



INDIAN RIVER ARC

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

SPURIOUS EMISSIONS

OCTOBER, 2021

CLUB MINUTES

OFFICERS

PRESIDENT

VIRON PAYNE

N4VEP

VICE-PRESIDENT

DAVID LERRET

KUOR

SECRETARY

ERNIE HOFFMAN

K1CPO

TREASURER

STEVEN LUCHUK

N4UTQ

DIRECTOR

DAVID SLAWSON

K4UZM

NEWSLETTER EDITOR

ARMANDO DELGADO

KN4JN

The meeting was called to order by President Viron, N4VEP at 7:30 PM. Following the Pledge of Allegiance Viron called on new member, Richard.

Secretary Report: the minutes of past meetings need approval. A discussion about quorums ensued and after counting those present and participating via Zoom, it was agreed we had a quorum for tonight's meeting.

Technical Report: Dave KUOR is out of town, so Viron summarized that the ECOM facility is almost ready, only needs a tweaking of the gain control.

Treasurer's Report: Equipment Fund, \$1836.95 after \$0.27 earned interest.

Checking, \$798.17 after \$4.50 from dues.

Viron mentioned that Chase Bank wanted to charge the club a monthly \$15 fee. He talked to the bank and found there was a waiver the bank provided for veterans.

Ernie, K1CPO being a Navy veteran and an officer in the club met the requirements and the fee was waived.

IRARC weekly nets are still the same: Wednesday Net at 7:15 PM on 145.37 MHz, tone 156.7 Hz.

Followed by the Simplex Ragchew on 147.42 MHz. The monthly Simplex Exercise on 147.42 MHz will

next be on October 24 at 9:00 AM. And the Digital Training every Tuesday at 7:00 PM on the 145.37 MHz repeater.

New Business:

Next was a discussion of the proposed Bylaws change regarding quorums. The current Bylaw, Article 7, Sect. 2 reads: *...A quorum is established when at least fifty members or twenty percent of the membership eligible to vote are present.*

The change will read: *...A quorum is established when at least twenty percent of the membership eligible to vote is present in person or electronically via two way communication.*

The proposed Bylaws change will be voted on at next month's meeting.

The Christmas Party was next discussed. First, Steve, N4UTQ was elected Chair of the event. Then, the members chose Red Lobster to hold the party. The date became an issue and after some discussion the members voted for a primary date of December 2, a Thursday and secondary choice December 7, a Tuesday. The final choice of a date will be made at next month's meeting.

There followed a discussion of the Winter Field Day event on January 29, 2022 from 9:00 AM to 3:00

PM, but this item was tabled for the next month meeting to determine the number of radios, antennas, etc.

The next item on the agenda was the nomination of club officers for the next two years cycle. Both Steve and Viron presented nominees and at the November meeting a vote will be held.

The nominee choices are: President: Viron Payne, N4VEP or Steve Luchuk, N4UTQ

Vice-President: Sam Thorpe, KJ4VGR or Steve Luchuk, N4UTQ

Treasurer: David Lerret, KUOR Secretary: Viron Payne, N4VEP or Armando Delgado, KN4JN

Director at Large: Ernie Hoffman, K1CPO or Bob Scorah, WOAGE

Following the nominations, Viron opened a discussion on the merits of the Icom IC7610 versus other brands like Yaesu or Kenwood. Dave, KUOR is thinking of purchasing a high end radio for his ECOM station at the church, a radio that could also be used during club activities, such as Field Day. No consensus could be reached after a brief discussion. The meeting adjourned at 8:16 PM.

Respectfully submitted for the Secretary by Armando Delgado, KN4JN

HAPPENINGS

ARRL and the Radio Society of Great Britain (RSGB) will jointly sponsor events to celebrate the achievement of transatlantic communications by radio amateurs 100 years ago. ARRL and RSGB will activate special event stations for 6 hours (0200 - 0800 UTC) on December 12 for the 160-meter Transatlantic Centenary QSO Party. RSGB will activate GB2ZE from Scotland, with a team of stations from the GMDX

Group sharing operating duties. ARRL will activate W1AW. The stations will operate only on CW. If transatlantic propagation holds up, the stations may continue to operate beyond 0800 UTC. The times are 9:00 PM EST December 11 to 3:00 AM EST December 12.

(Editor's note: This is a golden opportunity to try the club's 160 meter antenna.)

W1AW Commemorative Transatlantic QSL Card. Stations making contact with the Hiram Percy Maxim Memorial Station, W1AW, between December 11, 2021, and December 31, 2022, qualify to receive a commemorative W1AW QSL card. US stations should QSL with a self-addressed, stamped envelope; international stations should QSL via the Bureau.

WSJT-X 2.5.0 has just been released and is available on the [WSJT-X website](#). " New features are described in the WSJT-X User Guide [here](#) and in the [Release Notes](#). If you will use the new Q65 mode, please read the [Quick-Start Guide to Q65](#).

Microsoft has announced the release of the new **Windows**

HAPPENINGS

11 operating system, but it will be a slow reveal. Microsoft said that the free upgrade to Windows 11 has begun rolling out to eligible Windows 10 PCs, and PCs that come pre-loaded with Windows 11 will start to become available for purchase on October 5. A prompt to upgrade to Windows 11 will come to newer devices first, with all [eligible](#) devices to receive their updates by next summer. Windows 11 has higher technical requirements than Windows 10, which will be deprecated in 2025. Microsoft no longer supports Windows 7 or earlier iterations. Machines will need to have a 64-bit CPU, 4 GB of RAM, and 64 GB of storage, and have Trusted Platform Module (TPM) v 1.2 or later enabled. On existing Windows 10 PCs, Windows Update will let people know when the upgrade is available for Windows 11. You can also check to see

if your device is eligible for the Windows 11 upgrade through Windows Update. If your PC isn't fully compatible with Windows 11, Microsoft will continue to support Windows 10 until October 14, 2025.

The Nashua (NH) Area Radio Society (NARS) in New Hampshire will again offer its popular Ham Bootcamp online on Saturday, November 13. Bootcamp is free and includes demonstrations and tutorials designed to help newly licensed Technician-, General-, and Amateur Extra-class hams get on the air. It is also a great opportunity for prospective radio amateurs to be introduced to a variety of ham radio activities. Bootcamp is free and includes demonstrations and tutorials introducing a variety of ham radio activities. [Email](#) for registration instructions.

Members of the BBC's radio club,

The London BBC Radio Group, have been granted an exceptional all-year Special Event call-sign to help celebrate the BBC's centenary year in 2022. Ofcom will permit GB100BBC to operate throughout the year, starting at midnight on New Year's Day, from the headquarters station in Broadcasting House, London. Operating slots will then be allocated for use by individual members and local groups of operators, from their home QTH, or BBC premises throughout the UK.

The Kingdom of Eswatini (formerly known as Swaziland) has become a popular place for dxpeditions this Fall. Besides the Russian team reported in last month's newsletter, a Latvian team will also operate from October 12-26 from the Kingdom of Eswatini using all modes and frequencies (for suggested fre-

quencies, see: <https://lral.lv/3da0ww/freq.html>) using the call sign 3DA0WW.

Applications for the 2022 ARRL Foundation Scholarship Program will open on November 1, 2021. More than 100 scholarships ranging from \$500 to \$25,000 will be awarded in 2022. Scholarship recipients will be notified in May 2022 via USPS mail and email. All applicants must be active, FCC-licensed amateur radio operators [NOTE: Active foreign amateur radio operators are eligible for the ARDC Scholarships]. All applicants must submit a completed online application.

ON THE AIR

Rochester DX Association 73rd Anniversary Oct 1-Oct 31, 0001Z-2359Z, W2RDX/73, East Rochester, NY. Rochester DX Association. 14.250. QSL. Chris Shalvoy- K2CS (W2RDX), 512 Beechwood Dr., East Rochester, NY 14445. Help celebrate the 73rd anniversary of the Rochester DX Association - CW, SSB and Digital modes will be covered on all bands - Please go to RDXA.com for up to date operating and QSL information. Don't forget to enter the New York QSO Party (NYQP) which will be held on 16 October, 2021 - head to NYQP.org for contest rules. Best DX es 73! www.rdxa.com

Shenandoah National Park Special Event Oct 17-Oct 23, 0600Z-0600Z, W4DO, Charlottesville, VA. Albemarle Amateur Radio Club. 7.240 14.300. Certificate & QSL. AARC - SNP

Special Event, P.O. Box 6833, Charlottesville, VA 22906. This special event will activate numerous overlooks and summits spanning the length of Shenandoah National Park. Participants are encouraged to make contact with all of the stations for a clean sweep and certificate. <https://www.albemarleadio.org>

Veterans Day 2021 Nov 1-Nov 15, 0000Z-0000Z, N5VET, Cleburne, TX. Club KC5NX. 14.255 14.045 7.240 7.235. QSL. Club KC5NX, 9200 Summit Ct. W, Cleburne, TX 76033. N5VET is again operating for 15 days during our Veterans Day Special Event.... QSL to KC5NX.. We will be on most all bands and using most modes... Always a great Event.. come join us. www.qrz.com/db/kc5nx, jay.n.violet@gmail.com or www.qrz.com/db/n5vet

158th Anniversary of Lincoln's Gettysburg Address Nov 10-Nov 20, 1200Z-2330Z, WO4L/W1G, East Berlin, PA. Robert Hess. 7.185 14.288 3.830 18.155. Certificate & QSL. Robert Hess, 74 Curtis Dr, East Berlin, PA 17316. Beautiful full color 11 x 14 Certificate and or a QSL Card available please see QRZ page for WO4L or W1G, for instructions.. and any previous Certificates still available watch spotting nets to see where we are...DX SUMMIT big-bob7388@gmail.com

102nd Anniversary of Armistice Nov 13, 0800Z-1800Z, WW1USA, Kansas City, MO. National World War 1 Museum and Memorial. 7.030 7.250 1.4030 14.250. QSL. C/O Charles Van Way, NOCVW, National World War 1 Museum and Memorial, 2 Memorial Drive, Kansas City, MO 64108. Direct questions to:

ww1usa@theworldwar.org
<https://www.theworldwar.org/amateurradio>

OX7A Team will be active from **Greenland**, IOTA NA - 018, in CQ WW DX SSB Contest, 30 - 31 October 2021. Team - OZ1AA, OZ1DJJ, OZ1KNJ, OZ7AKT, OZ7AM.

HD8R DX Friends Team will be active from **San Cristobal Island, Galapagos Islands**, IOTA SA - 004, 26 October - 7 November 2021. Team - EA1SA, EA5EL, EA5KA, EA5KM, EA5RM, EA7R, EA7X, F5CWU, F5NKX, F8ATS, HC5VF, HK6F, IK5RUN, IN3ZNR, EC7ZK, EA7KE. They will operate on 160 - 6m, CW, SSB, Digital modes. QSL via EA5RM: ANTONIO GONZALEZ, P.O. BOX 930, E-03200, ELCHE, Spain.

LONG DELAYED ECHOES BY Armando Delgado, KN4JN

In the past century humanity not only put radio waves to good use but also learned a great deal about them. We found that radio waves propagate by reflection and refraction from ionized layers in the upper atmosphere, and we also learned how different frequencies propagate. We discovered the effect of solar radiation on radio waves and the changes that occur with the 11-year cycle of solar activity. We understand a great deal about radio waves and radio propagation, but we do not know everything.

Occasionally, radio propagation does unexpected, surprising things that are not easily explained by the established theories. Actually, some of these mysterious phenomena currently lack a clear explanation from our knowledge base. One such mystery is long delayed echoes (LDE).

Radio echoes are repetitions of a transmitted signal that occur shortly following a transmission. There are many causes for echoes and those vary with the frequency of the signal. In HF, however, the most common echo is caused by the signal traveling around the world and returning to the transmitter. This phenomenon is noted most often during high solar activity and high MUF's, particularly on the higher HF bands, although it can happen in any frequency. A radio signal takes 138 milliseconds to go around the world, regardless of frequency.

One other well known radio echo occurs during EME transmissions when a signal bounced from the moon returns to the transmitter. This Earth-Moon-Earth trip takes 2.7 seconds. Thus, to qualify as an LDE an echo needs to occur at longer intervals than 3 seconds.

LDE's are not a newly recognized occurrence. The first report of an LDE happened in 1927 when the Norwegian Jorgen Hals in Oslo noted echoes of transmissions from radio station PCJJ in Eindhoven that transmitted on 9.55 MHz. He noted two echoes, one at a short period of 1/7 seconds and

another of a longer period of 3 seconds. Hals wrote to Professor Carl Stormer who reported the findings in the November 3, 1928 issue of *Nature*, a report that triggered an international interest in the phenomenon, with many experts trying to detect and explain the occurrence. Stormer himself carried on research using PCJJ transmissions and detected LDE's of variable time duration ranging from 3 seconds to 8 seconds. Others involved in the research included E.V.Appleton, the British researcher who identified the layers of the ionosphere, and who as part of his ionospheric research detected and studied LDEs.

In spite of the many confirmed detections of LDEs of variable time durations, scientists to this day fail to formulate a clear hypothesis of the mechanism for these events; although like with any other unexplained mystery, there are many suggested explanations, ranging from the scientific to the pseudo-scientific and to the preposterous.

The predominant scientific theory is that the radio signal, passing through the ionosphere, goes on to be caught in a magnetospheric duct, where it travels a distance of many Earth radii in that extraterrestrial magnetic field created by the Earth's own magnetism and that extends for millions of miles out into space. Then the signal returns back to the ionosphere, where it may cross back to Earth or be reflected back to the magnetosphere for one or more cycles. The radio signals that may follow this path are most commonly in the 1.8-4.0 MHz range.

Another scientific explanation involves an ionospheric duct, similar to the tropospheric duct seen in VHF propagation, that traps the radio signal causing it to make many revolutions around the Earth before the duct breaks and allows the

signal to return back down. The strongest argument against this hypothesis is that to last 3 seconds or more the signal would have to make more than 20 revolutions of the Earth and would degrade in intensity to the point that it would be inaudible, which does not seem to be the case with the recorded LDE's.

One other more radical explanation couples the radio wave to a plasma wave in the upper ionosphere. This plasma wave then travels along the Earth's magnetic field lines. Eventually, the radio wave decouples and returns down to be heard again.

Plasma clouds originating from the sun and interacting with radio signals at a Lagrangian point between the Earth and the moon is another hypothesis somewhat similar to the previous one.

Among the preposterous explanations, the prevalent one is that extra-terrestrials have set un-manned space probes between the Earth and the moon that reflect our radio signals back to us in an effort to communicate their presence.

Regardless of the lack of a definite scientific explanation, long delayed echoes remain an interesting phenomenon. [Here](#) is a sample of a recording by a Norwegian station of an echo delayed 7.5 seconds.



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



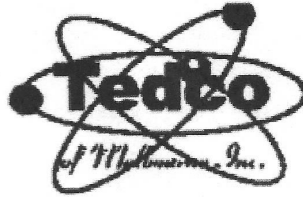
Editor's Note:

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, FI 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 F
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		195 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.	K4UJZM	
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 and user Rx)							
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							

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ARRL
ASTATIC
ASTI

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BECKMAN (WAVETEK)
BUSSMAN FUSES
BUD

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

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PANAVISE
PHILIPS ECG (SEE NTE)
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