

The COMMUNICATOR

The Tamiami Amateur Radio Club • Venice, Florida

COMMUNICATOR

JULY 2004

- PRESIDENT'S MESSAGE -

One of our faithful Snowbird Net participants, Juergen Nittner-N9RD, recently sent me an article about a new antenna technology developed by a fellow Amateur, Bob Vincent (*K1DFT?*) Of the University of Rhode Island Physics Department. I would like to quote from the article and challenge you to ponder this development.

"After decades of experimentation, combined with a 30-year engineering career and Yankee ingenuity, Vincent has in-vented a revolutionary antenna technology. The distributed-load, monopole antennas are smaller, produce high efficiency, and retain good to excellent bandwidth. And they have multiple applications.

"With this technology it will be possible to double, at minimum, the range of walkie-talkies used by police, fire, and other municipal personnel. Naval ships, baby monitors, and portable antennas for military use are other applications. An antenna could be mounted on a chip in a cell phone and be applied to wireless local area networks. Another application deals with radio frequency identification, which is expected someday to replace the bar code system.

"He began to model various combinations into a computer program called MathCad. His first attempt produced a 21-MHz band antenna that was 18 inches high. Normally, antennas for this band are 12 to 24 feet high.

"Tests confirmed that Vincent has created antennas at one-third to one-ninth of their full size counterparts. Normally smaller antennas are only 8 to 15 percent efficient. Vincent's antennas achieved 80 to 100 percent efficiency as compared to the larger antennas."

A patent is pending on Vincent's technology.

All of us who have limited space, budgets, or are just seeking a better signal are interested in this sort of thing, however, keep in mind the old saying, "If it seems to be too good to be true.....it usually is." I am having fun thinking about how this could work and how I could apply it. Let's hope my skepticism is unfounded! We need dreams like this to occupy our minds when we are not on the radio! I would encourage you to read the entire article from the University at <http://www.uri.edu/news/releases/?id=2659>.

73 de John-VE6AIV

- JULY MEETING -

The July TARC meeting will be at 6:00 PM on Thursday 08 July 2004 in the "Community Room" of The Gulf Coast Community Foundation of Venice, 601 South Tamiami Trail (Business US 41), across from the Bon Secours Hospital. Following the business meeting, WCF Section Manager Dave Armbrust-AE4MR will give an update on section activities.

- JUNE LICENSE EXAM RESULTS -

Dan Anderson, of Venice, who was a visitor at our 10 June TARC meeting, walked away from the 12 June TARC VE session with a General Class CSCE clutched in his hand. Dan is now known as KI4FZA, and hopes to be on the HF bands when he can procure some equipment.

- HOW FAR TO THE LIGHTNING? -

As Bill Rockwood-KE4ZAK can testify, we are now into the electrical storm season. Therefore, it might be useful to be able to estimate how far away the lightning is striking.

While the speed of light is virtually instantaneous (300 million meters/second), sound travels at a much slower rate. Under "standard conditions" of 59° F and at sea level, sound travels at 1116 feet/second. Adjusting for summertime conditions of 80° F, the speed of sound is approximately 1140 feet/second. Therefore, if you see a bolt of lightning and start counting off the seconds until you hear the thunder, you will have a good estimation of how far distant the lightning is from you.

<u>Time (sec)</u>	<u>Distance (mi.)</u>
1	0.22
2	0.43
3	0.65
4	0.86
5	1.08
10	2.16
15	3.24
20	4.32
30	6.50

The "30-30 rule" recommends that you seek a safe location if the time between lightning and thunder is 30 seconds, and that you not resume outdoor activities until 30 minutes after the last thunder is heard. However, lightning has traveled up to 20 miles horizontally prior to striking the ground, so there is no sure fire prediction method.

TAMIAMI AMATEUR RADIO CLUB

Minutes of the Meeting

10 June 2004

Vice President Peter Knorr-N2IZD called the meeting to order at 6:00 PM and led the pledge of allegiance to the US flag. Diana Gregory and Dan Anderson, both of Venice and studying for their licenses, were welcomed as visitors.

MINUTES - Charlie Covell-AG4TT moved to forego reading of the minutes of the 13 May meeting which were published in the June issue of *The Communicator*, seconded by Marty Horowitz-W4MHH, and passed.

CORRESPONDENCE - To be discussed under Old Business.

TREASURER'S REPORT - Treasurer Bob Officer-WA6WAY reported the 13 May account balance was \$4,284.70. Income since then was \$15.00 for dues and expenditures were \$200.09 for printing, postage, and annual registration with the State of Florida, such that the 10 June account balance is \$4,099.61.

COMMITTEE REPORTS

SUNSHINE - Nothing to report.

VE TESTING - Jack Sproat-W4JS reported that there will be a VE session 12 June with at least one candidate.

REPEATER/TECHNICAL - Bob Davisson-KA4BOB reported that we have no key to the equipment room, as the contractor who borrowed our key never returned it. Consequently, we have no access at this time to our equipment. The EchoLink system is off, possibly due to lightning. Tropo ducting has been causing heavy traffic on the repeater, such that a PL tone feature may have to be added. Peter Pesa-N4RD moved that we add the PL tone, seconded by Charlie-AG4TT, and passed. It was decided to await the return of Eddie Palmer-K4JP before further action is taken.

FIELD DAY - Marty-W4MHH asked that TARC members assist the Englewood ARS with the latter club's Field Day effort. Setup will be Friday morning 25 June, and the operation begins at 2 PM on 26 June, running until about noontime on Sunday, 27 June. CW operators are needed, but all are welcome to come out and participate. A picnic-style lunch will be served on Sunday for those who helped set up or operate.

CLUB GRANTS AND DONATIONS - Bob-WA6WAY reported that the paperwork is still being processed to transfer the decommissioned Red Cross communications trailer to the TARC. While the bedroom area was gutted for the communications shack, the kitchen and bathroom are intact and the trailer is in good condition.

LIAISON TO SERC/ARES/RACES/RED CROSS - Bob-KA4BOB reported that the SERC would be participating in a Sarasota County Search & Rescue exercise on 11 June, beginning at approximately 7 AM. Bob also reported that the former SkyWarn system has been decommissioned, however, Sarasota County may initiate its own independent system.

LIAISON TO FGCARC - Charlie Larson-KD4FZ gave a status report on the FGCARC and stated that he would like to step down as our representative to the Council. As we must attend at least two meetings a year to remain an active member, we need to find another volunteer representative.

LIAISON TO QCWA - Jack-W4JS reported that 19 members and friends of Suncoast Chapter 53 attended the first informal lunch of the summer season, which was held 02 June at the Panda Pavilion in Venice.

CLUB HISTORIAN - Marty-W4MHH stated that he was starting to sort through the collection of material that had been given him.

OLD BUSINESS - Marty-W4MHH has a copy of the current roster and he will be meeting with the selected vendor, Michael Fox of Sarasota, on Sunday to order the standardized TARC call sign pins.

Jack-W4JS reported that he had a follow up exchange of e-mail with Jack Doyle-WX1JAD, regarding TARC participation on the WENG amateur radio program. Prior to our starting our monthly participation, it is important that each participant be aware of what each will discuss such that there is no repetition of topics.

NEW BUSINESS - None

ADJOURNMENT - Motion to adjourn at 6:46 PM was made by Rick Morandi-KI4RMO, seconded by Peter-N4RD, and passed. There were 12 members and two visitors present.

PROGRAM - A video of the 2000 K5K Kingman Reef Expedition was shown.

Jack Sproat-W4JS, Secretary

-TARC NET SCHEDULE -

The following schedule is provided by the TARC Net Manager, Bob Murphy-WA1UHG:

01 July (r)	Charlie - KD4FZ
06 July (s)	Bob - WA6WAY
08 July	Meeting - no net
13 July (s)	Marty - W4MHH
15 July (r)	Bob - WA1UHG
20 July (s)	Peter - N2IZD
22 July (r)	Jack - W4JS
27 July (s)	Jim - W8ISZ
29 July (r)	Bob - WA1UHG
03 Aug (s)	Jack - W4JS
05 Aug (r)	Charlie - KD4FZ
10 Aug (s)	Bob - WA6WAY
12 August	Meeting - no net
17 Aug (s)	Jim - W8ISZ
19 Aug (r)	Jack - W4JS
24 Aug (s)	Marty - W4MHH
26 Aug (r)	Bob - WA1UHG
31 Aug (s)	Peter - N2IZD

(r) = 145.130 Repeater; (s) = 146.58 Simplex

Show your support of the TARC by showing up on the Tuesday and Thursday night nets—both at 7:30 PM.

CURRENT/PENDING DX ACTIVITY AND PROPAGATION FORECASTS

CURRENT and/or SCHEDULED DX ACTIVITY									
COUNTRY - CALL SIGN	ACTIVITY PERIOD	BEARING	HF BANDS and BEST OPENING TIMES (GMT)						
			80	40	30	20	17	15	12
Fiji - 3D2XX	Now to 30 July	258	06-11	05-12	03-13	00-12	00-05	20-04	20-04
Corsica - TK/F6AUS	Now to 23 July	51	00-05	23-07	21-08	17-00	20-00	NO	NO
The Sudan - ST2DX	Now to 10 July	66	00-04	23-05	22-06	18-02	20-22	NO	NO
St. Pierre & Miquelon - FP/K9OT	02 - 11 July	39	00-10	00-24	00-24	11-05	NO	NO	NO
Canary Is - ED8ERC	03 - 10 July	72	00-07	22-09	20-10	18-04	16-04	NO	NO
Chatham Is - ZL7V	05 - 15 July	230	04-11	03-12	02-05	00-04	00-02	00-01	00-01
Samoa - 5W0TR, 5W0DL	08 - 12 July	257	05-11	04-12	03-13	00-12	23-03	00-04	NO
Mariana Is - KH0/JA and KH6 Ops	09 - 12 July	306	-	08-12	07-13	04-15	10-15	03-04	NO
Lesotho - 7P8NK, 7P8DA	29 July - 06 August	110	00-05	23-06	01-07	07-10	08-10	10-11	NO
Swaziland - 3DA0SV, 3DA0WC	12 - 17 August	106	00-05	23-05	22-07	20-05	0130	15-16	NO

Updated 26 June 2004, based on 21 June 2004 *The Weekly DX* and *K1XN DX Alert #168*

Notes: ??? = Call sign not yet known, ++ = Phone Only, ** = CW Only, NO = No opening forecast, Time in bold = Best Band(s) for opening
Long path bearings and opening times (if any) are underlined. All forecasts calculated via *W6ELProp V.1.03* propagation software,
<http://www/gsl.net/w6elprop/> by Sheldon C. Shallon-W6EL, with Solar Flux and K-index varied in accordance with NOAA 27-day forecast.

- SOLAR ACTIVITY DURING JUNE -

During the first 27 days of June, the Solar Flux ranged from 83 up to 119, with a mean value of 98.8 (vs. 129.3 for June 2003 and 148.8 for June 2002). The A-index was ≤ 10 on 19 of those 27 days.

- JULY PROPAGATION -

During July, solar activity is expected to range from very low to moderate levels. The Solar Flux should range from 90 on 01 July, up to 115 in mid-July and end the month at 95. The greater than 2 MeV electron flux is expected to reach high levels on 16 July due to recurrent coronal hole high speed streams. The geomagnetic field is expected to range from quiet to active levels with unsettled to active conditions possible 01 and 12-14 July. (From *NOAA Weekly Highlights and Forecasts, 22 June 2004* and *NOAA 27-Day Space Weather Outlook Table, 22 June 2004*)

Sporadic-E will be most prevalent during July and may provide some 10- or 12-meter openings. There may be strong openings into the Southern Hemisphere on 17 and 15 meters. The most reliable DX band will be 20 meters, however, openings will be weaker than a year ago. The 30-, 40- and 80-meter bands will offer good propagation, however, the static levels may be too high for good signal reception.

Conditions should be *Above Normal* 4-6, 10-13, 17-20, 23-24, 27 and 31 July; and *High Normal* 2-3, 7-9, 15-16, 21-22, 25-26 and 29-30 July. (From "Propagation", Tomas Hood-NW7US, July 2004 *CQ*)

- TROPOSPHERIC PROPAGATION -

Since the TARC repeater has been relocated to a facility offering increased coverage, the repeater reception has also expanded, with signals from Cuba accessing the repeater. This is undoubtedly due to "tropospheric ducting" which is a seasonal event common to the 144 MHz band.

Most tropo ducting occurs in the summer when layers of air stratify within the troposphere. The refractive index between each layer causes a refraction of the radio waves. If the layers

form in just the right way and at the right height, a natural wave-guide is created, i.e., a tropospheric duct. Favorable weather conditions will enhance normal tropospheric refraction, lengthening the useful 144 MHz range by several hundred kilometers and increasing the signal strength.

Ducting is typically very geographically selective, usually occurring over water during high-pressure, anticyclonic conditions when the air is relatively still. Considering that Havana, Cuba is some 550 km distant, over a path of flat land and water often covered by hot stagnant air, and you may better understand the high propensity for ducting between Cuba and Venice, Florida.

(From "Summertime Tropospheric Propagation and VHF DX", Tomas Hood-NW7US, July 2004 *CQ* and "Propagation", *The 1997 ARRL Handbook for Radio Amateurs*)

- CARL SMITH-N4AA -

On 14 June 2004, Carl Smith-N4AA, DX Editor for *CQ*, Editor/Publisher of *The DX Magazine*, and Editor/Publisher of the weekly *QRZ DX*, failed a stress test and was hospitalized as a prime candidate for a heart attack. There he was given a heart catheter which helped determine that 99% of his main artery was blocked. His doctor performed a balloon/stint procedure that successfully opened the artery. Carl was able to return home 16 June, however, he has had to forego publishing the weekly *QRZ DX* until he's fully up and about. We do wish Carl a complete and speedy recovery.

- PETER I DXPEDITION SET TO GO -

It's a bit early, but it's great news that the postponed Peter I Island DXpedition is set to go in January 2005. A newly refurbished icebreaker formerly in service with the Chilean Navy will transport the operating and support teams to Peter I, moving all equipment and personnel ashore via helicopter. The 83-m ship will remain offshore during the proposed 14-day operation. Check out <http://www.peterone.com> for additional details.

(From *The Weekly DX*, 21 June 2004)

CONTESTS & ACTIVITIES

Contest/Special Event	Times/Dates	Bands/Modes	QSO With	Exchange
RAC Canada Day Contest	0000 GMT 01 July 2359 GMT 01 July	160 - 2 Meters Phone & CW	Canadian Stations Only	R/S/(T) + Serial Number
Bahia Independence Contest	2100 GMT 02 July 2100 GMT 03 July	160 - 10 Meters Phone Only	Brazilian Stations Only (Bahia Stations are PY6 prefix)	R/S/(T) + Serial Number
	2100 GMT 03 July 2100 GMT 04 July	160 - 10 Meters CW Only		
Venezuelan Independence Day Contest	0000 GMT 03 July 2400 GMT 04 July	160 - 10 Meters Phone & CW	Anyone, Anywhere	R/S/(T) + Serial Number
German DX RTTY Contest	1100 GMT 03 July 1059 GMT 04 July	80 - 10 Meters RTTY & PSK	Anyone, Anywhere	R/S/T + Serial Number
IARU HF World Championship	1200 GMT 10 July 1200 GMT 11 July	160 - 10 Meters Phone & CW	Anyone, Anywhere	R/S/(T) + ITU Zone (Zone 8 for Florida)
UK DX RTTY Contest	1200 GMT 10 July 1200 GMT 11 July	160 - 10 Meters RTTY Only	Anyone, Anywhere	R/S/T + Serial Number
North American RTTY QSO Party	1800 GMT 17 July 0600 GMT 18 July	80 - 10 Meters RTTY Only	Anyone, Anywhere (100 W max. power)	Name & QTH
RSGB Islands-On-The-Air Contest	1200 GMT 24 July 1200 GMT 25 July	80 - 10 Meters Phone & CW	Stations operating from Islands	R/S/(T) + Serial Number
Russian RTTY WW Contest	0000 GMT 24 July 2400 GMT 25 July	80 - 10 Meters RTTY Only	Anyone, Anywhere	R/S/T + CQ Zone (Zone 5 for Florida)

From July 2004 *Worldradio* and July 2004 *QST*.

- THE NEXT VOYAGE OF NIRA -

"Boating" Bob Avrutik-NIRA will be taking to the high seas again in late Fall 2004. Bob and Marie will depart Barcelona, Spain 29 October, making port calls in Spain, Morocco, the Canary Islands, and the Madeira Islands before departing their cruise ship in Lisbon, Portugal on 09 November. Bob has already received permission to operate his HF rig on shipboard, so he will be on the air and listening for reports from fellow TARC members

Despite diminishing HF DX propagation, there should be good openings to all of those ports of call. Bob's exact schedule and best times and bands for HF QSOs will be determined and published in the October issue of *The Communicator*.

- VANITY FEE TO INCREASE -

In a recent "Report and Order" the FCC announced that the regulatory fee to obtain a Vanity Call Sign will rise from \$16.30 to \$20.80 later this year. The FCC anticipates 7,800 applications for FY 2004-2005, fewer than the previous fiscal year. The R&O becomes effective 30 days after publication in *The Federal Register*. The ARRL will announce when the new, higher vanity fee becomes effective. (From *The ARRL Letter*, Vol. 23, No. 26.)

"Every man born has something the matter with him, and if you're looking for the perfect man, you'll never find him." - Harriet Gray (Ellen Drew) in "Stars in My Crown"

- HAM RADIO FOR DUMMIES -

Most computer users have, at one time or another, made use of one or other of the "for Dummies" handbooks. Prolific author Ward Silver-N0AX has just had his new book *Ham Radio for Dummies* published by Wiley Press. The book has been receiving good reviews in both *CQ* and *QST*.

Silver wrote this book for news hams as a "Desktop Elmer" and for people interested in becoming hams. Experienced "old timers" will also find new items to perk up their interest. The book is available both on-line and at book stores at prices ranging from \$15 to \$22.

(From 26 June 2004 Press Release, Ward Silver-N0AX)

- EARS/TARC FIELD DAY EFFORT -

The first-time cooperative Field Day effort by our TARC and the Englewood ARC was an apparent success. TARC members helped with set up and operating at the Englewood site. Two center-fed, multi-band dipole antennas were used by the separate Phone and CW HF stations, and a beam was erected for the 6-meter station. Final QSO data were not available at press time, however, EARS's Ken Anderson-W4JQT estimated some 500 QSOs were made, including 64 on 6 meters.

Following operations at noon Sunday, a picnic lunch was attended by some 25-30 folks, and there was more than enough food for all.

Perhaps this will be a trend-setting activity that may lead to closer association between the two clubs.

-- FRANK CONRAD - 8XK --

(The following is offered as a bit of history—the tale of how a Radio Amateur's initiative and efforts opened up the world to the adventure of commercial radio broadcasting.)

Who was Frank Conrad-8XK? Conrad was born in Pittsburgh 04 May 1874 and is widely known as the father of commercial radio broadcasting.

In 1890, the urge to work with tools led him to quit the Starrett Grammar School to begin work as a bench-hand with the Westinghouse Electric and Manufacturing Company, his life-long employer. Seven years later, he developed the rotary watt-hour meter to measure the consumption of electric power, and it remains as the type in use to this day. During his 51 years with Westinghouse, Conrad received over 200 American, English and German patents for such diverse devices as refrigerators, carburetors, radio transmitters and receivers, televisions, clocks, arc lamps, gear shifts, air conditioners, insulators, vacuum tubes, and electric meters. He was appointed general engineer of Westinghouse in 1904 and assistant chief engineer in 1921. He received an honorary Doctor of Science from the University of Pittsburgh in 1928, followed by numerous citations from the IRE, the AIEE, and other institutions. And he was an Amateur Radio operator.

Conrad was intrigued with time synchronization and a desire to have his watch correct to the second, so he built a radio receiver to pick up the time signals sent out from station NAA at the Naval Observatory in Arlington, Virginia. This led to construction of a transmitter and his being licensed at 8XK. *(Pittsburgh was in the 8th Call District at that time.)* Most of Conrad's experimentation took place in his garage on the corner of Penn Avenue and Peebles Street in Wilksburg, an eastern suburb of Pittsburgh.

After devising special airplane radio apparatus during World War I, he recognized the rapid development of voice communication via radio. Consequently Conrad rebuilt the station in his garage and began to broadcast phonograph music. He discovered a large audience of listeners who had built their own crystal sets and who, upon hearing the music, wrote or phoned requests for more music. When he became swamped with requests, he decided to broadcast regular, scheduled programs to satisfy his listeners.

When he ran out of his own collection of records, he borrowed records from a local music store in exchange for mentioning the store on the air. The store owner soon discovered that records played over the air sold better than others. A Pittsburgh department store advertised wireless sets that could pick up Conrad's broadcasts.

The response to Conrad's broadcasts encouraged Westinghouse officials, especially VPH. P. Davis who saw the commercial potential, to apply for a commercial broadcast license. The call sign issued was KDKA. *(There are two "K" stations in Pittsburgh: KDKA and KQV. Subsequently, "K" calls were limited to stations west of the Mississippi*

River.) The first "commercial" broadcast of KDKA was 02 November 1920, giving the Harding-Cox election bulletins.

As a result, the demand for radio receivers was tremendous. Building crystal sets at home became a national pastime, with tuning coils wound on cereal boxes and condensers made of tin foil from the florist shop. Electrical manufacturers, overcome with the demand, expanded plant facilities to fill orders from around the nation. In the three years, 1922-1924, RCA's sales of home radios amounted to \$83,500,000. The radio receiver effectively became a household utility.

In the pre-broadcasting era, the frequencies above 1500 kHz were considered useless because the ground loss was so high. Conrad experimented with ionospheric reflection and proved that these frequencies were extremely valuable when the skywave was used. He showed that the portion of radiation that went skyward at a low angle could be reflected back to Earth at a remote point, from an ionized layer above the Earth's surface. His experiments indicated that a series of reflections between earth and the ionized layer take place before the signal eventually returns to Earth at the desired receiving station. Radio engineers learned to use these new frequencies for international communications.

Conrad died in Miami, Florida on 10 December 1941.

The "Conrad Project" of the National Museum of Broadcasting was established to acquire, restore and preserve Frank Conrad's garage and establish a permanent, self-sustaining, national museum of broadcasting with Conrad's garage as its centerpiece. The project has managed to dismantle the garage and it is now in storage until sufficient funds have been donated to begin building the museum and reconstructing the garage.

(From web sites of ARRL, NPR, History Center, Adventures in Cybersound, and the Conrad Project.)

- ARRL ON-LINE SURVEY -

Back on 16 April 2004, the survey asked, "Do you use an indoor antenna?" Of the 2411 respondents, 207 did use such an antenna and they were pleased with its performance, however, 413 respondents with indoor antennas wish that it was outdoors. The remainder of respondents either had outdoor antennas or no ham station at home.

A total of 2853 hams responded to the 14 May 2004 query, "If something goes wrong with your radio, do you...." Perhaps there are some smart folks out there, for 1754 claimed they open up the rig and "attempt to fix it." However, 780 admitted that they ship it off to a repair shop, while 114 have smart friends who perhaps can fix it. A total of 190 folks never had anything go wrong with their rigs. They must be using *(fill in the blank)!*

The 28 May 2004 survey asked, "Can you read and understand a schematic diagram?" Of the 3363 respondents, 1823 said, "Yes, very well" and 1123 claimed, "Yes, if it isn't too complex." However, 437 admitted they could "barely" or "not at all" read these diagrams. *(Your editor admits he is in the latter category—how about you?)*

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