

OFFICIAL NEWSLETTER FOR THE WEST AUSTRALIAN VHF GROUP(INC)
P.O. BOX 189, APPECROSS WA 6153.

MEETINGS ON THE FOURTH MONDAY OF EACH MONTH AT WIRELESS HILL
TELECOMMUNICATIONS MUSEUM, ALMONDBURY RD, ARDROSS

VK6WH

VK6WH

PATRON MR. F.W. DAWSON

PRESIDENT	BOB BLINCO	VK6KRC H277 7049	SECRETARY	BOB PINE	VK6ZFY H 339 3273
VICE PRES	PETER TAIT	VK6ZPT	TREASURER	BERT MEUWISSEN	VK6ME H 457 3892
COUNCILLOR	TERRY LEITCH	VK6ZLT H332 7008	BULLETIN ED.	JACK BORTHEN	VK6KDX H 447 5933
COUNCILLOR	BRUCE DOUGLAS	VK6BMD	MUSEUM REP.	BOB PINE	VK6ZFY
COUNCILLOR	COLIN MURRAY	VK6ZCR	MUSEUM REP.	TOM BERG	VK6ZAF
ACTIVITIES	TERRY LEITCH	VK6ZLT	PUBLICITY	PHIL MALEY	VK6AD
MATERIALS	COLIN MURRAY	VK6ZCR	LIBRARIAN	ILMAR BELTS	VK6AIB

CALENDAR

SEPT	21	COMMITTEE MEETING
	26	FOXHUNT
	28	GENERAL MEETING
OCT	19	COMMITTEE MEETING
	24	FOXHUNT
	26	GENERAL MEETING
	26	ANNUAL GENERAL MEETING

SEPTEMBER 92

Subscriptions are now due

Your prompt payment will assist the Group.

Thank You

THANK YOU

Acknowledgements to the following operators for their kind donations to the on going development of the beacon project.

VK6KXW Peter Jackson-Electrical hardware and fittings
VK6FN Max Faulkner -Xtals, antenna hardware
VK6ZFY Bob Pine -6 ft cabinet and 19 in aluminium rack
VK6ZPG Peter Grumble -2000 watt transformer
VK6ZPT Peter Tait -Rewind of 2000W transformer
-Loading of 13.8 regulator
VK6KAT Ross Tolchard -Supply of FM828 UHF exciter board
VK6JJ John Pearce -Supply of FM828 UHF exciter board
VK6HK Don Graham -Supply of keyers for all beacons
VK6KZ Wally Howse -Supply 1296 Alfred slot antenna
VK6KRC Bob Blinco -Construction of beacon antennas

A special thanks must go to Don VK6HK for his seemingly tireless efforts to the technical input and direction of this project.

A Word From The President.

Ladies and Gentlemen, It should be appreciated that the donations from the above mentioned operators has resulted in countless hours of construction and effort. The efforts of this small group of persons has resulted in a set of beacons physically and electronically second to none.

The ongoing support of these beacons cannot be achieved without considerable cost to the VHF Group, particularly the ongoing cost of power. These amount to approximately \$300 per year with the Busselton beacon (VK6RBS) costing about \$150 and about \$150 for the Perth Beacon (VK6RBS). In addition there is the cost of licencing the beacons. All these costs are being met by the VHF Group membership who are a small but dedicated group of people. So, the next time you check your system on the local beacon or look at Busselton to ascertain what propagation is like down the coast, you may wish to give a thought to the amount of effort and cost behind the maintenance of these reference signals. In order to ensure the continuance of this service operated by the VHF Group, donations (whatever you can afford in these difficult times) will be gratefully accepted, greatly appreciated and acknowledged in this bulletin.

Donations may be made by post to

The West Australian VHF Group
PO Box 189
Applecross
WA 6163

or in person at the monthly meetings at Wireless Hill.

At this months meeting there will be a talk on the history of the VHF beacons by Dr Wally Howse VK6KZ.

Why not come along and hear the history of the first VHF beacons in Australia.

Yes thats right, the first VHF beacons in this country.

E.S.C. CATALOGUE FOR OCTOBER/NOVEMBER 1992

* This list contains quite a few updates including AMIDON toroids. To help kit builders we have introduced a building expertise rating as follows 1 BEGINNER , 2 AVERAGE , 3 RF EXPERIENCE , 4 SPECIAL TECHNIQUES/ADVANCED.

** Please note that once off specials are denoted by a X and won't be repeated once finished!

NEW **** **VK5 UHF PREAMPLIFIER** *** Rating=2 \$40.00

432MHz companion to the popular VHF kit.70 x 50mm PCB features on board RF relay. NF 1.5dB at 70cm, Gain 15dB. Uses CF300 DG GaAsFET. All on board Components supplied , Connectors and box required to complete.

NEW **** **VK5 6 metre Transverter** *** Rating=3 \$150.00

New design single board all mode transverter. Primarily for use with any low power (3W) 2m transceiver eg. FT290 , optional 28MHz to 50MHz version available. Features BF981 receive front end, SBL-1 mixer for both Tx/Rx, RF sensed switching and No tune PA for 15Watts RMS out. Simple alignment. Requires misc. hardware and box to complete. Please specify IF required when ordering.

NEW **** **VK5 1250 MHz ATV Converter** *** Rating=2 \$25.00

Simple design that requires no test gear to align other than a multimeter! Converts 1240-1260MHz ATV (AM or FM) signals to Channel 22 (485.25 MHz) UHF TV IF. 4db noise figure , only requires a box and connectors to complete.

PACKET RADIO KITS Rating = 2

BASIC MODEM (Commodore C64 with Digicom V3.51) \$60.00
IBM RS232 UPGRADE (Baycomm V1.5) \$10.00

Design by VK5ZAH for use with Commodore C64/128 or IBM type PCs, using Digicom or Baycomm software respectively. Suits both HF (300baud) and VHF (1200baud) packet. Supplied with all board components, 7910, and C64 port socket. Misc leads and hardware required. IBM Conversion kit for the modem , converts TTL to RS232. Includes the V1.5 Baycomm software, plus all onboard bits. Requires Misc. hardware to complete.

VK5 VHF PREAMPLIFIER 6M/2M Rating = 2 \$30.00

Receive preamp , 70mm x 50mm PCB , with relay switching. Kit is universal for 50-200MHz. Approx. noise figure is 1dB, using a BF981. All on board components supplied. Hardware, connectors and box required to complete. Also available without relays \$18.00.

VK5 5AMP 12V POWER SUPPLY Rating = 1 \$20.00

Uses discrete components, with over voltage and current protection. To complete you will need an 18V transformer, a 10000uF 40V filter cap (see under caps), and heatsink

VK5 20AMP 12V POWER SUPPLY Rating = 2 \$55.00

Includes 5 Amp kit, 3 X 10,000uF electro's plus other bits to make a 20 Amp supply. You will need a transformer , heatsink and box.

UHF and ABOVE KITS Rating = 3

The following kits are available for the 432MHz and above. They are linear and are suitable for all modes. Kits use a common 144MHz IF to give 4MHz segments above the indicated frequency. Transverters ,transmit converters need 1-3W drive at 2m. Relayless R/T change over via PIN diodes. Local oscillators are high stability Butler types, and the transverters feature the "no tune" LO from May 89 QST. (available seperately). Various options are available including different IF's link freqs, etc , linear amps. use Mitsubishi modules.

1296 MHz	Receive converter	2.5dB NF	\$60.00
1691 MHz	"	137MHz IF	\$65.00
2304 MHz	"	3.5dB NF	\$65.00
2400 MHz	"	3.5dB NF	\$65.00
1296 MHz	Transmit converter	1.5W out(1240-1300)	\$130.00
1296 MHz	Transverter	3dB NF, 1.0W out	\$195.00
1296 MHz	Transverter	NEW driver design 12Watt out	\$300.00
2304 MHz	Transverter	4dB NF, 0.5W out	\$200.00
1296 MHz	Linear Amp.	200mW/12W	\$110.00

RLC540 QST 5/89 Local OSC. with XTAL (Specify) \$70.00
OSC-1 Extra oscillator for transverters for \$25.00
extra ranges (eg repeaters) ASK.
All on board components included, you add hardware and box.

DIRECTION FINDING KITS Rating = 2

2m DL2DE Design \$20.00
70cm VK5ZAH Design \$25.00
Audio VCO \$10.00

Both designs are simple TRF receivers with 85dB gain control. Kits need a meter , box etc to complete. Optional VCO gives an audible indication of signal strength, good for night use!!

CW PRACTICE OSCILLATOR KIT Rating = 1 \$6.00

SEMICONDUCTOR DIODES

1N4148	G.P. (equiv. 1N914)	0.05 ea.
P600G	400V 6A X	0.50 ea.
1N4007	1KV 1A	0.10 ea.
1N5404	400V 3A	0.25 ea.
1.5A	Bridge rectifier W04 400V	0.60 ea.
10A	Bridge rectifier	2.00 ea.
35A	Bridge rectifier	4.00 ea.
BZX79	C5.1V, C10, C12, C15 400mW Zeners	0.20 ea.
BA481	Schottky diode. RF mixer/det.	0.50 ea.
BA482	PIN switching diode	0.50 ea.
BB405G	UHF Varicap diode	0.50 ea.
BB809	VHF Varicap diode	0.50 ea.
MV109	Varicap 5 to 30pF (28 to 3V) X	0.50 ea.
5082-2800	Schottky diode, PIV of 70V	1.00 ea.
LED	Red 5mm diffused	0.15 ea.
LED	Yellow and Green 5mm diffused	0.25 ea.

GENERAL PURPOSE SEMIS

BC547, BC548, BC549, BC558		0.10 ea.
BC337, BC327 (NPN,PNP)	0.5A 45V TO-92	0.15 ea.
BD139, BD140 (NPN,PNP)	1A 80V 8W TO-126	0.50 ea.
TIP31, TIP32 (NPN,PNP)	3A 80V 40W TO-220	0.80 ea.
TIP3055T, TIP2955T (NPN,PNP)	10A TO-220	1.10 ea.
2N3055	TO-3 with full mounting kit inc. bolts	1.80 ea.
2N2218	NPN 0.8A 30V Ft=250MHz (2N2222) TO-39	0.20 ea.
2N5770	NPN RF - replaces 2N3563 TO-92	0.35 ea.
2N5485	RF JFET N-ch	0.50 ea.
BF245B	" " "	0.80 ea.
BF245C	" " "	1.10 ea.
MPF102	" " "	0.60 ea.
OC960	GP NPN BC548, lockfit pack 50 for X	1.00 pk.
BD115	NPN GP 150mA TO-39 X	0.10 ea.
BFX85	NPN 1A 60V Ft=50MHz TO-39 X	0.10 ea.
BFX89	NPN Wideband RF Ft=1200MHz TO-72 X	0.20 ea.
BT151	SCR as used in power supply kit. (C122)	2.80 ea.
LM353N	Dual FET OP Amp (TL-082)	1.10 ea.
LM370	Squelch/AF AGC Amp X	0.50 ea.
LM380N	Audio Amp. 14pin dip	1.00 ea.
LM386N1	" " minidip	0.50 ea.
LM555	Timer I.C.	0.60 ea.
NE602A	RF Bal.Mixer IC+ Oscillator 200MHz	4.00 ea.
LM741	G.P. OP-AMP minidip	0.40 ea.
EF7910	World modem IC	17.50 ea.
XR2211	FSK decoder	6.60 ea.
ICM7660	Volt Inverter +1.2 to 12V in; -ve out	5.00 ea.
MAX232	RS232 Transceiver, only needs 5V.	5.00 ea.
MC1350P	IF Amp IC. Minidip to 60MHz	1.00 ea.
MC1496P	Balanced Mixer IC	0.70 ea.
MC3320P	Audio Amp./ driver	0.10 ea.
MC3357P	Narrow band FM IF, dual conversion	1.00 ea.
MC3359P	As MC3357P but extra stage	1.30 ea.
RC4558	Dual Wideband OP-AMP (2 X 741) X	0.50 ea.
ua733	Differential Video amp	1.20 ea.
4046	CMOS Micropower PLL	1.10 ea.
7805T, 7808T, 7812T	V Reg. 1A (LM340T) TO-220	0.60 ea.
78L05, 78L08, 78L12	" " 100mA TO-92	0.50 ea.
LM317L	Variable V Reg. 3-30V 100mA TO-92	0.50 ea.
LM317T	" " 1.5A TO-220	1.20 ea.

UHF SPECIAL SEMICONDUCTORS

BF981	Low Noise VHF DG Mesfet (VK5 pre-amp)	1.00 ea.
BF960	" " UHF " "	1.10 ea.

CF300	Siemens DGasFET NF=1.2dB @ 1GHz	3.00 ea.
BFR91A	UHF NPN 35mA 180mW Ft=5GHz	1.30 ea.
BFR96S	" " 75mA 500mW Ft=5GHz	1.20 ea.
BFG91A	" " 35mA 300mW Ft=6GHz Xpack	1.80 ea.
BFQ34T	" " 150mA 1W Ft=3.7GHz	3.00 ea.
BFQ34	" " stud mount, 1.5W @ 1300MHz	22.00 ea.
MRF571	" " Vce=8V 1W Ft=8GHz NF<3dB @ 2GHz	2.70 ea.
MRF581	" " Vce= Xpack 2.70 ea.	
MRF901	" " Vce Xpack X 1.00 ea.	
M57716	Mitsubishi 10W linear module for 70cm	50.00 ea.
M57762	Mitsubishi 10W linear module for 23cm	90.00 ea.
MGF1302	Mitsubishi Gasfet 1.2db NF @ 4 GHz. NEW	6.50 ea.
SBL-1	Double Balanced Mixer 0-500MHz	9.00 ea.
MAR-1	MMIC 0-1GHz, Gain 17dB, 1mW out 50	3.10 ea.
MAR-3	" 0-2GHz Gain 13dB, 5mW out 50	4.60 ea.
MAR-4	" 0-2GHz Gain 8dB, 11mW out 50	4.90 ea.
MAR-6	" 0-2GHz Gain 19dB, 3dB NF 50	3.60 ea.
MAR-8	" 0-1GHz Gain 28dB, 10mW out 50	6.00 ea.
uPC1651	" 0-1GHz Gain 19dB, Counter Preamps	1.00 ea.

RESISTORS:

SMD Chip	27,51,68,100,120,150,220,330,470,1K,4K7,10K	0.06 ea.
STANDARD	Metal film 1R - 10M E12 values, 0.4W	0.03 ea.
Some values may be supplied as 1/4W carbon		
5 Watt	Wire wound 0.1R, 0.47R	0.40 ea.
50 Watt	200R wire wound, Heatsink mounted X	1.50 ea.
Trim pots	vert. adj. 1K,2K2,5K,10K,22K,50K,100K,1M	0.35 ea.
Trim pots	500R cermet, sealed, horiz adj. X	0.20 ea.
Trim pots	4K7 horiz. adj. Phillips X	0.10 ea.
Pots	2K2 linear, 4K7 log panel mounted X	0.10 ea.

CAPACITORS:

SMD Chips	1p2,4p7,10p,22p,47p,100p,470p,1n	0.15 ea.
Ceramic	2p2 to 2n2, 50V/100V .. some left X	0.07 ea.
Ceramic	Phillips miniplaate, 1pF - 2n2, 10n	0.10 ea.
Ceramic	0.1 uF Disc 12V X	0.04 ea.
Ceramic	0.01u, 0.047u, 0.1u 50V Dipped monolythic	0.10 ea.
Ceramic	10p -1n 500V, some values left...ASK	0.10 ea.
Ceramic	1000p 3KV discs. HF Linears X	0.20 ea.
Feedthru	Ceramic 2n2, solder in type X	0.30 ea.
Green cap	1nF, 4n7, 10n, 22n, 47n 100V	0.10 ea.
Green cap	47n 100V	0.10 ea.
Green cap	0.1u 100V	0.15 ea.
Green cap	0.33u, 0.47uF 100V	0.45 ea.
Mica	270p (300V),390p,820p,1n8 1KV	X 0.10 ea.
Polyester	Miniprint 3n3, 4n7 630V, 47n 100V	X 0.03 ea.
Electro	2.2u, 4.7u, 10u, 47u, 100uF 25V PCB	0.15 ea.
Electro	220uF, 470uF 25V PCB	0.50 ea.
Electro	1000uF 25V PCB	0.65 ea.
Electro	2200uF 35V PCB	1.40 ea.
Electro	10000uF 40V PCB(Used with 5A power sup.)	9.00 ea.
Electro	100uF 350V Axial HI VOLTAGE PWR SUP.	2.50 ea.
Tantalum	1uF 35V	0.30 ea.
"	2.2 uF, 4.7 uF 25V	0.40 ea.
"	10 uF 25V	0.60 ea.
"	22 uF, 16V	0.70 ea.

TRIMMER CAPS

Phillips	8mm diam 1.5-6pF, 2-10pF, 2-22pF PCB type	0.40 ea.
Phillips	6mm sq. 1.2-3.5pF HI-temp/quality	1.30 ea.
Phillips	6mm sq. 1.8-10pF	0.50 ea.
DAU	10mm dia 9-60pF & 12-100pF Teflon	X 0.40 ea.

LOW PROFILE IC SOCKETS:

8 Pin	0.15 ea.	14,16,18 Pin	0.25 ea.
24, 28 Pin	0.40 ea.	40 Pin X	0.50 ea.

FERRITES:

Toroid	Phillips 4C6 3-300MHz u>100	6mm diameter	0.30 ea.
Toroid	" " " " 9mm	"	0.50 ea.
Toroid	" " " " 14mm	"	0.80 ea.
Toroid	Orange u=3000 f<1MHz	6mm	0.10 ea.
Bead	1.2mm hole x 3.2mm long for component leads		0.05 ea.
Bead	2.0mm hole x 5.0mm long. FX1115, over wire		0.07 ea.
Bead	6 Hole type		0.30 ea.
Balun	2 hole core (6mm or 12mm long - specify)		0.70 ea.
Potcore	X-core 25mm 3H1 no air gap.17.8tns/mH + bobbin		0.40 set
Potcore	19mm diam. 3B7 material, incl. bobbin		0.50 set

Neosid	722/1 5mm formers	0.40 ea.
Neosid	Shielding can for 722/1	0.50 ea.
Neosid	Base for 722/1	0.40 ea.
Neosid	F29 Ferrite slug for 722/1	0.20 ea.
AMIDON	T37-2 or T37-6 Toroids	** NEW 1.20 ea.
AMIDON	T50-2 or T50-6 Toroids	** NEW 1.60 ea.
AMIDON	T68-2 or T68-6 Toroids	** NEW 1.90 ea.
AMIDON	T200-2 2 KW Balun Toroid	** NEW 12.00 ea.

COAX FITTINGS:

** Pricing/style of Connectors may vary due to supply. **		
Plug	PL259, small screw in type, no reducer	2.50 ea.
Plug	PL259 for RG-8	3.00 ea.
Reducers	for above. Specify RG-58 or 59 cable	X 0.55 ea.
Socket	SO239 4 hole flange	2.00 ea.
Back to back	SO239 (Joins two plugs)	3.00 ea.
Adapter	PL259/BNC skt.	4.50 ea.
Adapter	BNC plug/SO239	5.00 ea.
Socket	BNC Single hole socket	2.00 ea.
Plug	BNC Plugs for RG-58	2.75 ea.
Plug	Type N for RG-8	7.50 ea.
Socket	Type N, 4 flange mount	6.20 ea.
Car	Car Radio socket or plug	X 1.00 ea.

ANTENNAS:

VHF	1/4 Wave stainless steel whip	5.50 ea.
UHF	1/4 Wave stainless steel whip	3.50 ea.
Base	VHF 5/16" x 24 tpi thread	3.00 ea.
Base	UHF 5/16" x 24 tpi thread	5.50 ea.
Gutter	Mount for bases (specify for VHF/UHF base)	17.50 ea.
CLAMP	HILLS 1/4" U bolt and Vee Block	1.60 ea.
CLAMP	HILLS 5/16" U bolt and Vee Block	1.90 ea.
MOUNT	VK5ZGB Plastic insulator 3/8" Ele sim ATN	1.20 ea.
ENDCAP	VK5ZGB Plastic endcap for 3/8" element	0.10 ea.

DURACELL Alkaline Batteries.

Sorry, No mail order on batteries due to postal regs.			
AA	Twin pack 2.00 pk.	AA	Four pack 3.70 pk.
C	Twin pack 2.80 pk.	D	Twin pack 3.00 pk.
9V	Transistor 3.00 ea.	AAA	Twin pack 2.20 pk.

SUNDRIES

Solder	60/40 0.71mm (22g) 250gm roll	5.50 rl.
Solder	" " 500gm roll	9.50 rl.
3.5mm	Phono plug (Red or black)	X 0.60 ea.
Banana	plug (Red or black)	X 0.60 ea.
RCA	plugs, small cheap style	X 0.10 ea.
RF	suppression capacitor (Automotive type)	X 1.00 ea.
Circuit	Board Pillar- CBS12N Nylon 3/4" snap type	X 0.15 ea.
Switch	metal toggle Sub miniature C&K 7101 SPDT	1.70 ea.
Switch	PCB mom.action 5mm sq. keyboard style	X 0.10 ea.
Switch	rotary 12pos 1pole Oak type	X 1.00 ea.
SWITCHES,	SURPLUS ROCKER and TOGGLE lucky dipl	X 0.10 ea.
Edge	connectors: 26/43 way Single side contacts	X 0.20 ea.
Ceramic	tube 50mm x 14mm O.D. 3mm wall LINEARS!	X 0.10 ea.
VALVES-	Various, mainly miniatures, most new {Ask}X	1.00 ea.

Blank printed circuit board offcuts, Asstd sizes,
Sorry there is no mail order facility for this item \$????

DATA SHEETS

all 0.20 ea.

Data sheet of pin connections for our transistors and IC's
Power supply upgrade instructions. From 5A to 20A or more.
Data sheets available on many of our components.

All VK6 orders to:

Bob Blinco VK6KRC 277 7049
Bob Pine VK6ZFY 339 3273

HAMFEST.....HAMFEST.....Some kits may be available at HAMFEST

PLEASE NOTE THAT AUSTRALIAN LAW RESTRICTS THE POSTAGE OF CASH.

NOMINATION FORM
(Annual election of Office Bearers)

I wish to nominate

_____ (Member's Name) _____ (Call Sign)

for the position of

PRESIDENT	
SECRETARY	
VICE PRESIDENT	
TREASURER	

(Place X in Box)

Moved

_____ (Member's Name) _____ (Call Sign)

Seconded

_____ (Member's Name) _____ (Call Sign)

I am prepared to stand for the position ,
as nominated above, for the year _____.

_____ (Member's Name) _____ (Call Sign)

In response to numerous enquiries on wxsats, here is some info from the BBS.
 Further information will follow in the next issue.

- [] COSMOS-1602 Inactive.....137.280 Mhz.
 Last heard on 09/14/90 transmitting APT in the OKEAN format.
- [] COSMOS-1809 Transmitting wide band data.....137.850 Mhz.

- * POLAR ORBITING UPDATE (137 Mhz. Transmissions Only
- * The following compiled list has been verified by user's in the
- * United States during the observation periods indicated below.
- * This weekly update is provided as a service to DRIG members and
- * Datalink BBS user's. Should you upload this data to another BBS
- * please leave all the data within the document intact thus allowing
- * credit to the Dallas Remote Imaging Group.

OTHER PLATFORMS	FREQUENCY
[] FENGYUN 1-2 Not heard during this period.....	137.795 Mhz.
Last heard on 02/02/92 transmitting carrier only.	

OBSERVATION DATES 08/10/92 TO 08/21/92

NOAA POLAR ORBITING SATELLITES	FREQUENCY
[X] NOAA-09 Transmitting normal APT VIS/IR.....	137.620 Mhz.
[X] NOAA-10 Transmitting normal APT VIS/IR.....	137.500 Mhz.
[X] NOAA-11 Transmitting normal APT VIS/IR.....	137.620 Mhz.
[X] NOAA-12 Transmitting normal APT VIS/IR.....	137.500 Mhz.

NOTE: PLEASE REPORT ALL UNKNOWN SIGNALS WITH AOS, LOS, FREQUENCY AND YOUR LOCATION BY LEAVING A MESSAGE FOR CHARLES DAVIS OR

Compiled By:
 DALLAS REMOTE IMAGING GROUP

World-Wide Satellite Intelligence Network
 P.O. Box 117088
 Carrollton, TX. 75011-7088

DATALINK BBS - 1-214-394-7438 24 Hours/ 1200/9600 Baud

METEOR SERIES SPACECRAFT	FREQUENCY
[] METEOR 2-16 lactive.....	137.850 Mhz.
Note: This platform was heard 08/08/92 transmitting a dead carrier, data was not present on the signal.	
[] METEOR 2-17 Inactive.....	137.850 Mhz.
[] METEOR 2-18 Inactive.....	137.850 Mhz.
[] METEOR 2-19 Transmitting Normal APT VIS.....	137.850 Mhz.
[] METEOR 2-20 Transmitting APT VIS.....	137.850 Mhz.
Note: This platform still has problems with it's imagers.	
[] METEOR 3-2 Inactive.....	137.300 Mhz.
[X] METEOR 3-3 Transmitting Normal APT VIS.....	137.400 Mhz.
Note: This satellite is not transmitting IR during night time passes.	
[X] METEOR 3-4 Transmitting Normal APT IR.....	137.300 Mhz.
[] METEOR 3-5 Inactive.....	137.300 Mhz.
Last heard on 03/23/92 transmitting on 137.400 Mhz.	

Contributing Ground Stations: Charles Davis, Hampstead, Md., DRIG

Mark Sims, Richardson, TX., DRIG
 Dr. T. Pappan, Owosso, MI.
 Dr. Jeff Wallach, Dallas, TX., DRIG
 Geoff Perry, UK.
 Kermit Allen, Pomona, CA., DRIG

OKEAN SERIES SPACE CRAFT	FREQUENCY
[] OKEAN-1 Inactive.....	137.400 Mhz.
[] OKEAN-2 Inactive.....	137.400 Mhz.
[] OKEAN-3 Inactive.....	137.400 Mhz.

COSMOS SERIES SPACE CRAFT	FREQUENCY
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THE WEST AUSTRALIAN V.H.F. GROUP BULLETIN

SEPTEMBER 1992



The West Australian V.H.F Group (INC)
P.O. BOX 189 APPLECROSS W.A. 6163

