VOLUME XLII, NUMBER 4

SPURIOUS EMISSIONS

APRIL, 2021

INDIAN RIVER ARC

P.O. BOX 237285, COCOA
FLORIDA 32923-7285

OFFICERS

PRESIDENT
VIRON PAYNE
N4VEP

VICE-PRESIDENT
DAVID LERRET
KU0R

SECRETARY
ERNIE HOFFMAN
K1CPO

TREASURER
STEVEN LUCHUK
N4UTQ

DIRECTOR
DAVID SLAWSON
K4UZM

NEWSLETTER EDITOR
ARMANDO DELGADO
KN4JN

CLUB MINUTES

The meeting was called to order by President Viron, N4VEP at 7:15 PM. There were 12 members present at the club house and others participated via Zoom.

Following the Pledge of Allegiance, Viron proceeded to the business meeting.

Secretary Report: Viron called for approval of the minutes of the March meeting. A motion was made, seconded, and the minutes were approved.

Treasurer's Report: Viron noted that access to the bank account was temporarily blocked due to "unusual activity". He will go to the bank tomorrow to clear the issue. The last statement showed the Equipment Fund $1796.62 The Checking Account, $1578.18. The Treasurer's Report was approved for audit.

Technical Committee Report: IRARC has a wi-fi access at the church and Dave, KU0R will have a password for members.

The 145.37 repeater had issues dropping calls from some radios. Chris Durso, AA4CD looked into the issue and fixed it.

Dave mentioned that recent ducting propagation has allowed a South Florida repeater to access the 146.88 repeater.

Dave also mentioned that he had unlocked an FTM-300 radio, for use in the emergency communications site, to allow it to transmit in frequencies outside the amateur bands. This will allow operations in the GMRS frequencies; however, users need to be aware that to transmit in frequencies outside the ones amateurs are licensed is illegal, unless the user be licensed to operate in those frequencies. The altered radios will have a warning label attached.

Dave also expressed a desire to get the antenna farm set up at the church. Initially, it might be better to rig the halyards for the antennas in a one-day operation, using a rented lift, and at a later date raise the antennas.

ARES Report: The 10-week ARES emergency operations training carried out at the Mims fire station is over.

President's Report: The antenna Party is still on the planning stage; the date, to be announced.

The ECOM Center meeting with Matthew Wallace of the EOC went well, just like the meeting with Brevard County Sheriff Wayne Ivey. They both were impressed with the club's capabilities for emergency communications using the system set up at the church.

Viron also encouraged members who make interesting or DX contacts to post them in the Contact Board at the club website.

Viron reminded the members that this year's hurricane season might be more severe, due to the fact that the El Nino will not be present and that ocean waters are predicted to be warmer.

New Business: Viron mentioned that the next Simplex Exercise is on April 24. It'll start at 9:00 AM. Check-in will be on the simplex frequency, 147.42 MHz, although Steve, N4UTQ will monitor the 145.37 MHz repeater for those who fail to make contact on the simplex frequency.

Following the business meeting, Viron gave a presentation on general guidelines for emergency preparedness, including some interesting information on newly available convertors called "battery generators" that allow the use of power tool lithium batteries to power other devises.

The Zoom meeting closed at 7:42 PM.

The general meeting adjourned at 7:59 PM.

Respectfully submitted for the Secretary by Armando Delgado, KN4JN

HAPPENINGS

Interesting experiment comparing three different HT VHF antennas in a YouTube video. https://forums.qrz.com/index.php?threads/ht-antenna-comparison-signal-stick-diamond-srh770s-and-abbree.755074/

The FCC Part 97 rules establishing a new $35 amateur radio application fee go on the books on April 19, but the FCC won't start collecting the fee "until the requisite notice has been provided to Congress, the FCC's information technology systems and internal procedures have been updated, and the Commission publishes notice(s) in the Federal Register announcing the effective date of such rules." When effective, the fee will apply to new, modification (upgrade and sequential call sign change), renewal, and vanity call sign applications, as well as applications for a special temporary authority (STA) or a rule waiver. Fees will be collected per application.

Pending future FCC action, amateur radio secondary use of the 3.3 – 3.45 GHz band segment may continue indefinitely. The FCC, as part of a lengthy Second Report and Order (R&O) for commercial licensing of 3.45 – 3.55 GHz adopted on March 17, agreed with ARRL that continued access by amateur radio to 3.3 – 3.45 GHz should be allowed until consideration of the 3.1-3.45 GHz spectrum in a later proceeding. The FCC action in WT Docket 19-348 represents a partial — and temporary — reprieve from the FCC's December 2019 proposal to remove amateur radio

HAPPENINGS

from the entire band, and it makes available an additional 50 megahertz than an FCC proposal last fall to allow amateur temporary use of 3.3 – 3.4 GHz.

An Interesting article exploring the use of photons in quantum communications by encoding quantum information into the spatial properties of single photons can be found here.

For those using computers near wireless routers or Bluetooth devices, Intel has an interesting report on radio interference caused by USB 3.0 devices titled **USB 3.0* Radio Frequency Interference on 2.4 GHz Devices**

Club Log's DXCC Most Wanted, 2021

1. P5 DPRK (NORTH KOREA)
2. 3Y/B BOUVET ISLAND
3. FT5/W CROZET ISLAND
4. BS7H SCARBOROUGH REEF
5. CE0X SAN FELIX ISLANDS
6. BV9P PRATAS ISLAND
7. KH7K KURE ISLAND
8. KH3 JOHNSTON ISLAND
9. 3Y/P PETER 1 ISLAND
10. FT5/X KERGUELEN ISLAND

For those working on certificates, QSL collection, or just seeking certain radio contacts, QRZ has a forum where hams can request to schedule contacts: https://forums.qrz.com/index.php?forums/sked-qso-scheduling.28/

Several North Florida counties performed a mock emergency exercise in March, 2021. The following link goes to an after-action report of the event.

A few years late, but here is an interesting article in using WSPR technology to locate the missing Malaysian flight MH370 passenger plane flight path.

The FCC has announced that rule changes detailed in a lengthy 2019 ***Report and Order*** governing RF exposure standards go into effect on May 3, 2021. The new rules do not change existing RF exposure (RFE) limits but do require that stations in all services, including amateur radio, be evaluated against existing limits, unless they are exempted. For stations already in place, that evaluation must be completed by May 3, 2023. After May 3 of this year, any new station, or any existing station modified in a way that's likely to change its RFE profile — such as different antenna or placement or greater power — will need to conduct an evaluation by the date of activation or change.

The December 2019 RF *Report and Order* changes the methods that many radio Amateur radio licensees will have to determine whether any existing facilities previously excluded under the old rules now qualify for an exemption under the new rules. Most will, but some may not. The ARRL Laboratory staff is available to help amateurs to make these determinations and, if needed, perform the necessary calculations to ensure their stations comply. *RF Exposure and You* is **available for free**

ON THE AIR

Woronoko Heights Outdoor Adventure Apr 24, 1300Z-1900Z, W1M, Russell, MA. Western Mass. Council--BSA. 14.290 14.060 10.115 7.190. QSL. Tom Barker, 329 Faraway Road, Whitefield, NH 03598. SES operating from the Horace Moses Scout Reservation in western Mass. SASE for QSL

Armed Forces Day Crossband Test May 7-May 8, 1600Z-2000Z, Various, Fort Huachuca, AZ. US Department of Defense. 5330.5 USB 14438.5 USB 14383.5 USB 13164 FM 2484. QSL. Armed Forces Day, station, contacted . Military stations will transmit on DOD frequencies and announce the amateur frequency they are monitoring. For a complete list of participating stations, modes, frequencies, and times, go to www.dodmars.org after 19 April 2021 dodmars.org

Golden Spike Special Event May 7-May 10, 1500Z-2300Z, W7G, Corinne, UT. Ogden Amateur Radio Club (OARC) - W7SU. 14.255 7.235 7.074 7.040. QSL. Ogden Amateur Radio Club (OARC) - W7SU, PO Box 3353, Ogden, UT 84409. Golden Spike Celebration Commemorating the Anniversary of the 1869 Driving of the Golden Spike, completing the Transcontinental Railroad at Promontory Summit, Utah. Golden Spike National Historical Park - National Parks Service 6200 North 22300 West, Promontory Summit, UT 84307. http://ogdenarc.org or http://w7g.org

Marius, FM/OQ3R will be active from **Martinique Island**, IOTA NA - 107, 23 May - 5 June 2021. He will operate on 160 - 10m, CW, including activity in CQ WW WPX CW Contest as TO3F. QSL via home call ON4RU, DANCILLA MARIUS, RUE DES STATIONS 43/5, B-5590, CINEY, Belgium.

Bo, OZ1DJJ/OX3LX will be active from **Greenland**, 8 April - 1 May 2021. He is planning to be active from 3 different locations. He is planning QRV also from IOTA NA - 151. QSL via OZ0J. Direct QSL: Joergen Roemming, Brandelev Stationsvej 9, DK-4700, Naestved, Denmark.

CP1XRM **Bolivia** Antonio, EA5RM will be active again as CP1XRM from Bolivia, until 27 April 2021. He will operate on 160 - 10m, SSB, Digital modes, using 100 watt solar powered station and vertical antenna. QSL via home call direct, LOTW. QSL direct: Antonio Gonzalez, P.O. Box 930, E-03200 Elche, Spain.

156th Anniversary of **Sultana Disaster** Apr 24, 1500Z-2100Z, W5S, West Memphis, AR. AG5QY. 14.240. QSL. Marc Gwin, 1402 Stratford Drive, West Memphis, AR 72301. https://ag5qy9.wixsite.com/ag5qy

SVALBARD, JW. Station JW1I is now QRV on Bear Island, IOTA EU-027, at the Bear Island Norwegian Meteorological Station and is here until May 15. Activity of late has been on 20 meters using SSB. QSL via bureau.

JAPAN, JA. Special event station 8J100CB is QRV until the end of March 2022 to celebrate the 100th anniversary of Chiba-City. QSL via bureau

GREENLAND, OX. Bo, OZ1DJJ is QRV as OX3LX from Kangerlussuaq, IOTA NA-018, until May 1. Activity is in his spare time on the HF bands. QSL via LoTW.

SOUTH SHETLAND ISLANDS. Lee, DS4NMJ is QRV as DT8A until December 31 while on work assignment from the King Se-Jong Korean Antarctic Base on King George Island, IOTA AN-010. Activity is on various HF bands using CW, SSB and FT8 in DXpedition mode. QSL via DS5TOS.

The Radar by Armando Delgado, KN4JN

Radio direction and ranging, or R.A.D.A.R was an acronym created by the US Navy in 1940 to describe a radio-based detection system. Over the years, the word became commonplace and incorporated into the regular lexicon. It may have been the first acronym to become a common word, but today many people do not know its origins as an acronym, and many could not tell what the acronym is.

The invention of modern radar is attributed to two Englishmen in the years just before World War II, yet the basis for its invention dates back to the beginnings of commercial radio. In the decade after Marconi sent the letter "S" across the Atlantic, starting the age of radio, most commercial radio operations revolved around maritime communications. In a short time, most sea-going vessels acquired radios, and shore relay stations sprouted in all countries bordering oceans and seas, to provide communications with the ships out on the water.

As maritime communications bloomed, radio operators soon noticed, particularly in short distance contacts, that the passage of a vessel crossing the line of the radio signal caused a fading of the signal. Astute scientists realized that this phenomenon could be used to detect unknown obstacles in poor visibility situations. In 1904, Christian Hulsmeyer, a German scientist, developed a radio-based system to detect bearing of an unknown object. Also, in the 1930's the US Navy developed a similar system for the same purpose. Unfortunately, all these inventions lacked sensitivity and selectivity, and thus failed to be adopted.

In the years prior to WW2, the British were very concerned with the rapid militarization of Germany, and fearing a war that would use air power to achieve its ends, began to look for methods to detect approaching aircraft from a distance, in order to protect their defenses.

In the mid-1930's the English government asked Robert Watson-Watts, a prominent English researcher on radio propagation and the man who coined the term "ionosphere", to give them advice on the best system to detect approaching aircraft. Watson-Watts recruited one of his colleagues, who had postulated earlier that metal flying objects would reflect radio waves, to help in the search. In 1935, they conceived an experiment, called the Davenshire Experiment, because of the location where it was carried out, to determine if the hypothesis was true. Using a BBC transmitter transmitting in the 60m band, they monitored for echoes as an aircraft flew in circles above. The experiment was a success and showed a signal reflection that provided a bearing to the source.

Following this successful experiment, Watson-Watts and Wilkins went on to refine their system. Echo signals from the aircraft were very weak and limited the range of the devise to about 10 miles. From their ionospheric research they knew that a pulsed signal would increase the intensity of the returned signal. By applying a pulsed signal to their system, they managed to increase the range to 100 miles.

They modified the reception equipment by adding an oscilloscope screen calibrated to the signal frequency, so that in the display on the X-axis the return signal spike showed distance to the object as well as range. They further used two antennas, one above the other, to provide a measure of the altitude of the target.

In the years between 1936 and 1939, the British government began to build a line of radio towers on the eastern and southern coasts of England to support the radio detecting effort. They called this system Chain Home. By the time war broke out in late 1939, there were numerous towers in operation.

The typical Chain Home system had a 100 miles range, operated at frequencies between 20 MHz and 55 MHz using pulses of 25 pps with duration of 2.5-25 microseconds, had a beamwidth of 150°, an elevation of 2.5^0-40^0 and transmitted with a power of 100Kw.

During the Battle of Britain in 1940 the Chain Home warning system proved invaluable and many credit it for the British success in defeating the German air force. Due to the early warnings, the RAF could deploy its interceptors before the German planes could reach over British territory and drop their bombs.

In 1940, the British introduced the cavity magnetron that allowed very high frequency signals at much higher power. This development changed radar drastically by allowing smaller antennas, better signal resolution and rotatable antennas that covered a span of 360^0. The British shared their secrets with their American allies who further refined the technology.

By the end of World War II most naval ships, American and British, carried radar units. As well, radars installed in aircrafts took part in the defense against submarines, since the sensitivity of later units allowed the detection of periscopes breaking the surface of the water.

Later electronic advances produced the units and the expanded uses of radar we have today.

W1AW CW PRACTICE TRANSMISSIONS

7 PM EST Slow CW : 5-15 WPM
Mon, Wed, Fri

7 PM EST Fast CW: 35-10 WPM
Tue, Thu

FREQUENCIES:
1.8025, 3.5815, 7.0475, 14.0475, 18.0975, 21.0675, 28.0675, 50.350, 147.555

Editor's Note:

Send comments about the Newsletter or to contribute information or articles to the Editor's email address:

olardelga@aol.com.

ACTIVE REPEATERS INCLUDING DMR, PACKET & SIMPLEX

RACESBRE0008 REV B

Repeaters & Packet are open for all licensed amateur radio operators to use.

OUTPUT FREQ.	STD. NAME	OFFSET	TONE/CC	CALL	LOCATION	OWNER	NOTES
WBFM							
145.130	130 VB	-600	107.2	AB4AZ	VERO BEACH, INDIAN RIVER	AB4AZ	
145.350	350 SC	-600	103.5	K4OSC	St. CLOUD, OSCEOLA	K1XC	Radio Science Club, Fl Club
145.370	**370 CO**	-600	156.7	W2SDB	COCOA-BROADCAST CT.	IRARC	Yaesu Repeater replaced with Bridgecom FM
145.470	**470 ME**	-600	107.2	K4HRS	MELBOURNE- RIALTO PL.	HIRAC	
145.490	**490 TI**	-600	100.0	WN3DHI	TITUSVILLE SR405 & Fox lk rd.	WN3DHI	
146.610	**610 ME**	-600	None/107.2	W4MLB	MELBOURNE- HOLMES HOSP	PCARS	Tone Downlink only
146.625	**625 MM**	-600	100.0	KE4NUZ	NW of MIMS NEAR HARRISON RD.	KE4NUZ	Limited coverage
146.775	**775 MM**	-600	100.0	K4KSC	NW of MIMS Hog Valley , W of I95	K4KSC	
146.850	**850 ME**	-600	None/107.2	W4MLB	PALM BAY- Port Malabar Rd.	PCARS	Tone Downlink Only
146.880	**880 RO**	-600	107.2	W4NLX	ROCKLEDGE- WUESTHOFF HOSP.	IRARC	FUSION Repeater replaced with Bridgecom Fl
146.895	**895 PB**	-600	107.2/107.2	**K4EOC**	PALM BAY- DeGroot Library	EOC	TSQL as of 5/2018
146.910	**910 TI**	-600	107.2	K4KSC	TITUSVILLE Water Tower on south st.	TARC	
146.940	**940 RO**	-600	None	K4GCC	ROCKLEDGE Carver Rd.WLRQ Tower	LISATS	
146.970	**970 TI**	-600	107.2	K4KSC	TITUSVILLE-T'VILLE TOWERS	TARC	
147.075	**075 SC**	+600	107.2/107.2	**K4EOC**	SCOTTSMOOR Near US1-Aurantia Rd	EOC	TSQL as of 5/2018 Relocated 4/2019
147.135	**135 RO**	+600	107.2/107.2	**K4EOC**	ROCKLEDGE-EOC	EOC	TSql as of 5/2018
147.240	240 DE	+600	123.0	KV4EOC	DELAND	VARES	
147.255	**255 PB**	+600	107.2	K4DCS	Near Babcock & Palm City S City limi	PBARC	
147.330	**330 TI**	+600	107.2	K4NBR	TITUSVILLE-PARRISH HOSP.	NBARC	
147.360	**360 TI**	+600	107.2	N4TDX	TITUSVILLE-PARRISH HOSP.	NBARC	DSTAR Gateway in work
442.850	**850TI4**	+5000	107.2/107/2	N4TDX	TITUSVILLE-PARRISH HOSP.	NBARC	TSql;FUSION/WBFM/WIRES-X
444.325	**325ME4**	+5000	107.2	K4DCS	MELBOURNE-TRINITY TWRS-E	PBARC	
444.375	**CNLBRE**	+5000	107.2		I95 FDT Twr 1/2 Mile N of County Lin	SARNET	"SARNet Sebastian Repeater"
444.425	**425ME4**	+5000	107.2	W4MLB	MELBOURNE- RIALTO PL.	PCARS	
444.525	**525RO4**	+5000	103.5/103.5	**K4EOC**	ROCKLEDGE-EOC	EOC	TSql; VOICE/NBEMS
444.650	**CNMBRE**	+5000	107.2	W4NLX	COCOA-FHP SR520	IRARC	"SARNet Cocoa Repeater"
444.750	**750TI4**	+5000	156.7/156.7	N4TDX	TITUSVILLE- TGO WATERTOER 230 ft.	NBARC	TSql
444.875	**875MI4**	+5000	107.2	KC2UFO	MERRITT IS. COURTNEY SPRS.	K4UZM	
444.925	**925KS4**	+5000	131.8/131.8	N1KSC	KENNEDY SP. CTR.-VAB	KSCARC	FM Tsql ; P25 capable
224.120	**120CO2**	-1600	123.0	AA4CD	COCOA Broadcast Ct.	AA4CD	
DMR							
444.150	**150TI4**	+5000	CC1	K2JO	TITUSVILLE-PARRISH HOSP.	KC2CWT	DMR FL
444.575	**575CO4**	+5000	CC3	K4DJN	COCOA BROADCAST CT.	AA4CD	DMR Brandmeister
444.675	**675TI4**	+5000	CC3	K4DJN	TITUSVILLE-T'VILLE TOWERS	AA4CD	DMR Brandmeister
ATV							
427.250	**250CO4**			K4ATV	COCOA BROADCAST CT.	LISATS	NTSC INPUT 439.25 See www.lisats.org
PACKET STATIONS:							
145.090	**WL2KPB**	WINLINK		W2PH-10	PALM BAY-W2PH QTH	PBARC	WINLINK GATEWAY
145.090	**090 ME**	PCARS		W4MLB-2	MELBOURNE-TRINITY TWRS-EAST	PCARS-K1YON	BBS W4MLB-4 EASTNET
145.770	**770 PB**	SEDAN		K4EOC-7	PALM BAY	N2DB	http://www.fla-sedan.com
145.770	**770 TI**	SEDAN		KD4MWO-4	TITUSVILLE	N2DB	INACTIVE NODE
BREVARD RACES/ARES SIMPLEX							
146.480	**CENTX**	SIMPLEX		N/A	CENTRAL REG	IRARC	CENTRAL NET SIMPLEX BACKUP
146.550	**SOUTHX**	SIMPLEX		N/A	SOUTH REGION	PBARC	SOUTH NET SIMPLEX BACKUP
146.580	**MLBX**	SIMPLEX		N/A	MELBOURNE REGION	PCARS	MELBOURNE REGION NET SIMPLEX BACKUP
146.595	**NORTHX**	SIMPLEX		N/A	NORTH REGION	TARC	NORTH NET SIMPLEX BACKUP
147.540	**EOCROX**	SIMPLEX		N/A	RACES Bay	EOC	EOC VOICE/NBEMS
SIMPLEX							
146.520	**CALL52**	SIMPLEX		N/A	Station to station, anywhere		VHF national simplex calling freq
146.490	**TAC A**	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
146.560	**NBRX**	SIMPLEX		N/A	NBARC -Club/Parrish Hosptial Activities		
146.580	**TAC B**	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
147.420	**TAC C**	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
147.420	**IRARCX**	SIMPLEX		N/A	IRARC 'FUN NET" and CLUB ACTIVIES		
147.450	**TAC D**	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
147.570	**TAC E**	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
446.000	**CALL46**	SIMPLEX		N/A	Station to station, anywhere		UHF national simplex calling freq
446.500	**TAC A4**	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
446.600	**TAC B4**	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
446.700	**TAC C4**	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006

2 Meter & 70 cm WBFM repeaters use CTCSS; if one frequency is listed it is for uplink (user Tx) , if two are listed the repeater is set for uplink and downlink (user Tx a

Repeater Call Signs in bold are owned by Brevard Emergency Management and are maintained by the county. Repeater Trustee: Ron K2RJ

NOT ON AIR

Standard Names in Bold are recommended for Emergency Radio in Brevard *

PBARC= Palm Bay Amateur Radio Club (Replaces DCS for South Brevard) See Ed W2PH for more info

437 S. BABCOCK ST.
MELBOURNE, FL 32901
Ph) 321-727-2311
Fax) 321-727-2312

DISCOUNT ELECTRONICS

HAM&CB EQUIPMENT
SECURITY SYSTEMS
BATTERIES(ALL TYPES)
REPAIRS(ALL TYPES)
ANTENNAS – TOWERS
2-WAY RADIO EQUIPMENT

"SALES AND SERVICE"
TELEPHONE SERVICE
COMPUTER REPAIR
STEREOEQUIPMENT
POWER SUPPLIES
TUBE EQUIPMENT

2013 LINE LISTINGS ** THE ONLY REAL PARTS STORE LEFT IN SOUTH BREVARD **

AIM
ALINCO
ANTENNACRAFT
ANTENNA SPECIALISTS
ARRL
ASTATIC
ASTI

BEARCAT
BECKMAN (WAVETEK)
BUSSMAN FUSES
BUD

C.B.RADIO
CALRAD
CORNELL DUBILIER
CELLPHONE AMPS
CHICAGO MINIATURE
CINCH JONES
CLOVER
COBRA
CUSHCRAFT

DALBANI
DECIBEL PRODUCTS
DENNISON
DURACELL
DANTONA IND.

ECG (SEE NTE)
ELECTRONIC RESOURCES
ELECTROVOICE
EVEREADY

FANON-INTERCOMS
FLUKE (WAVETEK)

GC ELECTRONIC
GALAXY
GOLDLINE

HAM RADIO
HARADA
HITACHI
HYGAIN

ICOM RADIO

JSC WIRE
JW DAVIS SOUND
JVC PARTS

KENWOOD RADIO
KOSS
KESTER

LITTELFUSE
LOWELL

M & G
MALLORY
MACOM
MAXON
MIDLAND
MOTOROLA

NTE TRANSISTORS
NELLO TOWERS
NTE ELECTRONICS
NORMAN LAMPS

PANASONIC
PANAVISE
PHILIPS ECG (SEE NTE)
PHILMORE
PIONEER
POMONA
POWERSONIC
PRB
PROAM ANTENNAS

QUAM
QUEST

RANGER RADIO
RAYOVAC BATTERIES

RUSSELL IND.

SR COMPONENTS
SANYO BATTERIES
SHURE BROTHERS
SONY PARTS

SPECO
SWITCHCRAFT

TEI
TNR BATTERIES
TELEX – HYGAIN
TRIPPLITE
TUBES – ALL TYPES
TV ANTENNA'S

UNIDEN
UNIDILLA
UNION CARBIDE

VARCO
VALOR
VECTOR
VIDEO EQUIPMENT

W2AU BALUNS
WALDOM – MOLEX
WAHL-CLIPPER
WAVETEK (BECKMAN)
WILSON ANTENNAS
WILSON ELECTRONICS

YAESU

WEB PAGE:
www.tedcoelectronics.com

EMAIL:
tedco@bellsouth.net

Hours:
MON – FRI 9 AM – 5 PM
SATURDAY 9AM-3PM

TED – W4LR - GENERAL MGR.

DOTTIE – OFFICE MANAGER