! Promote Our 6 Meter Net NOTE!
NOTE! Promote All Amateur Radio Nets NOTE!

PURPOSE

The purpose of this information source is to keep interested parties abreast of the amateur radio activities and other deemed pertinent ham related topics on the TEARA 6 meter chat/information net held each Thursday at 8:30 pm using the 53.03 six meter repeater (K4ITL, FM) located just south of Raleigh, NC at Lake Wheeler. The 53.03 repeater is owned by Danny Hampton, Jr. and we have been given permission by him to use it.

CONTRIBUTING

If you have any information that would be pertinent to the amateur radio participants of this net please send it to ki4fyr@bellsouth.net for inclusion in a future issue. Also send a note to this address if you, or a friend, wish to be included in the email distribution for issues of the 6 Meter Net Chronicles.

NET ACTIVITY SUMMARY

So far during the month of JUNE, the TEARA 6 meter net handled 29 check-ins covering an area of approximately a 55 mile radius from Danny Hampton's 53.03 repeater. A table and map showing the activities to date are included as **Appendix A** of this document. To-date we have had 63 different check-ins into our 6 meter information/chat net!

TEARA (Triangle East Amateur Radio Association)

The Triangle East Amateur Radio Association meets the fourth Tuesday of each month, at 7:00 pm, in the social hall of the Wendell United Methodist church. Individuals start arriving around 6:00 to 6:30 pm and bring their dinner and socialize until the meeting starts at 7:00 pm. TEARA has very good programs of interest to hams. Please give the club a visit and consider becoming a member. TEARA does not meet during the month of December.

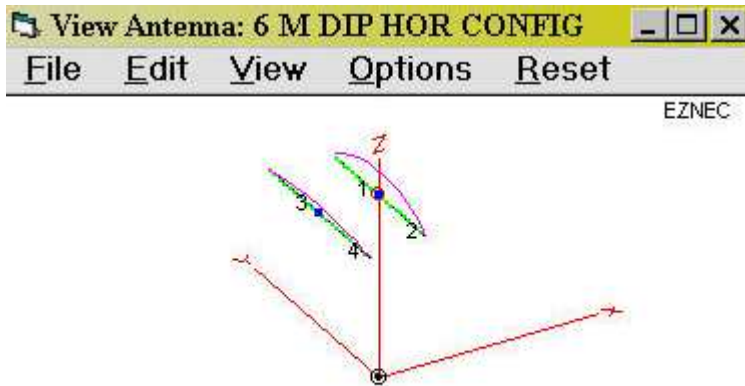
FIELD DAY - 2006 FIELD DAY -2006

Do not forget that **June 24 and 25** is Amateur Radio 2006 Field Day. Please take part, if only on a very limited basis. Get out and make a couple of contacts. I am sure that all local clubs would welcome a visit by non-member hams, or non-hams, to their field day activities and most would let you get on the air and make a couple of contacts. Better yet, take your kids, or any kid, and let them get on the air.

Note! During the next couple of nets leading up to Field Day 2006 I will discuss briefly how anyone who elects not to participate directly in any club's field day activities can take part in contacting those that are actively participating. If an Amateur Radio operator is participating in field day all contacts can count officially. So even if you do not elect to officially participate in Field Day 2006, turn on your radio and help out your fellow hams! More information to come!

THE CONCEPTS BEHIND AMATEUR RADIO ANTENNAS - PART P - SECTION 2 DESIGN OF A 6 METER 2 ELEMENT YAGI-UDAS BEAM ANTENNA FOR FIELD-DAY 2006

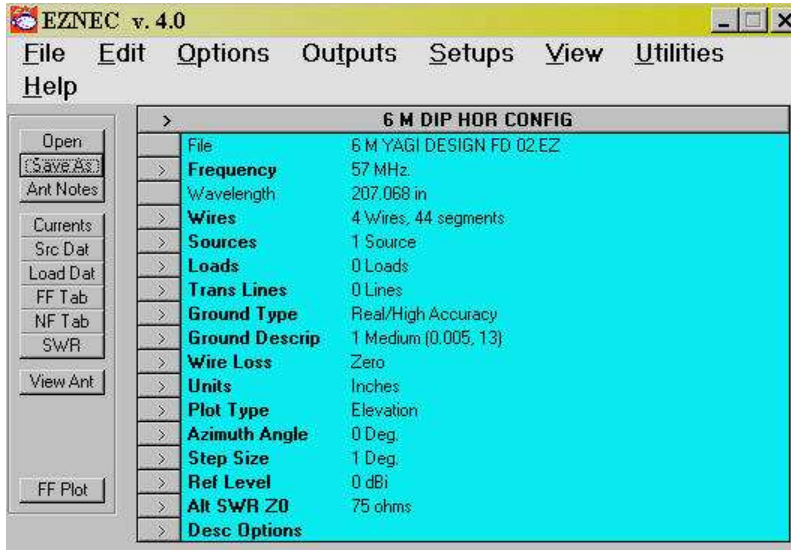
(A) View



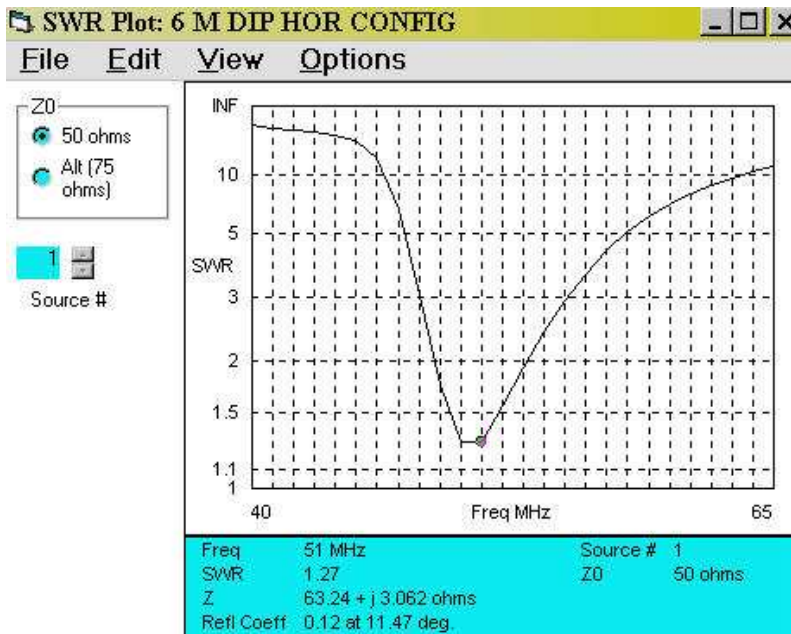
(B) Wires

Wires												
No.	End 1				End 2				Diameter (in)	Segs	Insulation	
	X (in)	Y (in)	Z (in)	Conn	X (in)	Y (in)	Z (in)	Conn			Dielectric	Thk (in)
1	0	0	120	W2E1	0	53.6	120		0.5	11	1	0
2	0	0	120	W1E1	0	-53.6	120		0.5	11	1	0
3	-40	0	120	W4E1	-40	59.8	120		0.5	11	1	0
4	-40	0	120	W3E1	-40	-59.8	120		0.5	11	1	0

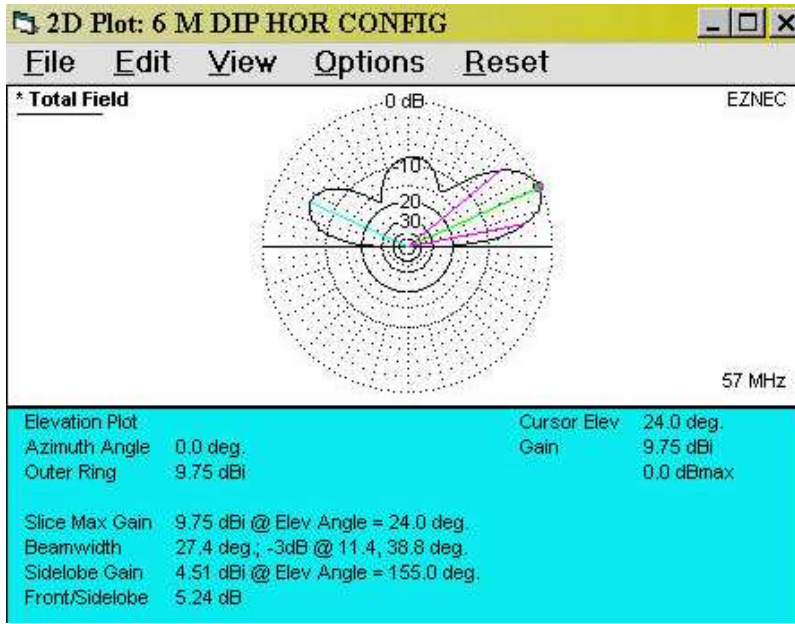
(C) Details



(D) SWR



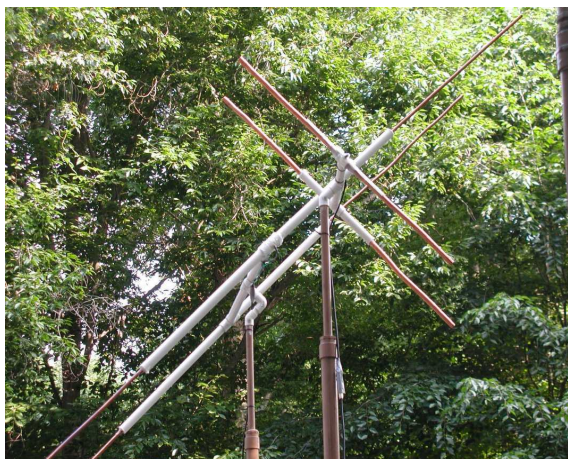
(E) Radiation, Elevation View



The above data are the predicted (EZNEC) performance for the 6 meter Yagi-Uda antenna that was designed for field day activities. Note that the predicted performance is for perfect ground conditions at a height of 120 inches.

(F) Pictures

6 And 2 Meter Antennas Together



Attempt To Balance Weight Distribution



The same general construction techniques used to design and build the 2 meter 2 element Yagi-Uda antenna were followed in designing the 6 meter configuration. A couple of different items came up. First, a slightly larger size PVC pipe had to be used to support the heavier 6 meter antenna elements. Second, an attempt was made to put the center support at a balance point between the driven and reflector elements. Third, as indicated in the above picture, an attempt (not quite successful) was also made to also place the center of mass of the 6 meter beam over the center of the supporting PVC pipe. Initially I tried to have the special coupling element, as shown above, be non-permanently attached to both the supporting PVC pipe as well as the antenna main supporting structure. This did not work, so I had to glue the curved section shown above directly to the main antenna supporting unit. Otherwise, when a large bird would land on the antenna and take off, the antenna would rotate around its 45 degree axis orientation.

By placing the 6 meter and 2 meter units at 90 degrees, radiation angles, to each other no interactions between the antennas were observed. This was great in that the antenna theory books indicate such!!!!

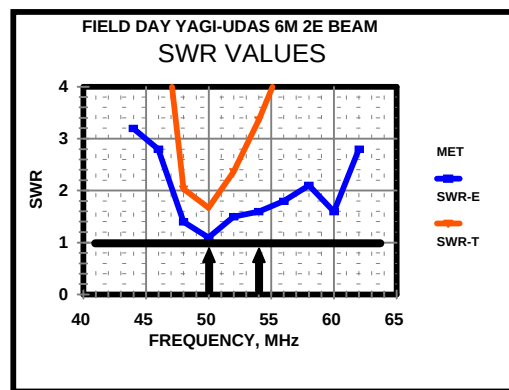
The antenna was constructed using 0.5 ID (inner diameter) copper tubing. Note! If one used a different size material the difference in electromagnetic wave speeds could be significant. Also, the SWR bandwidth (smaller diameter) would be somewhat reduced. For the 6 meter beam I selected 1.3 inch OD (outer diameter) PVC piping material. The smaller sized PVC piping used in building the

2 meter antenna would not adequately support the heavier weight of the 6 meter beam.

The 50 ohm coax line had its shield separated from the center wire and two connecting clips were soldered to the ends. The length of these two sections, ground and center wires, will act as part of the total dipole $\lambda/2$ length section!

The antenna openings, exposed wires, etc. were all covered with a high grade of silicone sealer. Note! In the above view of the 6 meter beam the reflector is being held in place by only the silicone sealer that was inserted into the ends of the PVC rod that holds the reflector. I would note that the two beams shown weathered the wind and rain of our most recent tropical storm just fine.

The measured performance, SWR with the antenna on top of the test stand and with approximately 60 ft of 50 ohm coax attached is as follows:



In the above figure SWR-E refers to the measured test stand experimental data and SWR-T refers to the computer program (theory) predicted SWR values. Obviously, my test stand location and ??? are having a very positive impact on my measured SWR values, as was the case for the 2 meter 2 element beam. Also note that the experimental data are for the antenna oriented at a 45 degree angle with respect to the ground whereas the predicted theory (EZNEC computer program) is for a horizontally oriented antenna. We will wait and see what data set turns up at the TEARA Field Day location site.

Coming, Part O, Section II

In Part O, Section 2, I will conclude the design of my 2 meter log-periodic antenna along with SWR test stand data.

APPENDIX A

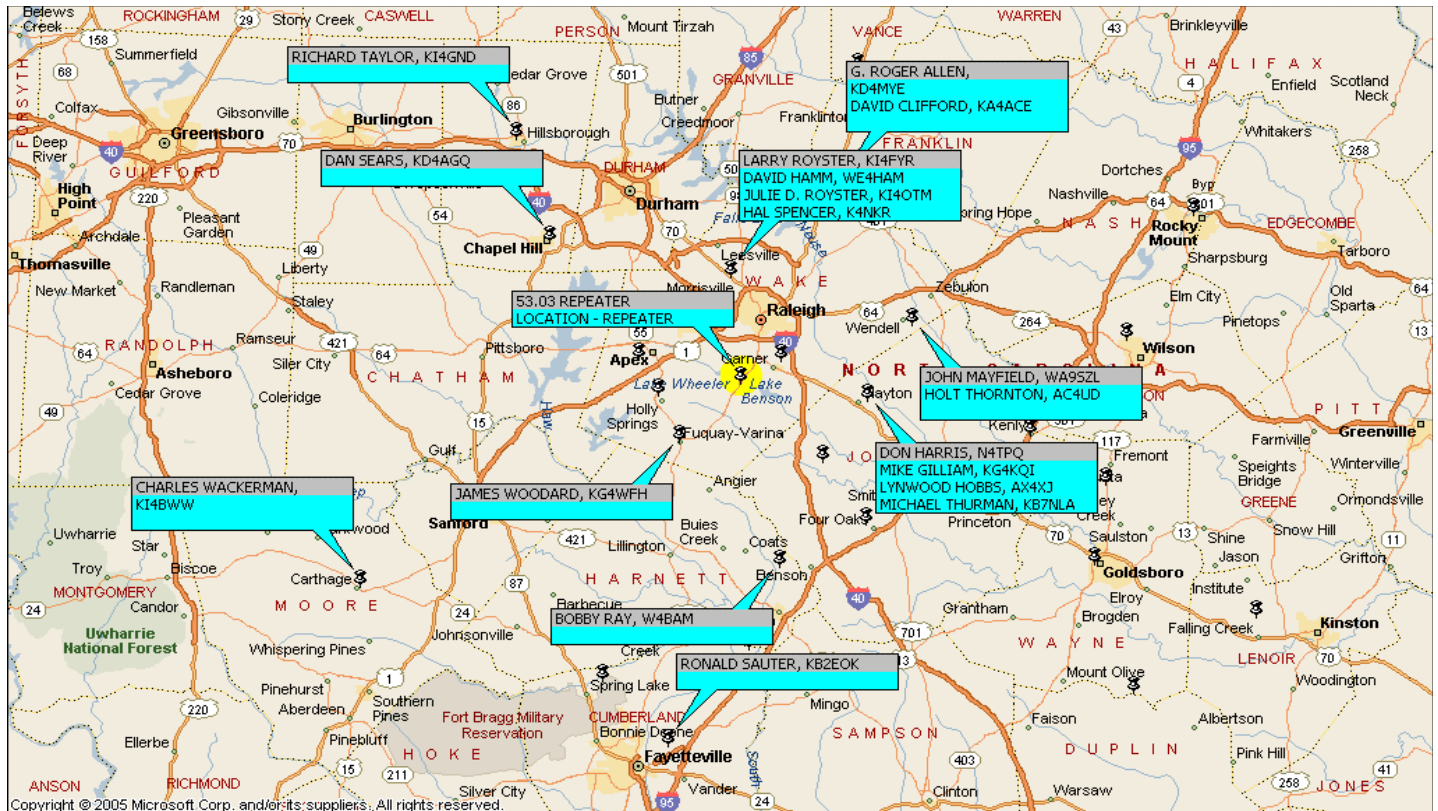
TABLE FOR MONTHLY CHECK INS/OUT TO THE TEARA 6meter THURSDAY NIGHT INFORMATION/CHAT NET - YEAR 2006 MONTH: JUNE

(*) Indicates Net Controller For The Session and (**) In and Out

SEQ	WK 1	WK 2	WK 3	WK 4	WK 5	CALL SIGN	NAME	LOCATION	COMMENTS
1	X	X				AC4UD	HOLT THORNTON	WENDELL	
2						AD4XE	FRANCIS DRAKE JR	GARNER	FRANK
3	X	X				AF4XJ	LYNWOOD HOBBS	CLAYTON	
4						AG4WE	FREDERICK BREIDT	RALEIGH	FRED
5						AI4FQ	BOBBY CARLYLE JR	DOVER	BOB
6						K4JDR	RONNIE CASEY	RALEIGH	RON
7						K4NGJ	BYRON KING	RALEIGH	
8		X				K4NKR	EARNEST SPENCER	RALEIGH	HAL
9						K4WDE	WALT EDMUNDSON	WAKE FOREST	
10						K4WIX	JACKIE WILLIAMS	WENDELL	
11						K9TJE	TERRY EDWARDS	ROCKY MOUNT	TED
12						KA0GMY	STEVEN MOWELS, SR	RALEIGH	
13						KA3SEI	ROB RUFF	APEX	
14		X				KA4ACE	CLIFFORD DAVIS	WAKE FOREST	CLIFF
15						KA9QJT	BRIAN YOUNG	RALEIGH	
16						KB2EOK	RONALD SAUTER	FAYETTEVILLE	RON
17						KB4PQJ	STEVE VON DOHLEN	RALEIGH	
18	X					KB7NLA	MICHAEL THURMAN	GARNER	MIKE
19						KC4PHJ	ALEX MACKLIN	HOLLY SPRINGS	
20	X	X*				KD4AGQ	DAN SEARS	CHAPEL HILL	
21	X					KD4MYE	GLENN R ALLEN	WAKE FOREST	ROGER
22						KD4CHT	ALAN AYCOCK	PRINCETON	
23						KD4JWF	JOSE GUZMAN	GARNER	
24						KE4HXV	SAMUEL HAWKINS	TRENTON	SAM
25						KF4FJJ	JOHN BREEDLOVE	GOLDSBORO	
26						KF4VXJ	DAVID CRAWFORD	RALEIGH	
27						KG4HNB	BILLY SMITH	HILLSBOROUGH	
28	X					KG4KQI	MIKE GILLIAM	CLAYTON	
29						KG4QYK	JAMES P WILSON	CARTAGE	
30						KG4VDM	JACOB ALDERMAN III	WAKE FOREST	JAKE
31						KG4VXJ	RANDALL BARTLETT	FLINT HILL, VA	GERONE
32						KG4WVU	STUART SMITH	PINK HILL	
33	X**					KG4WFH	JAMES WOODARD	FUQUA VARINA	KERBIE
34						KG4WFG	HARRY GATES	GOLDSBORO	
35						KG4UXR	DAVE SUTTON	DUNN	
36						KG4ZHK	JEROME EDGELEY	KENLY	
37	X	X**	X			KI4BWW	CHARLES WACKER.MAN	CARTHAGE	
38	X	X	X			KI4FYR	LARRY ROYSTER	RALEIGH	
39	X	X	X			KI4OTM	JULIE ROYSTER	RALEIGH	
40			X*			KI4GND	RICHARD TAYLOR	HILLSBOROUGH	RICK
41						KI4IHX	PHILIPPE HOSTER	CARY	PHIL
42						KI4WZ	JAMES DRIVER JR	KENLY	
43						KJ4RB	DONALD SMITH	PINK HILL	DON
44						KM4DA	CADDELL 3, WILLIAM	WAKE FOREST	WILLIE

SEQ	WK 1	WK 2	WK 3	WK 4	WK 5	CALL SIGN	NAME	LOCATION	COMMENTS
45						N4TBL	TERRY LEWIS	CLAYTON	
46						N4TL	THOMAS LEWIS	RALEIGH	TOM
47						N4DIL	KENNETH HOLMES	RALEIGH	VADEN
48						N4PLC	PHILIP COCKRELL	WILSON	PHIL
49						N4TPQ	DON HARRIS	CLAYTON	
50	X	X**	X			W4BAM	BOB RAY	BENSON	
51						W4FHC	FREDRICK CROSBY	GOLDSBORO	FRED
52						W4DNA	ROY DAVID	GOLDSBORO	
53						W4JRZ	MICHAEL CALLAM	FOUR OAKS	MIKE
54						W4SIS	LEWIS THOMAS	RALEIGH	TOM
55						WA4PXV	DAN RENFRO	GRIFFINS CROSS R	
56						WA4IAJ	SCOTT MEDLEY		TIM?
57						WA9SZL	JOHN MAYFIELD	WENDELL	
58						WB4IUY	DAVID HOCKADAY	YOUNGSVILLE	
59						WB7OND	RICHARD LINDER	FAYETTEVILLE	DICK
60						WD4MB	MICHAEL BALDOCK	WILLOW SPRINGS	MIKE
61	X	X	X			WE4HAM	DAVID HAMM	RALEIGH	
62						WI4PER	CECIL PERKINS	PIKEVILLE	
63						WW4TLB	THOMAS BABB	HOLLY SPRINGS	TOMMY
XX						K4ITL -53.03	REPEATER-DANNY HAMPTON	LAKE WHEELER	RALEIGH
D	1	8	15	22	29				
TO	12	10	7			TT =			

Note! Only those individuals who have checked into the 6 meter net during a previous three month period (April, May, June) are listed on the map below. In the future the map shown will be updated at the end of each new quarter period.



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