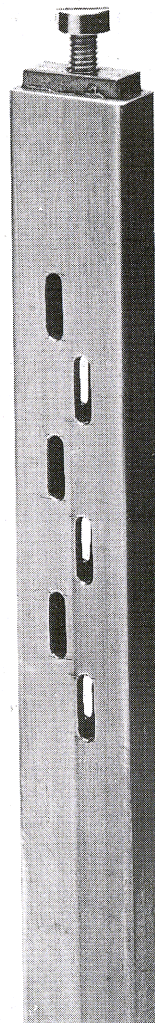
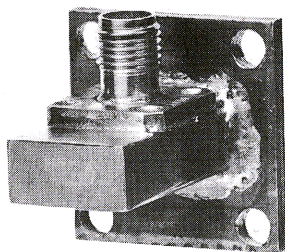


D U B U S										INFORMATIONEN FÜR UKW AMATEURE									
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HF																			
HF																			
AK																			
BK																			
CK																			
DK																			
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Please send your information about VHF, UHF – Bitte schicken Sie Ihre UKW Informationen an folgende Anschrift :
 Claus Neie, DL7QY, D-7181 Rudolfsberg 24 Phone: 07951-7418



24 GHz

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COVERPICTURE: 24 GHZ ADAPTER AND SLOTANTENNA (FOTO BY W. FILSER OTTOBRUNN)

CONTENTS:

PAGE

TECHNICAL REPORTS EDITED BY DL7QY

24 GHZ ADAPTER WG/SMA AND OMNIDIRECTIONAL SLOTANTENNA BY DK2RV.....	1
7 W TRANSISTORIZED 13 CM LINEARAMPLIFIER BY DL7QY.....	3
MS UP CONVERTER BY LABAK.....	8
TWO STAGE 5760 MHZ GAAS FET AMPLIFIER BY DL7QY.....	9
13 & 9 CM BREITBANDVERSTÄRKER AUS DUBUS 4/83 (IN DEUTSCH).....	10

TECHNICAL NEWS.....	11
MICROCOMPUTER NEWS.....	13
TROPO NEWS 2M & 70 CM.....	15
MICROWAVE NEWS.....	21
AURORA- 'THE BOUNDARY FENCE' BY G2FKZ.....	24
METEOR SCATTER ADDRESS LIST.....	33
METEOR SHOWER INFORMATION SERVICE 'MARCH TO MAY'.....	44
METEOR SCATTER NEWS.....	45
AURORA NEWS.....	47
SPORADIC E INFORMATIONS.....	48
FORM-SHEET FOR TOP LIST.....	55
MOON BOUNCE NEWS BY DF7VX.....	56
NEWS+SKEDS+COMMENTS+SUPPLEMENTS.....	61
EUROPEAN BEACON LIST (FREQUENCY SORTED).....	69
EUROPEAN BEACON LIST (COUNTRY SORTED).....	72
WORLD WIDE VHF TOP LIST.....	75
WORLD WIDE UHF TOP LIST.....	77
WORLD WIDE SHF TOP LIST.....	79
LATEST NEWS.....	81

EDITOR/REDAKTION: CLAUD NEIE; DL7QY; D-7181 RUDOLFSBERG 24. TEL: 07951/7418. JAHRESBEZUGSPREIS DM 18.-- INNERHALB DER BUNDES-REPUBLIK DEUTSCHLAND UND BERLIN WEST. ERSCHEINUNGSWEISE 4 AUSGABEN PRO JAHR. AUSLIEFERUNG 1984 AM 25.FEB. 26.MAI 25.AUG 24.NOV. DURCH ÜBERWEISUNG VON 18.--DM AUF EINES DER UNTERHALB STEHENDEN KONTEN WERDEN SIE AUTOMATISCH IN DIE BEZIEHERKARTEI AUFGENOMMEN. DUBUS IS PUBLISHED 4 TIMES PER YEAR. FOR THE ANNUAL SUBSCRIPTION RATE OUTSIDE GERMANY CONTACT YOUR HOME DISTRIBUTOR. (SEE ABOVE) ^ BW-BANK BLZ: 62231051 KONTO NR. 826406301 ODER POSTSCHECKKONTO STUTTGART NR. 164175 - 703. BITTE DEN ABSENDER NICHT VERGESSEN !

TECHNICAL R EPORTS

BY DL 7 QY

24 GHz Baugruppen

by Ulf Hülsebusch DK 2 VR

Übergang Koax - Hohlleiter

Bei der kapazitiven Ankopplung an einen Hohlleiter wird im Maximum des E-Feldes eine Sonde angebracht. Normalerweise wird im 1. Maximum angekoppelt, welches sich $\lambda/4$ vom kurzgeschlossenen Ende des Hohlleiters befindet. Bei 24 GHz wird diese Abmessung bereits so klein (ca. 5mm), daß sich konstruktive Schwierigkeiten beim Anbringen der Buchse ergeben.

Es wurde deshalb ein Übergang gebaut, der im 2. Maximum ankoppelt, 3 $\lambda/4$ (16.3mm) vom kurzgeschlossenen Ende entfernt. Die sich daraus ergebende geringere Bandbreite ist für unsere Zwecke ohne Bedeutung.. Als Einkoppelsonde dient allein der Innenleiter einer SMA Flanschbuchse. Die Bohrung durch die Hohlleiterwand (2.3mm) ist so bemessen, daß sich mit dem Innenleiter (1.27mm) der Buchse ein Wellenwiderstand von 50 Ohm ergibt.

Vergleiche mit einem kommerziellen Übergang zeigten keinen meßbaren Unterschied in der Durchgangsdämpfung.

Adapter coax-waveguide

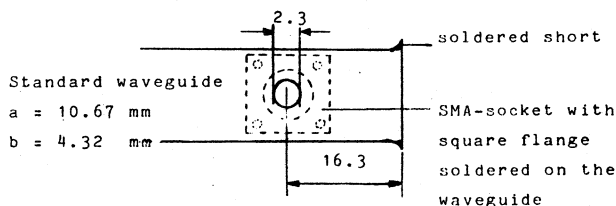
The coupling from a coaxial line to a waveguide can be realized by a capacitive probe which is brought into the maximum of the electrical field. Usually the first maximum is used which is spaced $\lambda/4$ from the short of the waveguide.

On 24 GHz this dimension is so small (abt. 5mm) that one will have difficulties mounting a SMA socket on the waveguide.

Such adapter was built with a coupling in the second maximum which is 3 $\lambda/4$ (16.3mm) spaced. The bandwidth reduction is not important for amateur radio application.

The coupling probe is the inner conductor of the SMA socket without any modification.

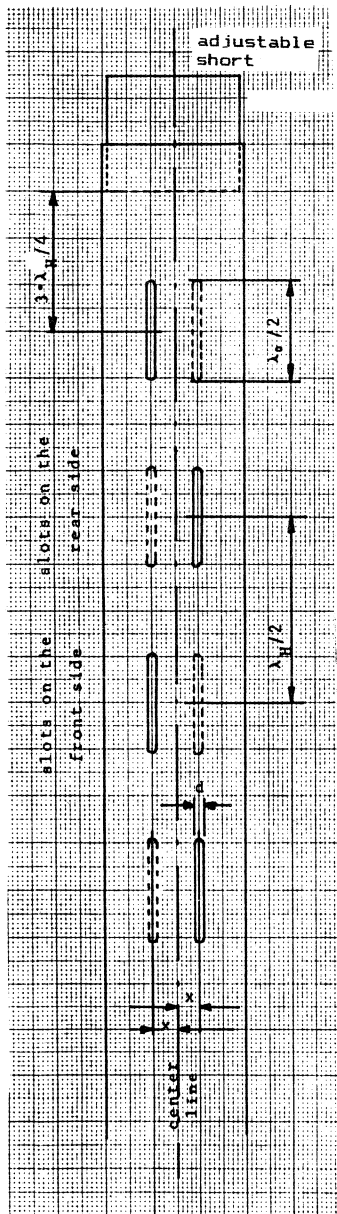
The hole which is drilled into the wall of the waveguide has a diameter of 2.3 mm and gives with the conductor of the socket (1.27mm) an impedance of 50 Ohm. Insertion loss measurement has shown that this adapter, compared with a commercial one, has the same performance.



Gestockte Schlitzantenne

Für Anwendungen mit Rundumstrahlung wurde eine gestockte Schlitzantenne entworfen. Die Polarisation ist horizontal, und der Gewinn beträgt etwa 11 dB bei insgesamt 12 Schlitzen. Das Diagramm weist in der $\pm 90^\circ$ Grad-Richtung eine mehr oder weniger starke Einschnürung auf, die abhängig von der Höhe b des Hohlleiters ist. Bei dem verwendeten Normhohlleiter beträgt sie etwa 6 dB. Je kleiner b ist, desto mehr nähert sich das Diagramm der Kreisform.

Am oberen Ende des Hohlleiters kann mit einem Kurzschluß Schieber die beste Anpassung eingestellt werden. Die Antenne wurde nach Dimensionierungsvorschriften berechnet, die von G3RPE veröffentlicht wurden.

Stacked slot-antenna

For application with an omnidirectional diagram a stacked waveguide-slot-antenna was built. The polarization is horizontal and the gain is about 11 dB for 12 slots. The diagram has in the $\pm 90^\circ$ deg.-direction a decrease in gain. It depends on the waveguide's height b . The smaller b the better the circularity. For the standard waveguide which is used, the decrease is about 6 dB. The short on the top end of the antenna can be adjusted for minimum return loss. The antenna was calculated with the equations published by G3RPE.

a = waveguide's inside width
 b = waveguide's inside height
 λ_0 = wavelength in free space
 λ_H = wavelength in waveguide
 x = Deviation from centerline
 y = slot width
 N = total number of slots
 G = gain

a = Hohlleiter Innenbreite
 b = Hohlleiter Innenhöhe
 λ_0 = Wellenlänge im freien Raum
 λ_H = Wellenlänge im Hohlleiter
 x = Abstand von der Mittellinie
 y = Schlitzbreite
 N = Anzahl der Schlitz
 G = Gewinn

Dimensions for standard waveguide
 Abmessungen von Standard Hohlleitern
 (WR42, R220, WG20, RG53)
 Frequency 24192 MHz (21 x 1152 MHz)
 $a = 10.67 \text{ mm}$ $x = 1.4 \text{ mm}$
 $b = 4.03 \text{ mm}$ $y = 1.5 \text{ mm}$
 $\lambda_0 = 12.4 \text{ mm}$ $N = 12$
 $\lambda_H = 15.24 \text{ mm}$ $G = 11.7 \text{ dB}$

$$\lambda_H = \lambda_0 / (\sqrt{1 - (\lambda_0 / (2a))^2})$$

$$i = \arcsin(\lambda_0 / (2a)) \text{ degrees}$$

$$A = 2.09 \frac{a}{b} \frac{\cos^2(90 \cos(i))}{\cos(i)}$$

$$x = \frac{a}{180} \arcsin \sqrt{1 / (NA)}$$

$$d = \lambda_0 / 20$$

7 W 2320 MHz Linear Verstärker

by DL 7 QY

Schaltungsbeschreibung:

Dieser 4 stufige Verstärker hat eine durchschnittliche Verstärkung von 30 dB. Alle Stufen arbeiten im A-Betrieb. Die Schaltung ist auf RT DURQID RTS870 (.79mm) aufgebaut, welche in einem geätzten Aluminiumgehäuse untergebracht ist. Dadurch, daß die Transistoren alle im A-Betrieb arbeiten, entsteht eine relative große Wärmeentwicklung. Selbst bei gut dimensioniertem Kühlkörper sollte man die Wärme durch einen leichten Luftstrom zusätzlich abtragen. Die elektrischen Werte gehen aus Bild 1 hervor.

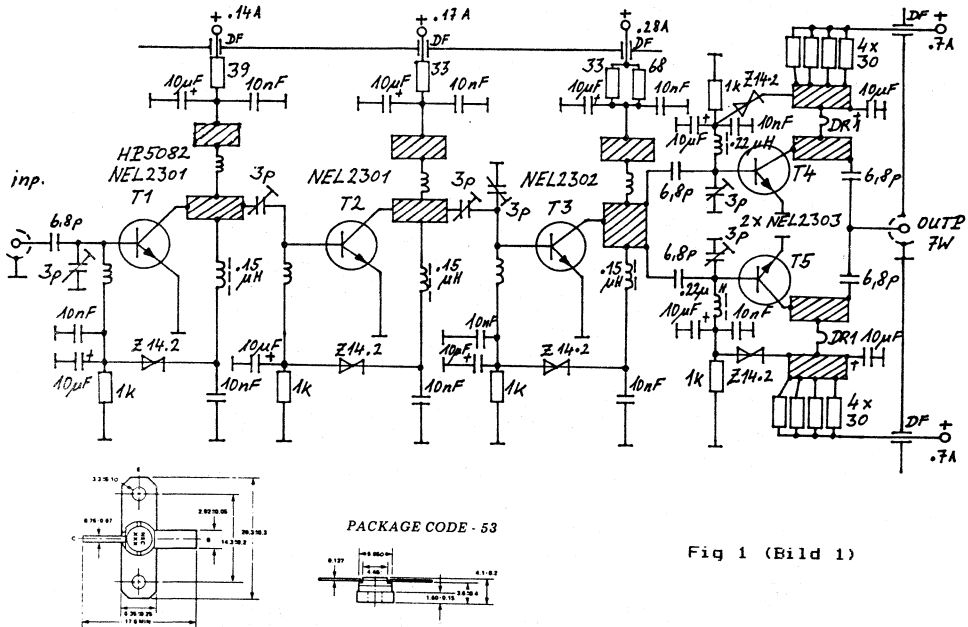


Fig 1 (Bild 1)

Verstärkung (gain) bei 20 mW input 7W output = 24 dB.
 bei 5 mW input 5W output = 30 dB.
 bei .5 mW input 1W output = 33 dB.
 bei .1 mW input .7W output = 35 dB.

Betriebstemperatur 70 Grad C. I=2A bei Ub 21.3 V oder I=1.5A bei Ub 19.5 V.

Bei der Wahl der verwendeten Transistoren können einige Unterschiede in der Verstärkung auftreten. Grundsätzlich aber können verwendet werden:

T1: HP5082 (HP), NEL230153 (NEC), FJ9208 (Fuji)

T2: NEL230153 (NEC) oder FJ9208 (Fuji)

T3: NEL230253 (NEC) oder FJ9215 (Fuji)

T4/5: NEL230353 (NEC) oder FJ9235 (Fuji)

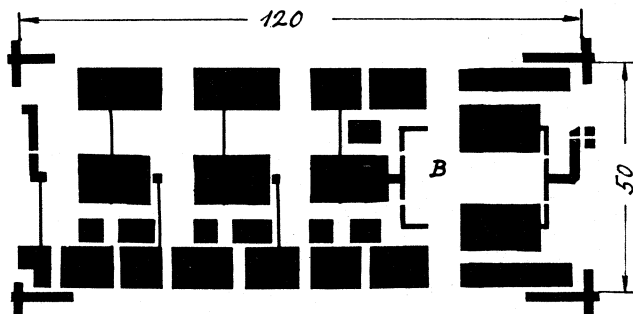
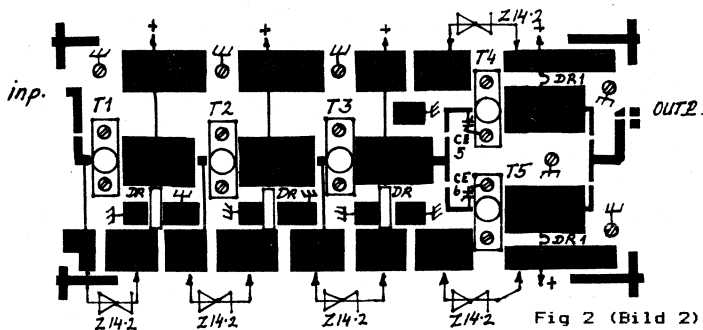
Die Versorgungsspannung kann zwischen 19 und 21.5 V variiert werden, unabhängig von den verwendeten Transistoren. Die verschiedenen Ströme der einzelnen Stufen, sowie deren Verstärkung bei entsprechenden Spannungen geht aus der Beschriftung von Bild 1 hervor.

Es ist darauf zu achten, daß die Anschlußfahnen der Transistoren, nach dem Einbau, der gleichen Höhe entsprechen, welche die Leiterbahnseite der gedruckten Platine hat. Dewegen müssen die Transistoren etwa 2 mm tief in den Boden des Gehäuses eingelassen werden.

Die Z Dioden können auch aus mehreren hintereinander geschalteten Dioden bestehen, um auf den Wert von 14.2V zu kommen.

Sämtliche Widerstände sind Metallschichtwiderstände 0.5W. Alle 10 nF Abblockkondensatoren sind keramische Vielschichttypen. Die Koppelkondensatoren 6.8 pF sollten möglichst Chips sein, deren Eigenresonanzfrequenz höher 3 GHz liegt. (Vitramon o. ä.).

Die Trimmkondensatoren CE1-CE6 sind "GHz Trimmer" von Tecelec Airtronic mit Glasdielektrikum (0.4-3pF). Es können sicherlich auch Trimmkondensatoren anderer Hersteller verwendet werden. Die Masseanschlüsse von CE1-CE6 werden durch Lötflächen an den Transistorbefestigungsschrauben hergestellt. Die Drosseln DR1 bestehen aus CuAg 1mm, eine halbe Windung mit 6mm Durchmesser. Bild 2 zeigt die Anordnung der wichtigsten Teile. Bild 3 stellt das Platinen "Layout" dar.



Alle Transistoren werden einzeln über die Durchführungsfilter DF (Erie) versorgt, somit können die einzelnen Stufenströme bequem gemessen werden. Aus den nachfolgenden Messprotokollen können die elektrischen Eigenschaften des Verstärkers entnommen werden. Bild 4 zeigt die Durchlaßkurve über einen Frequenzbereich von 1 GHz - 3 GHz. Die Referenz-Linie bedeutet 0 dB Verstärkung. Bild 5 zeigt die Durchlaßkurve von 2300 - 2400 MHz im gering komprimierten Bereich (Ausgangsleistung < 0.3 W). Bild 5 dagegen zeigt schon eine Dynamikkompression von etwa 5 dB über alles (Ausgangsleistung > 1W). Da der Verstärker ja mit 5-7 W Ausgangsleistung betrieben wird, (5mW input=5W output) liegt die Kompression zwischen 6 und 9 dB bei einer Gesamtverstärkung von etwa 30 dB, was jedoch nur eine geringe Rolle spielt, wenn man bedenkt, daß das Ansteuersignal (5 mW) noch nicht komprimiert ist.

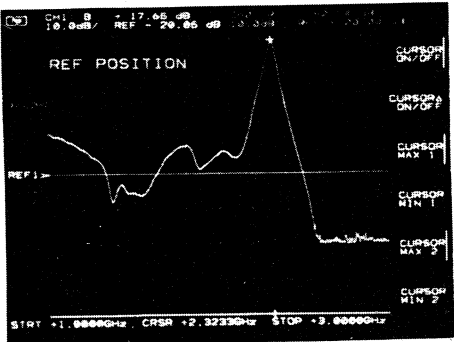


Fig. 4 shows the transmission curve from 1 - 3 GHz
Ampl. 10 dB / div.
Ref.-line1 = 0 dB gain

Bild 4 zeigt die Durchlaßkurve von 1 - 3 GHz
Referenzlinie 1 = 0 dB Verstärkung.

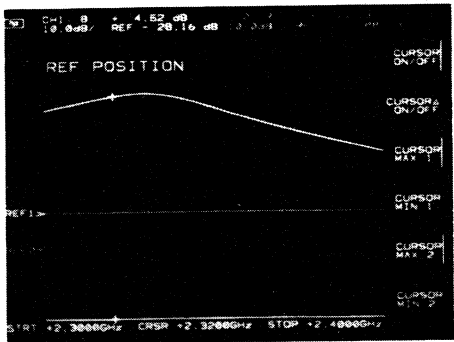


Fig. 5 shows the transmission curve from 2.3-2.4 GHz
Ampl. 10 dB / div.
Ref.-line1 = 0 dB gain

Bild 5 zeigt die Durchlaßkurve von 2.3 - 2.4 GHz
Referenzlinie 1 = 0 dB Verstärkung.

Der Abgleich

sollte folgendermaßen vorgenommen werden: Zuerst Koaxial abschließen! Dann die einzelnen Stufen auf ihre gleichstrommäßige Funktion überprüfen. Signal mit etwa 0-10 dBm am Eingang anlegen. Über Koaxabschwächer am Ausgang die Verstärkung mit CE1, CE2, CE3, CE4, CE5 und CE6 (CE5 und CE6 wechselseitig) optimieren. Als letzten Feinabgleich kann man (wegen der Streuung der Transistoren) auf der gedruckten Kollektorkapazität von T4 oder T5 eine Unterlegscheibe (6mm Durchmesser) etwas über den Rand hinausschieben um eine vorhandene Unsymmetrie der Parallel-Endstufe auszugleichen. Beim Erreichen des besten Wirkungsgrades kann die Scheibe dann in der jeweiligen Stellung fest aufgelötet werden. Hierbei handelt es sich aber nur um eine Vergrößerung der Ausgangsleistung im Bereich von < 0.2 dB. Die verwendeten Transistoren und die gedruckte Platine sind bei DL7QY erhältlich. NEL230153 168,--DM, NEL230253 202.40 DM, NEL230353 276,--DM.

Ich selber verwende diesen Verstärker seit ca. einem halben Jahr und treibe damit eine 2C39BA mit einer Ausgangsleistung von 55W ohne irgendwelche Schwierigkeiten.

Circuit description:

E.

This 4 stage linear amplifier gives a average gain of 30 dB. All stages operating in linear (A) mode. The PCB is made from RT DUROID RT5870, mounted in a alumina box. Because the transistors operate all in linear mode, heavy heatdevelopment arises from the high quiescent current produced by the transistors. A heatsink of acceptable size, mounted on the backside of the box, is normally sufficient, but an additional air-current is recommendable. The operating temperature should not exceed 75 deg. C. The circuit diagram is shown in Fig.1.

Using transistors from different manufacturers, differences in their gain can appear. Generally following transistors can be used: (see page 3). The supply voltage can vary from 19 to 21.5 V, without taking care of which types are used. The different currents of stages shows Fig. 1.

Pay attention to that the transistor terminations height is similar to the upper side of the PCB. Therefore the transistors must be imbeded in (abt 2mm) the bottom plate of the box. To realize the Z-voltage (14.2V), series connection of several diodes can be used.

All used resistors are metal layer types 0.5W dissipation. All 10 nF blocking capacitors are multilayer ceramic types. As coupling capacitors should be used chips only if their selfresonating-frequency is higher than 3 GHz (Vitramon or ATC). The variable capacitors CE1-CE6 are "GHz Trimmer" factured by Tecelec Airtronic (0.4-3 pF). Surely other factured capacitors can be used. The groundterminations from CE1-CE6 should be connected by soldering lugs on the transistormount screws. The chokes DR1 are made of CuAg 1mm diameter, 1/2 turn of 6mm diameter. Fig. 2 shows the configuration of the most important parts. Fig. 3 shows the PCB layout.

All transistors are feeded via lead-through filters making single stage current measurements very easy. Fig. 4 and 5 show the transmission curve.

The adjustment procedure

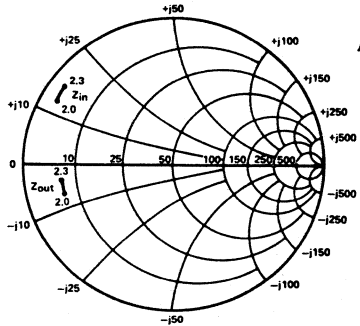
should be carried out as follows: First, connect a 50 Ohm load on the outup socket. Then checking the single stages of their DC function. Driving the input with abt. 0-10dBm. Via coaxattenuator on the output optimizing the gain with CE1-CE6 (CE5 and CE6 mutual). Because the difference in collector capacities of the final stage transistors (parallele use), adjustment of the printed capacities on PCB may be necessary. Place a washer more or less beside one of the printed capacities for the best gain of the stage. This adjustment effects a difference of maximal 0.2 dB.

Myself I use discribed amplifier to drive a 2C39BA which produces 55W rf without any trouble since half a year now. 73 es hope to work you soon on 13 cm, DL7QY.

Technical data of the used NEC transistors. Technische Daten der benutzten NEC Transistoren.

ELECTRICAL CHARACTERISTICS(T_a-25°C)

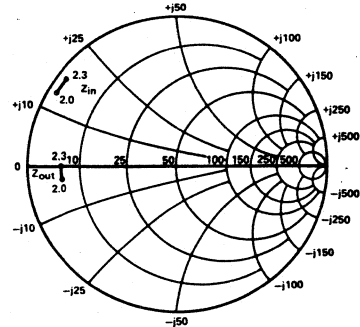
NEL PART NUMBER PACKAGE CODE			NEL2301 20,53,54,57,63,97			NEL2302 20,53,57,63,97			NEL2303 20,53,57,63,97		
SYMBOL	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
BV _{CBO}	Collector-Base Breakdown Voltage at I _E = 0, I _C = 1.0mA I _C = 2.0mA I _C = 4.0mA	V	45			45			45		
BV _{CEO}	Collector-Emitter Breakdown Voltage at I _g = 0, I _C = 2.5mA I _C = 5.0mA I _C = 10.0mA	V	20			20			20		
BV _{EBO}	Emitter-Base Breakdown Voltage at I _C = 0, I _E = 0.5mA I _E = 1.0mA I _E = 2.0mA	V	3.0			3.0			3.0		
I _{CBO}	Collector Cutoff Current at V _{CB} = 30V, I _E = 0	mA			0.25			0.5			1.0
I _{EBO}	Emitter Cutoff Current at V _{EB} = 2V, I _C = 0	mA			0.25			0.5			1.0
h _{fe}	DC Forward Current Gain at V _{CE} = 5V, I _C = 100mA I _C = 200mA I _C = 400mA		15	40	120	15	40	120	15	40	120
C _{ob}	Output Capacitance at V _{CB} = 20V, f = 1.0MHz, I _E = 0	pF		1.2	2.0		2.4	4.0		5.0	8.0
R _{th(l-c)}	Thermal Resistance	°C/W			16			10			6
P _T	Total Power Dissipation (T _C = 25°C)	W			11			18			29



NEL230153 LARGE SIGNAL IMPEDANCES

FREQUENCY	Z _{in}	Z _{out}
2.0	3.3 + j13.5	6.6 - j6.5
2.3	3.3 + j16.8	6.6 - j3.6

LARGE SIGNAL IMPEDANCES FOR THE NEL230153
AT V_{CE} = 15V, I_C = 200mA, P_{out} = 29dBm



NEL230253 LARGE SIGNAL IMPEDANCES

FREQUENCY	Z _{in}	Z _{out}
2.0	2.0 + j14.0	7.0 - j2.5
2.3	2.0 + j17.0	7.0 + j0

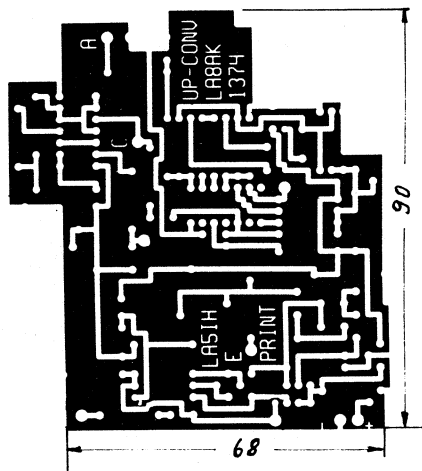
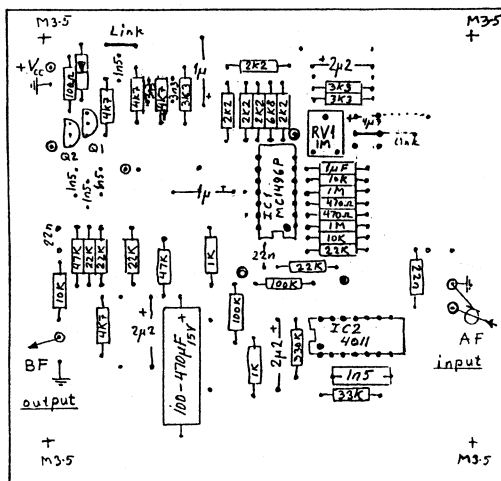
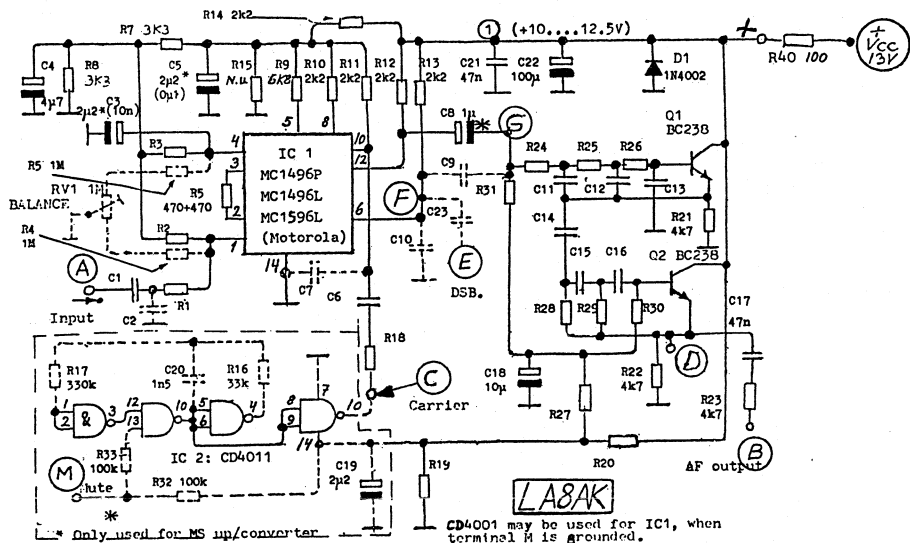
LARGE SIGNAL IMPEDANCES FOR THE NEL230253
AT V_{CE} = 15V, I_C = 350mA, P_{out} = 32dBm

Up converter for MS Use

by LA 8 AK

LABAK writes: PCB will not be distributed from me any more. I estimate that 80-100 amateurs use the circuit now. Several amateurs in Germany have requested that a pattern should be published.

LABAK schreibt: Die gedruckte Platine wird von mir nicht mehr hergestellt. Ich nehme an, daß 80-100 Amateure die Schaltung jetzt benutzen. Einige Amateure in DL meinen, daß das Layout mit Lageplan veröffentlicht werden sollte.



Two Stage 5760 MHz GaAs FET Amplifier

by DL 7 QY

This amplifier is usable as preamp. as well as smallpower amplifier. Maximum rf output on 5760 MHz is abt. 60 mW at 24 dB gain. Best noise figure is adjustable with the open stub in the input circuit (min noise figure abt. 1.5 dB). If the amplifier is adjusted for highest gain, the noise figure increases to about 4 dB. The gates are driven by a voltage converter IC ICL7660 (Intersil). Normally gate voltage should stay before the supply voltage reaches the drain of transistor. In this case it isn't necessary because the voltage converter operates already with very low supply voltage and the negative output voltage arrives the gate in time because the RC combination 15 Ohm and 10 uF. For lowest noise figure adjust the drain current to 10 mA of each transistor. When operating as small power amplifier increase the current to 20-30 mA. The variable coupling capacitor is home brew, a silverplated copper band (3mm x 7mm x .5mm) is soldered on the printed transmission line gate T2. Take care under adjustment of this capacitor, because you may not touch the drain transmission line from T1 (4 V positive voltage!). The best protection under adjustment is to isolate the drainline T1 using a thin Teflon foil. Varying of this capacitor moves the center transmission frequency. As PCB material is used DUROID RT5870. Transistors NE72089 are obtainable from DL7QY (74,--DM each). Fig 1 shows the circuit diagram. Fig. 2 shows the PCB layout and Fig 3-5 the transmission curves and gain characteristics.

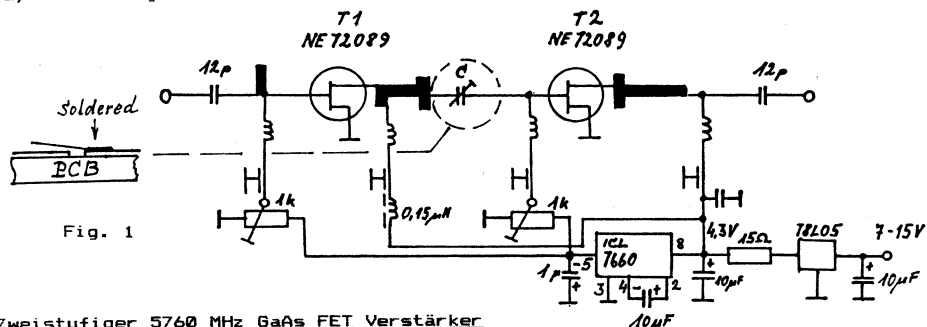


Fig. 1

Zweistufiger 5760 MHz GaAs FET Verstärker

Dieser Verstärker kann sowohl als Empfangsvorverstärker als auch im Kleinleistungsbereich eingesetzt werden. Maximaler HF Output ist 60 mW bei 24 dB Verstärkung. Die niedrigste Rauschzahl kann durch Variieren der Länge des Stubs im Eingangskreis erreicht werden (Beste Rauschzahl ca. 1.5 dB). Ist der Verstärker für größte Ausgangsleistung und Verstärkung eingestellt, erhält man noch ein Zusatzrauschen von ca. 4 dB. Die Gatespannung wird mit einem Spannungskonverter IC ICL7660 (Intersil) erzeugt. Normalerweise soll die Gatespannung immer vor der Drainspannung anliegen, ist aber in diesem Fall unkritisch, weil der Spannungskonverter schon mit sehr niedriger Versorgungsspannung arbeitet und während des Hochfahrens der Betriebsspannung über die RC Kombination 10 uF/ 15 Ohm schon beim Ladevorgang eine negative Spannung am Ausgang erzeugt. Für beste Rauscheigenschaften wird ein Drainstrom von 10 mA bei jedem Transistor eingestellt. Bei Kleinleistungsbetrieb 20-30 mA. Der variable Koppelkondensator wird mit einer Kupferfahne realisiert (3mm x 7mm x .5mm), welche auf der Leiterbahn Gate T2 festgelötet wird. Achtung, beim Abgleich darf die Fahne die gegenüberliegende Leiterbahn von Drain T1 kommend NICHT berühren (4V + Spannung). Zur Sicherheit sollte beim Abgleich mit einer dünnen Teflonfolie die Leiterbahn isoliert werden. Eine Veränderung dieser Kapazität verschiebt die Mittenfrequenz des Durchlaßbereiches des Verstärkers.

Die Platine besteht aus DUROID RT5870. Die Transistoren NE72089 können bei DL7QY bezogen werden (74,--DM/Stück). Bild 1 zeigt das Schaltbild. Bild 2 die

gedruckte Platine und Bild 3-5 die Durchlaßkurven.

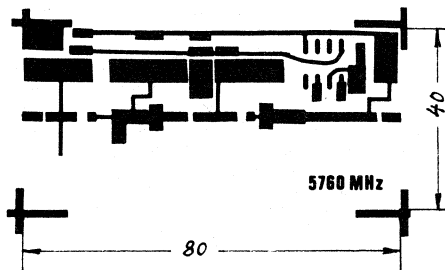


Fig. 2 layout

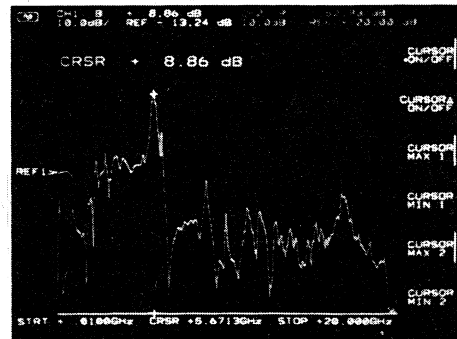


Fig. 3 Transmission curve
10 MHz - 20 GHz.

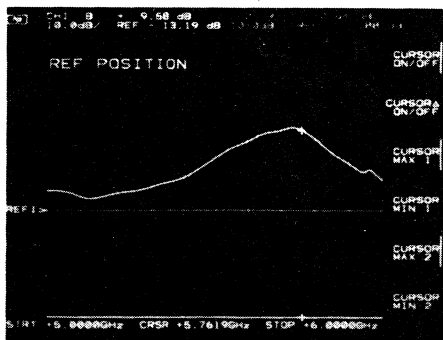


Fig. 4 Transmission curve
5 - 6 GHz.

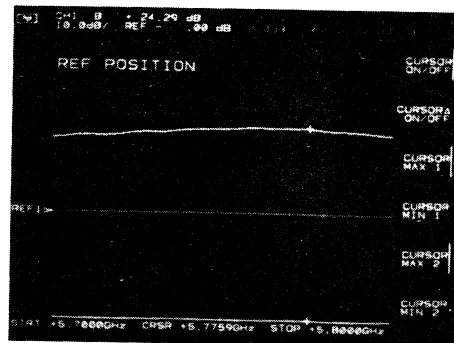


Fig. 5 Transmission curve
5.7 - 5.8 GHz

Breitbandverstärker für das 13 & 9cm Band

Der in DUBUS 4/83 Seite 269 beschriebene Verstärker kann als Empfangsvorverstärker oder Kleinleistungsendeverstärker verwendet werden. Die Schaltung arbeitet mit einem HP Transistor HXTR3101 (Bei DL7QY für 15,-DM erhältlich). Der Verstärker verhält sich völlig unkritisch im Betrieb. Die Leiterplatte besteht aus DUROID RT5870 0.79mm stark. Wenn der Verstärker als Empfangsvorverstärker eingesetzt werden soll, wird der Kollektorstrom auf 10 mA eingestellt. Dann hat der Verstärker bei 2300 MHz ein Zusatzrauschen von etwa 3 dB bei ca. 10 dB Verstärkung. Auf 3456 MHz 4 dB Zusatzrauschen und 9 dB Verstärkung. Als Kleinleistungsverstärker wird der Ic auf etwa 20 mA eingestellt. Die maximal erzielbare Ausgangsleistung beträgt etwa 35 mW auf 13cm oder 30 mW auf 9cm. Bild 1 zeigt die technischen Daten des HXTR3101, Bild 2 den Schaltplan, Bild 3 das layout und Bild 4 und 5 auf Seite 301 die Durchlaßkurve.

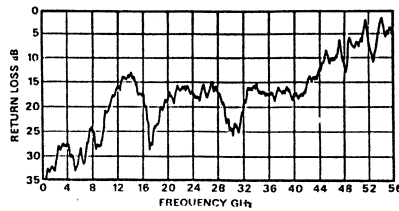
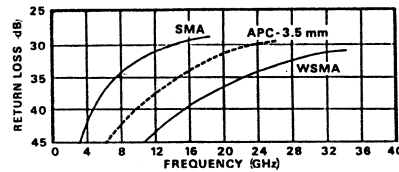
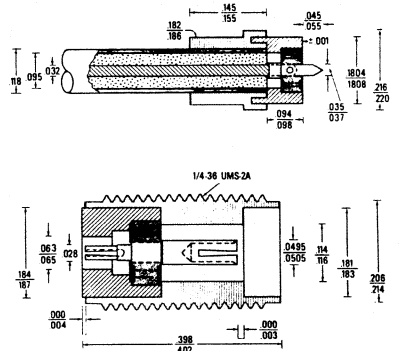
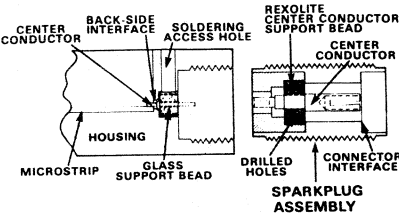
Vy 73 de DL7QY

TECHNICAL

NEWS

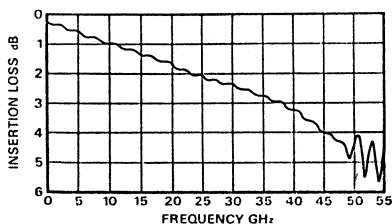
BY DL 7 QY

New K Connector Extend the Use of Coax Above 40 GHz



A new era begins

The evolution of coaxial devices that operate at higher and higher frequencies continues. Recent advances produced the APC 3.5 and WSMA devices, which operate mode-free to about 34 GHz. However, the present requirements in electronic warfare and communications mandate the use of coaxial devices operating beyond 40 GHz. The broadband nature of coax— as well as its small size and application flexibility— makes a 46 GHz coaxial system highly desirable, especially when it is durable, repairable, and compatible with existing lower frequency systems. These durable 2.92mm devices are field repairable and compatible with 3.5mm SMA, APC 3.5, and WSMA coaxial devices. These new connectors and cable extend the coaxial state-of-art to 46 GHz. A cross sectional drawing of the new connector is shown beside. The support for the center conductor is a Rexolite bead with holes drilled through it to reduce the effective dielectric constant to 2.0. The bead provides lateral, axial, and rotational stability for the center conductor without introducing a large reflection or an unwanted mode. The geometry of the back side interface is critical because it connects very fragile devices, such as the 10 mil wide center conductor on 10 mil alumina microstrip. The use of a glass hermetic bead as the support element ensures the achievement of desired RF performance and mechanical strength. The bead has a 12 mil diameter center conductor and is made of Corning 7070 glass, which has a dielectric constant of 4.0. Because no suitable coaxial cable was available for use with the K connectors, a new semirigid cable was custom designed. The center conductor is made of very soft copper with a 0.032 inch (0.081cm) diameter, allowing a bend radius of .25 inch (0.64cm) without displacing the center conductor. The outer conductor is nickel-plated solid copper, 0.118 inch (0.299cm) in diameter. The dielectric is microporous teflon, a choice which achieved a theoretical TE11 mode of 46 GHz. The cable connectors were designed to achieve the lowest loss, the best reflection characteristics and the least amount of heating during assembly. An innovative cable assembly design achieved specifications of 1.35 SWR and 1.0 dB loss per foot at 40 GHz. A failure analysis of SMA and APC 3.5 connectors indicated that the female pin



Typical Insertion Loss of a 3-foot long 0.118 in. diameter
Serrigid Cable Assembly

could be damaged by the male pin during mating whenever the two were not in close axial alignment. In the K connector design, this problem has been solved. The length of the male pin is now shorter so that, as the male and female come together, the outer conductors align before contact is made between the center conductors. If a connector fails due to accident, abuse, or wear, the sparkplug assembly is easily replaced in the field. To operate at 46 GHz, the K connector had to be smaller than the SMA, APC 3.5 and WSMA connectors. But it also had to be compatible with them.

Neuer K stecker ermöglicht koaxiale Übertragung bis über 40 GHz

Eine neue Zeit beginnt.

Die Entwicklung von koaxialen Bauteilen auf immer höheren Frequenzen schreitet voran. Nach der APC 3.5 (bis 26 GHz) Steckverbindung gibt es jetzt die WSMA Steckverbindung, welche "Mode-Frei" bis 34 GHz arbeitet. Die Nachfrage in der Nachrichtentechnik nach höherfrequenten Koaxialbauteilen, bis über 40 GHz, steigt ständig an. Die Vorteile der Breitbandigkeit koaxialer Systeme, wie die geringen Abmessungen, Flexibilität und nicht zuletzt die Servicefreundlichkeit, werden immer größer. Ebenso die Kompatibilität zu niedrigeren Frequenzen. Der neue K Stecker ist kompatibel zum SMA (3.5mm) und APC 3.5 Stecker, ebenso das WSMA Coaxialzubehör. Dieser neue Stecker wird zum Standard bis 46 GHz Anwendungen. Eine Querschnittsdarstellung finden Sie auf vorheriger Seite. Bei der Einbauflangebuchse besteht die Halterung des Innenleiters aus einer Rexolite Perle, in welche Löcher gebohrt sind, um das Er auf 2.0 zu verkleinern. Die Perle gewährleistet außerdem Stabilität in allen 3 Dimensionen für den Innenleiter ohne das SWR zu verschlechtern oder unerwünschte Moden entstehen zu lassen. Die Einbaubuchse ist für Aluminiumoxidsubstrat Platinenmaterial ausgelegt; die Innenleiterausführung an der Rückseite ist sehr vorsichtig zu behandeln, da Abbruchgefahr besteht. Die Durchführungsperle im Stecker hat ausgezeichnete HF Eigenschaften bei guter mechanischer Stabilität und besteht aus Corning 7070 Glas mit einem Er von 4.0. Weil bisher kein geeignetes Koaxkabel zur Verfügung stand, wurde ein neues Festmantelkabel entwickelt mit einem Innenleiterdurchmesser von 0.81 mm, was einen minimalen Biegeradius von 6.4 mm gestattet, ohne den Innenleiter zu verformen. Der Außenleiter besteht aus vernickeltem Kupfer mit 2.9 mm Durchmesser. Das Dielektrikum aus Mikrofaser Teflon, womit eine theoretische Auswahl bis zum TE₁₁ Mode by 46 GHz erreicht werden kann. Die Kabelstecker sind auf niedrigste Durchgangsdämpfung entwickelt worden, mit besten Reflexioneigenschaften und der geringst nötigen Erhitzung bei der Montage. Dieses neuartige Kabel erreicht bei 40 GHz ein SWR von 1.35 und eine Dämpfung von 1 dB bei 30cm Länge. Obtainable from WILTRON, erhältlich von WILTRON, PO Box 7290, CA 94042-7290 USA.

36 GHz Double-balanced Mixer

offers Honywell. Model 1836 TF is a coaxial double-balance mixer designed to cover the octave band at 18 to 36 GHz. It has a fullband conversion loss of typically 7 dB, and LO-to-RF isolation of at least 17 dB. The IF bandwidth is typically 7 GHz.

1W 9dB at 2300 MHz Class A low cost Transistor from Acrian Inc.

Touting high gain, high frequency cutoff and low cost as its major advantages, Model 80143 microwave linear npn power transistor. Guaranteed power gain is 9 dB at 2.3 GHz. 4.2 GHz cutoff frequency, typ. BV_{ceo} is 20V with I_c equal to 20 mA and BV_{cbo} at 2 mA is 45V. Ruggedly designed, the part withstands infinite-VSWR loads and junction temperatures to 200 deg.C.

MICROCOMPUTER NEWS

BY DL 7 QY

World Wide QTH Locator Calculation

by DL 7 QY

```

10 INPUT"OLD EUROPEAN QTH LOCATOR":A$
20 FORI=1TO5:A$(I)=MID$(A$,I,1):NEXT
30 B=ASC(A$(1))-65:C=ASC(A$(2))-64
40 D=VAL(A$(3)):E=VAL(A$(4))
50 F=ASC(A$(5))-64
60 IFB>21THENB=B-26
70 IFC>21THENC=C-26
80 IFE=0THENE=10:D=D-1
90 G$="1222100001":H$="0012221001"
100 G=VAL(MID$(G$,F,1))
110 H=VAL(MID$(H$,F,1))
120 U=40+C-(D/8)-(H/24)-.020833
130 V=(2*B)+(E/5)+(G/15)-.169
140 GOTO210
150 A=V:GOTO170
160 A=U
170 B=(A-INT(A))*60
180 C=(B-INT(B))*60
190 G=INT(A):M=B:S=C
200 RETURN
210 GOSUB150:G=G+180*M/60
220 N=INT(G/20):T$(1)=CHR$(N+65)
230 T$(3)=CHR$(INT((G-20*N)/2)+48)
240 IFINT(G)=2*INT(G/2)THENEV=1
250 IFM>0ANDEV=0THENM=M+60
260 IFM<0THENM=120+M:IFEV=1THENM=M-60
270 T$(5)=CHR$(M/4.99+65)
280 GOSUB160:G=G+90*M/60:M=M+S/60
290 N=INT(G/10):T$(2)=CHR$(N+65)
300 T$(4)=CHR$(INT(G-10*N)+48)
310 IFM<0THENM=60+M
320 T$(6)=CHR$(INT(M/2.5)+65)
330 FORN=1TO6:Q$=Q$+T$(N):NEXT:EV=0
340 PRINT"INTERNATIONAL QTH LOCATOR: "Q$:Q$=""
```

1.) E. A program which converts the old European QTH Locator (E-QTH) to the new world wide QTH Locator (WW-QTH). The program converts within following European area: west vertical "W" to east vertical "V" and north "U" to south "V". You can change this field by modifying the value 21 in line 60 into another integer value for longitude and in line 70 for latitude. Varying by 1; the whole calculationfield will move of one square. The program is written in common BASIC without any special commands. Calculation example: FJ61e = JN59BD.

D. Das Programm konvertiert innerhalb folgenden Bereiches von Europa: West vertikal "W" bis Ost vertikal "V" und Nord "U" bis Süd "V". Diese Fläche kann auch verändert werden, indem der Wert 21 in Zeile 60 in einen anderen Integer Wert verändert wird (Länge), oder Zeile 70 für Breite. Eine Änderung um 1 verschiebt das gesamte Berechnungsfeld um ein Großfeld. Das Programm ist in normalem BASIC, ohne Spezial Befehle geschrieben. Berechnungs Beispiel: FJ61e = JN59BD.

2.) E. A program to calculate the distance using the WW-QTH locator. This program calculates the distance between two locators world wide by using the well known cosine law $\cos(a) = \cos(B) \cdot \cos(C) + \sin(B) \cdot \sin(C) \cdot \cos(a)$. Calculation Example: JN59BD to J062QL = 435 km or JN59BD to FN30DR = 6319 km.

D. Ein Programm zur Berechnung der Entfernung zweier Standorte weltweit. Die Berechnung ist abgeleitet aus dem Seiten Kosinus Satz wie o. a. Berechnungs Beispiel JN59BD bis J062QL = 435 km oder JN59BD bis FN30DR = 6319 km.

```

10 P=PI/180:F=40000/(2*PI)
20 PRINT"OWN WW QTH LOCATOR":INPUTQE$:QF$=QE$
30 GOSUB90:LE=LF:BE=BF
40 PRINT:INPUT"WW QTH LOCATOR":QF$
50 GOSUB90:GA=LF-LE:B=BF-BE
60 N=SIN(BE)*SIN(BF)+COS(BE)*COS(BF)*COS(GA)
70 DX=INT((-ATN(N/SQR(1-N*N)))+PI/2)*F+.5)
80 PRINT"DISTANCE= "DX" KM":GOTO40
90 FORN=1TO6:T$(N)=MID$(QF$,N,1):NEXT
100 LF=(ASC(T$(1))-65)*20-180+VAL(T$(3))*2+(ASC(T$(5))-65)/12+1/24
110 BF=(ASC(T$(2))-65)*10-90+VAL(T$(4))+(ASC(T$(6))-65)/24+1/48
120 LF=LF*P:BF=BF*P:RETURN
```

```

10 PRINT"ENTER LONGITUDE:"
20 GOSUB180:G=G+180+M/60
30 N=INT(G/20):T$(1)=CHR$(N+65)
40 T$(3)=CHR$(INT((G-20*N)/2)+48)
50 IFINT(G)=2*INT(G/2) THENEV=1
60 IFM>0 AND EV=0 THENM=M+60
70 IFM<0 THENM=120+M:IFEV=1 THENM=M-60
80 T$(5)=CHR$(M/5+65)
90 PRINT"ENTER LATITUDE:"
100 GOSUB180:G=G+90+M/60:M=M+S/60
110 N=INT(G/10):T$(2)=CHR$(N+65)
120 T$(4)=CHR$(INT(G-10*N)+48)
130 IFM<0 THENM=60+M
140 T$(6)=CHR$(INT(M/2.5)+65)
150 FORN=1 TO 6:Q$=Q$+T$(N):NEXT
160 PRINT"INTERNATIONAL QTH LOCATOR: "Q$
170 END
180 INPUT"DEGREE:":G
190 INPUT"MINUTES:":M
200 INPUT"SECONDS:":S:RETURN

```

3.) E. A program to calculate the own WW-QTH Locator. To calculate your own WW-QTH locator you need your geographical coordinates longitude and latitude. Pay attention to: All west- longitudes as well as all south latitudes must be entered as minus values! East longitudes and north latitudes as positive. Calculation example for New York: long.= -73 deg, -45 min, 00 sec and lat.= 40 deg, 44 min, 00 sec. WW-QTH= FN30DR or for Munich long.= 11 deg, 54 min, 56 sec and lat.= 48 deg, 18 min, 07 sec. WW-QTH= JNS8WH.

D. Ein Programm zur Berechnung des eigenen WW QTH- Kenners. Um den eigenen Kenner zu ermitteln benötigen Sie Ihre geographische Länge und Breite. Achtung: Alle

Standorte mit westlicher Länge und südlicher Breite werden als negative Zahlen eingegeben, östliche Länge und nördliche Breite als positive Zahlen. Berechnungs Beispiel für New York: Länge= -73 Grad, -45 Min, 00 Sek and Breite= 40 Grad, 44 Min, 00 Sek. WW-QTH Kenner= FN30DR oder für München Länge= 11 Grad, 54 Min, 56 Sek und Breite= 48 Grad, 18 Min, 07 Sek. WW-QTH Kenner= JNS8WH.

Literaturhinweise/Referenzen:

MC 9/1983 S.61 Neues QTH Kenner System v. Lothar Sack

CQ-DL 10/1980 S.487 Weltweiter Standortkenner von DL7GS, A. Schlendermann

Programmieren von E-PROMS für Rufzeichenmaschinen

von DK 2 RV

Nachdem der Verfasser bei der manuellen Codierung viele PROMS für Rufzeichenmaschinen falsch programmiert hat, entstand ein BASIC- Programm. Es wandelt Klartext in Morsezeichen bzw. in Bitmuster und weiter in hexadezimale Zahlen um. Für die Programmierung des PROMS wird eine Tabelle mit Adresse und Daten im Hexcode ausgedruckt.

Der Zeichensatz umfaßt die Buchstaben A-Z, die Ziffern 0-9 sowie die Zeichen .,/?= Blank. Die Zeichen < und > haben eine Sonderfunktion (siehe unten).

Das BASIC Programm ist lauffähig auf einer Siemens 6.610. Für das Umschreiben auf andere Rechner werden nachfolgend die wichtigsten Aufrufe erklärt. Das \$ Zeichen wird bei dem verwendeten Drucker mit dargestellt. HEX (I) erzeugt einen String, der den hexadezimalen Wert des dezimalen Argumentes I darstellt. Besonderheiten: Mit dem Zeichen > kann ein Bit zu 1, mit dem Zeichen < zu 0 gesetzt werden. Dies ist durch das Konzept meiner Rufzeichenmaschine notwendig, wo während der Pause ein Dauerträger gesendet wird und das erste Bit des Datenwortes mit der Adresse 0 ausgelesen wird.

Am Ende des Textes wird eine Zeile mit FFhex eingefügt. Diese Kombination kommt bei Telegrafie nicht vor und dient der Erkennung des Textendes.

Listing erhältlich bei DL7QY gegen Einsendung eines Freiumschlages DIN A 5.

E. The above discribed BASIC program (listing obtainable from DL7QY, send 2 IRC's) converts text into a hex (bit pattern) code to program a E-PROM usable for automatic CW sign mashines driving beacons a.s.o.

RY DL 7 QY

TROPIC NEWS

and Y30CLA GO.

On Sept. 26th SM7JUQ GP, Y23SB FN, DL9RBK GJ, OZ9ZI GP, OK1SM/p GJ and SM7KNK HP. tks fer info Bernard.

F6CJG/p (BF21j) wkd via Tropo on July 2nd 1983 at 2200 DG6KW FM53d 56 57, 2320 DF5AR FM58e 55 55, 2355 OK1KVK/p GK44d 52 58. On July 3rd at 0139 GW4CZ/p YN64d 55 55, 0209 G4SHC/p YN29d 55 52. On August 13th at 0830 F1DPU/IS0 EY03g 59 59. On Sept. 3rd at 1613 EA5RCG ZY18e 53 59, 2125 EA1QJ VD55h 51 54, 2117 EA1TA VD59h 51 55. On Sept. 4th at 0055 G4APA/p ZD48e 51 53. On Sept. 24th at 0744 G3ZNZ Z079f 53 54. On Sept. 26th at 0917 OZ1BVW EP48a 56 55, 0922 SM7KNK HP32c 529 57, 0926 OZ1F6P EQ67a 529 55, 0927 OK1MG HK71a 56 59, 0932 OZ1CFT HP74b 59 59, 0946 OZ3NH EQ70a 52 55, 0954 OZ6ZR FQ61c 57 55, 0955 OZ1GMP FQ61c 53 55, 1544 Y22QG FM79h 55 57, 1640 Y24XN GK33e 55 55 and 1725 DL8LAF EQ05e 53 58. On Oct. 22nd at 0953 G140PH X033j 59 59, 0954 G16ATZ X031j 55 55, 0958 GW3NYY XL40b 59 59, 0959 G3ZNZ Z079f 59 59 and 1139 GM8YJU Y005a 55 52.

F6FLV (BI13h) wkd via Tropo on July 15th LA5XAA CS39j and PA000M JQ01c. On July 28th Y30LAE HNS3j. On July 30th GM8TIC/p YP20j. On Aug. 7th F1DPU/IS0 EA22e. On Aug. 11th SM6JLZ GS68j and SM5AKU HT80f. On Aug. 29th LA6ZW ESS4h. On Aug. 30th OZ1CFO ER79j, LA9UX FU76f and LA9ZY FT44j. On Sept. 3rd EA1EH/p YB09a and EA2ALW/p ZD63a. On Sept. 4th EA3XB BB05f. On Sept. 8th EA1ZK YD41b. On Sept. 18th F1F80/p AC08d. On Sept. 24th EA4DR/1 WD40h and OE3WRS HH09a. On Sept. 25th LA9LS D670d, OZ1FOW G002a, Y21TC GN37j, Y2480/A GM49j, OK1HM/p GJ28h, SM7EBI HR12f and SP2FAV J076f. On Sept. 26th EA2BKB YC17a, EA2AGZ ZB02j, OE5FPL/5 G177a and OE5EFM HI42g. On Oct. 2nd F3TE/p ZC07h. On Oct. 16th EI8EF VO49j, EI9FE VM49b, EI3V WNS9d, G14GVS X021b, GM80EG YQ46g and F1FBE AD28c. On Oct. 17th SM6HDY FS80g, SM6CEN FR40b and SM6KTO GR53f. On Oct. 20th Y31SM/A GL53g, OK2KFA JJ33g, OK1KRA HK72a and OK1KKH/p HJ06c. On Oct. 21st OK2KZR/p IJ32j. On Oct. 22nd GM8YJU Y005a, OZ4PY EQ54h, OZ4RW EP14g, DL4LG EO59h, OZ1IVW FQ41h, OZ1IUD FP60c, DC5BT/A F051e, SM7NJH GQ63b, OZ3SW GP11j, SK7HW HQ05e, OZ1FYW HP76h, SM5MIX HS66g, SM7OS IQ22a. On Oct. 31st EI9Q WM65d. On Nov. 1st OE2CAL GH16c. On Nov. 24th F1EYB CD45j. On Dec. 2nd G4SWT ZP73d, G4KUX Z021e and EA1TA VD58b. On Dec. 3rd EB1MS/p XC01b. On Dec. 4th F9HS BD30e. tks fer info Jean-Pierre.

G3PBV (YK32b) wkd via Tropo over 1000km on Aug. 28th OZ4RW EP. Aug. 29th LA6ZW ES, SM6GWA FS, SM4AIQ HT and SM4CJK GT. On Sept. 23rd HB0BNP EH. On Oct. 22nd OK1KHI/p HK. tks fer info Dave.

HB0POM (EH68c) wkd via Tropo over 800 km on Sept. 23rd: OZ1IRM FO, OZ9SL FF, OZ1GTE FP, OZ1GDZ FO, DL5LAH FO, OZ1QZ EP, SM7MKT GP, SM6JWH GQ, DD0LO FO, SM6AFH GQ, Y22IC GN, DC4LZ EO, SM6AEK GQ, OZ1AXM EP, SM6EOC GQ, OZ1FTO GP, OZ1IWT FQ, Y21TC GN, OZ2VM GP, DH3LAM EO, DH1LAC FO, DB3LZ FO, OZ1F6P EQ, OZ1EHW FO, DD9LR FO, DC4LI FO, DC1LZ FO, OZ1EXY GQ, SM7LAD GP, OZ1IWX FQ, OZ1IJL EP, OZ9KT EO, OZ8ZT EP, DD4LG FO, OZ1BVW EP, SM6JDO GR, OZ1EKI EP, OZ1OF EQ, OZ1ELF EP, SM7CMC HQ, OZ1FRH EQ, OZ1AMB FP, SM7LXV GP, OZ3ZW FO, OZ9FW GP, SM70BV GP, OZ1FIT GP, DG3LAS EO, DHSLAR EO, DB4LT EO, Y35YC HN, OZ1IVW FQ, SM7LHI GP, SM6NOE GR, SM7GEP HR, DJ9OI EO, SM5CBN HS, SM5MIX HS, SM5MGW HT, OZ1EYI GQ, OZ1FTY GP, OZ1DLD EP, OZ1FOW GQ, OZ1ASL FO, OZ5GF FO and mni stations in EN, FN, DM, EM, FM and GM. tks fer info Manfred.

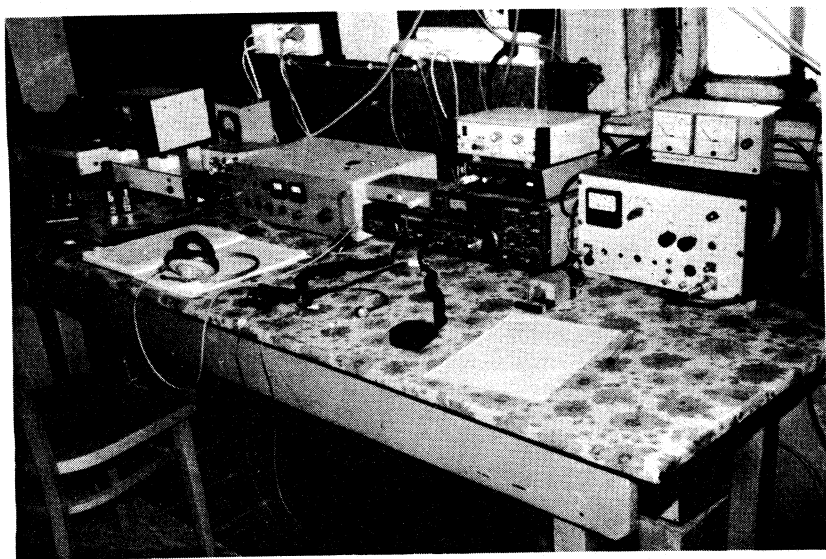
I2FAK (EF77g) wkd in 1983 on June 5th ON6TN/6 CK. On June 8th F1GKW/p BK, ON7RB BL, ON1NA BK, ON7TH BK and ON5NK BK. On June 10th F6ELI ZE. On June 11th F6ELI ZE, F1ADT ZE and F1BUU ZE. On June 25th IW9AJZ/9 GY, IT9VKL HY and IBYZO HY. On June 26th IT9SAS/9 HY. On July 7th F1FVP ZF. On July 23rd IT9TDN HY, IT9TVE GY and IZKX/8 HY. On July 24th IT9DTU/9 HY, IT9JLU HY and IBYZO HY. On Aug. 3rd F6KBF/p ZC. On Sept. 23rd G4MJC AK, G4KIJ ZM, PE1JSM CL, G4DHF ZM, TQ2YT BK, F1RX BK, G4BXN ZM, ON4YG CK, F1FHI ZH, ON1YP BK, ON1JI BK, F1EXP BK, G4RRN AM, ON5QW BL and ON1AOI CL. And on Sept. 25th G6TTL AL, F5JY ZJ, G3CMJ ZL, G3APB ZL, G8JVE ZK, G6RGA/p AK, G6ECM AL, G4SMX AL, G6NQX AL, G8DDY ZK, G6H1B AK, F1HHV BJ, F6FLV BI, F1DPT BJ, F1CNE CI and F1DDA/p AJ. His rig is 700 W output and single 16 el. ly. tks fer info Franco

OE1APS (II63g) wkd via Tropo on Sept. 23rd at 1757 F6HGC CH, 2113 ON4YG CK,

2120 DF7KF DK and 2211 F6HVK CH. On Oct. 23rd at 2020 OZ1HDF GP and 2037 OZ1EPV GP. tks fer info.

OE3RLC (HH09a) altitude 1100m, wkd via Tropo on Sept. 23rd: G4OJD YK, F6GCX BI, G4MJC AK, F6BSQ/m DI, F6EQG DI, G3OWQ AL, G4JZ YL, G4BAH AM, F1BUY AJ, FA3CGR DM, PE1FOO DK, PA0AWN CM, PE1HVD CL, PA3CWF CL, G8NWM ZM, PE1ILC CL, G3IMB ZL, PA0AVG DN, PA3CEO CL, PE1IMK CL, ON7MK CK, F6FLV BI, G8IQU AK, F1DRO CJ, ON4AAE BK, ON1IM BL, ON1NA BK, G4R6K ZL, DL1EAF DL, F1BZK BJ, PA0SIR DM, PB0ADA DK, PE1F16 CM, G8UGU ZM, PE1ITC DL, G4FVK ZM, PA3CSG CL, G6HYF AN, DK8KC DK, PE1JSE CL, PA0CIS CM, ON4AAE BK, F6ICX BI, ON1BRR CL, F6DKW BI, F6GUO DI, ON4ASL BL, G4SWX AM, G4DHF ZM, ON1ASN BL, PA3BRS CM, F6EKG/p CH, PA0DVM CM, G4CMV ZM, PA3BRQ CL, G4DKI AL, PE1EBN CN, PE1DAB CN, PE1JUP CL, PA3CDD DM, G6LYU ZM, ON1KDY/p CJ, ON8DG BK, DL2YCD DL, DJ6BP DM, G8XPZ ZN, DL4BBV EM, PE1ITF CL, PE1JSP CL, ON7SO BK, PA3CPL CL, DK1BM DM, PE1JOA CL, Y30BLI FL, PA0AHI DK, DJ9YE EN, PE1FXS DM, DL7FZ FM, F1CXW CK, PE1JCU CL, F6GHG CI, DL9KAS DK and DL8KBJ DK. On Sept. 29th Y22QG FM, Y05BPE/p LG and YU1AWW KE. On Oct. 7th HB9AMH DH. On Oct. 23rd OZ1CFT HP, OZ1DOQ GP, OZ7AMR EP, SM7KNK HP, SM7LXV GP, SM7NBR GP, OZ1IWZ FQ, OZ1OF EQ and SM7MKT GP. On Nov. 9th DL7YS GM, UB5DAA LI, DL7KH GM and DL7IB/p GM. tks fer info Rainer.

OK1KHI/p (HK29b) wkd from Oct. 22nd to 23rd 375 G, 39 GW, 21GM and 39 PA stations! Here follow now the best DX QSO's: EI6BLB WM, EI8EF WO, EI6AS WM, EI2CA WM, EI2DJ WN, EI2DN WN, EI7BJB WN, EI8BZ WM, EI7DG WM, EI9FE VM, EI4FC WM, GU6EFB YJ, GU6PGS YJ, GD4GNH XO, GD3AHV XO, OH0NC KU and LA9RAA CS. tks fer info Franta.



Shack of OK1KHI and OK1CA

Report from OZ1DOQ/mm expedition to DP, CQ, BR, AS, YU and XV square. 22/23.8. and 31.8-1.9 1983. Wkd from DP: 18 OZ, 6 SM, 10 PA, 7 DL, 1 LA, 1 G. Wkd from CQ: 32 OZ, 11 SM, 16 PA, 6 DL. Wkd from BR: 23 OZ, 16 SM, 2 PA, 1 DL, 5 LA, 1 GM. Wkd from AS: 11 OZ, 15 SM, 1 PA, 1 G, 1 GM, 1 OY, 5 LA. Wkd from XV: 2 OY. The expedition was very succesful because of the good condx, with tropo from AS, BR 31.8. and a aurora from AS 31.8. The rig was 20 Watts and 6 el antenna. I would like to thank OY9JD, OZ1FDJ, OZ1FTU, OZ1GEH and OZ7IS for

their help with the expedition, also I would like to encourage other operators to make a /mm expedition on the ordinary ferry routes (I used Esbjerg (DZ) - Torshavn (DY)). These ferry routes are quite numerous (for example in the North Sea), and it is quite easy to get permission, and the rig can easily be held in a single suitcase. So hope to see you from CR, CQ, CO, BM, BN, BO, BP, BR, AD, AP, AQ, AR, AS or one of the other extremely rare squares. Special QSL card is on the way to all stations worked. tks fer info Uffe.

PA0JMV (CL37e) wkd via Tropo >800km on July 12th 1983 LA1BM CT, LA5XAA CS, LA1HCA CU, LA8DY DS, PA000M/SM1 JQ and F6ECI/p AF. On Aug. 10th LA3UL FT, LA8WF FT, SM4KL GT, SM6GWA FS, SM4HFI HU, LA9UX FU, SM5AKU HT, SM4GVF HT and LA8SJ FT. On Aug. 11th SM5MIX HS. On Aug. 25th LA9ZV FT. On Aug. 28th G16DRK WO, E1BEF VO, G14TAP XO and G3DAH XO. tks fer info Joop.

SP5AD (KM66g) wkd via Tropo on Sept. 26th 1983 DJ9UX DL, DJ4AX DL, PA3CCE DN, DF8JD DL, DL9GS DL, DL5DAW DL, DL8CM DJ, F6G0Y BH, PA0BRS CM, DF1ET DL, PA3CNN CM, PE1AGJ DK, PA3BIY CM, DL2BAJ EN, PA0RDY CM, PA0CSL CM, PA0COB DM, DJ9RT EN, F6GHG CI, PA0VST CM, DL5DAV DL, F1FHI ZH, F6HWJ AI, ON4AXC CL, PA3CXJ DN, F6CCH ZG, F80Q BI, DL4YBR DM, F1EAN AG, F6DGC BI, PA0HIP CL, DF7KF DK, PA3CGR DN, PA0FTF CK, F6FYZ BI, DF9KT DK, PA3COB DM, DK3JU EN, DJ1XP DL, DL0SE DL, DK4PA DK, DJ2RH DJ, DF1ZE EJ and DL0WW EJ.

On Oct. 22nd PA0FAS CM, PA0FTF CK, DF3WH DK, G3IMV ZL, DJ4UF DK, PA3BBV CM, G2CIW AL, G5YU YK, DK2BJ DK, DL2OM DK, PA0VST CM and PE1EBN CN.

On Oct. 23rd DF5JB DL, PA0JMH CN, PE1GBT DN, PE1AGJ DK, G4GFX YM, G4GUF AM, PA3COB DM, PA0BYI CM, PA3CXJ DN, PA0RDY CM, PE1JFI CM, DB1BP DN, DL9CE EN, PE1DTU CN, G3LGR AM, PA0AMF CM, PA3AJG DM, G4DZU ZN, PA3BGM DN, PA3BRI DN, G41JJ AM, PA3BRS CM, DL9BBR DN, G3PHO ZN, PA0KDV DN, PE1HJO CN, G4DHF ZM, PA3CGR DM, PB0AGC CL, PA3AXY CM, PA3CWH CN, PE1EBV CN, PA3BXH CM and PA3CEE DN.

On Nov. 2nd DL1CS EI, DF9KX DK, DK2BJ DK, DF1CF FH and DF0UK EJ. tks fer info.

Y22ME (HM53a) wkd via Tropo on Sept. 23rd ON4ASF ??, ON7CC CL, G3IMV ZL, ON6CF BL, G3GLL AL and F6ADD CI. On Sept. 25th F5XU BF, ON1NA BK, FIARR ZI, F6FHP/p AE, F6FLV BI, F1DXH AI, F1GEP ZG, ON1ADK CL, F1EAN AG, F6DBW BI, F6APE ZH, F6BQX/p ZG, F1DRO CJ, F6FYZ BI, F1AIW AH, ON1IM BL, ON4ASL BL, HB9PIV EH, ON7UM CK and F9NW DJ. On Oct. 23rd UB5PAZ ML, UP2BJB LP and HG0SO KH. tks fer info Jürgen.

Y23FG (FM63g) wkd via Tropo on March 4th 1983 OK3KFF/p KJ. On March 8th G3DAO XK, G4NDG YK, G5YU YK and 4 times G from AL and ZL. On April 17th G3BDQ AK and G4MDZ AL. On June 18th HG6KVB/p KH, HG1YU IG, HG2KRZ/p IH, HG5KF/1 IH and HG1VY/2 IG. On June 20th HG5KF/1 IH. On June 22nd SM1MKY JR, SM1MUT JR and SM1NVW JR. On July 2nd HG5KF/1 IH, IV3HWT/3 GG (first contact with Italy via Tropo) and HG1KSA/p IH. On July 30th G3OZU AL, G4GUF AM, G4SFY AM and LA7AJ and LA1YCA/p. On July 31st UQ2GMD LR. On Aug. 28th F6HMQ/p XI. On Aug. 29th G6WXL/p YO, G6ULN/p ZO, G6NKP/p YO, G6WNR/p ZL and hrd G4CXM XP. On Sept. 8th DK3CM/LA DR. On Sept. 23rd F6DKW BI, F1CYB BH, F1DRO CJ, F6FLV BI and HB0POM EH. On Sept. 25th F6HRO/p YI, F1FHI ZH, F1FHO/p BF, F5NI AJ, F1BTK BG, F6EQQ/p YI, F6CIS ZE, F6FHP/p AE, F6BZA AG, T06HRP YI, FIARR ZI, F1GTU AF and F1BYM ZE. On Sept. 26th SP5AD KM and UB5PM MK. On Oct. 22nd G6DDB XN, G4TRA YL, G3UVR YN, G8MKD ZM and 9 times G from ZL, AK and AM. On Oct. 23rd G3N3YY XL, G6CMV YM, SP2BSF JO, G8MAG ZM, G61RJ/p YM, G6EFF/p XK and G41JJ AM. On Oct. 26th G8BJLY/p YL. On Nov. 2nd UB5DAA LI, RB5WAA MJ, UK5SAU MI, UB5WBL LJ, YU5DL LI and mni SP7,9. On Dec. 4th SP5KVM KN. On Dec. 28th F6FLV BI, F1DRC AI, F5NI BI and hrd F6GEH, F1GNQ, F6CKZ, F6DKW, F9ND and F1BBD (all with strong qsb. On Dec. 29th G600Z AL, G3KZR ZL and hrd G3BDQ, G6VDM, G4GZN and G4RJS. tks fer info Rolf.

Y02FP (KF27h) wkd via Tropo on June 6th 1983 at 1450 OE3XUA HH10b. On June 21st at 1833 OE3IWB/3 IIS2g. On June 29th at 1225 OE3LFA IIS2g. On July 1st at 2156 YU4EBL/4 ID38b. On July 2nd at 0750 YU5FAA/5 KB05a, 2033 YU5CEF/5 KA06d and 2354 YU4CF/4 IE05b. On July 3rd at 0051 YU2CDU/2 HF18j, 0117 YU2ARS/2 HE15e, 0659 YU3UQ/3 HG50j and 1020 YU3DEC/3 HG48a. On July 10th at 0626 YU3TAK HG50j. On July 14th at 2105 Y04ATW/p NF12h. On July 19th at 2018 YU2JL

HD03a. On July 22nd at 2008 OE3NDA I152j. On July 28th at 1958 EA3ADW BB22g, 2031 UB5VK/p LI15g and 2031 UM8MAZ/uSD LI15g. On July 31st at 0706 OK2VMD IJ54g and 1037 Y0BBDQ/p MH48g. On Aug. 6th at 2024 LZ2FA ND40g, 2035 OK0WCY KI15d, 2045 LZ0KCS/p MD25g and 2144 LZ2U MD45f. On Aug. 7th at 0428 LZ2FA ND40g, 0438 LZ2R MD54h and 0719 OK2KZR/p IJ32j. On Aug. 14th at 0312 LZ2KZA/p MC13d, 0541 Y03JJ/p4 NE67d and 0555 YU3C HG55f. tks fer info Fredy.

70cm-70cm-70cm-70cm-70cm-70cm-70cm-70cm-70cm-70cm-70cm-70cm-70cm-70cm-70

DC7UT (GM37c) wkd via Tropo on 432 Mhz in 1983 on Jan. 24th G6CGY ZD and OH1FA LU. On July 30th G8ECI AN. On Aug. 9th OH0NC KU (DXCC country No. 17.) On Aug. 10th OH2AYG MU. On Aug. 28th F6HMQ/p XI 1308 km. And on Sept. 25th ON5RU CK. tks fer info Horst.

DF9PY/p (DK64b) wkd on 432 MHz on Oct. 1st 1983 OK1KVK/p GK, G4LOJ/p AM, G4PUB/p AL and G4MRS/p AM. tks fer info Stefan.

DG1BP (DN37h) wkd >600km on Aug. 28th 1983 G4MAW YK, F6HMO YI and GJ4ICD YJ. On Aug. 31st SM4AXY HT. On Sept. 24th OK1KKH HJ. On Sept. 25th F6CCH ZG, F1DPX ZH, F1BUU ZE, F1EAN AG, F6ECI/p AF, F6BZA AG, F6ETI YH and F6ELI ZE. On Sept. 27th GU6JST YJ, G4DGU XK, G3SHK ZK and G4TRW/p YK. On Sept. 28th EI9Q WM. On Oct. 1st DK5MA/p FH. On Oct. 22nd OK1KHI/p HK. On Oct. 23rd SP1JX IO and GB3CTC (beacon). On Oct. 25th GB3CTC (beacon). On Oct. 26th F1CNJ AJ, GJ4ICD YJ and GU6EFB YJ. On Dec. 3rd GU3EJL YJ, G6CMV YM, GW8UCQ YL and GB3CTC (beacon). On Dec. 4th G8AAJ YK, G4TRW YK and GB3CTC (beacon). tks fer info Arend.

DL7QY (FJ61e/JN59BD) hrd on Nov. 19th the beacon OZ7IGY with 10dB ani and wkd at 1544 OZ9SL in FP74g 55 59. On Dec. 29th the band opened in the afternoon around 1500 into France and England. Following stations could be worked: at 1703 F5NS/p ZJ59g 53 58, 1707 F1DRC AI77g 54 59, 1709 F1DBE BJ71a 52 59, 1710 F6CRZ BI13g 59++ 59++, 1729 F1DQK BI23a 59 59, 1735 F1FNA BI03j 57 58, 1740 F1FSI CI25d 53 52, 1741 F6DKW BI 59++ 59++, 1829 F6FJE BI26e 57 59+, 1828 F6CTW BI12f 57 59+ (10W and HB9CV indoor antenna), F1BQX BI25f 59 59, 1951 F1DED BI11d 59+ 59+, 2100 G8ECI AN41h 59 59, 2138 G8SMQ AM 59 59, 2347 G6RJJ ZN40c 55 53, 2356 G3WZT ZK09j 55 55 (QTF= 320 deg.), 0007 G4RXR Z014f 55 57, 0013 G4ERX AL22e 52 52.

F1FEN (CF74c) wkd on Sept. 25th DB4LT EO, DJ7YP EM, OZ9SL FP, DK0NA FK, DJ9BV EN, DC2XK EN, DK5OD EM, OZ2OE EP, DC4OL FM, Y23BD GM, DF3YZ FN, DF6HV FN, DF2CA/p FK, OZ1FER GP, OZ2GG GP, DB7YAH EM, PA000S DN, OZ2LD FO, DL7APV GM, DL7ZL GM, OZ3ZW FO, OZ1OAZL FO, Y23FG FM, DG1BAH EN, OZ3NH EO and SM7LX GP. On Sept. 26th G4BVY YM, G3LQR AM, GW4GSS YN, G4CBW YN and G6ADE ZN. On Oct. 2nd OK1KIR GK. tks fer info.

G3PBV (YK32b) wkd via Tropo over 500km on Aug. 28th OZ1HDA ER and OZ1CFO ER. On Aug. 29th OZ1DPR EP, SM6GWA FS, OZ5BZ EP, SM6CMU FR and SM4CJK GT. On Sept. 23rd HB9AFN/p DG, HB9AMH/p DH, F5PL/p BD, DJ6JJ DL and F1EBN BI. On Sept. 25th F6ETI/p AF. Sept. 27th ON7HP CL. On Sept. 28th EA1NU XD, G4PEC ZP and G8PNN ZP. On Oct. 2nd PE0MAR/p CL. On Oct. 22nd OK1KHI/p HK, OZ7LX FP and DK8SG EI. On Oct. 23rd Y22ME HM, F6GCT BI and PE1EWR CL. tks fer info Dave.

HB0POM (EH68c) wkd on Sept. 23rd: OZ9FW GP, OZ1ASL FO, DB4LT EO, OZ5GF FO, SM7JUQ GP, DF6HT FN, DJ8BV EN, DC2XK EN and DL7ABR GM. TX-12W, ant 8el. WISI QTH 1000m asl. tks fer info Manfred.

OE1APS (II63g) wkd on Nov. 2nd at 1833 - 1844 UB5DAA, UB5DCN, UK5DAV, UB5DYL, UK5GZZ and UT5DL all in LI. On Nov. 27th at 0948 I6NO GD. tks fer info.

OE1ERC/9 (FH41h) 1500m asl wkd over 500 km on Oct. 1st OK1AIY/p HK, OK1KKL HK, Y350 GM, Y23FG/p FM, OZ9DT FP and OZ7IS GP. ODX 925 km. tks fer info Erich.

OE3RLC (HH09a) altitude 1100m wkd via Tropo on Sept. 23rd: ON4ASL BL, G6CZE ZM, G3XDY AM, F6GCT BI, PA3CED CL, PA0CIS CM, PE1GII CK, PE1JSE CL, PA3CJN CL and ON7HP CL. On Sept. 24th DJ4EB DK, F6DCD DI, DD8KV DL, F6DKW BI and DD2PK DK. On Nov. 9th UB5DAA LI, DL7APV GM and DF1YQ GM. tks fer info Rainer.

OK1KHI/p (HK29b) wkd from Oct. 22nd to 23rd 78 G, 47 DL, 36 PA, 11 SM, 8 OZ and 3 UB5 stations. Here follow now the best DX QSO's: GW8FCG XN, GW8FKB XN, GW4GSS YN, GW8YUJ XN, GW4GTE YN, GW3ZDH YN, GW8ZCP YN, G14GVS XO, GU6EFB YJ, GM8DDX YP, GM6LNM XP, EI6AS WNS9c odx: 1525 km, UC2ABT NN, UA3LBO GO and OH0NC KU. tks fer info Franta.

OK1KIR/p (GK45d) wkd via tropo in UHF/SHF Contest 1983 HB9BJT/p EG, HB9BDI/p EG, OZ7IS GP, OZ9PZ EQ, OZ7LX FP, HG4KYB JH, HG7KPL JH, OZ1ABE GP, OZ9FW GP, HG6V KI, SP9MM JK, F1KND BH and F1FEN CF. tks fer info.

PA0PLY (CM54f) wkd via Tropo on Dec. 3rd GW8TFI/p YL, OZ1JBQ FQ, GU3EJL YJ and GU4LJC YJ. On Dec. 29th G3OBD ZK. tks fer info Jan.

SP1FP6 (HN33c) wkd on July 7th 1983 DF5LQ EO and OZ2OE EP. On July 10th UR2RIW LS, SM0DJW IS and SM0FZH JT. On July 11th PA2JOK/SM1 JQ and SM1MKY JR. On July 17th OZ1EKI EP. On July 26th OZ1HMA FQ, OZ1CFO ER, OZ1IVW FQ and OZ1HDA ER. On July 31st UR2RIW LS, SM1MUT JR, DF7LC EO, SM1BSA JR and DK5QI/SM7 IR. tks fer info Henryk.

SP1JX (IQ35g) wkd in 1983 on Oct. 23rd at 1205 OE3XUA HH10b, 1229 PA3BYI CM27a, 1253 PA0RDY CM45e, 1303 G3LQR AM67b, 1308 G4MDZ AL76b, 1446 G4GUF AM49b, 1514 PA0EZ CM66b, 2025 PE1ALA CM44e, 2049 PA000S DN63e, 2058 PE1DPX DM41a, 2107 PA0QRB CN68g, 2112 PE1CNQ CN69c, 2120 PE1CNP CN80d, 2133 PE1FCQ CM57e, 2138 PE1IST CM24d, 2149 PA0JUS CM25d, 2209 PE1HQD DN71a, 2226 PA3BPC CM66b, 2250 UA3LBO QO21h, 2342 PE1JSE CL34f and 2356 PA0FRE CL03j. On Oct. 24th at 0020 PA0ERW CL48b, 0043 UC2ABN NN13 and 32 times DL, UP2 and UQ2. (Station: P:8W, Ant.:11el Yagi, Rx:T18BA, 22m.a.s.l.) tks fer info Andy.

Y22ME (HM53a) wkd via Tropo on Sept. 25th F6DKW BI, G6VEM/p AK, ON5QW BL, F1EAN AG, F6GCT BI and PA0's CM. On Sept. 26th SM0DJW IS and SM7NNJ IQ. On Oct. 22nd GW4GSS YN, G3LTF AL, G3UVR YN, G4CBW YN, G6CBN ZO, G4VCJ ZO and G4TTQ ???. On Oct. 23rd G8T2T YO, G3PBV YK, G6WYX ZL, G4BVY ZM, G3SEK ZL, G6JMI AM, G4MAW YK, G6CSY ??, G6CZE ZM, G6NVC AL, G8SRL ZL, G6NLX ??, G4KGC ZM and PA0's in CL, CM, DM. tks fer info Jürgen.

Y23FG (FM69g) wkd via Tropo 1983 on Jan. 22nd G3NNG ZL, F1FHI ZH, F6DKW BI, F6ETI YH, G6BBH/p ZM, F6GMR ZH, F1DQK BI, F1ELL BI, G3COJ ZL and G8JVM ZL. On Jan. 23rd G3PEJ ZO and G4LOJ AM. On Jan. 24th SM3AKW JW, SM0BYC IT, SM1MKY JR, SK0CT IT, SM0EJJ IT, OH0JN KU, UR2RIW LS, SM5QA IT, SM0FMT IT, SM7GEP HR, SM0CPA IT, OH1FA LU and SM1MUT JR. On Feb. 18th G3LQR AM, G4DCV AL, G3SEK ZL, G4MDZ AL, G4LOJ AM, G3ZNU AM, G3NNG ZL and 11 times PA from CM, CL and BL. On March 8th ON4YZ CK and F6DWG BJ(?). On July 14th G3LQR AM, F1KBF/p AJ and 3 times PA from CM. On July 28th G6DZT AK, G6KCG/a AM and G4MDZ AL. On July 30th G6KCG/a AM, LA9DL FT, OZ1HMA FQ, LABAK DS, LA6LCA FT, G8ECI AN, SM6CEN FR, LA3FV FT, OZ1IPU FR, OZ3NH EQ, LABAE FT, OZ2OE EP and SM6GWA FS. On Aug. 6th OK2J1 IJ and 10 times OK1 from GK, HK, and HJ. On Aug. 8th SP1JX IQ, SM7NR HQ, OZ1FER GP, UP2BKH KP, SM1MUU JR, OZ1CSI HP, SM7BHM HQ and hrd SM1NNJ IQ. On Aug. 28th SM7LXC GP. On Sept. 19th G4MDZ AL, G3LQR AM, SP6ASD HL, G4FRE AL, G3BHW AL, SP6AZT/6 IL and 7 times PA from CM and CL. On Sept. 25th F1DPX ZH, F6ETI YH, F6BZA AG, F6DKW BI, F1GTU AF, F1CVU AJ, F1FEN CF, ON5QW BL, G4ISM AL, F6GCT BI, F6DWG BJ, G4MVN AK, F1BUU ZE, F6BQX/p ZG, F6ECI/p AF, F6BSJ CG, GU6JST YJ (first GU), F6HLD/p CG, ON7HP CL, G3LTF AL, F1DDA/p AJ and 19 times PA from CL, CM and DM. On Oct. 22nd G8XVJ YN, F6DKW BI, G3UVR YN, G82CDY ZL, G4UGV AL, G4VCJ ZO, G6LWT AL, G4CQR AL, G3TDG AL, G8FUO ZL and GW4GSS YN (first GW). On Oct. 23rd G6CMV YM, OK2TU IJ and G4BVY YN. On Oct. 25th OE2CAL GH. On Oct. 26th G3LQR AM, G4BWG ZL, G6VEM/p AK, G8NDN AK, G40AE ZL, G4DDL ZL and G3BHW AL. On Nov. 2nd UT5DL LI, SP9DSJ JK, OK3LQ II, SP9MM JK and OK2KZR/p IJ. And on Dec. 29th he only hrd G4BWG and G4MDZ. tks fer info Rolf.

MICROWAVE NEWS

BY DL 7 QY

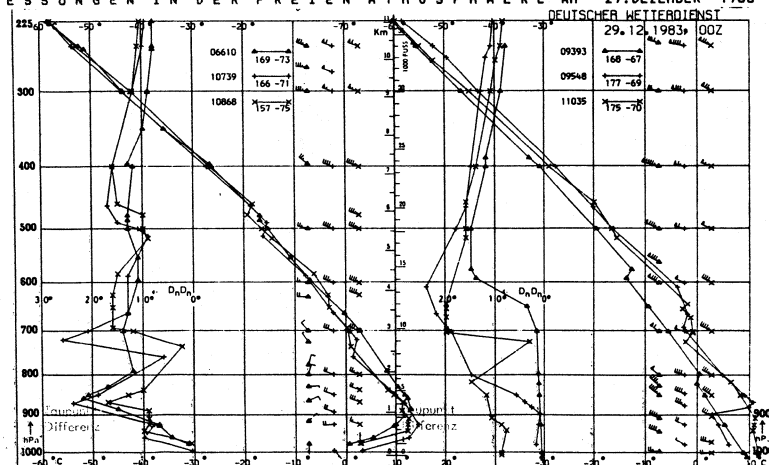
DD4ZZ/A (EJ14h) wkd via Tropo on 1296 MHz on Aug. 22nd DK0NA FK58b. On Oct. 1st F2TU/p DI76g, F1EA DI39c, HB9AMH/p DH66c and DL0HC/p DL68h. Heard during Contest ONS6F CK55h, HB9BBD EH73e, DK0NA FK58b, DJ9PC DI80f and DF1EQ DL. rig here: TX 1W rf, rx 2 x NE57B 35, ant 20 el loop yagi. tks fer info Olaf.

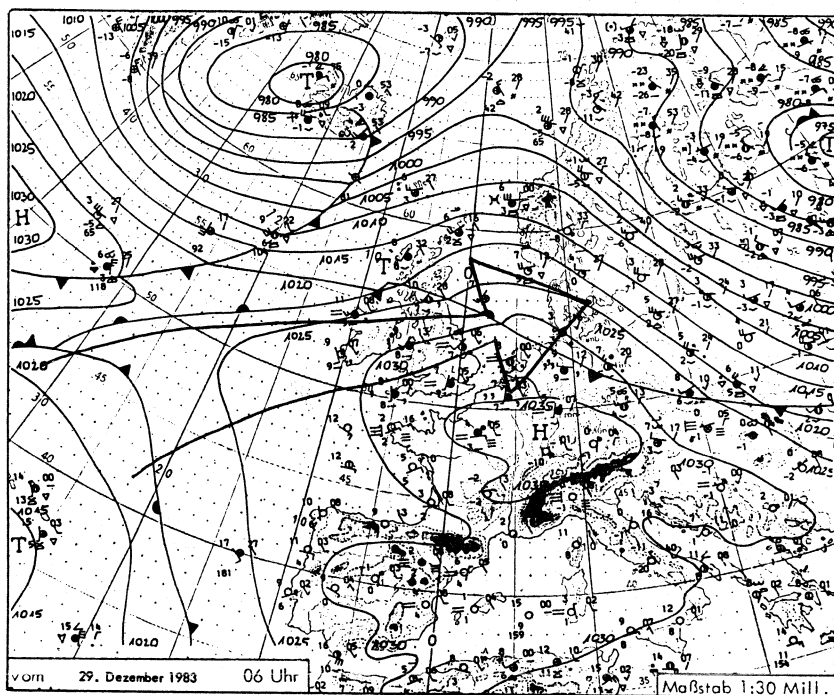
DF5JJ (DL44e) wkd on 1296 MHz with 3W rf on Sept. 23rd: F6DZK AI, F6HLD/p CG, F6BSJ CG, DF3CK FH, DCBNV FI and G3LQR AM. On Sept. 25th F6BCJ AG, F1DPX ZH, F1BUU ZE (897km), F6ETI YH, F6KFN/p BG and F6GCT BI. On Sept. 26th DL7ZL GM, F1FEN CF and HB9AMH/p DH. On Sept. 27th with 50 Watts rf G3TDG AL, G3AUS YK, G3OBD ZK and G8ULU AL. On Sept. 28th G4CBW YN and DK5AI FL. On Nov. 2nd OE2CAL GH, DK8SG EI, DJ6GQ EI and DL7QY FJ. On Nov. 9th G4BYV AM. Nov. 10th G6JHR AL, G3DY ZM and G8ULU AL.

Wkd on 3456 MHz on Sept. 23rd PA2DOL CL 56 549, PA0TGA CL 319, DK0NA FK 51 519 and G3LQR AM 539 529. On Sept. 25th DF9LN FO 529 529, DC9XD EM 31 529, DK1UV EL 549 529 and PA0JGF DM 529. On Sept. 27th DD2EK DL 51 519 and PA0CRA CM 59 599. On Oct. 1st DC0DA DL 59 599, DD2EK DL 51 569, DL4EBB DL 529 519, PE1DPX DM 319 519, PA0CRA CM 539 539, PA3BPC/p CM 519 539, PA0JRS/A CK 579 559, DF1EQ DL 41 539, DL3NQ EJ 419 419 and DC9XD EM 52 539. On Nov. 4th DC6TV DK 51 519. On Nov. 5th DK1UV EL 319 519. On Nov. 9th PE1CQG DM 219 529 and G4BYV AM 529 539. ODX 417 km. On Nov. 10th PA2DRV CL -- 579. Peter writes:....now also qrv on 13cm, for skeds call 02135/64990 or 02841/35853. tks fer info Peter.

DL7QY (FJ61e/JNS9BD) wkd during the lift on 29th Dec. on 1296 MHz at 1908 F6DZK AI20d 59+30dB 59+, 1936 F1DED BI11d 59+ 59+, 2103 G8ECI AN41h 57 59, 2130 PE1JSE CL34f 59 59+30dB, 2158 PA0LPN CM74e 539 57, 2204 DD2EK DL12c 59 59, 2229 PE1HWO CL03e 59 59, 2236 DD3KL DK13j 55 59, 2236 PA0HRK CL02b 57 59+, 2238 PE1FOT CL06a 59 59, 2247 PA0EZ CM66b 57 57, 2248 PE1AFY CM74e 54 59, 2250 PE1FPC CL06a 59 59, 2252 DC8DC/A DL53e 59+ 59+, 2259 PA0PLY CM54f 519 599, 2312 DK7LZ CL13h 519 559 and at 2330 PA2DRV CL03d 539 579. The band opened in the afternoon first into West, then the lift turned more and more to the North. Very strange backscatter tropo effects took place. Following radiosonde chart shows the inversionlayer of the 29th Dec. Already the weathermap from the day before provides a good hint for tropo DX condx.

MESSUNGEN IN DER FREIEN ATMOSPHÄRE AM 29. DEZEMBER 1983





DK7LZ (DK13h) wkd on 1296 MHz on Dec. 29th/30th 1983 PE1JSE CL34f 59 52/5 6W
26 El., G8TFI YL29j 57 52 200W 23 El., ON600 CL54c 58 52/6 5W 26 El., G4LRT
ZM45d 56 52 30W 27 El., G8ECI AN41h 57 53 40W 4x29 El., PE1HWO CL03e 59 57 30W
23 El., DL7QY FJ61e 559 519, GW3CCF YN65f 53 51 15W 23El. (odx 704km), G6DER
ZN33c 56 55 2W 23 El. and PA2DRV CL03d 57 51.2.

Station: 600 mW über 15 m RG-213 an 25 El. Yagi nach DL6WU, Empfänger mit Vorstufe 3 SK 97. Antenne 15 m über Grund. tks fer info Reinhard.

F1FEN (CF74c) wkd on 1296 MHz on Sept. 25th ON56F CK, PA3A0H DL, DL3NQ EJ, DK0NA FK, DB4LT EO, DC8UG DK, PA3CJN CL, OZ2LD FO (1200km 54 with SW), PE4AKJ CL, DJ5BU DK and 8 stations in CM. On Sept. 26th F1FHI ZH, PE1HVX CL, PA0JUS CM, DJSJJ DL, G3LTF AL and G4CBW YN. tks fer info.

F6DZK (AI20d) wkd on 1296 MHz: On June 5th F1KBF/p ZI75c, F6CIS/p AE21g, F66CJ AG13a, F1FEN/p CF74c and F1AHO/p DH06e. On July 2nd: GW6JIM/p YM44d, F1DED/p ZD73g and G4ROM/p ZN61a. On July 13th: ON1JE BL80f, DC0HW DN48a, DC4BK EN57d, DK3UC FN14a and SM6HYG FSS8f. On July 14th: PA3BGL CN70a and OZ7LX FP49c. On Aug. 6th: F1KBF/p ZC07h and F6KFN/p BG01h. On Aug. 13th: F6KNO/p BC33e. On Sept. 4th: F1FEN/p CE11d. On Sept. 23th: F6ETI YH24c, DC2CT F168j and OE2CAL GH16c. On Sept. 24th: G6J8BT YJ70g. On Sept. 25th: DC9XO EM14a, DF5LQ EO50j, DK2LR FH35h, DF9LN FO61a, OZ7IS GP22j and SM7CFE HQ68d. On Sept. 26th: G4FRE AL07a. On Oct. 1st: F6CIS/p BF21j and F1DLT/p CH29f. On Oct. 2nd: HB9AOF/p DG32a. On Oct. 25th F1IE ZF27a and OK1KHI/p HK29b. On Nov. 13th F6ECI AF57b. tks fer info Michel.

G3PBV (YK32b) writes:..have almost given up two meters as it is now almost impossible to work anything through the QRM. Still condx have been good on the

higher frequencies and activity has been quite good. I've recently increased power on 23 cm. From 3 to 30 Watts - and it made a big improvement. I have a 1.5m dish nearly finished. On Aug. 29th wkd DC0LY EO (lost in QSB). On Sept. 25th HB9AMH/p DH, F1DPX ZH, F1BUU ZE, DK8VR DJ and ON5GF CK. On Sept. 27th ON5NK BK, ON6UG BL (lost in QSB), DD8DA DL, DC8DC/A DL and DL4EBB DL. On Sept. 28th G4PEC ZP and G8PNN ZP. On Oct. 22nd DK8SG EI. On Oct. 23rd F6GCT BI and PA0JCA CM. On Oct. 25th PE1AKJ C1 and DC8UG DK. On Oct. 26th F1ELL BI. tks fer info Dave.

G4BYV (AM) wkd on 3456 MHz on Sept. 23rd DD3KL DK. On Sept. 27th DC0DA CL. On Nov. 9th DF5JJ DL. tks fer info John.

G6JNS (YM) writes: ...I will be qrv from YM in 1984 on 1296 MHz with 400 W to 8x25 loof and also a dish. For skeds OM's should phone me on +44 905 620041. tks fer info Peter.

OE1ERC/9 (FH41h) 1500m asl wkd on 1296 MHz over 500km on Oct. 1st OK1CA/p HK, DL4OX FM, DL4OL FM, DK5OD EM, DL0KK/p DL and OK1AIY/p HK. ODX 544 km. On 2320 MHz over 300 km on Oct. 1st: DF9ZT/p EK, OK1KIR/p GK, OK1AIY/p HK. ODX 544 km. On Oct. 2nd DK0NA FK, DF1EQ DL and DC6TV DK. tks fer info Erich.

OE3RLC (HH09a) altitude 1100m wkd on 1296 MHz Oct. 2nd: DK0NA FK, HG2KML/p JH, OK1AIY/p HK and OK1KKD/p HK. On Oct. 4th DL7QY FJ and DF4MC FI. Oct. 7th DK9MN FI. On Nov. 8th OK2VIL/p JJ. On Nov. 9th UB5DAA LI, DK0NA FK, DL8MBK FI, DF2CA/p FK and DC5RP GJ. On Nov. 20th DK5IE EJ and DJ6GQ EI. tks fer info Rainer.

OK1CA/p (HK29b) wkd on 1296 MHz on Sept. 28th: PA0EZ CM, PA0JOZ CM, PE1HQO DN, PE1CQQ DM and OZ9SL FP. On Oct. 26th DJ5BV DK, G3LQR AM, G3LTF AL and F6DZK AI. On Oct. 28th DK9MN FI. On Oct. 30th DL4OX FM, DF3AR FM, OZ7IS GP, DD2EK DL and DK1KR FN. During UHF contest 1983: 54 QSO's, 15429 points, countries wkd: OK, OE, SP, D, HB, OZ and HG. Best dx: OZ7LX FP, OZ9SL FP, DF9LN EO, DF5LQ EO, DB4LT EO, DK3UZ FN, HG2KRD IH, HB9RG EH and HB9BBD/p EH. ODX 672 km. tke fer info Franta.

OK1KHI/p (HK29b) wkd on 1296 MHz on Oct. 22nd: PA0EZ CM, PE1FOT CL, PE1FPC CL, PA2DRV CL, PE1AKJ CL, PE1HWO CL, PE1CQQ DM, PA0FRE CL, PE0PJW CL and ON1FF BK. On Oct. 23rd OZ1FEF EQ, G6ADE ZN and DK1KR FN. On Oct. 26th F6DZK AI, G3LTF AL, G3LQR AM, G6CRN ZO, G3NNU ZO, G6DER ZN, G4KIY ZM, G4BYV AM, G4LRT ZM, G4KGC ZM, G4CBW YN79c odx 1257km, OZ7LX FP, DC9XO EM, DC4BK EN, DB4LT EO, DK3UC FN, DJ5BV DK, DF6VW EM, DF5LQ EO and DL4EBB DL. tks fer info Franta.

OK1KIR/p (GK45d) wkd in UHF/SHF Contest 1983 on 1296 MHz PE1CQQ DM, PE0AGO DM, PI4TH DM, DJ5AP/p EH, DB4LT EO, DF9LN FO, DK1ZD EO, HB9BBD/p EH, OZ7LX FP, OZ1ABE GP, PA3BPC CM and OK2KQQ/p JJ. On 2320 MHz they wkd DK00X EI, DF8GQ/p EI, OE1ERC/9 FH, DJ5AP/p EH, DK1ZD EO, DF9LN FO, DC9XO EM, OE3XUA HH, OE1WWA/3 HH, DK3UC FN and OK2KQQ/p JJ. tks fer info.

ON5GF (CK55h) wkd on 1296 MHz on Oct. 23rd at 1945 PA0JGF DMS4j 59 59, 2002 DB4LT EO70e 59 59, 2114 DK7LJ FOS1j 59 59, 2136 DF7QF DM70j 57 57, 2145 DC9XO EM14a 59 58, 2207 DC0HW DN48a 59 59 and 2225 PA0ESN DMS3h 57 59. On Oct. 25th at 2035 DK8SG EI13j 59 59, 2057 F6ETI YH24c 54 54, 2105 F1FHI ZH63d 56 56, 2122 G8SFM YL39b 57 59, 2126 G4MAW YK43g 59 59, 2135 DL9BU EJ33a 59 59, 2200 DC8UG DK59j 59 59 and 2240 G3JXN ZL39e 59 59. On Oct. 27th at 0735 G4BYV AM25c 59 59.

On 2320 MHz on Oct. 23rd at 1952 PA0JGF 53 55, 2118 DK7LJ 51 56, 2150 DC9XO 55 56, 2155 DC6OT EO76a 58 59 and 2227 PA0ESN DMS3h 57 55. On Oct. 25th at 2015 LX2RV DJ31h 57 57, 2040 DK8SG EI 59 59, 2137 DL9BU EJ 59 59 and 2243 G3JXN 54 57. On Oct. 27th at 0745 G4BYV AM25c 59 59. tks fer info Michel.

PA0PLY (CMS4f) wkd via Tropo on 1296 MHz on Dec. 3rd GW8TFI/p YL, G6ADE ZN, G4TXG YM, G3AUS YK and DF5LQ EO. On Dec. 29th G3OBD ZK, F1DED BI and DL7QY FJ. tks fer info Jan.

THE BOUNDARY FENCE

LIMITS TO BISTATIC AURORAL FIELD ALIGNED PROPAGATION OVER LARGE AREAS OF EUROPE

C.E. Newton G2FKZ

Radio Society of Great Britain and International Amateur Radio Union, U.K.

"Der begrenzende Zaun"- Grenzen für die Ausbreitungsmöglichkeiten bei Aurora über weiten Teilen Europas

Introduction

Over the last 20 years the International Amateur Radio Union has become very firmly established throughout Europe. This has enabled radio amateurs to be organised to report events such as auroras and to submit logs for analysis. This has enabled a very wide coverage from the Arctic to the Mediterranean, from the Atlantic to deep inside Russia which has made it possible to undertake a survey considerably more extensive than any previously, not only in its geographical extent but also in the number of contacts recorded.

As this survey is concerned with the maximum range limitations that the auroral mode imposes on participating stations, only contacts in excess of 800 kilometres are used. For convenience it has been assumed that 'E' layer aurora is at 110 kilometres height, for which the isoflectional maps have also been drawn, and the operating frequency is in the V.H.F. Two metre amateur band (144-146 megahertz).

Previous Surveys: Using amateur results (1), (2), (3), were limited and did not consider the range limitation aspects, which also affect broadcast and T.V. station interference in the V.H.F. bands.

Einführung

In den letzten zwanzig Jahren hat sich die IARU fest in ganz Europa etabliert. Dadurch wurde es für Funkamateure möglich, sich zu organisieren, um über Ereignisse wie Aurora zu berichten und Logauszüge für Untersuchungen einzureichen. Dies ermöglichte eine sehr weitreichende Berichterstattung von der Arktis bis zum Mittelmeer, vom Atlantik bis weit hinein nach Rußland, die es möglich macht ein Gutachten zu erstellen, das weitaus bedeutender ist als irgend ein früheres, nicht nur in seinem geographischen Umfang als auch in der Anzahl der aufgenommenen Verbindungen.

Da dieses Gutachten für die maximalen Ausbreitungsgrenzen in Betracht kam, die der Auroramodus teilnehmenden Stationen setzt, wurden nur Verbindungen mit über 800 km Reichweite benutzt. Zur Erleichterung muß gesagt werden, daß die 'E'-Schicht-Aurora in 110 km Höhe liegt, für die auch die Ionosphären-Karte gezeichnet wurde, und die Arbeitsfrequenz ist das im VHF-Bereich liegende 2m-Amateurband (144-146 MHz).

Vorhergehende Gutachten: benutzten Amateurergebnisse, waren begrenzt und haben nicht Aspekte von Verbindungsbegrenzungen in Betracht gezogen, die auch Rundfunk- und Fernsehstationen im VHF-Bereich stören.

Theoretical Limits

The range limits imposed North/South for any station are controlled by that stations Line Of Sight Limit (L.O.S.L.) to the aurora maximum range, to back scatter point. The nearest that backscatter can be achieved with usable field aligned angles minimum range is best illustrated by an example Fig. 1.

Fig. 1: Isoflectional map of Stuttgart Station (solid lines), limits North/South (dotted lines).

The station is situated at Stuttgart. Its isoflectional map shows that the minimum slant range is about 190 kilometres (ground range 155 kilometres) at a

tilted elevated angle of 33 degrees. If we assume that the -6 to -8 field aligned contour is about the usable limit. In practice, this appears to be so (except for stations in the extreme west of Europe, i.e. Irish, the reasons for this are considered later), even with very intense aurora. In any case, as we increase the negative field aligned angles and the tilted elevated angle to try and get even nearer in the isoflectional lines get closer together at this point thus making little difference to minimum range. This is in addition to the practical difficulty of antenna elevation angles, which for the vast majority of stations is not possible. The maximum range due north is principally governed by the station's line of sight limit or radio horizon on 110 kilometres 'E' layer height, this is about 1250 kilometres. However, in order to contact another station it is necessary to subtract that station's minimum range. As we move about Europe the minimum range varies, being a little over 200 kilometres for more northerly stations and around 160 kilometres slant (2) for the most southerly ones, though in their case it does not matter as the aurora, so far as we know, does not seem to extend farther south than the Mediterranean. The minimum range is governed by how close in the station can see suitably field aligned areas as what is, in practice, high antenna elevation angles.

Theoretische Grenzen

Die Verbindungsgrenzen, die jeder Station im Norden und Süden auferlegt sind, werden durch die Sichtweitenbegrenzung L.O.S.L. der Station zum Aurora Maximumbereich, zum totalen Reflexionspunkt, bestimmt. Das Naheliegendste, das durch Rückstreuung in einem benutzbaren Feld, auf den kleinsten Winkelbereich ausgerichtet, erreicht werden kann, läßt sich am besten durch ein Beispiel, Fig. 1, darstellen.

Der Standort der Station ist Stuttgart. Ihre vergleichbare Reflektionskarte zeigt, daß ihre niedrigste Schrägentfernung etwa 190 km beträgt (Horizontalentfernung 155 km) bei einem Antennenerhebungswinkel von 33 Grad. Wenn wir annehmen, daß die auf -6 bis -8 ausgerichtete Feldkontur die benutzbare Grenze darstellt. In der Praxis scheint das die Grenze zu sein, sogar bei sehr intensiver Aurora (außer für extrem westlich gelegene Stationen in Europa, z.B. Irland; auf die Gründe hierfür kommen wir später). In jedem Fall, wenn versucht wird den negativen Feldlinienwinkel zusammen mit dem Erhebungswinkel zu vergrößern und dazu noch die vergleichbaren Reflektionslinien dichter zusammen zu diesen Punkt zu legen, macht das nur einen geringen Unterschied zu dem Minimumbereich aus. Zusätzlich erschwerend ist die Bestimmung des Erhebungswinkels, weil die meisten Stationen ihre Antennenanlage nicht vertikal schwenken können.

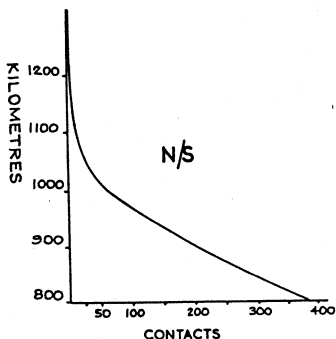
Der maximale Ausbreitungsbereich von Norden kommend, wird prinzipiell bestimmt von der Sichtgrenze der Station oder dem Radiohorizont auf 110 km E-Schicht-Höhe, dies sind etwa 1250 km Entfernung.

Wie immer, wenn man eine andere Station arbeiten will, ist es notwendig, deren minimalen Ausbreitungsbereich zu subtrahieren. Wenn man sich über Europa hinweg bewegt, variiert der minimale Ausbreitungsbereich: für mehr nördliche Stationen ist er etwas über 200 km, und um die 160 km schräg abfallend (2) für die meisten südlichen Stationen, obwohl es in ihrem Fall nichts ausmacht, da die Aurora, soweit wir es wissen, scheinbar nicht weiter südlich als bis in den Mittelmeerraum vordringt. Der minimale Ausbreitungsweg ist davon beherrscht, wie dicht die Station passende Feldliniengebiete ausmachen kann, was in der Praxis der Antennenerhebungswinkel bewirkt.

Practical Limitations North/South

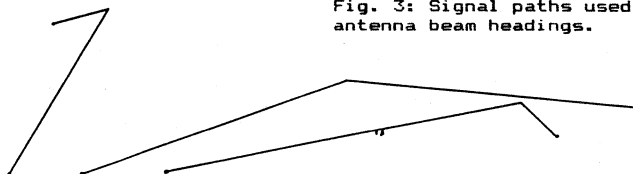
To take our mid-European station, Fig.1, this shows the isoflectional lines i.e. equal field aligned angle contours as seen by that station with a minimum range of about 190 kilometres slant. The maximum DX range that the station can use due north is its L.O.S.L. minus the northern station's minimum range, about 1050 kilometres. An analysis of auroral contacts (over 6000) from 1978 to 1980, plotted against component North/South and distance worked, shows that a very rapid fall-off occurs, Fig. 2, in very good agreement with the theoretical range limit.

Fig. 2: North/South range component of contacts made.



South is governed by the southern station's L.O.S.L. and the ability of the Stuttgart station to illuminate the 'E' layer at more negative angles which requires higher antenna elevation angles up to negative 8 degrees and 40 degrees elevation. In practice, this is very difficult to achieve, but would give a maximum workable distance of slightly more than 1100 kilometres. In practice North/South contacts are made with both station's antennas at an angle to the longitudinal field line, but more important, the negative field aligned angle and elevation angle requirements are very much less critical, Fig. 3. Due to this the maximum North/South range in practice is reduced very slightly. Fig. 2 shows good agreement with the theoretical limits of just over 1000 kilometres for the vast majority of stations. North/South along or close to the geomagnetic longitudes, this then defines two points north and south of the station past which an auroral contact cannot normally be made or broadcast and T.V. co-channel interference received. These points are defined as being on the "Boundary Fence" for that particular station.

Fig. 3: Signal paths used in practice. Typical antenna beam headings.



Praktische Grenzen Nord/Süd

Um unsere mitteleuropäische Station zu nehmen (Abb.1), zeigt diese die vergleichbaren Reflektionslinien, z.B. gleiche Feldlinienwinkelkonturen, wie man sie bei einer Station mit einem minimalen Ausbreitungsbereich von 190 km schräge sieht. Die maximale DX-Verbindung, von Norden kommend, die die Station benutzen kann ist ihr L.O.S.L. minus dem minimalen Verbindungsweg der nördlichen Station, ungefähr 1050 km. Eine Analyse von Auroraverbindungen (über 6000) von 1978 bis 1980, aufgezeichnet gegen die Nord/Südkomponente und den gearbeiteten Entfernungen, zeigt, daß ein sehr schneller Abfall erscheint (Abb. 2), der sehr gut mit den theoretischen Verbindungsgrenzen übereinstimmt.

Im Süden ist es abhängig von dem L.O.S.L. der südlichen Stationen und der Fähigkeit der Stuttgarter Station die E-Schicht mit einem negativeren Winkel zu illuminieren, was höhere Antennenerhebungswinkelbereiche fordert, von -8 Grad bis +40 Grad Erhebungswinkel. In der Praxis ist es sehr schwer, dies zu erreichen, aber es würde eine maximale zu arbeitende Entfernung von etwas mehr als 1100 km ermöglichen.

In der Praxis werden Nord/Südverbindungen mit beiden Stationsantennen, die im

Winkel zu den Längengradfeldlinien stehen, gemacht. Aber wichtiger ist, daß die Forderungen an negativen Feldlinienwinkel und Elevationswinkel unkritisch sind (Abb. 3). Davon herrührend, ist die maximale Nord/Südverbindungsänge in der Praxis nur unbedeutend reduziert. Abb. 2 zeigt gute Übereinstimmung mit den theoretischen Grenzen für Verbindungen von etwas über 1000 km für die umfassende Mehrheit von Stationen. Nord/Süd entlang den geomagnetischen Längengraden definiert dann zwei Punkte nördlich und südlich der Station, entlang denen eine Auroraverbindung normalerweise nicht gemacht werden kann, oder sich gegenseitig störende Rundfunk- und Fernsehstationen empfangen werden. Diese Punkte sind definiert, innerhalb des Auroraausbreitungsbereiches der jeweiligen Station zu liegen.

Theoretical limitations East/West

The geomagnetic field lines are not uniform across Europe but are biased eastwards into Russia about 6 degrees and westwards increasingly for western Europe and the U.K. of about 15 degrees. This give a tilting bias to the isoflectional map which, in turn, varies the precise shape of the extremes east, or west boundary. In practice, for most of Europe past geographical longitude 10 degrees east the effect is very small and at 15 degrees east the geographical and geomagnetic longitudes of the isoflectional maps are superimposed Fig. 4.

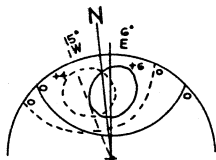


Fig. 4: The geomagnetic variation for 6 degrees West "Irish", 30 degrees East "Russian" stations.

From geographical longitude 10 degrees east to 10 degrees west the geomagnetic longitudes are increasingly biased to the west. This has little effect on the western end of the isoflectional specular line at L.O.S.L. range of either station, but considerable effect on the eastern specular line position of stations situated well to the west i.e. the U.K. and Ireland. In practice this means their maximum easterly range contact must be north of them, even though

at times by only a small amount (usually it is Russian). This effect is nullified as we move east over Europe and, in fact, very slightly reverses at 40 degrees or more east with the Russian station being usually the more southern one Fig. 5.

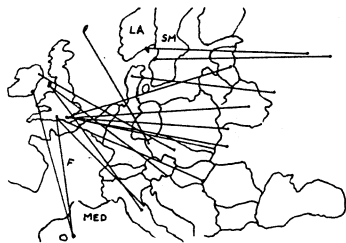


Fig. 5: Signal paths of DX or Beeline maximum range stations.

Theoretische Grenzen Ost/West

Die geomagnetischen Feldlinien sind nicht gleich über Europa, aber sie sind vormagnetisiert um 6 Grad nach Rußland hinein und westwärts wachsend für Westeuropa und England um ungefähr 15 Grad. Das gibt der vergleichbaren Reflektionskarte eine kippende Vorspannung, die abwechselnd die präzise Form der extremsten Ost- oder Westverbindungsmöglichkeit

variiert. In der Praxis ist der Effekt für den größten Teil Europas hinter der geographischen Länge 10 Grad Ost sehr klein und bei 15 Grad Ost sind die geographischen und geomagnetischen Längengrade der vergleichbaren Reflektionskarte überlagert Abb.4.

Von 10 Grad Ost geographischer Länge bis 10 Grad West sind die geomagnetischen Längengrade zum Westen zu wachsend vorgespannt. Das hat nur einen kleinem Effekt auf das westliche Ende der Reflektionsspiegelnden Linie bei L.O.S.L.-Verbindungsweite aber erheblichen Effekt auf die östliche Spiegellinienposition von Stationen mit Standort im entfernten Westen, z.B. England und Irland. In der Praxis bedeutet das, daß ihr maximaler östlicher Weitverbindungsbereich nördlich von ihnen liegen muß, sogar während nur kleinen Ansammlungen (gewöhnlich ist es Rußland). Dieser Effekt wird aufgehoben, je mehr östlich man sich über Europa bewegt und kommt in der Tat

bei 40 Grad oder östlicher langsam zurück, bei russischen Stationen, die gewöhnlich die südlicheren sind Abb. 5.

Practical range limits East/West

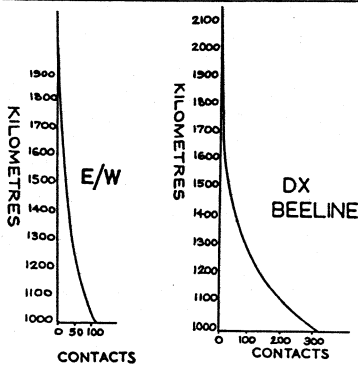


Fig. 6: East/West range component of contacts.
Fig. 7: Maximum range contacts.

The analysis of contacts shown in Figs. 6 and 7 shows a more gradual fall-off when compared with Fig. 2 but of very much extended range. The limits are therefore where the specular reflection lines meet at the L.O.S.L. for both stations Fig. 8. At other than specular angles the negative -2 degree angle has to meet the other station's positive $+2$ degree angle at L.O.S.L.

If these positions are plotted for any particular station throughout its East/West range of isoflectional angles, then we plot the beginnings of an oval around that station, which links with the North/South and East/West limits to complete an oval. The precise shape of this oval changes depending just where it is plotted and this is what is termed the "Boundary Fence" and marks the maximum range that that station can achieve by means of bistatic auroral contacts Fig. 9. Within the oval area the only criteria necessary for auroral contacts are that the reflection point must be more northerly than the most northern station, and this part of the "E" layer ionised by an aurora, even though, at times, this is by a very small amount in both instances. As mentioned above, the exact shape of the oval changes slightly over Europe due mainly to the easterly bias of the magnetic field in Russia and westerly bias in the U.K. and western Europe, but the changes are small, in practice it is the most westerly stations (Irish) which are affected most as the westerly magnetic bias enables them to extend their range farther South but not East/West, Fig. 5.

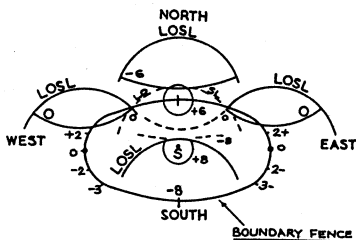


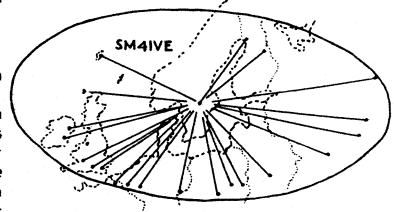
Fig. 8: Location of stations on "Boundary Fence" East/West for specular reflection of Station "S".

Praktische Verbindungsgrenzen Ost/West

Die Analyse von Verbindungen, in Abb. 6 und 7 gezeigt, weist einen allmählicheren Abfall auf, als verglichen mit Abb. 2, aber von viel ausgedehnterer Verbindungsweite. Die Grenzen hierfür liegen dort, wo die Spiegelreflektionslinien auf das L.O.S.L. für beide Stationen treffen Abb. 8. Anders als Spiegelungswinkel muß der negative -2 Grad Winkel der anderen Station auf dem L.O.S.L. treffen.

Fig. 9: Typical "Boundary Fence" of Northern European Station.

Wenn diese Positionen für irgendeine Station, durchweg ihre Ost/Westverbindung von vergleichbaren Reflektionswinkeln, aufgezichnet wird, dann zeichnen wir den Beginn eines Ovals um diese Station, welches die Nord/Süd- und Ost/Westgrenzen miteinander zu einem geschlossenen Oval verbindet. Die genaue Form dieses Ovals verändert sich in Abhängigkeit des Ortes der Aufzeichnung, da-

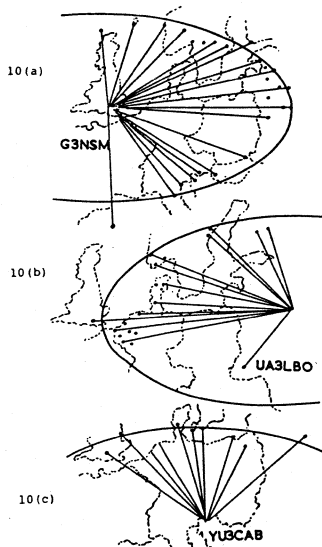


durch ist der "begrenzende Zaun definiert und markiert den maximalen Bereich in welchem Stationen miteinander arbeiten können Abb. 9. Innerhalb der Fläche dieses Ovals sind die einzig benötigten Kriterien für Auroraverbindungen, daß der Reflektionspunkt noch nördlicher als die meisten nördlichen Stationen liegt, und, daß dieser Teil der "E"-Schicht von der Aurora ionisiert wurde, auch wenn diese Konstellation selten ist. Wie oben erwähnt, wechselt langsam die exakte Form des Ovals über Europa hinweg, hauptsächlich in westlicher und östlicher Richtung fließend, bis nach England und Westeuropa und Rußland, vorgespannt durch das magnetische Feld, mit geringer Veränderung. In der Praxis sind es die mehr westlichen Stationen (irisch), die am meisten davon betroffen sind, da die westliche magnetische Strömung es ihnen ermöglicht, ihre Verbindungsweite nach Süden, aber nicht nach Ost/West auszudehnen, Abb. 5.

Practical aspects of the 'Boundary Fence'

Some examples of contacts for particular stations are given in Figs. 10(a), (b) and (c) and show good fit with the "Boundary Fence" concept very well. In practice, the limits are about 1000 kilometres North/South and 2000 kilometres East/West. The only stations able to use all the areas within their "Boundary Fence" are some North Eastern European and Russian stations, all others are penalised by geographical features, e.g. the absence of stations in the North Sea and Atlantic Ocean, also stations south of about latitude 52 degrees are increasingly affected by the fall-off in auroral frequency giving fewer chances and shorter times for contacts. Stations such as Italian or Yugoslavian etc. can only use the northern part within their "Boundary Fence" area as even the most intense auroras do not seem to penetrate far enough south for full coverage. The northern stations, though, experiencing a higher incidence of aurora are also penalised by lack of stations within the Arctic Circle, also strong to intense auroras tend to move south of them, which make their criteria that the reflection point must be north of the most northern station in a bistatic contact very difficult.

Fig. 10 (a), (b), (c) "Boundary Fence" and stations contacted by (a) U.K., (b) Russian, (c) Yugoslavian operators.



The most favoured spot in Europe where almost all the area within that station's "Boundary Fence" can be used (the Baltic Sea prevents all) is around 30 degrees east and 55 degrees north.

Within the "Boundary Fence" it is always possible to find a suitable field aligned area for contacts to use, provided the most northerly station's antenna looks within the arc east to west via north, then contact is possible. Field alignments within the oval in practice are not critical. Variations in antenna directions of 30 degrees often make little difference to signal levels, particularly when the DX range is small, i.e. between 600 to 1000 kilometres. The fall-off in stations worked at the maximum East/West distances is partly due to the low signal level and the Square Law effect, the reflection point being in the middle and northerly of their base line. The preponderance of contacts between 600 and 1000 kilometres is because the reflection point is near the most northerly station and in practice a considerable North/South component is involved so Square Law attenuation is low. The more numerous poorly sited and lower power stations can therefore participate.

Praktische Gesichtspunkte des "begrenzenden Zaunes"

Einige Beispiele von Verbindungen einzelner Stationen werden in Abb. 10(a), (b) und (c) dargestellt und zeigen, daß das "Boundary Fence"-Konzept sehr gut paßt. In der Praxis betragen die Grenzen 1000 km in Nord/Süd und 2000 km in Ost/West. Die einzigen Stationen, die in der Lage sind alle Gebiete innerhalb ihres "begrenzenden Zaunes" zu nutzen, sind einige in Nordosteuropa und russische Stationen, alle anderen werden durch geographische Merkmale eingeschränkt, z.B. das Nichtvorhandensein von Stationen in der Nordsee und im Atlantischen Ozean, auch Stationen, die südlich des 52. Breitengrades liegen, sind mehr und mehr, je südlicher sie liegen, von dem sich verringernenden Auftreten von Aurora beeinflusst, das ihnen weniger Chancen und weniger Zeit für Verbindungen läßt. Stationen in Italien, Jugoslawien usw., können nur den nördlichen Teil innerhalb ihres "begrenzenden Zaunes" ausnutzen, da sogar die meisten intensiven Auroras anscheinend nicht südlich genug vordringen, um ihn ganz abzudecken. Trotz des häufigeren Auftretens von Aurora im Norden sind die dortigen Stationen in der Anzahl ihrer Verbindungen beeinträchtigt, weil oberhalb des Polarkreises kaum noch Stationen QRV sind, auch sieht es sehr danach aus, daß Auroras dazu neigen, sich südlich davon zu bewegen, so, daß das Kriterium, daß der Reflektionspunkt nördlicher als die meisten nördlichen Stationen in einer bistatischen Verbindung liegen muß, sehr schwer zu erfüllen ist.

Der am meisten favorisierte Platz in Europa, wo fast das ganze Gebiet innerhalb des "begrenzenden Zaunes" einer Station genutzt werden kann, ist bei 30 Grad Ost und 55 Grad Nord (in der Ostsee sind keine Stationen).

Innerhalb des "begrenzenden Zaunes" ist es immer möglich ein passendes Feldliniengebiet zu finden, das man für Verbindungen nutzen kann, vorausgesetzt, daß die meisten Antennen nördlicher Stationen innerhalb des Ost-West-Halbkreises nach Norden zeigen, dann sind Verbindungen möglich. Feldlinien innerhalb des Ovals sind in der Praxis nicht kritisch. Abweichungen der Antennenrichtung um 30 Grad bewirken oft wenig Unterschied in den Feldstärken, besonders, wenn die DX-Verbindungsweite klein ist, z.B. zwischen 600 und 1000 km. Der Abfall der Anzahl von gearbeiteten Stationen bei maximalen Ost-/Westentfernungen rührt von der niedrigen Feldstärke (Abfallen der Feldstärke im Quadrat zur Entfernung), und daß der Reflektionspunkt in der Mitte und nördlich der Grundlinie liegt, her. Das Übergewicht von Verbindungen zwischen 600 und 1000 km beruht darauf, daß der Reflektionspunkt nahe der nördlicheren Station liegt, und in der Praxis ist eine beträchtliche Nord/Südkomponente enthalten, so daß die Strecken-Dämpfung geringer ist. Die zahlreichen Stationen mit niedriger Leistung oder schlechtem Standort können hieran teilnehmen.

Anomalies

If the capability of any particular station is improved about the limit of what an amateur station on the 2 metre band can achieve i.e. (moon bounce EME), this requires the best in antennas and a very low noise receiver. There are a few such stations scattered around Europe and they are also first class operators used to resolving weak signals. There have been occasions where such stations have exceeded what we have considered the normal maximum range possible for auroral contacts; this has only occurred under the most intense auroras i.e. 25th July 1981, 13th July and 6th September 1982, where local geomagnetic "A" indices exceeded 100 units. These were the most intense and widespread auroras so far on Solar Cycle 21.

Also, if we can increase the height of the aurora from 110 kilometres to around 120 - 125 kilometres under the most intense auroras; a very reasonable assumption, and realise the weak signal capability of EME stations then this is adequate to explain most of the anomalies. As we move west to Ireland and the U.K. the earth's magnetic field is biased westerly, this enables these stations to find reflection points at greater negative angles which, in fact, can be slightly south-east of them, thus enabling more southerly contacts to take place, i.e. Dublin to Balearic Islands, Belfast to Northern Italy. The map Fig. 5 shows the signal paths.

The station in the Balearic Islands was a high powered expedition which, by

luck, was operating at the time, and this is the farthest south location ever contacted by means of bistatic aurora in Europe since records have been kept (1957). Even so, the total of all known anomalies (a small fraction of a percent) exceed the theoretical limits for the 2 metre band by only 200 - 300 kilometres in all instances, except the Irish to Mediterranean where 500 kilometres has occurred on two occasions. In these instances the reflection point was on an easterly bearing of 120 degrees from the Irish station, i.e. south of east. This therefore added to the total southern penetration possible, a condition not usable by stations elsewhere in Europe, where the limits are nearer 85 degrees to 90 degrees either east or west, before the necessary field alignments can no longer be maintained.

Unregelmäßigkeiten

Wird die Fähigkeit einer bestimmten Station über die Grenzen hinaus dessen verbessert, was eine Amateurstation auf dem 2m-Band erreichen kann, z.B. Moon Bounce EME, so fordert dies große Antennen und Empfänger mit niedriger Rauschzahl. Es gibt einige solcher Stationen über Europa verstreut und es sind auch erfahrene Operatoren, daran gewöhnt, schwache Signale aufzunehmen. Es gab Gelegenheiten, wo solche Stationen das überschritten haben, was wir als normale maximale Verbindungsweite bezeichnen haben, die möglich ist für Auroraverbindungen; dies ist erst bei den intensivsten Auroras vorgekommen, z.B. 25. Juli 1981, 13. Juli und 6. September 1982, wo lokale geomagnetische "A"-Teile 100 Einheiten überschritten. Dies waren die intensivsten und weitest ausbreitendsten Auroras bis jetzt im Sonnenzyklus 21.

Auch wenn wir die Höhe der Aurora von 110 km auf etwa 120 - 125 km erhöhen könnten bei den intensivsten Auroras; eine sehr vernünftige Annahme, und die schwache Signalfähigkeit von EME Stationen voraussetzen, dann ist dies vergleichbar als Erklärung der meisten Unregelmäßigkeiten zu erklären. Wenn wir uns westwärts nach Irland und England bewegen, wird das Erdmagnetfeld westlich vorgespannt; dies befähigt diese Stationen Reflektionspunkte mit größeren negativen Winkeln zu finden, die, in der Tat, leicht südöstlich von ihnen liegen können, also können mehr südliche Verbindungen stattfinden, z.B. Dublin mit den Balearen, Belfast mit Norditalien. Die Karte in Abb. 5 zeigt die Signalwege.

Die Station auf den Balearen war eine Expedition mit sehr großer Leistung, welche glücklicherweise zu dieser Zeit tätig war, und dies ist die weiteste Verbindung mit dem Süden bei bistatischer Aurora, die, seitdem Rekorde festgehalten werden, in Europa hergestellt wurde (1957). Trotzdem überschreiten alle bekannten Anomalien (ein kleiner Teil von 1%) die theoretischen Grenzen für das 2m-Band nur um 200 - 300 km in allen Fällen, außer der Verbindung von Irland zum Mittelmeer, wo 500 km zweimal überschritten wurden. In diesen Fällen lag der Reflektionspunkt bei 120 Grad in östlicher Richtung von der irischen Station, z.B. Süden über Osten. Dies kommt darum zur totalen südlichen Durchdringung hinzu, die möglich wäre eine Bedingung, die für andere Stationen in Europa nicht in Frage kommt, weil deren Grenzen dichter bei 85 - 90 Grad entweder Ost oder West liegen und die nötigen Feldlinien nicht mehr länger erhalten werden können.

Radio Amateur International Co-operation

The success of the operation in producing up to 1980 over 6000 contact reports and to date, 1982, 25, 000, is an example of international co-operation through the International Amateur Radio Union and the D.U.B.U.S. Group, that would be very hard to better. Also, to get the maximum number of operators on during auroras, a series of telephone warning networks were established, both internationally and nationally to ensure maximum coverage. Also, the author supplied the R.S.G.B. news broadcast service with forecasts of auroras, this service proved to be more successful than had ever been anticipated. Most of the big or major auroras were correctly forecast, together with many more normal ones. The methods of auroral forecasting were based on keeping accurate records of solar events and the formation and development of coronal holes which have been shown to have a very high correlation with auroras (4). A paper appertaining to this aspect of the work

is under preparation for presentation at a later date.

Internationale Zusammenarbeit von Funkamateuren

Der Erfolg dieser Operation, bis 1980 über 6000 Verbindungsberichte und 1982 25 000 zu datieren, ist ein Beispiel von internationaler Zusammenarbeit durch die I.A.R.U. und der Dubus-Gruppe, welches nur schwer besser zu machen wäre. Um auch die größtmögliche Anzahl von Amateuren während einer Aurora zusammenzubringen, hat sich eine Reihe von Telefonwarnnetzen etabliert und zwar international und national, um die maximale Abdeckung zu sichern. Auch hat der Autor den R.S.G.B. Radionachrichtendienst mit Auroravorhersagen ausgestattet, eine Dienstleistung, die sich erfolgreicher bewies, als man je erwartet hatte. Die meisten der großen oder wichtigen Auroras wurden korrekt vorhergesagt, zusammen mit vielen normalen. Die Methoden der Auroravorhersage basieren auf genauen Aufzeichnungen der Sonnenaktivität und dem Formieren und Entwickeln von Koronaflecken, die eine sehr große Korrelation mit Auroras gezeigt haben (4). Ein Artikel, der zu diesem Aspekt der Arbeit gehört ist in Vorbereitung und wird zu einem spätern Zeitpunkt veröffentlicht.

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This image, the first view of the entire auroral oval from high altitudes, was taken on Sept. 25th 1981 with the spacecraft located approximately 3.27 earth radii (20860 km) above the North Pole. The light colors are the areas with the highest intensivities. Although quite faint along some of its circumference, the auroral oval extends across the terminator into the sunlit hemisphere of the earth. Half of the earth is completely dark except for the auroral oval. The sun is illuminating the earth from the left-hand side of the picture.

Dieses Bild ist eine Satellitenaufnahme von Aurora aus einer Höhe von 20860 km über dem Nordpol. Das Auroragebiet mit der größten Intensität hebt sich hell als Oval über dem Norpol hervor. Die Tag/Nacht Grenze ist deutlich auf der linken Seite des Bildes zu erkennen.

QST November 1983

METEOR SCATTER ADDRESS LIST

9H1BT	HV03F	P. GALEA; 94 BOSKETTO RD.; RABAT
9H1CD	HV	H.G.SOUCHET; 'DAVIS' 29/2; SAN GWANN
CT1WW	WB63B	T. J. FREDERICO; NAGOSELO DO DOURO; 5130 S. JOAO PESQUEIRA
DB1RF	DN	H. KOWALCZIK; NORDSEEDERWEG 1; D-NORDEN 2
DB5AQ	FL33B	A. IMSE; PFAFFENWIESE 57; D-3423 BAD SACHSA
DB7XC	DM	K. G.SCHACHT; ORCHIDEENSTR. 15; D-4460 NORDHORN
DB9CW	GH	H. BÖSSL; AUWEG 39; D-8201 FLINTSBACH; 080343100
DC2OC	EM60A	J. KAUFER; TULPENSTR. 4; D-3001 AHLTEN
DC2XK	EN40A	H. KUHN; PAPENMOORWEG 25; D-2038 HALSTEMBEK
DC7MH	GM37B	R. KORSCH; SENFTENBERGER RING 75; D-1000 BERLIN 26
DC7QH	GM48B	E. DIETERLE; GERSTNERWEG 1; D-1000 BERLIN 49
DC7UT	GM37C	H. KALZ; LINDAUER ALLEE 24; D-1000 BERLIN 51; 304966669
DC9CW	GH	H. BÖSSL; AUWEG 39; D-8201 FLINTSBACH; 080343100
DC9KW	DK26G	R. SCHLOTTE; LESSINGSTR. 1; D-BROICHWEIDEN
DC9YC	??	K.D.KLEIN; ALTE KÖLNER STR. 47; 4030 RATINGEN
DF1CF	FH23J	J. HEINZE; OBERSCHWARZENBERG 16; D-8961 OY; 08366590
DF1QC	FM44E	T. WILM; KANTALLEE 5; D-3180 WOLFSBURG 1
DF1OH	EM57J	F. W. BODE; HAUPTSTR. 10; D-3054 APELERN
DF1SO	EI27D	D. BREDIN; GERHSTR. 12; D-7317 WENDLINGEN; 070246737
DF2HC	FN31B	H.C.HOLSTENBERG; SAELESTR. 36L; D-2000 HAMBURG 73; 0406781664
DF2JQ	DL44H	T. FRIEDRICH; FORSTSTR. 106; D-4130 MERS 1; 0284157219
DF2RF	GI	F. B. RAAB; WACKINGERSTR. 9; D-8360 DEGGENDORF
DF2ZC	DK50D	B. MISCHLEWSKI; BOX 1463; D-6252 DIEZ; 0643281402
DF31F	EJ32D	P. KASTNER; BLOCKENGASSE 19; D-6710 FRANKENTHAL
DF3RU	FJ49J	K. SCHMIDT; MÖRSWINKEL 1; D-8451 ILSCHWANG; 09666328
DF3XU	FN31A	H. JESSEN; BOX 601221; D-2000 HAMBURG 60; 0406302531
DF4XW	EN50B	W. SCHRÖDER; HERMESWEG 29; D-2100 HAMBURG 90
DF5DE	EK02H	K. O. HERLING; KATZENBACH 12; D-5927 ERNDEBRÜCK 1; 027532513
DF5DL	EL23E	D. KLOSE; WESTRING 27; D-4787 GESEKE 2
DF6NA	EJ20D	R. ALLRAUN; TRAUTENAUERSTR. 12; D-8700 WÜRZBURG; 093173497
DF6OB	FM44C	M. KÜHLE; CRANACHWEG 2; D-3180 WOLFSBURG
DF7VX	EL	H. FISCHER; AM HOLSAUT 139; D-4791 DÖRENHAGEN
DF9CY	EL02E	C. PETERMANN; GÜTERSLOHERSTR.114; D-4836 HERZEBROCK 052452661
DF9FY	DK	S. HECK; IM AUL 21; D-5569 SCHALKENMEHREN; 065924654
DF9ZT	EK	F. RATHENOW; HÖHENSTR. 29; D-6301 KROFDORF; 064183877
DG1BF	DN	A. JANSSEN; PARKSTR. 39; D-2980 NORDEN 1
DG4NAE	EJ	U. LANGENOHL; MAINPARKASEE 1125; 8752 MAINASCHAFF
DH0HAR	FN21F	F. ROHJAN; WILLERSWEG 36 D; D-2000 HAMBURG 67
DH1LAC	FG	C. ESCH; DORFSTR. 7; BOX 2; 2304 LABOE; 043438012
DH8OAB	EM	P. ZIESE; FEUERBACHSTR. 16; D-3000 HANNOVER; 0511690468
DJ0QZ	DK	F. KNECHT; ESCHBACH 9A; D-5409 WALDESCH
DJ3TF	FJ50G	G. W. WESSLEY; BODELSCHWINGHSTR. 2; D-8450 AMBERG; 0962181337
DJ5BV	DK	G. PARZONKA; WALDSTR. 16; D-5305 ÜDEKOVEN
DJ5DT	EJ04E	T. DAMBOLDT; WOODGSTR. 65; D-6100 DARMSTADT; 06151372781
DJ5MS	GI15A	P. PELZ; HUBERT-FRANKENSTR. 1; D-8350 PLATTING; 09931638
DJ6CA	EM72H	H.J.DIERKING; IM FELDE 1; D-4503 DISSSEN
DJ6MB	DK	H.U.MÜTZELFELDT; SCHIEFFELINGSWEG 29; D-5300 BONN-DUISDORF
DJ8MT	FM	U. SÖCHTING; AM BIERWEG 1; D-3180 WOLFSBURG
DJ9CZ	DL71A	K.H.MÖDING; NIKOLAUSSTR. 13; D-5138 HEINZBERG
DK1KO	FI12G	R. KOCH; NEUER WEG 3; D-2061 SÜHLFELD; 04537224
DK1VI	EJ	E.W.WAWRZIK; DROSSELWEG 12; D-6909 WALLDORF; 062279505
DK1WB	FM44D	H. EICHEL; DAVID MANSFELDWEG 3; D-3300 BRAUNSCHWEIG
DK2AM	EN41G	D. WAGNER; GRAFENWEG 10; D-2935 BOCKHORN 1
DK2DD	EK09C	W. BORSCHEL; GÖRLITZERSTR. 13; D-6440 BEBRA
DK2LM	EJ21F	F. KUBITZSCH; D-6719 WEIERHOF/ POST MARNHEIM
DK2RY	FJ	W. KURZ; KARL MAY STR. 14; D-8520 ERLANGEN
DK2UO	DL	H. WÖLKY; LEONORENWEG 15; D-5050 PORZ-ENSEN
DK2ZF	FN04J	R. RIEFIND; WURZELDEICH 17; D-2980 NORDEN 1; 0493115884
DK3UZ	EN20C	E. NAMM; BOX 38; D-2358 KALTENKIRCHEN; 041911621
DK4MM	EK50J	S. SCHLEICHER; WIESENSTR. 60A; D-6108 WEITERSTADT
DK400	FI	H. FREYMANN; AM HAUSERHOF 7; D-3016 WENNIGSEN
DK4TG	DL63H	L. RUHM; GATHERSKAMP 45; D-4050 MÜNCHENGLADBACH
DK5AI	FL33B	W. HELLBERG; KASTENSAL 3; D-3426 WIEDA
DK5QI	EL05J	F.H. PRIESTER; LANGE STR. 38; D-4930 DETMOLD 1

DKSRQ GI24J R. DUSSMANN; H.-K.-SCHMIDSTR. 1; D-8380 LANDAU
 DKSSG EI13J H. AUBERMANN; OB. BERGSTR. 14; D-7544 DOBEL; 070833136
 DKSVR DJ55C E. DUPRE; BRUNNENSTR.; D-6601 HEUSWEILER 1 HOLZ
 DK8VS DJ66H W. HEYDT; BUNSENSTR. 36; D-6600 SAARBRÜCKEN 3
 DLQVW FM44E CLUBSTATION DARC OV WOLFSBURG; VIA DF10C
 DL1MF GH G. KIRNER; REGELSBACHERSTR. 16/I; 8504 STEIN; 0911676186
 DL20M DK R. MILKER; AM WALDCHEN 16; 5411 EITELBORN; 026208516
 DL3YB EM F. HERBST; NR. 35; D-3161 HEESSEL/LEHRTE
 DL4NAA FI C. PRITZEL; ULMENWEG 49; D-8750 ASCHAFFENBURG; 0602188397
 DL5MCG FI W. RAUH; FRAUENTORSTR. 22; D-8900 AUGSBURG; 0821152316
 DL6BAG DN P. FISCHER; PARKSTR. 24; D-2980 NORDEN 1
 DL6BF DM H. LOHAUS; EICHENWEG 26; D-4442 SALZBERGEN
 DL6NAA FK59C R. VÖLKEL; BRUNNENSTR. 9 D-8671 LEUPOLDSGRÜN; 092921525
 DL6ZAU EK G. VOLKMANN; STAUFFENBERGSTR. 5; 6367 KARBEN-REND. 060397966
 DL7AN DN M. HÖRNING; HARRINGASTR. 22; 2984 HAGE; 0493174179
 DL7QY FJ61E C. NEIE; D-7181 RUDOLFSBERG 24; 079517418; QRV 70CM MS ONLY
 DL7WC GM48G A. GNADIG; GRAPHITWEG 14; D-1000 BERLIN 47
 DL7YS GM P. JOHNS; KARLSBERGERALLEE 32-34; D-1000 BERLIN 22
 DL7YW GM47D J. HAHN; HÖSCHWEG 11; D-1000 BERLIN 49
 DL8GP DJ H.W. JOACHIMSEN; ESCHBERGERWEG 32; D-6600 SAARBRÜCKEN
 DL9DAK DL29F P. KAMINZKI; BOX 26; D-4619 BERGK.-RÜNTHE; 023895433
 EA1CR XD R.G.PANEDA; C/O GEN ESTEBAN INFANTES; 22-BJO IZQ ROCES; GIJON
 EA1ED VD F. FERNANDEZ; ARZUA 6-3; LA CORUNA; SSB
 EA1TA VD59A P.O. BOX 725; LA CORUNA; SSB
 EA1YV VC A.B.QUINTAS; LOPEZ MORA STR. 70-1A; VIGO
 EA3ADW BB22G C. NEIE; D-7181 RUDOLFSBERG 24; 079517418; QRV 70CM MS ONLY
 EA3AIR BB41E J.I. GARCIA; CARRERCA 25; BARCELONA 17
 EA3LL AB56B J.M. GENE; APARTADO 310; REUS
 EA3PL BB/AB V.E.FARRES; TAMRIT 185; BARCELONA 11
 EA3WH AB BOX. 23; VILLAFRANCA DEL PENEDES; BARCELONA
 EA4AO YA J.M.CORDOVA BARREDA; PASEO DE EXTREMADURA 17-4; MADRID 11
 EA5EIR ZY10H PACO SENDRA; PASEO GERMANIAS 24; GANDIA; VALENCIA
 EA5HM ZZ P.R.MARTINEZ; C/O CHILE 11-14A; VALENCIA 10
 EA5KF ZZ R.L.NAVARRO; BACHILLER 22; VALENCIA 10
 EA6AU BZ45A J. ANTICH; C-ORIENTE 31; LLUCHMAYOR-BALEARES
 EA6BW BZ R. MIRALLES; ED/BALBOA; CAN PASTILLA; PALMA DE MALLORCA
 EA6FB AY BOX 8; SAN JOSE; IBIZA
 EI2CA WM10A P. MARTIN; CRONROE; ASHFORD; CO. WICKLOW
 EI9D WN J.G.CARROLL; CLOONADA; RAHEEN PARK; BRAY; CO WICKLOW
 F1BHL ZJ77J J. LEPOIL; 1 RUE PASTEUR; 14310 VILLERS BOCASE
 F1BYM ZE C. GAYE; RES ARCACHON MARINES II; BAT IBIS 15; 33120 ARCACHON
 F1CNA CE34C E. ALLEMAND; 23 RUE PEYROUSE; 26200 MONTEILIMAR
 F1DDA ZE H. RIGAUCCOURT; 5 RUE PASTEUR; 78600 MAISONS-LAFITTE
 F1EIM DD J.E.ALLOUCH; LE REGINA; 71 BLVD. DE CIEMEZ; 06052 NICE CEDEX
 F1EIT CF J. BALANCA; 13 RUE FRANCOIS MARIE; 69200 VENISSIEUX
 F1FG CD24G J. GUERIN; PETIT SONNALIER; 13 ARLES
 F1FHI ZH63F J.P.MAIDON; LA HEE; 44120 VERTOU
 F1FIH CD M. LABORDE; 10 RUE CARAVELLE; 30127 BELLEGARDE
 F1KFN CF15E INSA; 20 AV. ALBERT EINSTEIN; 69621 VILLEURBANNE-CEDEX
 F3TV BI CLUB ECOLE SUP. D'ELECTR.; PLATEAU DE MOULON; 91190-S-YVETTE
 F3ZZ AG M. PELHATE; 73 BLVD. ANATOLE FRANCE; 86000 POITIERS
 F5DE AF B. DELAGE; LOTISSEMENT BEAUREGARD; TOUVRE; 16600 RUELLE
 F5SE CJ51F M. TONNA; 134 BLVD. DAUPHINET; 51000 REIMS
 F6AND BI M. AMIARD; 120 BLVD. BINEAU; 92200 NEUILLY
 F6APU DI A. JUNGBLUTH; 3 RUE DES TULIPES; 67000 LINGOLSHEIM
 F6BSJ CG J.M.MAUBLANC; 9 AV DU GENERAL DE GAULLE; 19000 TULLE
 F6BVA DD71A M. ANTONIOLI; LES COUGOURDONS; 83260 LA CRAU
 F6CER BI G. RICAUD; 34 AV DE LA GARE; 77310 ST FARBEAU PONTTHIERRY
 F6CJG BF21J G. GERVAIS; IMPASSE BALUZE; 19100 BRIVE
 F6CTW BI12F R. CAMUS; 17 AV. J. DUCLOS; 92350 PLESSIS ROBINSON
 F6CVN CI H. PHILLIPPE; 19 RUE PAVEE; 51300 VITRY LE FRANCOIS
 F6DRO AD D. DEHAY; 22 RUE DE L'AIGLON; 80000 AMIENS
 F6DWQ CD M. MARGARIA; 26 RUE TRACASTEL; 06130 GRASSE
 F6EAS ZI05D P. LEFOULON; 9 RUE DE MAYON; 50420 TESSY SUR VIRE

F6EMT ZH63A M. GUETRE; 14 RUE A. NOBEL; 44300 NANTES
 F6ETI YH24C P. MARTIN; KER-YVON; 56680 PLOUHINEC; 97367486
 F6EYM ZI75A G. VIBET; 14 RUE DES TROENES; 50000 ST.-LO
 F6FHP AE21G J. OULIE; RUE PASTEUR; BL 1 APPT 432; 33270 FLOIRAC
 F6HVK CH A. QUIVY; 39 R.DU CHATEAU; 21160 MARSANNAY-LA-COTE; 80454912
 F8CH AD37A P. RICAUD; 23 ALLEE DU CHATEAU; 31770 COLOMIERS
 F8SQ BI G. GROSSETTE; 13 AV DE LA REPUBLIQUE; 91260 JUVISY
 F8ZW DI28D J.P.SPINDLER; LE REBGARTEN; 67000 QUATZENHEIM
 F9FT CJ51F M. TONNA; 134 BLVD. DAUPHINET; 51100 REIMS
 FC6ABF EC J.J.PHILLIPPE; BOX 44; BASTIA; CORSE
 G3BW Y033G W.H.HODGSON; 53 HILL TOP RD.; WHITEHAVEN; CUMBRIA CA28 9ED
 G3COH ZN J. STACE; 38 SKIPPENDALERD.; SCUNTHORPE; S. HUMBERSIDE
 G3FPK ZL60J N.A.S.FITCH; 40 ESKDALE GDNS.; PURLEY; CR2 1EZ; 016685582
 G3IMV ZK07H J. HUNTER; 28 WHITELEY CRES.; BLETCHLEY; BUCKS.; MK3 5DG
 G3LEW ZL70K G. WHELE; 23 ST MICHAELS WAY; PATRIDGE GN; HORSHAM; RH13 8LA
 G3LTF AL11D P.K.BLAIR; LITTLE POOL; POTTER ST; HARLOW; ESSEX; CM179AD
 G3NSM ZL14E R.E. MC HENRY; 26 CHARLBURY RD.; OXFORD; OX2 6UU; 086556321
 G3FBV YK32B D. SELLARS; 'WISTERIA'; HENNOCK; NEWTON; DEVON 0626833468
 G3POI AL51G C.S.PENNA; DOWNE C. CT.; LUXTED RD.; DOWNE; ORPINGTON; KENT
 G3SEK ZL I. WHITE; 83 PORTWAY; DIXCOT; OXFORD; OX11 0BA
 G3TNO ZL M.T.HEALEY; 63 CURZON AV.; HORSHAM; W. SUSSEX
 G3UNU ZM NOTTINGHAM URS; STUDENT'S UNION; UNIVERSITY PARK; NOTTINGHAM
 G3VVF AL M.R.LEE; 11 STURROCK; VANGE; BASILDON; ESSEX; SS16 4PQ
 G3WOH YN E. GROSSMITH; 16 TOFTWOOD AV.; RAINHILL; PRESCOT L35 0PU
 G3WSN ZK K.A.M.FISHER; 45 CAULDRON CRESC.; SWANAGE; DORSET; B19 1QL
 G3WZT ZK09J J. MATTHEWS; KINGS DOWN; CHURCH RD.; PARTRIDGE GD.; HORSHAM
 G4ASR YN D. BUTLER; 23 WHITEHOUSE DRIVE; KINGSTONE; HEREFORD; HR2 9ER
 G4CBW YM A. HORSFALL; 20 THORNHOLME RD.; HAWK GN.; MAPLE; STOCKPORT
 G4CDC ZN E. MORTON; 23 COLLUM AV.; SCUNTHORPE; S.HUMBERSIDE; DN16 2HE
 G4CLK AL34C M.J.STRINGER; 154 TRINITY RD.; SOUTHEAD; ESSEX; SS2 4AW
 G4CMV ZN12F C.H.MORTON; 8 FOXHILL AV.; QUEENSBURY; BRADFORD; BD13 2JW
 G4DEZ AL B. LEWELLYN; 31A SEAVIEW DRV.; GT.WAKERING; SOUTHEAD; ESSEX
 G4DGU XK C.P.BARTRAM; BRADWORTHY; HOLSWORTHY; DEVON EX22 7TU 040924543
 G4DSC ZO D. BONIFACE; 11 HOLMEFIELD RD.; RIPON; HG41 1RZ; 07652230
 G4DZU ZN D. PARKER; 14 MOORSIDE CRES.; DRIGHLINGTON; BRADFORD
 G4ERG ZN P. ETHERIDGE; 42 WASCANA CLS.; ANLABY PARK RD.; SOUTH; HULLHU4
 G4GUF AM49B R. STORETON-WEST; 45 SOMERLEYTON RD.; LOWESTOFT; NR32 4RB
 G4GZA ZN D. AYRIS; 16 CHAPEL LANE; NORTHORPE; GAINSBOROUGH; Lincs.
 G4HGT YN J. WILKINSON; 10 RINGWAY RD.; LEE PK.; LIVERPOOL; L25 3QS
 G4IGO YK07F K. OSBORNE; 14 GLEBELANDS; MERRIOTT; SOMMERSET; TA165RE; 046073088
 G4IJE AL P.W.TURNER; GLADWYNS CT.; THE STREET; BISHOP'S STORTFORD CM227LN
 G4IJJ ZL A.J.SPRATT; 14 EDGE COTE CLS.; CADDINGTON; BEDS.; LU1 4HG
 G4IRX ZM N.P.BUTTON; 134 LONDON RD.; BIGGLESWADE; BEDS.; SG18 8EL
 G4ISM AL M. HUGHES; 7 MARTINDOWN RD.; WHITSTABLE; KENT
 G4IYA AL M.P.ADAMS; 14 HOLLANDS CLS.; SHORNE; GRAVESEND; KENT; DA12 3EH
 G4MDL AL G.R.MOORE; 462 HIGH RD.; BENFLEET; ESSEX; SS7 5AL
 G4MJS ZM P.C.C.BOWYER; BUSHY LAWN LODGE; BRIGSTOCK; KETTERING; NN14 3HZ
 G4OAE ZL D. CRISP; 2 FLAXMAN CLOSE; EARLEY; READING; BERGS. 734874232
 G4PCI YL G. GULLIS; 4 PRIESTACRE COTTAG.; MARLBOROUGH WILTS.; SN8 1QA
 G6UW AM C.U.W.S.; FITZWILLIAM COLL.; CAMBRIDGE; CB3 0DG
 G8HDR ZL C.A.LANCASTER; 41 GREEN LANE; HARROGATE; N. YORKS.
 G8JHL YN39E J. LOVELL; 40 VINE ST.; KERSAL; SALFORD; MANCHESTER M7 0PG
 G8LGL YL46C P. BROADHURST; 92 CLEVEDON RD.; TICKENHAM; BS21 6RE; 027552478
 G8MJD ZN A. COLE; 23 SMITHYLANE; COOKRIDGE LEEDS 16; LS16 7LX; 0532674721
 G8ROU ZN D. HARDY; THORNTREE HOUSE; WENSLEY; MATLOCK; DERBYSHIRE DE42LL
 G8RWG ZL N.MONTANANA; 324 YORKTOWN RD.; COLLEGETOWN; CAMBERLEY; SUR. GU154P2
 G8SFM YL K.A.SOUNDERS; 'TAMARISK'; TETBURY LANE; LEIGHTERTON; GL8 8UP
 G8SKG ZN L.G.S.CHALLIS; 87 MACAULEY DRIVE; LINCOLN; LN2 4EN
 G8SVG ZN V.A.BOLDY; 18 HOYLAND RD.; KETTLETHORPE; WAKEFIELD; WF2 7HF
 G8TZT ZN C.S.CAMM; 151 HEBDEN RD; KEIGHLEY BD22 8RE; YORKS.; 53542466
 G8VR AL K.E.V.WILLIS; 11 OLD DOWNS; HARTLEY; DARTFORD; DA3 7AA
 GD3YEO XD68E R.C.RIMMER; 33 SELBORNE DRV.; DOUGLAS; ISLE OF MAN
 GI4GID WD40D J. HEASLEY; KILLOWAN COT.; BALLYMACASH RD.; LISBURN; CO ANTRIM
 GI4HVI WF66C T. HAMILTON; 11 NORWELL PARK; CASTLE ROCK; COLERAINE

GI4KSO WO D. MAWHINNEY; 13 LAMBEG RD.; LISBURN; CO ANTRIM BT27 4GA
 GI5AJ XO J. ADAMS; 38 BAYVIEW RD.; BANGOR; CO DOWN
 GI8JGF W004D 13 LAMBEG RD.; LINBURN; ANTRIM; BT27 4GA
 GI8JTS WP A.T.HAMILTON; 11 NORWELL PK.; CASTLEROCK; COLERAINE; CO DERRY
 GI8YDZ WP67B A. DOHERTY; 21 RAMORE; PORTRUSH; AMTRIM; BT56 8BB
 GJ4ICD YJ70J G. BROWN; LEMNOS; LONGUEVILLE RD.; ST. SAVIOUR; JERSY
 GJ8KNV YJ70C P. JOHNSON; MON REPOS; FAUVIC; GROUVILLE; JERSY
 GJ8SBT YJ A. RENOUF; BOSCOBEL FARM; ST. PETER; JERSY; SSB; 053442258
 GM3XJQ XL M.A.SHELLEY; 7 GDN COTTAGE FLATS; SAUNDERSFOOT; TENBY; DYFED
 GM3YDR YR60 A.B.GIVENS; 41 VERONICA CRES.; KIRKALDY; FIFE
 GM4CXP YP37C D. DAWCE; STATION HOUSE; MAXTON; ST. BOSWELLS; ROXBURGH
 GM8BDX YP A.J.SCOTT; MANDERSTONE STABLES; DUNS; BERWS.
 GM8NCM YQ A. SIMPSON; 58 CHEVIOT RD.; KIRKALDY; FIFE KY2 6BB
 GU3YIZ YJ J.E.MARTIN; BONNE CHANGE; MARIAS LANE; VALE; GUERNSEY
 GW3NJW YL C. WHELAN; 24 SEVERN RD.; CANTON; CARDIFF
 GW3NYY XL W. DAVIDSON; BOX 21; SWANSEA SA1 1ED; 0792201111
 GW4BXE YL25D P. EDWARDS; 13 SALISBURY CT.; GREENMEADOW; CWMBRAN; NP44 4BY
 GW4CQT YL D.T.PRICE; VINE COTT.; GARTH LANE; TYCOCH; CWMBRAN.; NP44 7AD
 GW4FJK XL16G T.J.HUGILL; 8 CASTLE VIEW; HAVERFORDWEST; DYFED; SA61 2JA
 GW8DUP YL R.G.HARRIS; 64 FREDERIC PL.; LANSAMLET; SWANSEA
 GW8FKP XN69H A.H.HENDY; CERRIGCEINWEN; BODORGAN; GWYNEDD; N. WALES
 GW8NBK YL34D J. EASTMENT; 211 PANTBACH RD.; RHINBINA; CARDIFF CF4 6AE
 HB0POM EG08B M. EISEL; ROSENWEG 4; CH-7302 LANDQUART
 HB9MFL DH A. ROESCH; AMSELWEG 502; 4707 DEITINGEN; 065441721
 HB9MFW EH24H H. FITZNER; BIRCHWEG 49; 8200 SCHAFFHAUSEN
 HB9QQ EH45E P. PASTER; SUNNHALDENSTR. 28A; 8600 DUBENDORF/ZH
 HB9RG EH H.R.LAUBER; BOX 114; 8033 ZÜRICH/ZH
 HG0KLZ KH RADIO CLUB OF NYIREGYHAZA; BOX 25; NYIREGYHAZA; H-4402
 HG1YA IH63B DRASKOVITS GABOR; KARPATI U. 43; SZOMBATHELY; H-9700
 HG2KRD IH79J RADIO CLUB VESZPREM; MARTIROK UL. 11.; VESZPREM
 HG4KXG JG05J DUNAI VASMUE RADIO CLUB; BOX 132; DUNAUJVAROS; H-2401
 HG4YF JH63G HALMI BELA; ADONYI UT 86/A.; 40.LAKAS; SZEKESFEHERVAR; H-8000
 HG5AIR JH47G MALEV RADIO CLUB; BOX 4; BUDAPEST; H-1685
 HG5CJ JH47J BIRO ANDRAS; IFJUSAGI LAKOTELEP D.1.; 4-2 BUDAPEST
 HG5KQD JH25C RADIO CLUB OF BUDAPEST; BOX 2; BUDAPEST; H-1553
 HG6KNB JI69C RADIO CLUB OF SALGOTARJAN; BOX 115; SALGOTARJAN; H-3101
 HG6KVB KH RADIO CLUB; KOSSUTH L. U. 4.; EGER; H-3300
 HG7PR JH HETVES JOZSEF; BOX 17; SZAZHALOMBATTA; H-2441
 HG8CE KG32C KOVACS ISTVAN; PAPTELEK 5.; DEREKEGYHAZ; H-6621
 HG8ET KG NAGY GYULA; SIMA F.45; SZENTES H-6600
 HG8KCP KG22J NAGY GYULA; SIMA FERENC U. 45.; SZENTES; H-6600
 I0DLP GB03F P. DE LORENZI; V.D.FELTRESCHI 18A; 00164 ROMA
 I0HCJ GB03F F. MARINCOLA; V.SORELLO MARCHISO 23; 00168 ROMA
 I0MNI GC41J G. MANCINI; V.ZARA 54; 01100 VITERBO
 I0SNY GD72B R. SANNA; V.MADONNA ALTA 33; 06100 PERUGIA
 I1BEP DE/EF R. BERTELLA; V.ALBANI 57; 20148 MILANO
 I1DMP DF79J P. DEL MEDICO; V.DANEO 22; 10135 TORINO
 I1KTC EF A. ZAMPOGNA; VIA PRIV. FORMAGGIO 11; 28100 NOVARA
 I1MXI EE05C M. IVO; V.SANTA MARIA 4; 15055 PONTECURONE
 I1NVF EE800 F. GOZZI; VIA BIASSE 73; 19100 LA SPEZIA
 I1RSQ DE30G D. RACCA; F.R.MADONNA PILONE; 12030 CAVALLERMAGGIORE
 I1TEX DF M. SENESTRO; V.OBERDAN 133; 10127 TORINO
 I2FAK EF F. GIORGI; VIA PRIV. ZAVATTARELLO; I-27043 BRONI PV.
 I2GMJ EE07J E. FAGNANI; V.TELESIO 22; 20145 MILANO
 I2KSX ?? S. GRANDE; V. MENTANA 30; 22100 COMO
 I2MBC EF16J S. SALVATICO (I2SVA); V. ROTA 9; 22100 COMO
 I2VRN FF71J R. VERANI; V.G.PAGLIARI 6; 26049 STAGNO LOMBARDO-CREMONA
 I3FGX FF G. BATTISTA FERRERO; V. PINAZZA 10; 35031 ABANO TERME
 I3LGP GF24G B. ARTICA; V.VENEZIA 50; 30122 CEGGIA
 I3LHI FG76C B. LUCHI; V. INAMA 2; 38100 TRENTO
 I3SLB FF L. SALBEGO; V. MAGLIETTA 6; 36042 BREGANZE
 I3SOY GF P. SOSSAI; V. VERONA 19; 31015 CONEGLIANO
 I3TJQ GF41G S. TESTA; V. VOLTURNO 23; 30038 SPINEA
 I3VFJ GF42H V. BENVENUTI; V. MILANO 40; 30172 MESTRE

I4AE	FE	P. GUGLIUZZA; S. PIETRO IN CASALE; V. TOLOMELLI 37
I4BER	FE	G. TOMASSETTI; V.E.FERRAVILLA; 40127 BOLOGNA
I4BXN	FE	G. SALVIONI; V. ROVERSELLA 1; 40054 BUDRIO
I4EAT	FE60F	F. MINARDI; V. CANTAGALLI 18; 48018 FAENZA
I4GOC	SE	G. CANDUCCI; V. GALILEA FERRARIS; 47037 RIMINI
I4MJQ	GE77C	M. MAZZA; V. XX SETTEMBRE 55; 47037 RIMINI
I4FWL	FE	S. ZANNONI; V. CALLIGARIE 6; 48018 FAENZA
I4VEQ	FE47J	C. VEROLI; V.S.FERRARI 28; 40137 BOLOGNA
I4XCC	GD	C. MARACCI; V. GUAITINO 4; 47040 CROCE DI MONTECOLOMBO-FO
ISCEZ	FD32C	L. SALVADORI; BOX 106; 57100 LIVORNO
ISIAZ	FD32C	U. PICCHI; V. LLEWELLIN LLOYD 9; 57100 LIVORNO
ISMZY	FD17F	M. ZANNONI; V. PIENZA 43; 50142 FIRENZE; 055712035
ISWBE	FD25H	E. BALDACCI; V. MAZZINI 26; 50054 FUCECCECHIO
ISWXC	FD23J	P. MUSACCHIO; V.I.POSSENTI 17; 56100 PISA
I6CXE	GD38B	P. PALADINI; V. DALMAZIA 13; 60100 ANCONA
I6DQE	GD	A.D.D'ELIA; VIA BRUNAMONTI 2; 62019 RECANATI
I6QGA	GD38H	VIA I6ZAU
I6SF	GC18B	S. FRANCHI; V. SODERINO 16; 63100 ASCOLLI PICENO
I6WJB	HC42G	P. BATTAGLIA; VIA 319 NO 12; 65100 PESCARA
I6ZAU	GD38J	L. ZAULI; V.BRECE BLANCHE 27C; 60100 ANCONA
I7DPQ	IB	R. DI PILATO; V. LORENZO BONOMO 4; 70031 ANDRIA
I7EMG	IA	F. GUGLIELMELLI; V. LUNGAMORE V EM. 15; 74100 TARANTO
I8REK	HA	A. MINGO; V. MARIO RUTA 7; 80128 NAPOLI
I8YKE	HA02F	C. DI LORENZO; BEGONIA B; SCALA D; 80016 MARANO DI NAPOLI
IS0MSJ	EZ	S. MARRAS; V. DON MINZONI 10; 09039 VILLACIDRO
IS0PDQ	EZ66A	V. PUDDA; V. TRENTINO 32; 09100 CAGLIARI
IS0PUD	EZ66A	A. PUDDA; V. TRENTINO 32; 09100 CAGLIARI
IT9PLT	HX	E. PICCOLO; V. MONTE GENUARDO; 96100 SIRACUSA
IT9TAI	GY67F	D. MARINO; V. NUNZIO MORELLO 3; 90144 PALERMO
IV3HWT	GF18C	L. COLAUTTI; V. I MAGGIO 55; 34074 MONFALCONE
IW0AKA	GB13A	P. NOTO; V. DEGLI ARMATORI 11; 00154 ROMA
IW1ACL	DF79D	P. PETRINI; V. PERGOLESI 1; 10025 PINO TORINESE
IW2AGD	EF16J	T. BORELLA; V.N.SAURO 1; 22038 TAVERNERIO
IW3EHQ	GF12J	C. CARRER; V.D.DANESIN; 31010 PONTE PRIULA
IW3QBC	GG	F. ONGARDO
IW3QEF	??	R. SATORI; V. TRIESTE 172/10; 34074 MONFALCONE
IW4ARD	GE	G. MATTEINI; V. C. PAVESE 20; 47041 BELLARIA; FO
IW5AFB	FC47H	G. MAFFEI; V.G.FATTORI 11; 58010 ALBANIA
IW5AII	FD25J	C. PANCHETTI; V.T.ROMAGNOL EST 767; 56028 SAN MINIATO BASSO
IW5AVM	FC	M. PARMEGGIANI; VIA SENESE 3; 58100 GROSSETO; 056427304
IW5AZC	FD	A. BIASCI; BOX 144; 56025 PONTEDERA
LA1AV	FT13B	A.B.WASENDEN; VENDLA 14; 1315 NESOEYA
LA1K	FX	RADIOKLUBB AKADEMISK; 7034 TRONDHEIM-NTH
LA2PT	FT13B	W. WASENDEN; BOX 70; 1315 NESOEYA
LA2VC	FT	R. HENRIKSEN; BOX 27; 1512 JELOY
LA3EQ	CS29B	J.H.LUSTRUP; ZYNKBAKKEN 20; 4D BRYNE; 04482702
LA3UU	FT/FV	T.O.MYERS; STORE LANDFALL 71; 3000 DRAMMEN
LA3VU	FT/FV	I.W.STOKKERUD; 3430 SPIKKESTAD
LA3WU	CU47D	I. LUNDE; BREIDABIKKVN 3; 5000 BERGEN
LA6CU	CU	P. OLSEN; BOX 2327; 5012 BERGEN
LA6HL	CS	J. BAARDSEN; 4056 TANANGER; 04697200
LA7KK	FU	P. DAHL; DRONNING RAGNHILDSV. 9; 3500 HOENEFOSS
LABAK	DS08B	J.M.NOEDING; VOIELA 39B; 4620 VAGSBYGD; 04213363
LA9BM	EU	L. BREIE; 2580 GEILO; QTH 6785802; QRL 6785005
LA9IC	HB	E. VALBERG; O.T.OLSENV. 21; 8014 HUNSTADMOEN; 08160604
LA9TH	EX	J. KRKNES; 7105 STADSBYGD
LX1DB	DJ	W. BAUER; 12 RUE BALTJ WEBER; SANDWEILER
LX1GR	DJ	G. REMY; 36 RTE DE HALLER; 6312 BEAUFORT; 86857
LX1SI	DJ	M. SCHILTZ; CITE DE 1' AEROPORT NR 5; LUXEMBOURG
LZ1AB	LC	W. TERZIEV; BOX 311; SOFIA
LZ1AG	MC64E	A. NESTROV; BOX 76; PLOVDIV
LZ1BW	LC	S. MINTCHEV; VASSIL DIMITROV 245-E; 84; SOFIA 80
LZ1CD	MC64D	R. DANCHEV; KICHEVO 56; 4004 PLOVDIV
LZ1DW	LC	S. DELISTOYANOV; BOX 158; SOFIA

LZ1DX MC N. ZAPRYANOV; UL. GR. IGNATIEV 38; ST. ZAGORA
 LZ1FO LC D. STAJKOV; ANTON IVANOV 16; SOFIA
 LZ1UF LC R. GAYDARDIEV; BOX 187; SOFIA
 LZ1ZB LC27A W. WLADOW; K.W.NADEJKA; ULREPUBLIKA; BLOCK 18 APT.23; SOFIA 20
 LZ2FA ND D. GARMADIEV; GEORGI DIMITROV; WHOD A; TOLBUHIN
 LZ2JF MD79H N. PISSAROFF; G.SEMINAROFF 1; VHOD '0'; 5000 VELIKO TIRNOVO
 LZ2KAD MC RADIO CLUB LZ2KAD; BOX 15; 5300 GABROVO
 LZ2KBI LD05A RADIO CLUB; BOX 5; 3700 VIDIN
 LZ2KSO MD RADIO CLUB; UL. TZAR OSVABODITEL 15; SVISHTOV
 LZ2NA ND R. IVANOV; GENERAL KOLEV 26; TOLBUKHIN
 LZ2SA MD I. POPOV; BOX 126; TIRNOVO
 LZ2ZK MD K. DRANDAROV; KOZLODUJ 11; VELIKO TIRNOVO
 OE3CEW II52F E. CECHOTA; LEHRERWIESE 9; A-3400 SCHEIBLINGSTEIN
 OE3OBC II52B O. BIBARIC; BISAMBERGSTR. 16; 2100 KORNEUBURG
 OE3PUW II72J P. UNGERBÖCK; BOX 13; 2352 GUMPOLDSKIRCHEN
 OE3UP HI70J H.P.USCHAN; UNGARGASSE 8/11; 2700 WIENER NEUSTADT
 OE3XMS IH11G VIA OE3UP
 OE3XUA HH10B C. LIBOWITZKY; GIANNONIGASSE 5; 2340 MÖDLING
 OE4XMS IH12J VIA OE3UP
 OE5JFL GI H. FASCHING; KREUZBERGFELD 156; 4780 SCHARDING
 OE5KE HI52F A. KERSCHBAUM; HÖRZINGERSTR. 64; 4020 LINZ
 OE5XXL HI RADIO CLUB LINZ; BOX 240; 4020 LINZ
 OE6AP HH78J A.E.PENDL; HOHENRAINSTR. 146; 8042 GRAZ-ST. PETER
 OE6IWG HH W. STEINWENDER; H.V.HOFMANNSTHALWEG 3; 8605 KAPFENBERG
 OH0JN KU O. KARLSSON; HELLESTORP 9; 22610 LEMLAND
 OH2AXH MU P. HOHTIO; SEPELKYHYKYNTIE 10A2; 02660 ESPOO 66
 OH2BBF LT15B E. HEIKKINEN; HANKO RADIO STATION; 10940 HANKO
 OH2BEW MU R. BAECKSTRÖM; SAARISELAENTIE 2H119; 00970 HELSINKI
 OH2BRW MU64E M. HERMAS; BRASKERNA 5; 02380 ESPOO 38
 OH3AZW LV39E R. LEPPANEN; KULMAKATU 65; 33500 TAMPERE 50
 OH40B NW A. SINISALO; KP6; 79600 JORDINEN
 OH5NW NU A. TIGERSTEDT; MUSTILA; ELIMAEMI
 OH6RM NW23E T. KAPANEN; KIVISALMI; 44300 KONNEVESI
 OH7AZX NZ J. HANNINEN; PAROLANTIE; 71800 SILIJARVI
 OH7RH MZ A. ILONEN; EELIKSENK. 11; 94600 KEMI 60
 OK1BMW HK K. JORDAN; KAFHOFA 51; 16000 PRAHA 6
 OK1DIG HK D. GLANC; PURKYNova 13; 41117 LIBOCHOVICE
 OK1IDK GJ M. GÜTTER; JABLONSKENO 42; 30145 PILZEN; 1945975
 OK1KRA HK CLUB STATION; BOX 105; 16000 PRAHA 6
 OK1OA HK J. BITTNER; VELTRUSSKA 532; 19000 PRAHA 9
 OK1VHK HK J. BECK; DUKELSKA 22; MLADA BOLESLAV
 OK2BFH JJ J. SZAROWSKI; KIROVOVA 6-2305; 73401 KARVINA 1
 OK2LG II J. ONDRACEK; ZA TESARNOU 256; 69142 VALTICE
 OK2SGY IJ18D P. CHELMAR; JANA SVERMY 35; 75701 VALASSKE MEZIRICI
 OK3AU KI27H A. ORAVEC; UL. SLOBODY 31; 04001 KOSICE
 OK3CGX II D. KOSINOH; VALACHOVEJ 3; 82900 BRATISLAVA
 OK3KAG KI VIA OK3AU
 OK3KCM JI VIA J. IVAN; KVETNA 30; 93401 LEVICE
 OK3KKF JI VIA E. BENUS; PUSKINOVA 50; 98601 FILAKOVO
 OK3KMY II VIA A. MRÁZ; UL 1. MAJA 27; 90101 MALACKY
 OK3LU II46G A. MRÁZ; 1 MAJA 27; 90101 MALACKY; OKR BRATISLAVA VIDIEK
 OK3RMW JI VIA P. ZAJAK; FEBRUAROV. VITAZSVA 1127; 95201 VRABE
 OK3TBY II58B P. VICENIEK; PREDNARAZIE II; BLOCK 24/72; 91701 TRNAVA
 ON1IM ?? D. VERBERCKMOES; HEIRNISPLEIN 1; 9110 ST. AMANDSBERG
 ON5FF BL79E M. DE MUCK; KONIG ALBERTLAAN 126; 9000 GENT
 ON5QW BL R. VAN DAMME; 48 BROEKSTR.; 9270 LAARNE
 ON5UN BK19C E. SEYSSSENS; J.F.WILLEMSTR. 10; 9000 GENT
 ON6UG BL F. DE GUCHTENEIRE; OLMSTR. 12; 9910 MARIKERKE
 ON7EH CK M. SPELIER/BL. INKOMSTSTR. 79; 1830 MACHELEN
 ON8IW BK40D G. LINSS; 168 CHAUSSEE BRUNEHAUT; MASNUY ST. JEAN
 OY5NS WW79F N. JOHANNESSEN; VARDABU 7; 3800 TORSHAVN
 OY9JD WV J. DAM; SANDAGÖTA 1; 3800 ARGIR; FAROE ISLANDS; 45421365
 OZ1ASL ?? P. ROERHOLT; KASTANIEV. 14; 4990 SAKSÖBING; 03096143
 OZ1CFO ER P. GISSING; OLDENBORRV. 13; NORREHOLM SKOV; 9000 ALBORG

OZ1DOQ GP U. LINDHARDT; J. APPLS ALLE 89; 2740 KASTRUP
 OZ1EKI EP T. EKLUND; STENDERUPV. 155; 6092 VARMARK
 OZ1EYE FQ K. BJGRN; GL.HADSUNDVEJ 24E; 8900 RANDERS; 6425742
 OZ1EYX GQ J. GRANHOLM; LÖVVÄNGET 24; 3100 HORNBEAK
 OZ1FDH GP C. FELBY; BORGAGER 14; 2620 ALBERTSLUND
 OZ1FTU FP/GF S. PEDERSEN; GAASEHOLMV. 67; 2730 HERLEV
 OZ1OF EQ78B G. KRISTENSEN; HOJAGERVEJ 45; 8653 THEM
 OZ2GF FF/GF O. ANDERSEN; EGEV. 1561 TV; 2650 HVIDOVRE; 00901497660
 OZ4VV EQ17A F. KRISTENSEN; MUNKSJÄRUPVEJ 54; 9640 FARSO
 OZ5IQ FP38F K. LILJEKRANZ; NORD SKOVVEI 8; 4190 MUNKE-BJERGBY
 OZ6ZR FQ J. RASMUSSEN; HEGE RODESVEJ 11ST; 8210 AARHUS
 OZ9FW GP31B F. NIELSEN; ROSHILDEVEJ 11; 4000 TUNE
 OZ9FW EQ E. FROSCHE; LYNGBEJ 17; 9631 GEDSTED; 08645330;
 PA0AAC CM P.J.PUTZ; YMUIDENSTR. 31; 2586 TZ DEN HAAG
 PA0AKN CL11J D.F.VAN DER WAGT; STEENHOEKSTR. 7; 3223 BS HELLEVOETSLUIS
 PA0AZR CL13A J.A.ZWEDDIJK; RINGDIJK 308; 2983 GP RIDDERKERK
 PA0BAT DL03D G. GEESINK; TUBANTENSTR. 5; 7122 CN AALTEN; 054373186
 PA0BLD CM P.H.DE BOER; STR. V. GIBALTAR 17; 1183GT AMSTELVEEN 20450170
 PA0BWW CM B. WIJLING; DINSAG WETERING 12; 2215 EP VOORHOUT
 PA0CSL CM63D C. SLEGTEHORST; HARTELSTEIN 9; 2352 JT LEIDERDORP
 PA0FHG CM64D F. HOFSTEDER; W.TOMBERGSTR. 68; 2806 SJ GOUDA
 PA0FRE CL D.F.VAN ESVELD; GORDELWEG 44B; 3037 AD ROTTERDAM
 PA0HWM CK09D J.H.HANSEN; PR. IRENEWEG 10; 6231 EZ MEERSSEN
 PA0JMV CL37E J.H.MUTTER; DE SCHUTTER 10; 5688 VH OIRSCHOT
 PA0JOZ CM J.F.VAN DER LIST; VOORSTR. 43; 2201 HL NOORDWIJK
 PA0JTA CL03G R.L.ZWARTJES; STOUTSTR. 16A; 3042 RG ROTTERDAM
 PA0KDV CN80D K. DE VRIES; BOX 82; 8400 AB GORREDIJK; 03151331801
 PA0LSC CM R.P.SLEGTEHORST; HARTELSTEIN 9; 2352 JT LEIDERDORP
 PA0LWS CL L.J.WYDEMANS; DE KULDER 5; EINDHOVEN
 PA0MJK CL48D M.J.KOEPPEN; GRIENDSTR. 17; GELDROP
 PA0MS CL48J P.F.MAARTENSE; TWEEFOREN 95; 5672 SH NUENEN
 PA0NIE CL C.J.NIEUWLAND; ZWEDERSTR. 55B; 3073 ZR ROTTERDAM
 PA0OOM DN63C J.N.DE VRIES; DE S. LOHMANLAAN 32; 9722 HH GRONINGEN
 PA0OOS DN63B J.C.VAN OOSTEN; LAGE DE AA 32; 8009 GRONINGEN
 PA0PJS CL P. VAN STEENOVEN; PASTOR VAN LEEWENSTR. 71; HELMOND
 PA0RDY CM45E R. DIJKSTRA; HET BREED 875; 1025 JE AMSTERDAM; 020325745
 PA0RLS CM53D R.L.SCHIPPERS; BARTOKSTR. 22; 2162 VE LISSE; 31252115553
 PA0SGL CM56F D. VAN DER WERF; VOGELKERSSTR. 15; 1402 GA BUSSUM
 PA0TJK CM T. KOLMAN; VIA PA3AHD
 PA0VLY CM G. KLINKENBERG; GROOTTE BEER 170; 1562 VT KROMMENIE
 PA0VV CM W.H.VAN VELZEN; LISZSTR. 193; 2625 BR DELFT
 PA0VVH CL V.H.VAN HOORN; HET ALM 32; 6581 VN MALDEN
 PA0WWM CM W.W.MUNNIKS; HYACINTHSTR. 25; 2223 HT KATWIJK; 0171814290
 PA0XMA DM44H M. POWELS; MOELLINKSWEG 2; 7691 PJ BERGENTHEIM
 PA0ZWR CM J. KONIJNENDIJK; HENGELOLAAN 1055; 2544 GH DEN HAAG
 PA2DWH CM72C D.W.HARM; SPARRELN 1; 2282 XN RIJSWIJK; 070984063
 PA2GER CL02E G.E.VISSER; DR. BRUGMASTR. 24; 3132 NA VLAARDINGEN
 PA2GFL DM G.F.LEUSINK; EMMASTR. 239; 7513 BD ENSCHEDE
 PA2VST CM P.A.GOUWELIEUW; WIELINGENWEG 224; 1826 BV ALKMAAR
 PA3AES CM C. TOOL; P.RODENBURGSTR. 15; 1602 TE ENKHUIZEN
 PA3AHD CM44F M. BOSSCHAERT; WILHELMINASTR. 60; 1011 VP HAARLEM; 023314726
 PA3AJ6 DM B. STOETEN; SPEKOPSWIJK 33; 7771 RZ HARDENBERG
 PA3ANQ DM V. ZWAFFERING; ROMBOUT VERHULSTL. 2; 7606 SN ALMELO
 PA3AQU DN63G H. GOLDOORN; HOOFDSTR. 242; 9682 PK OOSTWOLD
 PA3AQM CL C. VAN WIJK; HOMERUSSTR. 509; 3076 LC ROTTERDAM
 PA3BBA CM72J R. PELS; BOX 10315; 2501 HH DEN HAAG; 070456037
 PA3BBI CM53D W.A.STOLTENBERG; RAVELSTR. 30; 2162 AR LISSE
 PA3BIY CM P. HOEFLSLOOT; S.W.CHURCHUILL STR. 5; 2631 AK NOOTDORP
 PA6MB CM78H H.J.PETERS; WILGENLAAN 74; 3831 XW LEUSDEN
 PE0CHR CM80E C.N.PLOEGER; PALESTRINASTR. 5; 6815 DA ARNHEM; 085430214
 PE0HND CM72C H.N.DEK; VLIETENBURGSTR. 9; 2271 GM VOORBURG
 PE0JCV CM J.C.VENEMA; LAARDERWEG 302; 1403 RR BUSSUM
 PE0WOR DM B.J.VAN DER WOP; JURA 23; 7607 RE ALMELO
 PE1BTX CN G.VAN DER BERG; GABBEMASTR. 29; 8602 VC SNEEK

PE1BXA	CM	N.J.PETERS; NIEUWSTR. 28A; 2511 AN DEN HAAG
PE1CAL	DM	H.H.TER VEEN; J.VAN RIEBEEKSTR. 66; 8331 SV STEENWIJK
RA1ASA	PU	VIA CRC; BOX 88; MOCKBA; CCCP
RA3AIS	SP	VIA CRC; BOX 88; MOCKBA; CCCP
RA3TAO	VQ60C	VIA CRC; BOX 88; MOCKBA; CCCP
RA3TCP	VQ70B	VIA CRC; BOX 88; MOCKBA; CCCP
RA3YAA	RN	VIA CRC; BOX 88; MOCKBA; CCCP
RA3YCR	RN52C	VIA CRC; BOX 88; MOCKBA; CCCP
RB5WAA	MJ	VIA CRC; BOX 88; MOCKBA; CCCP
RQ2GCR	MQ	A.E.VILKS; KARL-MARX-STR. 62-20; RIGA 11
SK6AB	FR30B	RADIO CLUB; BOX 25049; 40031 GOETEBORG
SL2CU	LZ316	VHF-GROUP; F21/SB; FACK; 95120 LULEA
SM0AGP	IT70B	S. MYRBY; BAECKSVAMPSV. 14; 14146 HUDDINGE
SM0BYC	IT70B	M. LATHI; ROENTGENV. 3-12 TR.; 14152 HUDDINGE
SM0CPA	IT60C	L. ERICSON; KUMMELV. 32; 16139 BROMMA
SM0DFP	IT	P. GREEN; SVETSARV. 15/6TR; 17573 JAEERFAELLA
SM0DJW	IS10D	B. LATHI; HEIMDALSV. 14-STR; 14900 NYNAESHAMN
SM0DRV	IT	L. GUSTAVSSON; GRANSANGARV. 7; 16140 BROMMA; 08260941
SM0EJY	IT69G	A. GYLIN; MARIEKAELLG. 36; 15144 DOEDERTAELJE
SM0ERR	IT	M. SAKALOV; BJOERKEBYN 31; 17562 JAEERFAELLA
SM0EXD	HR06E	A. GUSTAVSSON; GRANSANGARV. 7; 16140 BROMMA
SM0FFS	JT	L. HUEBNER; STOERVARG. 26; 12441 BANDHAGEN
SM0FOB	JT62A	K. BERGGVIST; MUSSERONGANGEN 209; 13500 TYRESOE
SM0GWX	JT	A. GUNNARSSON; STÖVELV. 15; 12640 HAGERSTEN; SSB
SM0HDI	IS	A. SIKSTROEM; BACKLURAV. 3-6TR; 14900 NYNAESHAMN
SM1BSA	JR22E	A. GUTEDAL; LYEGATAN 11; 62100 VISBY
SM1DIE	JR	T. ISAKSSON; BOX 45; 62016 LJUGARN
SM2AID	LZ	T. LINDBERG; LAEMMELTAGET 26; 95100 LULEA
SM2AZH	LZ31J	K. AGREN; O-SOLGATAN 44; 95161 LULEA
SM2BYA	KB12H	G. WANNBERG; GRUVV. 227; 98135 KIRUNA
SM2BYC	MZ	M. LATHI; KUKKOLA 3451; 95300 HAFARANDA
SM2CF6	JX	L. CONRADSSON; FREISV. 32; 91020 HOERNEFORS
SM2CKR	KX126	M. FREDERIKSSON; FLOTTARGATAN 5; 90254 UMEA
SM2END	KZ19J	R. JOSEFSSON; N.SUNDRBYN 6157; 96100 BODEN
SM2EZT	KZ	T. LUNDBERG; SIHEDSG. 5; 94200 AELVSBY
SM2GHI	MZ	L. LATHI; KUKKOLA 3451; 95300 HAFARANDA
SM2HEI	LZ16C	L. PETERSSON; BOX 2017; 95200 KALIX
SM2ILF	KY	S. HEDENSTROM; PL 11537; 93100 SKELLEFTEA
SM2IUE	IZ38H	E. HEDMAN; NORRA OERNAES; 92070 SORSELE
SM3AKW	1W30E	K.G.MOHLIN; BATMANV. 32; 87100 HAERNOESAND
SM3AVQ	IU27A	L. OLSSON; FUROMOV. 21K; 80358 GEVLE
SM3AZV	IY79D	T. NAESLUND; UTNAES; 88010 UNDRUM
SM3BIU	HX18J	B. ERICSON; TULLINGSAS 6174; 8300 STROEMSUND
SM3BZS	HY	H. DAMGREN; BOX1; 88054 KYRKASJOE
SM3COL	IW	R. STROEMBERG; FACK 12; 87013 VIKSJOE
SM3DCX	I63B	L.G.JARELUND; TROLLESUNDSV. 102; 12439 BANDHAGEN
SM3EUS	IU	S. HANSSON; GAEVERAENGE FLAGGB. 2074; 81600 OCKELBO
SM3FGL	IV536	G. WAAG; BOX 6036; 82100 BOLLNAES
SM3FSK	IV536	P. HALL; P1 6082; 82100 BOLLNAES
SM3FZW	HW20B	E. WESTBERG; SOESJOE 1020; 84060 BRAECKE
SM3GHD	GW70E	L. JOHANSSON; GULF B/S; 82083 LINSALL
SM3UL	IV	P. HAMMARBERG; LEROVERKSG. 42A; 82100 BOLLNES; 027816261
SM4ANQ	HU66D	U. AKESSON; ROTORV. 41; 77100 LUDVIKA
SM4ARQ	HT59A	C.A.GUSTAVSSON; P1 5524; 73200 ARBOGA
SM4AXY	HT55C	L. WAHLSTROEM; BOX 39; 71015 VINTROSA
SM4BEI	GT246	L. SUNDBERG; ROENNVA. 29; 67100 ARVKA
SM4COK	HT	B. ISRAELSSON; HJAERSTAV. 25; 70358 OEREBRO
SM4DHN	GU70F	L.B.KARLSSON; BOX 7321; 68300 HAGFORS
SM4FVD	GU	L. KARLSSON; BAECKV. 2; 68300 HAGFORS
SM4FXR	HT576	C. GRAENNSJOE; GLANSHAMMARV. 20; 70369 OEREBRO
SM4GGC	GT80C	S.A.LARSSON; HORSENSG. 54; 65467 KARLSTAD
SM4IVE	HT68D	L. PETTERSON; CARLSLUND; 71500 ODENSBACKEN
SM5AII	IS	B. BRANDER; HOEGSBERGSG. 24; 15013 TROSA
SM5AQJ	JT61C	B. LARSSON; VALFISKENSG. 810; 13664 HANDEN

SMSBEI JU72C L. NORBERG; SOROGATAN 17; 16341 SPANGA
 SMSBFK IT49D G. THISELL; FAGELV. 68; 17562 JAERFAELLA
 SMSBSZ JTS1H L. ASBRINK; KRIGSSTIGEN 18; 18274 STOCKSUND
 SMSCHK HS36J P.O. OSCAR BAECKMANN; BORENSV. 81; 59100 MOTALA; 014151670
 SMSCPD IT70H U. SOEDER; ADVOKATBACK. 24; 14556 NORSBORG; 075380643
 SMSCTI IT09B L. LARSSON; GAVSTA RASBO; 75590 UPPSALA
 SMSDRV HR06E L. GUSTAVSSON; BJURSBORG; 57060 OESTERBYMO; 014043044
 SMSEIU JT M. WIKSTROEM; HOEGBERGAV. 20; 18162 LIDINGOE
 SMSEJN IT77J J. ANCKER; O.STORG. 10; 15010 GNESTA
 SMSFND HT00J B. OLSSON; BONDEG. 5; 64300 VINGAKER
 SMSFRH HT00F T. KIHLEGREN; VIKINGAV. 42; 64300 VINGAKER
 SM5LE JTS1J S. NORDIN; HENRIKSDALSRINGEN 101; 13100 NACKA
 SMSMIX HS U. GUSTAVSSON; DALGARDSGATAN 9C; 59010 BOXHOLM; 14251747
 SM5GA IT50E K.G. FORSEN; GLOMMINGEGREND 8-#4; 16362 SPANGA
 SM6CEN FR40B H. BERG; ANGSLYCKAN 14; 43081 BILLDALL
 SM6CKU GR41C B.A. JOECKERT; ALLATORP 1446; 43033 FJAERAS
 SM6EAN FR M. ESPLING; EKEH6JDSG. 23; 42168 V. FR6LUNDA
 SM6FBQ GS C. BERNERUS; VOLVAT THAMSG. 24/673; 40031 GOETEBORG
 SM6FYJ GR41B L. GUSTAVSSON; GULLREGNSV. 13; 43400 KUNGSBACKA
 SM7AED GQ56B A. NILSSON; TRUMSLAGAREG. 3; 23100 TRELLEGORG
 SM7BAE GP26D K. RASMUSSEN; KAP 325; 24500 STAFFANSTORP
 SM7BPM GP10C H.P.H. BOKLUND; RAMSGATAN 6; 29010 TOLLARP
 SM7FJE GQ B. NILSSON; SPANGATAN 7 A/STR.; 21144 MALMG
 SM7GEP HR H. ANDERSSON; NORRHARAGATAN 8; 57100 NASSJO
 SM7HBC HQ53E C. JOHANSSON; INGENJOERSG. 37; 29300 OLOFSTROEM; 045442501
 SM7WT GP47B S. GULICH; N.GROENBY 4; 23023 ANDERSLOEV
 SP1CNV I062B J. POLANSKI; UL. MONINSKI 18M12; 75-551 KOSZALIN
 SP2DX J043C W. WYSOCKI; BOX 2; GDANSK 6
 SP2EFO JO L. DUNOWSKI; UL. SNIADICKICH 27M8; 80-2046GDANSK
 SP2LU JN61F R. KOWASLSKI; CHODKIEWICZA 37 BL.3/43; 85-667 BYDGOSZCZ
 SP2PZH J044F RADIO CLUB PG; UL. WYSPANSKIEGO 5A/DS-8; 80-434 GDANSK
 SP4ERZ KN40H A. KARWOWSKI; PL DZIERZYNSKIEGO 9/3; 12-200 PISZ
 SP4JYP KN13E W. RADZISZEWSKI; UL. MALLKA 1A/7; 10-113 OLSZTYN
 SP5EFO KM L. DUNOWSKI; UL. SAKA 4M110; WARSZAWA
 SP5JC KM56F J. KONOPKA; UL. MIEDZYJARODOWA 38M67; WARSZAWA
 SP6ARE IL65D W. STEPNIOWSKI; KWISKA 6/6; 54-210 WROCLAW
 SP6ASD HL39C T. ADAMOWICZ; UL. OGRODOWA 16/7; 59-325 PREZEMKOW
 SP6XA IL76A T. MATUSIAK; SZENWALDA 7/3; 51-672 WROCLAW
 SP9AI JJ16G B. DUDA; ORMOWCOW 3/7; BIELSKO/BIALS
 SP9DH JK A. SUCHCIA; BOX 73; KREZESOWICE
 SV1AB LY L. VERNARDAKIS; 3 KRISTALI ST.; PERISTERI; ATHENS
 UA1DZ FT C.A. RUMIANCEW; FENTANKA 24-9; LENINGRAD D-28
 UA1MC PU VIA CRC; BOX 88; MOCKBA; CCCP
 UA1WW OR VIA UR2BU
 UA1ZC RC08C A.P. KLIMANSKI; POS. TUMANNYJ; KOLSKI R-N; 184375 MURMANSKAJA
 UA3ACY SP VIA CRC; BOX 88; MOCKBA; CCCP
 UA3AFA SP2BJ VIA CRC; BOX 88; MOCKBA; CCCP
 UA3BB SP VIA CRC; BOX 88; MOCKBA; CCCP
 UA3LAW P026C VIA CRC; BOX 88; MOCKBA; CCCP
 UA3LBO Q021H VIA CRC; BOX 88; MOCKBA; CCCP
 UA3MBI UR VIA CRC; BOX 88; MOCKBA; CCCP
 UA3MBJ SS78E VIA CRC; BOX 88; MOCKBA; CCCP
 UA3OG UR15F VIA CRC; BOX 88; MOCKBA; CCCP
 UA3PCK T072B VIA CRC; BOX 88; MOCKBA; CCCP
 UA3RFS UM08J VIA CRC; BOX 88; MOCKBA; CCCP
 UA3TAO VQ VIA CRC; BOX 88; MOCKBA; CCCP
 UA3TCF WQ14A VIA UA4NM
 UA3YAJ RN VIA CRC; BOX 88; MOCKBA; CCCP
 UA4NM YS29A V. SUVOROV; 8 MARCH 9-25; 610030 KIROV
 UA9CKW EQ14E VIA CRC; BOX 88; MOCKBA; CCCP
 UA9GL CR VIA UA4NM
 UB5WN PK52J K. FECHTEL; BOX 303; 252001 KIEV 1
 UC2AAB NN18C G. GRISHEHUK; AERODROMHAJA 55; 220065 MIHCK 65
 UC2ABT NN18A VIA CRC; BOX 88; MOCKBA; CCCP

UG6AD WA KURGIN EUGENIJ; UL TAMANCEW 18-56; EREWAN 6; ARMENIA
 UK2BAB MO KLUB STANZIJA UNIVERSITETA; VILNIUS V. KAPSUKAS
 UK3AAC SP VIA CRC; BOX 88; MOCKBA; CCCP
 UK3RAL UM28A VIA CRC; BOX 88; MOCKBA; CCCP
 UKSEAD RI46G RADIO CLUB SUT; KEDRINASTR. 17; DNJEPROPETROWSK 8
 UKSEDB QH VIA CRC; BOX 88; MOCKBA; CCCP
 UK6LEZ TH VIA CRC; BOX 88; MOCKBA; CCCP
 UO50GF OG19 VIA CRC; BOX 88; MOCKBA; CCCP
 UO50GX OH74D VIA CRC; BOX 88; MOCKBA; CCCP
 UP2BBC LP07J VIA CRC; BOX 88; MOCKBA; CCCP
 UQ2AQ MQ VIA CRC; BOX 88; MOCKBA; CCCP
 UQ2OW MQ01C VIA CRC; BOX 88; MOCKBA; CCCP
 UR2CQ MS I. JUKSAAR; TAMISKE ASK 2-2; PAERNU RAJDOON
 UR2DZ MT54H VIA CRC; BOX 88; MOCKBA; CCCP
 UR2GZ ?? J. NIKKER; MAHLAMAE 8-28; 203590 RAPLA
 UR2RQT MS80E RANDMAS ANTS; RITSU; BOX 88; 202533 ESTONSKAJA
 UR2RX MT63C R. LAIDSALU; BOX 125; TALLIN; ESTONSKAJA
 UT5DL LI22C VIA OK3AU
 UW3YS RNS2C VIA CRC; BOX 88; MOCKBA; CCCP
 UW6DY TE VIA CRC; BOX 88; MOCKBA; CCCP
 UW6MA TH V.P.GLUCHINSKI; PR KOMMUNISTICHESKI 20/1-28; 344058 ROSTOV
 UY5UP QK VIA CRC; BOX 88; MOCKBA; CCCP
 Y21FL GL79E T. HARTIG; FUCHSGRABEN 4; 7264 WERMSDORF
 Y22HA GO D. BOELTE; HENRIK-IBSEN-STR. 17; 252 ROSTOCK 22
 Y22ME HM53A J. FIEDLER; JURI-GAGARIN-RING 43; 12 FRANKFURT/ODER; 40282
 Y23FG FM69G R. MERGNER; VICTOR-JARA-STR. 4; 301 MAGDEBURG
 Y23FA G061F M. HOERNIG; OSTSEEALLEE 22; 252 ROSTOCK 22
 Y23SJ FK08C R. PRAGER; FR.-LISZT-STR. 73; 69 JENA
 Y23ZI FL66E S. KLEINE; LANGE STR. 2; 523 SOEMMERDA
 Y2400 GM B. GRÖSCHKE; KAROLINENHOFWEG 63; 1187 BERLIN
 Y24TN GK07C P. HÖRIG; KARL-KEGEL-STR. 40; 92 FREIBERG
 Y24XI FL42E R. TEUBNER; K.-LIEBKNECHT-STR. 37; 56 LEINEFELDE
 Y02IS KF17E SUELI IULIUS; STR. IASI 1; 1900 TIMISOARA
 Y05AVN NE31D BOX 3-30; BUCURESTI 3
 Y06AFP MG BIRINYI CSABA; STR PAPIU ILARIAN 19; 4300 TIRGU MURES
 Y07VS LE59C D. SCHMIDT; BOX 63; 1100 CRAIOVA I
 YU1ADN KD35G M. KUZMANOVIC; KRALJEVACKA 24; 36210 VRNJACKA BANJA
 YU1BB KE13C V. VUJOSEVIC; PATRISA LUMUMBE 63/I; 11060 BEOGRAD
 YU1EU KE13H A. EKMEDZIC; CARA DUSANA 35; 11080 ZEMUN
 YU1NAJ KE24D A. PIOSIJAN; DIMITRIJA TUCOVICA 156; 11050 BEOGRAD
 YU1OFQ KE13J I. GADO; UROSA PREDICA 1; 11000 BEOGRAD
 YU1ONQ KE13H M. KOJIC; BOX 73; 11080 ZEMUN
 YU2CBE IG VIA YU2RDU
 YU2CBM ID33F RADIO CLUB 'MARJAN'; BOX 155; 58001 SPLIT
 YU2CKL HD30A S. BUKVIC; WILSONOVA 4; 59000 SIBENIK
 YU2CMS IG33F RADIO CLUB 'MEDJIMURJE'; BOX 20; 42315 MURSKO SREDISCE
 YU2CRK HF64J RADIO CLUB 'CRIKVENICA'; BOX 79; 51260 CRIKVENICA
 YU2DG JF S. VEHAPOVIC; VIJENAC DZEMALA BIJEDICA 13/III; 54000 OSIJEK
 YU2EZA IG RADIO CLUB; BOX 9; 42230 LUDBRERG
 YU2HW HF20C I. VRBANOVIC; RUZE CRNKOVIC 15; 41000 ZAGREB
 YU2IQ HE77E M. MARKOVIC; SIME MATAVULJA 7/4; 57000 ZADAR
 YU2JL HD S. BUKVIC; VILSONOVA 4; 59000 SIBENIK
 YU2RDU IG MAKOVEC ZVONIMIR; PRVOMAJSKA 60; 42000 VARAZDIN
 YU2RGC HF20C M. VISKOVIC; PROLETERSKIH BRIGADA 226/H; 41000 ZAGREB
 YU2RGK HF64J M. RADIL; TOMISLAVA 21; 51260 CRIKVENICA
 YU2RGO HF20C M. BOZINOVIC; SUSEDGRADSKA 1/4; 41000 ZAGREB
 YU2RSD HF53H V. BROZICEVIC; GRADAC 29; 51253 BRIBIR
 YU2RTU HD B. BUKVIC SLOBDAN; VILSONOVA 4; 59000 SIBENIK
 YU2RVS ID54F G. GRUBISIC; PROLETERSKIH BRIGADA 6; 58000 SPLIT
 YU3AJK HG73J D. OBRADOVIC; TUGOMERJEVA 6; 61000 LJUBLJANA
 YU3CAB HG64F RADIO CLUB 'DOMZALE'; BOX 50; 61230 DOMZALE
 YU3DBC IG22A RADIO CLUB 'MURSKA SOBOTA'; BOX 70; 69001 MURSKA SOBOTA
 YU3ES GF39D S. JERIC; VENA PILONA 4; 66000 KOPER
 YU3TCN GF09J M. MANKOC; CEVLJARSKA 5; 66000 KOPER

YU3TGN GF09J B. CELIK; BOX 43; 65001 NOVO MESTO
 YU3TKB HF B. KOVAC; IRCA VAS 2; 68000 NOVO MESTO
 YU3UAN GF10A RADIO CLUB 'AJDOVSCINA'; BOX 20; 65270 AJDOVSCINA
 YU3ULM GF09J M. LEBAN; TRG PLENCICA 9; 65000 NOVA GORNJA
 YU3ZV HG D. TURIN; PARTIZANSKA 36; 69250 GORNJA RADGONA
 YU4BYZ IE17F RADIO CLUB 'NIKOLA TESLA'; BOX 25; 78001 BANJA LUKA
 YU5FAA KB08J T. DJORCESKI; RUDI CAJAVEC 8/19; 91000 SKOPJE
 YU6ZAH JC37J D. VUCINIC; VRANICKE NJIVE 63; 81000 TITOGRAĐ
 YU7AOP KF42D RADIO CLUB 'ZRENJANIN'; BOX 127; 23000 ZRENJANIN
 YU7BCX KF24F RADIO CLUB 'MILIVOJ TOSKOV'; MARSALA TITA 23; 23218 NOVACRNJA
 YU7KWX JF80F RADIO CLUB 'DJURO SALAJ'; BOX 27; 24000 RUMA
 YU7NOK JF16E J. FICA; XII VOJVODJANSKE UDARNE BRIGADE 21; 25000 SOMBOR
 YU7NWN KF24F N. ISTVAN; KOSUTOVA 14A; 23218 NOVA CRNJA
 YU7QED KF43F M. SIC; BACKA 35; 23000 ZRENJANIN

continued from page 46

continued from page 46			'METEOR SCATTER NEWS'						
DATE	GMT	CALL	QTH	REPORT	burst	pings	re-		
	start stop			tr re	Nr.	Nr.	marks		

Y23FG (FM69q) wkcd:									
13.08.83	0000 0100	IW4ARD	GE	26	26	10	C SSB		
	0400 0500	TO6DMD	DD	27	26	5	C		
	0500 0530	SM2LTA	JY	26	26	21	C SSB		
	0700 0900	YU7KMN	JF			1	NC		
	1000 1030	EA6FB	AY	27	26	4	C SSB		
	1900 2000	YU7AJH/5	LB	27	26	8	C SSB		
	2100 2135	YU2EZA/2	IC	26	27	5	C		
hrd: 0111 DJ9EV, SM3JAW, SM6AEK and LA6HL.									
14.08.83	0500 0600	ISMZY/5	FD	26		1	NC		
04.09.83	2235 2320	YU7AU/5	KA	27	37	27	C		
05.09.93	0100 0200	F6CRP/p	YG	28	26	20	C		
11.09.83	2000 2100	DK6AS/IS0	EA	26	26	7	C		
17.09.83	1040 1130	DK6AS/IS0	EB	26		3	NC		
	1900 2100	UA3RFS	UM				NC		
07.10.83	1600 1700	F6EYM	ZJ	26		2	NC		
09.10.83	0600 0800	G4KTP	ZO	26	26	6	NC		
22.10.83	0600 0800	UB5JNI	SF	26	26	12	C		
05.11.83	0200 0400	YU7QED	KF				sri not grv		
20.11.83	0600 0800	G4KTP	ZO				ant. defect		
11.12.83	0200 0400	YU4BMN	JE				sri not grv		
	1700 1800	UB5JNI	SF				NIL grv?		
12.12.83	0200 0400	UB5JIW	RF	26	26	8	C		
13.12.83	0100 0200	GM40GM	YP	27	26	8	C SSB		
	0200 0300	YU7QCA	JF				NIL SSB		
hrd: CQ UA1ASA, CQ UB5DAA, QRZ I6WJB.									
03.01.84	2000 2100	OH7AXB	NW	26	26	12	C SSB		
	2200 2212	EA3LL	AA	27	27	7	C		
	2300 2400	UB5QFW	RH	26	26	12	C		
04.01.84	0200 0300	EA3DXU	BB	26	26	15	C SSB		
	0300 0400	YU3TTL	HG	26	37	7	C		
17.01.84	2000 2200	EA3IH	BB	26		2	NC		
tkc fer info Rolf									

tkts fer info Rolf

continued from page 74

'BEACON LIST'

EUROPEAN VHF UHF SHF BEACON LIST 15.02.1984									
CALL	GRG (MHz)	WW-QTH	E-QTH	POWER (W)	ANTENNA	QTF	ASL (M)	MODE	
ZB2VHF	70.120	1M76HE	XW648	10	4EL. QUAD	N	117	F1A	F1A
ZB2VHF	144.145	1M76HE	XW648	15/35	8EL. YAGI	NE	117	F1A	F1A
3A2B	144.900	JN33RR	DD28H	5	GROUNDPLANE	OMNI	60	F1A/F2A	
SB4CY	50.500	KP60HT	QUI46	35	5EL. YAGI	WNW	2000	A1A	A1A
SB4CY	70.112	KP60LU	QUI58	10	4EL. YAGI	WNW	117	F1A	F1A
SB4CY	144.139	KP60HT	QUI46	40	6+6EL. YAGI	NW	2000	A1A	A1A
9H1VHF	144.830	JM75FV	HV03F	1.5	TURNSTILE	OMNI	??	A1A	A1A

PAGE - 4 - DUBUS EUROPEAN VHF UHF SHF BEACON LIST: SUPPLEMENTS SEND TO: CLAUD NEIE / D-7181 RUDOLFSBERG 24 --- PRINTED BY DL 7 QY

Meteor Shower Information Service March to May

Reprint from BMS Radiant catalogue compiled by Robert A. Mackenzie.

Stream	Date	Maximum	Nr. of Refle.	R.A.	Dec.	Solar- Longit.
Gamma Virginids-1	Feb.7.-13.	Feb.11.	5	193	+5	
<u>ALPHA-BETA PERSIDES</u>	Feb/M 23.-12.	Feb.28	10	45	+45	
Alpha Scorpiids	March 4.-12.	Mar.8.	4	248	-26	347
Leonids-Ursids	March 10.-12.	Mar.11.		167	+28	349
<u>ZETA BOOTIDS</u>	March 10.-12.		10	218	+12	
Mu Sagittariids	March 11.-17.	Mar.14.	5	285	-14	353
<u>ARAEIDS</u>	March 4.-20.	Mar.16	4	246	-50	355
Alpha Lupids	Mar.3.-Apr10.	Mar6-22	5	220	-47	
H-Virginids	Feb.3.-Apr15.	Mar.17.	4	184	0	350
Mu Hydrids	March 14.-20.	Mar.18.	5	51	-81	357
N-Virginids	Mar.9.-Apr.5.	Mar.20.	4	202	-3	359
Crucids	March 18.-23.	Mar.21.	2	194	-57	359
Cameloparids	Mar.14-Apr.7.	Mar.21.		119	+68	359
Virginids	Feb.18-Apr25.	Mar.21.	4	181	+11	0
Beta Corvids	Feb.10-Apr.5.	Mar.22.	6	180	-26	4
Mu Geminids	March 20.-25.	Mar.22.	18	95	+23	1
35 Coma Berenicids	March 21.-28.	Mar.24.	4	190	+20	3
Beta Ursa Majorids	March 23.-27.	Mar.25.	var.	161	+58	4
Corona Australids	Mar10.-Apr 1.	Mar.30.	3	280	-38	8
<u>A-VIRGINIDS</u>	April 6.	Apr.6.	5	212	-17	7
Beta Triangulum Austr.	April 5.-9.	Apr.6.	4	240	-57	
Delta Pavonids	April 5.-7.	Apr.6.	5	303	-63	15
Theta Virginids	Mar30.-Apr19.	Apr.9.	2	212	-8	19
Alpha Arietids	Mar.31-Apr14.	Apr.11.	1	34	+20	
Q-Alpha Virginids-1	Mar10.-May 6.	Apr7-18.	10	204	-11	
Ursa Majorids	Apr.1.-2.		20	160	+55	11.535
Delta Craterids	April 2.-15.	Apr.11.	3	166	-17	20
P-Virginids	Mar. 2.-May1.	Apr.12.	6	211	-9	359
Alpha Circinids	April 10.-14.	Apr.12.	3	220	-65	21
S-Gamma Virginids-2	April 7.-21.	Apr.14.		189	-02	23
Omicron Leonids	Mar21.-May13.	Apr.17.	6	200	-5	28
Gamma Draconids	April 17.-25.	Apr.19.	var	280	+47	29
Velids	April 10.-24.	Apr.19.	4	156	-55	28
Theta Carinids	April 7.-28.	Apr17-19.	3	156	-66	
Beta Serpentids	April 18.-25.	Apr19-20.	5	231	+17	
Sigma Sagittariids	Apr.20-May 5.	Apr.21.	5	279	-29	30
Alpha Librids	Mar10.-May2.	Apr.22.	5	224	-16	
<u>LYRIDS</u>	April 19.-25.	Apr.22.	12	272	+33	31
Sigma Puppiids	April 18.-25.	Apr.22.	4	109	-43	31
Nu Sagittariids	Apr.16-May15.	Apr.29.	5	284	-10	38
A-Ophiuchids	Apr.22-May10.	Apr.30.	var	257	-01	
Phi Bootids	Apr.16-May12.	May 1.	2	240	+51	40
Alpha Capricornids	Apr.26-May 9.	May 4.	4	304	-16	43
Eta Aquarids	Apr.21-May12.	May3.-5.	50	336	-01	42
Gamma Normids	May 2.-10.	May 5.	2	241	-48	
Librids	Apr.28-May14.	May 6.	7	236	-19	45
<u>HALLEYIDS</u>	May 3.-21.	May 8.	25	338	-01	46
Beta Pavonids	Apr.28-May10.	May 8.	2	308	-64	47
<u>PISCIDS</u>	May 6.-10.	May 8.	30	12	+19	46
Piscis Australids	May 8.-22.	May 10.	3	344	-30	49
<u>NU PISCIDS</u>	May 11.-14.	May 12.	20	16	+27	47
Ophiuchids	Apr.9-Jun20.	May 13.	8	256	-13	51
Nu Librids	May 3-Jun7.	May 14.	2	228	-9	53
Alpha Coronids	May 7.-18.	May 14.	3	231	+27	49
<u>OMECRON CETIDS</u>	May 7.-28.	May 14.	15	22	-4	59
Theta Aquilaeids	May 19.-23.	May 21.	2	305	-6	59
Epsilon Corona Austr.	Apr.22-Jun10.	May 22.	4	284	-36	60
Eta Pegasisds	May 20.-Jun9.	May 31.	5	333	+27	
Eta Aquilaeidsds	May 2-Jul20.	Jun7-30.	var	294	0	

METEORSCATTER NEWS

BY DL 7 QY

[illegible]

DATE	GMT start stop	CALL	QTH	REPORT tr re	burst Nr.	pings Nr.	sec	re- marks
DC7UT (GM37C) wkd:								
10.08.83	0800 0830	F5DE	AF	26	26		6	C
12.08.83	0600 0650	I4BXN	FE	26	26		8	C
	0700 0744	YU3ES	GF	28	27		4	C
	0900 0936	GW6APZ/p	XM	27	26		3	C
	1200 1234	EI2CA	WM	26	26		25	C
	2200 2250	LA9IC	HB	26	27		30	C
	0008	YU3EW	IG	38	37			C rand

Please note that DC7UT is very interested in MS - QSO's in SSB-mode.

Equipment: RX 0.7 db, TX QOE 06/40, Ant. 4x16-e1. F9FT YAGI.

Please write to Horst Kalz, DB7UT, Lindauer Allee 24, D-1000 Berlin 51, Tel: 30/4966669. tks fer info Horst.

F6CJG/p (BF21j)	wkd						
05.06.83	0000	0040	OZ1EYE	FQ41h	27	27	C
23.07.83	2100	2135	YU3TSB	HF03h	27	37	C
24.07.83	0000	0030	GM4C00	YS72j	38	27	C
06.08.83	2000	2025	DK0TU	GM37e	27	27	C
	2100	2135	YU7NTU	KF42j	26	27	C
	2200	2245	OZ1EYX	GG73j	26	27	C
	2300	2400	YU2CBM/2	IC04j	26	26	C
07.08.83	0500	0540	DK3FW	EM69b	27	27	C
	0600	0625	OE3CEW	II52f	26	26	C
11.08.83	1100	1145	SM0HAX	JT51b	26	26	90 C
	1210	1245	OK2VMD	IJ54g	26	27	20 C
	1305	1330	YU7AU	KE14h	36	26	12 C
	1600	1700	YD6AFP/p	MF21j	26	37	C
	1910	1945	Y22UL	GN75j	37	27	C
	2015	2055	SP9AI	JJ16g	26	27	C
	2300	2338	OZ1CFO	ER79j	26	26	C
	2339	2400	I4TSB	GE63f	26	27	C
12.08.83	0200	0350	UG26CG	LR66a	26	26	C
	0600	0625	LA9BM	EU32g	37	28	C
	0653		LA6HL	CS	26	27	C
	0700	0720	EA4AAW	WZ49g	26		NC
	0800	0850	UK2RDX	MT35g	27	26	C
	0912		SM5MIX	HS	27	37	C
	0926		OZ1ELF		27	37	C
	0938		OZ1EYX	GG	37	48	C
	0940		SM7GEP		37	37	C
	0940		SM7IWG		37	37	C
	0944		Y22IC	GN75j	26	26	C
	0952		G8TIC		38	37	C
	1030		F1DPU/IS0	EY03g	27	27	C
	1236		OZ1BVW		27	27	C
	1302		SM7JUQ		27	27	C
	1355		OZ4EM	HP64a	37	37	C
	1400	1425	OH2AUK/0	KT05g	26	26	C
	1719		OE3DBC	II	27	37	C
	1900	1930	SM7KNK	HP32c	26	27	C
	2100	2127	SM6GWA	FS27c	26	26	C
13.08.83	0000	0200	RQ2GG6	LQ00b	26		NC
	0700	0725	YU2EZA/2	IC04j	27	49	C

	0745		SM5CHK	HS	27	27			C	SSB
	0758		DF6LO		27	26			C	SSB
	1055	1115	LABN	EV	27	27			C	
	1200	1240	EA7AG	YW18b	26	26			C	SSB
03.09.83	1100	1135	YU7AU/5	KA05h	26	37			C	
	1200	1235	DK3CM/LA	DT77c	37	37			C	
22.10.83	1000	1100	SK7HW	HQ05e	27	27			C	

OE3CEW (I152f/JN88CG) wkd

12.11.83	0800	0906	F6EYM	ZJ	26	26	12	3	C	
13.11.83	0800	0845	F6EYM/p	ZI	26	28	15	mni	C	
17.11.83	2300	0035	EA2LU	ZC	27		14	mni	NC	QSD
21.11.83	0700	0800	EA2LU	ZC	26	26	10	mni	C	QSD
	1300	1355	G4MCU	AL	26	26	14	mni	C	
29.11.83	0700	0800	GI4OP6	XO	27	26	16	mni	NC	
02.12.83	0700	0855	GI4OPH	XO	26	26	15	mni	C	
09.12.83	2200	2300	UA3MEE	TR	26		5		NC	
11.12.83	0600	0715	OH6CH	NV	26	27	9	4	C	
12.12.83	0300	0425	LA6HL	CS	26	26	10	mni	C	
	2100	2200	OH6CY	MW	26		18	mni	NC	
14.12.83	2300	2326	F1FVP	ZF	26	26	5	mni	C	SSB
03.01.84	0600	0645	EA3LL/p	AA	26	26	18	mni	C	
	0700	0758	F1JG	CD	26	26	4	8	C	SSB
	1100	1158	OH7PS	OX	26	26	6	mni	C	SSB
	1300	1340	OH6CY	MW	37	27	21			
	2300	2400	IT9GSF	GX	26		4	5	NC	SSB
04.01.84	0200	0250	OH7UE	OW	26	27	11	8	C	

NIL: OH7PS, OH2AUK, EA7CPW, EA7BIH.

tks fer info Erik.

Y23FG (FM69g) wkd:

25.03.83	1700	1900	UB5LNR	RJ	26	26	3	4	4	C
21.04.83	2000	2100	YU6AA	JC	27		2	14		NC
22.04.83	0000	2000	YU3FM	HG						NIL qrm
	1100	1300	F9HS	BD	26	26	23	26	2	C
	2000	2200	YU7NTU	KF	26	26	8	4		C
23.04.83	0500	0550	F1ANY	BD	26	26	8	3	10	C SSB
	1800	1900	YU6AA	JC	26	26	12	19		C
07.05.83	1030	1230	YU3FM	HG	27	26	8	18		NC
29.05.83	0600	0800	IW5ACZ	FD	26	26	9	31		NC
04.06.83	0200	0400	YU3TSB	HF	26	26	7	6		C
05.06.83	1400	1600	UA3IDQ	QQ	26		5	9		NC
11.06.83	0920	1030	YU3FM	HG	26	27	6	1		C
02.08.83	2200	2300	YU3EW	IG	27	27	15	19	2	C
03.08.83	0400	0500	YU7AU/2	HD	26	26	9	25		C
07.08.83	1730	1810	DL7ZL/7	JZ	27	27	19	18		C
10.08.83	1900	2000	EA4AAW	WZ				2		NC SSB
	2300	2400	T06DMD	DD	26	26	10	46		NC
11.08.83	1000	1200	UA3NBI	UR	27	26	4	9		C
	1600	1650	YT3V	HF	26	25	5			C SSB
	1900	2000	G4NFD	XJ	49	47	13	29	25	C
	2000	2200	OK3CPY	JI				7		NC qrb
	2200	2315	LABKV	FW	27	27	6	8	13	C
12.08.83	0600	0800	ISWHC	FD	26	26	4	8		C
	0800	0900	C30AAR	AC			2			NC SSB
	1000	1100	F6EXG	DD						NIL
	1100	1130	F1DPV/IS0	EY	26	26	10	17		C SSB
	1300	1315	F1KBF/p	ZC	26	26	2	1	20	C SSB
	1500	1600	T06DMD	DD	27		5	10		NC qrm
	1900	2100	Y04AUL	OE						NIL
	2300	2330	I4YND	FE	26	37	11	9		C SSB
	hrd in random periods: F6FHP, SM2ILF and F6DKQ.									
13.08.83	0000	0100	IW4ARD	GE	26	26	10	16		C SSB

continued on page 43

Es INFORMATION

BY DL 7 QY

DC7UT (GM37C) wkd via Es on July 2nd 1983 at 1944 UB5JL6 OE 59 59 1718 km, 1948 RB5JAX OE 59 59, 1952 UO5TA OH 59 59 DXCC NO. 40 and 2123 YU2CBM ID 59 59. On July 15th at 1604 9H10B HV 59 59 1859 km, 1608 9H16P HV 59 59, 1610 9H1I HV 59 59, 1611 9H5I HV 57 58, 1616 9H1B HV 57 58, 1625 IT9MRJ HY 59 59, 1628 IT9XIX HX 59 59, 1631 IT9UBA GX 59 59 1690 km, 1636 IT9WPO HX 59 59 and 1713 9H1FN HV 59 59. tks fer info Horst.

DF1XU (FN22e) sent a TV receiving report (band 1 channel 2-4) from May 12th to June 26th 1983. p= picture report, s= sound report and c= TV channel.

May 5th at 0700 JRT, p8, s6. 0800 JRT s0. 0700 c3 RAI, p8, s8. 0900 RAI, s0. 0800 c2 USSR, p0-8, maximum 1200-1330. 1515 USSR s0. 0815 c2 RAI, p0-7, s0-3. 0945 RAI s0. 0845 c3 USSR, p0-3. 1015 c3 USSR, p8. 1215 USSR s0. 0900 c3 TVR Bucurest, p0-4, s0. 0910 c3 TVR s0. 0945 c3 RTVE-Gamonteiro, p8, s8. 1015 RTVE s0.

May 15th at 0630 c2 USSR, p0-4, 0945 c2 USSR, p2-6, 1030-1033 p0-8, 1034 s0. 0915 c3 USSR, p0-5, 1000 s0.

May 16th at 1700 c2 RTVE, p0-4, s0-4, 1730 s0. 1700 c3 RTVE, p0-3, s0-2, 1730 s0.

May 24th at 0600 c2 USSR, p0-8, 1145 USSR s0. 0830 c3 USSR, p0-5, 1215 USSR s0. 1345 c2 RTVE, p0-5, s0-3, 1515 RTVE s0. 1420 RTP-Porto, p0-4, s0-5, 1445 RTP s0. 1345 RTVE c4, p0-9, s0-9, 1500 RTVE s0. 1400 RTP c3, p0-8, s0-7, 1430 RTP s0. 1415 RTVE c3, p0-8, 1445 RTVE s0.

May 25th at 1615 c2 USSR, p2-7, 1650 USSR s0. 1650 RTVE, ps9+. 1630 c4 TVR Bucurest, p0-6, s0, 1650 TVR s0. 1715 RTP-Porto c3, p0-4, 1650 RTP s0. 1730 RTVE c3, p0-5, s0-7, 1800 qrt.

May 26th at 1415 c2 TVi-Sverige, p1-3, s0. 1630 c2 TVi-Sverige, p0-3, s0-2. 2000 qrt.

June 1st from 1615-1630 c2 RTVE, ps2-7, 1645 RTVE s0.

June 4th from 1445-1700 c2 USSR, p0-8.

June 5th from 1630-1955 c3 RAI, ps0-8. 1915-1930 c3 DR (Denmark Radio), pt0-6, 1630-1800 c4 RAI, pt0-7.

June 6th from 1400-1445 c2 USSR, p0-7. 1730-1740 c2 USSR, p0-7.

June 7th at 1415 c2 RAI, p2-5, s0. 1530-1845 c3 RAI, ps0-5, 1900 s0.

June 8th from 0700-0900 c2 USSR, p0-6. 0815-1045 c2 RTVE, ps0-8. 0830 c2 RAI, p0-6, s0-3. 0800 c3 RAI, p0-5, s0. 0815-0845 c3 RTVE, ps0-8. 0945-1030 c3 RTVE, ps0-8. 1045-1230 c3 RAI, p0-6, s0-5. 1100 c4 RAI, ps0-4.

June 12th from 0600-0715 c2 USSR, p0-8. 1045-1100 c2 RAI, ps0-5. 1115-1215 RTVE, p0-5, s0-4. 1345-1445 c2 TVi-Sverige, p0-4, s0. 1700-1715 c2 RTVE, ps0-9. 1045-1245 c3 RTVE, ps0-7. 1130-1530 c3 RAI, ps0-9. 1500 c3 JRT, ps0-7.

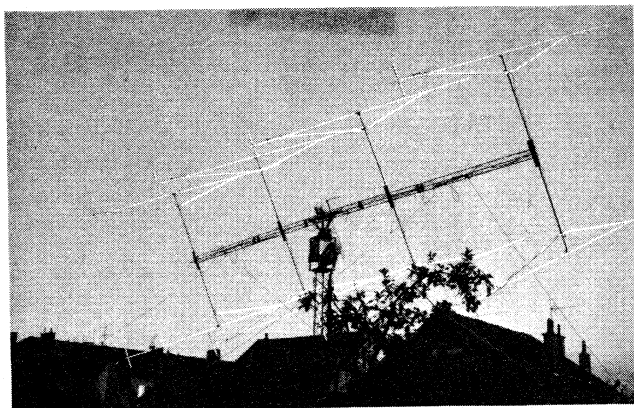
1715-2000 c3 RAI, p0-8, s0-7. 1745 c3 JRT, ps0-5. 0645-0653 c4 PTT-NL, p0-4, s0. 1045-1300 c3 RTVE, ps0-8. 1215-1515 c4 RAI, p0-8, s0-7. 1500 c4 JRT, p0-4, s0. 1045 c4 RAI, p0-3, s0.

June 15th from 1530-1645 c2 RTVE, ps0-7. 1930-2130 c2 RTVE, ps0-6. 1415-1615 c3 RAI, ps0-5. 1545-2130 c3 RTVE, p0-5, s0-4. 1415-1530 c4 RAI ps0-5. 1545-2130 c4 RTVE, ps0-7.

June 17th from 0715-0800 c2 RTP, ps0-7. 0830-2250 c2 RTVE, ps0-8. 0830 c2 RTP, ps0-4. 0930 c2 RTP, p0-4. 1215 c2 USSR, p0-5. 1430-1500 c2 USSR, p0-6. 1915-2000 c2 USSR, p0-5. 0745 c3 RTVE, p1-6, s0. 0830-1030 c3 RTVE, ps0-8. 0845-1015 c3 RTVE-Aitana, ps0-8. 0945-1015 c3 RTVE La Muela, ps0-8. 0845 c3 RAI, ps0-4. 1045-1130 c3 RTVE, ps0-6. 0930-1230 c3 RAI, ps0-8. 1245-1300 c3 RTEi-Ireland, p -9+, c4 s0-4. 1300-1745 c3 RTVE, ps0-8. 1400-1500 c3 RTP-Porto, p0-7, s0-4. 1630-1645 RTP, p0-3, s0. 1745-2045 c3 RTEi, p0-8, s0-4. 2030-2250 c3 RTVE, ps0-7. 0830-0945 c4 RTVE-Santiago, p0-9, s0-6. 1000-1130 c4 RTVE-Madrid, ps0-4. 1000 c4 JRT-Zagreb, p0-4, s0. 1015 c4 RAI, ps0-5. 1215-1245 c4 TVR, p0-7, s0. 1300-1745 c4 RTVE, ps0-6. 2015-2145 c4 RTVE ps0-6. June 18th from 0630-0700 c3 DR, ps0-9. 0630-0700 c4 DR, p4, s2. 0700 c2 USSR, p0-4. 0830-1000 c2 RTVE, ps0-6. 0930-1015 c2 USSR, p0-7. 1045-1230 c2 RTVE, ps0-8. 1145-1415 c2 USSR, p0-5. 1700-2007 c2 USSR, p0-8. 0830-1230 c3 RTVE, ps-9. 0930 c3 RAI, p0-4, s0. 1145-1300 c3 DR, ps2-5. 1230 c3 RTEi, p0-5, s0.

1930-2000 c3 RTE1, p0-8, s0. 0830-1200 c4 RTVE, ps-9+. 1730 c4 USSR, p0-6.
 1745-1800 c4 JRT, p0-5, s0-2.
June 19th at 0615 c2 USSR, p4. 0615-0730 c4 PTT-NL, ps7-8. 1300-1400 c2 USSR,
 p2-4. 1515-1600 c2 RTVE, p0-7, s0-5. 1515-1545 c3 RTVE p0-6, s4. 1600-1700 c3
 DR, ps0-8.
June 20th at 1630 c3 USSR, p6-7. 1735-1800 c4 RUV-Island, p0-5. 2100-2130 c2
 RTVE, p0-5, s0-3. 1930 c3 DR, ps5. 2100-2130 c3 RTVE, ps1-3. 2100-2130 c4
 RTVE, p1-3, s0.
June 22nd from 1900-2024 c2 TV1-Sverige, ps3-4. 1900-2045 c3 DR, ps5.
June 23rd from 1600-1730 c2 TV1-Sverige, p3, s0. 1600 c3 DR, p0-4, s0.
June 24th from 1530-1600 c2 RTVE, ps5-8. 1545-1600 c3 RTVE, p0-4, s0.
June 26th at 0645 c2 TV1-Sverige, p3, s0. 0645-0700 c4 PTT-NL, ps-6.
 tks fer info Uwe.

DB4NAE (EJ06a) hrd on June 10th 1983 at 1616 SV1DH/m MX01g 55 and 1639 SV1EX
 LX09a 54. On June 12th hrd at 1158 SV1DH/a MX01g 51, wkd 1221 SV1DH/a MX01g 57
 55 (1781 km), hrd 1230 SV1EX LX09a 59, 1236 SV1D0 LX19c 59, 1239 SV2JL LA35c
 59 and 1240 SV2JT LA25a 59 (hrd SV1EX until 1317). On June 15th at 1150 hrd
 9H1?? HV03e 52 (hvy QRM), 1333 SV1DH LX09 54, wkd 1350 *SV9LM MV46d 59 51
 (2074 km), 1400 SV3QD LY 59 59 (1700 km), 1417 SV8CS KX15a 59 55 (1642 km),
 1431 SV1EX LX09a 59 54 (1767 km), 1439 Es out, 1536 2nd event started, hrd
 1549 IW9AOR HY 57, 1610 IW8PCW HY79a 59 59 (1420 km), hrd 1633 YU1PRV KD16d
 59, 1633 YU1EN ?? 59, wkd 1643 YU100 KC10b 59 59 (1244 km), hrd 1644 YU7AR KF
 59, 1702 SV1EX LX09a 59, 1711 YU10HV ?? 59, 1711 R050AA OH74c 599 and at 1727
 Es was total out. On July 16th at 1109 hrd UC2P?? PN 56 (hvy QSB) and 1752
 UB5GEO PI 59 (3 min). On June 17th at 1626 hrd UA6LJV TH 59, wkd 1637 UB5EFC
 RI46g 59 59 (1876km), 1640 UA6LJV TH 59++ 59++ (2100 km), 1644 RB5EHB RI56b 59
 59 (1881 km), hrd 1646 UA4CD XP27e 539!?! , 1647 UY5HF QG24f 59, 1648 RB5ITP
 SI80d 59, wkd 1650 UB5GFS RG51c 59 59 (1887 km), 1655 UB5QDM RH44h 59 59 (1879
 km), 1706 UW6MA TH69c 59 59 (2253 km), 1713 RB5QGL SG15f 59 59 (2067 km), 1717
 UA6BDC TG22g 59 59 (2172 km), 1726 Es out; between 1630 and 1718 hrd mni GM,
 GI stns 59 sigs with backside of antenna! On June 20th at 1838 wkd 9H1BT HV12b
 59 59 (1628 km), 1839 9H1FN HV03e 59 59 (1625 km) and 1841 IW9APS GX58c 59 59
 (1455 km) (TV-band 1 not open). On June 28th at 1840 hrd SV1DH/a MX01g 519 QTF
 115 degrees! until 1852. On July 2nd at 1050 wkd 9H1ED HV03e 59 59 (1625 km)
 frm 1050 - 1246 hrd mni EA-stns (EA1, EA4, EA5, EA7, EA9JZ), also CT1 frm
 VY-square. On July 8th at 1450 hrd LZ2XX ND44d 599, wkd 1454 LZ2FA ND40g 59 59
 (1596 km), hrd 1510 Y03JJ ?? 599, wkd 1520 UB5JIN RE10f 59 59 (2076 km), 1545
 UB5GBY QG24f 59 59 (1781 km), 1547 UB5GFC ?? 59 59, 1550 QRT bcz hvy
 thunderstorm. On Aug. 1st at 1405 hrd for 1 min. OH7NK 56.
 *Udo schreibt noch: Ob die Verbindung mit SV9LM eine Erstverbindung DL - SV9
 ist, kann ich leider nicht mit Sicherheit sagen. Zumindest sagte SV9LM, ich
 sei der erste DL, den er auf 144 MHz gearbeitet hätte. tks fer info Udo.



F6CJG/p (BF21j) wkd on
 June 7th 1983 at 1355
 SV1EX LX09a 57 53 QTF 115
 deg., 1427 I8YZO HY40a 59
 58 QTF 115 deg., 1432
 IK8ADM IZ13a 59 59 QTF
 115 deg. and 1503 IK7BFD
 HB27c 59 59 QTF 115 deg..
 On June 15th 1443 LZ2AR
 LD18c 59 59 QTF 95 deg..
 On July 2nd at 1811
 R050AA OH74g 59 59 QTF 85
 deg. 2030 km, 1819 Y06AVE
 MG33j 59 59 QTF 85 deg.
 1722 km, 1846 SM4KVM
 HT56d 59 59 QTF 30 deg.
 1742 km, 1847 SM4CSK
 HT59b 59 59 30 deg. 1770
 km, 1848 SM4AXY HT55c 59
 59 30 deg. 1740 km, 1907

SM4DHN GU70f 59 59 30 deg. 1783 km, 1908 SM3LIC IW03j 59 59 30 deg. 2177 km, 1911 SM3AFT IW30d 59 59 QTF 35 deg. 2135 km, 1912 OH1DM KV69b 59 55 QTF 35 deg. 2144 km, 1913 OH6CH NV01d 59 59 QTF 35 deg. 2368 km (adx), 1915 SM0FOB/mm JT54c 59 59 QTF 35 deg. 1876 km (10W/GP), 1918 OH1LA KV40f 59 59 QTF 35 deg. 2170 km, 1918 SM0KFJ IS10a 59 52 QTF 35 deg. 1839 km, 1919 SM3HYA IU27g 59 59 QTF 35 deg. 1937 km, 1921 OH0NC KU70j 59 59 QTF 35 deg. 2070 km, 1927 SM4KVZ HT55d 59 59 QTF 35 deg. 1736 km, 1927 SM4KVU/4 HT55d 59 59 QTF 35 deg. 1736 km, 1928 SM4DJO HU35a 59 59 QTF 35 deg. 1857 km, 1929 SM4GVF HT76a 59 59 QTF 35 deg. 1725 km, 1930 SM4IVE HT68b 59 59 QTF 35 deg. 1752 km, 1931 SM3LRH IU26d 59 59 QTF 35 deg. 1931 km, 1933 SK4AD HU39a 59 59 QTF 35 deg. 1881 km, 1942 SM5BEI JU72c 55 59 QTF 35 deg. 1923 km, 1943 SM0BYC IT70b 59 59 QTF 35 deg. 1839 km, 2111 UT5DE LI42a 55 59 QTF 40 deg. 1555 km and 2118 UT5BN PK53e 55 59 QTF 40 deg. 2159 km.

On July 3rd at 0821 LZ2FA/m ND40f 59 59 QTF 95 deg. 2041 km, 0823 Y03JJ NE51c 57 59 QTF 95 deg. 1890 km, 0825 LZ2QA/p OD 59 59 QTF 95 deg. and 0835 Y04AUL OE64g 59 57 QTF 95 deg. 2084 km.

On Aug. 11th at 1400 DL0IV/I7 JZ01h 58 57 QTF 115 deg., 1723 YU1EV KE 59 59 QTF 95 deg., 1723 YU1ACD JE37f 59 59 QTF 95 deg., 1728 YU10YA KD37c 59 59 QTF 95 deg., 1729 YU4BMN JE 59 59 QTF 95 deg., 1729 YU1AFS KE 55 59 QTF 95 deg., 1730 YU1AFI KE12j 59 59 QTF 95 deg., 1731 YU1VF/1 LD02e 55 59 QTF 95 deg., 1731 YU10YA KD37c 59 59 QTF 95 deg., 1735 YU1NDL JE37f 59 59 QTF 95 deg., 1736 YU1ADN KD35g 55 55 QTF 95 deg., 1737 YU1EN ?? 55 ? QTF 95 deg., 1740 YU7NXA ?? 59 ? QTF 95 deg. 1835 YU5EF KB08e 59 59 QTF 100 deg., 1854 I0QM GC 51 51 QTF 85 deg., 1857 IW0AIJ GB12d 55 53 QTF 85 deg., 1858 OE5MQ HI42g 57 55 QTF 85 deg., 1904 YT5IL LB13j 53 59 QTF 85 deg., 1950 IW0AKA GB12a 51 51 QTF 85 deg., 1954 I0AFF ?? 51 52 QTF 85 deg., 1955 I0NMJ GB22a 55 57 QTF 85 deg., 1959 IT9JLU HY68h 55 51 QTF 85 deg., 2001 IT9DTU/9 HY68h 51 51 QTF 85 deg., 2134 IV3HWT GF18c 51 52 QTF 85 deg., 2145 YU3TSB HF03h 51 55 QTF 55 deg., 2147 YU7MAU JF 51 55 QTF 55 deg., 2206 IWSACZ FD24h 52 53 QTF 80 deg., 2211 YU2JL HD30a 52 53 QTF 80 deg., 2213 YU3C HG55f 53 52 QTF 80 deg., 2214 YU3EW IG22f 55 55 QTF 80 deg., 2218 EA3LL AB56b 53 52 QTF 80 deg., 2220 I0JDM/5 FC08e 52 52 QTF 80 deg., 2223 IK5ACD FC05f 53 52 QTF 80 deg. and 2241 I3LDP FF35c 57 58 QTF 80 deg..

On Aug. 12th at 0000 YU1AWW KE13j 53 59 QTF 80 deg..

On Aug. 13th at 1301 YU1BH ?? 51 55 QTF 90 deg. and 1310 YU1AWW KE13j 59 59 QTF 90 deg.. tks fer info.

F6FLV (BI13h) wkd via ES on July 15th IT9ZLG 6Y73e, IW9AJZ/IH9 GW11g, IT9XIX HX36j, I7IWN JA62a and SV1OE LX10a. On July 16th LZ2FA ND40g. On July 18th 9H1GB HV13a. On July 31st I2KSK/p HY80h. On Aug. 11th YT5IL LB13j. tks fer info Jean-Pierre.

G3PBV (YK32b) wkd on June 15th at 1505 YU1EU KE02j 59 59, 1519 hrd EA6LQ, 1610-1725 open to FC, GB and HY, 1823 hrd YU2CBM and 1928 wkd YU100 KC10b 59 59. On July 7th hrd at 1838 CT1AYC and CT1AUW and wkd at 2005 EA7AG YW18b 59 59. On July 16th at 1713 IW9ANS 6X25a 59 59, 1715 IT9JLG 6Y73e 59 59 and 1736 IW9AJZ/IH9 FW20b 59 59. From YK23h he wkd on July 15th at 1537 9H1BT HV12b 59 59, 1553 IW9ANS 6X25a 59 59, 1557 9H1FL HV13j 57 56 and 1601 IW9ABZ 6Y67d 59 59. tks fer info Dave.

G4IG0 (YL38f) wkd on June 22nd at 1721 YU4VYL JE34j 59 59, 1723 YU100 KC10b 59 59, 1725 YU4WMF JE34j 59 59, 1729 YU100 KC10b, 1731 4N4DX JD13h 57 54, 1741 YU1NDL JE37f 59 59 and at 1744 144 MHz closed. On July 2nd at 1039 9H1BT HV12b 59 59, 1101 144 MHz closed, 1133 to 1145 144 MHz opened to 9H1 from ZK-square, 1213 IT9DQZ/IT9 6Y73c 59 59, 1223 IW9ANS 6X29a 59 59, 1233 144 MHz closed. On July 7th 1809 F1JG CD24g 59 59, 1800 to 1829 hrd G14OPH on backscatter, 1844 CT1WW WB63j 59 59, 1845 CT1AUW WA34e 59 59 and at 1904 144 MHz closed. On August 4th 144 MHz opened at 1718, 1721 EA7AJX YX12f 59 59, 1727 the band closed with me but opened in YN-square.

Other Es info

31.5.83: 1346 G3IMV ZL hrd HG7KSV.

2.6.83: 1655 to 1701 OH5AD NU wkd LZ2FA ND, LZ2QA OD and Y04YT OE.

15.6.83: G3PBV YK wkd at 1505 YU1EU KE, hrd 1519 EA6IQ, wkd 1615 IW0BOS/0 GB

and 2033 YU100 KC10b. G4MUT wkd at 1619 IW9AIG. G3BDQ AK wkd from 1500 to 1710 SV4LD LZ, SV30D LY, IK0BRC FC, IW9AOR HY and I8YZD HY.

16.6.83: G3IMV ZL wkd EA7AG YW.

21.6.83: GM3VTB XP wkd from 1700 to 1712 HG8CE KG, HG6NP JI, HG6VV JH and OK2KZR IK.

22.6.83: G3FPK ZL wkd at 1658 YU100 KC10b.

2.7.83: G4MVR AK wkd at 2215 Y03AID/p MF, G4MCU AL wkd at 1042 9H1GK HV and 1656 UC2AAB NN, G4DOL YK wkd from 1020 to 1046 9H1BT HV, 9H1ED HV, 9H1B HV, 9H1FL HV, 9H1CG HV, 9H1GK HV, at 1135 I8TUS IZ and hrd at 1140 IT9G (beacon).

In 144 MHz contest Es occurred from 1640 to 1900. Stations in AK, AL, ZK and ZL worked into UC2, LZ, UB5 and OH, then at end of opening YK wkd to UC2 and UQ2.

1935 G4GRC/p wkd to OH, HG and OK. 2105 G4BAR/p wkd UB5JMR RE01f. 2030 to 2125 AK and AL wkd to Y0.

7.7.83: G16ATZ XO wkd from 1808 to 1849 F1JG CD, F6EPE CD, EA4AW WZ, EB7KU WX and I0SNY/p/EA9 XV. G3PBV YK wkd at 2010 EA7AG YW. G4DOL YK wkd at 1845 CT1WW WB and EA4AAW WZ. G3CQJ ZL hrd from 1850 to 1855 CT1AYC VY24g, CT1BYL, CT1ALF VZ45 and at 2015 I0SNY/EA9 XV04.

8.7.83: G3BDQ AK wkd at 1515 UB5GBY QG24f.

11.7.83: G4DOL YK wkd at 1729 IS0RHF EZ.

15.7.83: G3BDQ AK wkd at 1848 IW9AJZ/IH9 GW11g. G3PBV YK wkd from 1535 to 1605 9H1BT HV, 9H1FL HV, IW9ANS GX and IW9ABZ GY.

16.7.83: G3PBV YK wkd at 1713 IW9ANS GY, IT9JLG GY, IW9AJZ/IH9 FW20b and hrd G3JKI/5A. G8LFB ZL wkd at 0707 9H1B HV and hrd at 1714 EA8XS SO.

28.7.83: G3IUE XK wkd in FM from 1607 to 1635 on R4 CT2AP MY, CT2BV NX and CT2EA/M on R6.

28.10.83: G3DAO XK wkd YU1AWW KE, YU1AWW wkd F6HLD.

I3LGP (GF24g) wkd: On June 7th at 1434 EA5BSE ZY 59 59, 1435 EA5DFY AY 59 59, 1455 EA5EB ZY 59 59, 1457 EA5DFY AY 59 59, 1500 EB7NK YW 59 59 and 1502 EA7PW YX 59 59. On June 18th at 0856 UK5IEC TI 599 599. June 30th 1128 EA1BLA VD 59 59. On July 2nd at 1204 EA1QJ VD 59 59, 1205 EA1ACD VD 59 59, 1219 EA10D XD 59 59, 1222 EB1WV XD 59 59, 1229 F1EIE ZF 59 59 and 1233 F1FBQ ZE 55 55. On July 8th at 1203 Y04AUL OE 59 59, 1214 UB5JIZ QF 59 59, 1610 OH5IY NU 59 59 and 1611 OH3ZS MU 59 59. On July 16th at 1715 CT4KQ WA 59 59 and 1831 EA4AAW WZ 59 59. tks fer info Giuliano.

All Bands DX Team Palermo Es info 1983:

IT9TQH (GY67d) wkd on June 7th at 1354 F6CER B134g 59 59, 1357 F6HNL BJ61d 59 59, 1413 F1FHI ZH63d 59 59, 1417 F6DKW B112f 59 59, 1419 F6BSJ GC24f 59 59, 1420 F1CCC G622c 59 59, 1422 F6GCI AG13a 59 59, 1423 F1EAN AG22f 59 59, 1430 F6DWG BJ41j 59 59, 1433 F6HQC BJ03j 59 59, 1439 F6FKB Z177g 59 59, 1445 F6CTT ZH02a 59 59, 1447 GJ8EZA YJ70j 59 59, 1448 G3CHN YK61b 59 59, 1450 G8TGM ZK17f 59 59, 1507 F3G1 CF64a 59 59 and 1508 GJ8SBT YJ70j 59 59. On June 20th at 1722 F1AFJ AG13c 59 59, 1725 F6APE ZH47b 59 59, 1726 F1GST ZH48g 59 59, 1736 F8CS CH56h 59 59, 1738 F1DRC AI77g 59 59, 1748 F6BSJ G624f 59 59 and 1750 F1FYE ??13f 59 53.

IT9TQH/IT9 (GY76a) wkd on July 2nd at 1732 OH10L LU66c 59 59, 1733 OH1CO LU43d 59 59, 1739 OH3KF LU29f 59 59, 1736 OH1AYQ LW76f 59 59, 1737 OH1XF LU44c 59 59, 1739 OH0NC KU71g 59 59, 1740 SM2LT JT02g 59 59, 1741 SM5HT ?? 59 59, 1743 OH2AY LX06g 59 59, 1744 SM0EBP IT60d 59 59, 1745 SM2KOT JZ74g 59 59, 1746 SM3LIC JW03j 59 59, 1747 OH6HP LX24j 59 59, 1748 SM2HDF JY34a 59 59, 1749 SM6JWH GQ25g 59 59, 1754 SM1BSA JR34a 59 59, 2104 SM2EJY IT63g 59 59, 2106 SM0KAK ?? 59 59, 2107 OZ4HAM HP66f 59 59, 2109 SM5FRH HT80f 59 59, 2110 SM4IVE HT60d 59 59, 2113 SMSMIX HS66g 59 59, 2115 SM5AQJ JT61c 59 59, 2117 SM0DJW IS10d 59 59, 2117 SMSHJL IS06j 59 59, 2118 SM5NER IS08d 59 59, 2118 SMSLXA HS68j 59 59, 2120 SM0KFV IS10a 59 59, 2121 SM7MCD IR52h 59 59, 2123 SM0MPI IT49f 59 59, 2125 SM0BYC ?? 59 59 and 2126 SM0DME ?? 59 59.

QSO's worked by IW9AJZ and IT9TQH in multi operator during the Int. Contest of July 1983 in portable stn.

IT9GSF (GY77b) wkd on June 7th at 1328 LX1SI DJ22g 59 59, 1329 ON1RN CL63g 59 59, 1330 ON40X BL79d 59 59, 1330 ON7NP CL62d 59 59, 1331 PA3BZL BL40f 59 59,

1333 HB9CSW D608g 59 59, 1334 PA08HIP CL34b 59 59, 1340 LX1DB DJ32b 59 59, 1341 DK8VS DJ66h 59 59, 1342 DK2LM EJ21f 59 59, 1343 DF8VK ?? 59 59, 1345 PA08HWM CK10e 59 59, 1345 F6CVR BI?? 59 59, 1348 F6HNL BJ60d 59 59, 1349 F6CER BI34g 59 59, 1415 F1CC C622c 59 59, 1416 F1KPW BK57g 59 59, 1416 F6HLD C655a 59 59, 1417 F6HEO B607h 59 59, 1417 F6BSJ C624f 59 59, 1418 F1CVU AJ31d 59 59, 1419 F6DKW BI12f 59 59, 1419 F6HLD C655a 59 59, 1419 F1DED BI11d 59 59, 1424 F1EAN AG22f 59 59, 1426 F1FHI ZH63d 59 59, 1431 F6HQC BI03j 59 59, 1435 G8TGM ZK17f 59 59, 1435 F1COW/m BI12f 59 59, 1443 F6FKB Z177g 59 59, 1444 F6FHO BF16e 59 59, 1445 GJ8EZA YJ70j 59 59, 1445 F1BQM AG19j 59 59, 1452 F1EQA BI13j 59 59, 1454 GJ6SUI YJ70j 59 59, 1455 G3CHN YK61b 59 59, 1455 F6DWG BJ41j 59 59, 1456 F1FLA ?? 59 59, 1457 F6GGF BI12j 59 59, 1459 F1BDJ AI72f 59 59, 1459 GUBFBO YJ48g 59 59, 1502 G6SMH XK32b 59 59, 1503 G61EP XK40f 59 59, 1507 F1BQM AG19j 59 59, 1509 GJ8FBT YJ70g 59 59, 1524 F6GLH ZI?? 59 59, 1526 F6CTT ZH02a 59 59 and 1527 F1EUI AG?? 59 59.

On June 20th at 1722 F1FHI ZH63h 59 59, 1722 F6APE ZH57b 59 59, 1723 F1EAN AG22f 59 59, 1725 F1FVZ AI67d 59 59, 1725 F6GLH ZI?? 59 59, 1726 F1AGO AG32b 59 59, 1726 F6FTC C632g 59 59, 1727 F1DPX ZH02a 59 59, 1727 F6CTW BI12f 59 59, 1728 F6DKW BI12f 59 59, 1728 F6GIF/p B?? 59 59, 1729 F1CUN C615e 59 59, 1730 F1HAR BI12a 59 59, 1731 F6HLD C655a 59 59, 1732 F1DQK BI23a 59 59, 1733 F1FSH DF01e 59 59, 1734 F6FDR BJ42a 59 59, 1735 F3GI CF67a 59 59, 1736 F6DWG BJ41j 59 59, 1738 F6DYX ZD7?? 59 59, 1739 F6ARQ AF21e 59 59, 1740 F1EHJ BH70g 59 59, 1741 F1DLT CH60d 59 59, 1741 F6FGD BH73g 59 59, 1742 F1BRV BG06b 59 59, 1744 F1DRC AI77g 59 59, 1745 F80P CF14d 59 59, 1745 F1HEQ AI41? 59 59, 1746 GJ8KNV YJ70c 59 59, 1747 F1ZD ?? 59 59, 1747 F6EVY ?? 59 59, 1748 F1KPW BK57g 59 59, 1749 ON4AAE BK? 59 59, 1749 F1BDW BJ62g 59 59, 1751 F1EFW C615b 59 59, 1751 F8CS CH56h 59 59, 1752 F6FEO BH12e 59 59 and 1754 F1YJ BH12c 59 59.

On June 22nd at 1714 DL8AH FN24c 59 59, 1716 OZ1BW FQ? 59 59, 1716 OZ50F EP75c 59 59, 1717 OZ1DPR EP54e 59 59, 1818 OZ1IIV FQ41h 59 59 and 1819 OZ1EYE FQ41h 59 59.

On June 28th at 1456 SM7KNK HP? 59 59, 1456 SM6AFH GQ25c 59 59 and 1502 SM6JWH GQ26g 59 59.

IW9AJZ/IT9 (GY77c) wkd on June 7th at 1340 LX1DB DJ32b 59 59, 1356 F6HNL BJ60d 59 59, 1448 GJ8EZA YJ70j 59 59 and 1500 GUBFBO YJ48g 59 59.

IW9AJZ/IT9 (GY67c) wkd on June 15th at 0940 CT1WW WB73b 59 59, 1317 SV1DH LX09a 59 59, 1328 YU1PRV ??16d 59 59, 1331 Y0BCJI ?? 59 59, 1333 HG0LZ KH09j 59 59, 1335 HG0DG KH39f 59 59, 1335 HG0KLZ KH09j 59 59, 1336 HG6KVB KH02j 59 59, 1337 HG8ET KQ22j 59 59, 1337 HG8CE K632c 59 59, 1340 YU7NXA KF77a 59 59, 1341 YU5CRI LG18c 59 59, 1342 YU7AKX KF77a 59 59, 1343 YU7QEC KF? 59 59, 1353 OK3CPY JI60f 59 59, 1354 OK3KKF JI60f 59 59, 1404 SV1DO LX19c 59 59, 1404 SV1JZ LY79a 59 59, 1409 OK3KNM ?? 59 59, 1411 OK8BAA JJ13b 59 59, 1413 OK2STK JJ12d 59 59, 1414 OK2BTI JJ13a 59 59, 1415 OK2BFO JJ13b 59 59, 1441 OK2SBL ?? 59 59 and 1444 SV9LM MV46d 59 59.

On June 20th at 1732 F6IF/p BC1?g 59 59, 1732 F6DKW BI12f 59 59, 1744 F1EHD ?? 59 59, 1748 F5SE CJ51f 59 59, 1751 F6CTW BI12f 59 59, 1752 F90E CI12j 59 59 and 1754 F1FV AI37d 59 59. On June 25th at 1700 F6HTJ BC25a 59 59. And on June 28th at 1456 SM7KNK HP? 59 59.

tk's fer info.

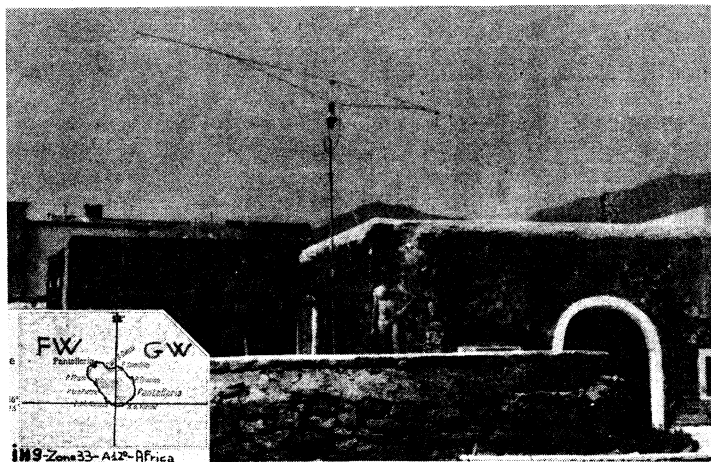
IW9AJZ/IH9 DX EXPEDITION TO GW-SQUARE

IW9AJZ/IH9 (GW11g) writes: very lucky summertime period: only 10 days, 10 watts (TS770, QRG06/40, QRT after 6 hours) and one 17el. by F9FT to work. In Tropo and Es over 650 QSO's, the greater part over 700 km QRB, 19 countries DXCC and about 120 squares. I hope to active next summertime Lampedusa Is. (I69) in best conditions and on all bands as IH9ONU 1982 (from 80m to 106Hz with all the operators of the team). Another very rare square between Sicily Is. and Tunisia -GV.

On July 7th he wkd at 0918 EB4BK YA42f 59 59, 0922 EB4AU YA51c 59 59, 0958 I0SNY/EA9 XV04e 59 59, 1500 CT4PI VZ38j 59 59, 1502 EA4AAW WZ49g 59 59 and 1552 CT4KQ WA21e 59 59. It was a beautiful opening to West direction, but as you can see from the little number of QSO's, the activity was very poor.

On July 15th he worked at 1525 OE6WIG HG29b 59 59, 1526 YU3ZW IG41e 55 59, 1528 HG1PP IG17j 57 59, 1530 YU2LEA IG13f 59 59, 1532 DL9NBE FJ46d 59 59, 1534

DFBIK EJ23f 59 59, 1534 DL4IAH EJ32d 59 59, 1534 DL1GBM/p EI73j 59 55, 1535 DJ4EJ EI73c 59 58, 1535 DL2UR EH03j 59 59, 1535 DF9IJ EI02h 59 59, 1537 DL1FAR EK72g 59 53, 1537 DF1ZE EJ13e 59 59, 1538 DK2WP EI73e 59 59, 1539 DL6FAW ???0a 59 59, 1540 F1ZU BI 59 59, 1541 F1EFW ?I??? 59 59, 1541 G600Z ?? 59 59, 1542 DL1EAF DL62h 59 59, 1543 DL2KDS ?? 59 59, 1543 DB8UF EJ20d 59 59, 1544 DC4WP FJ62c 59 59, 1544 DF1CF FH23j 55 55, 1546 DL4MBY FH21a 55 55, 1547 OE1APS II63g 59 59, 1548 F5NE BI22c 59 57, 1550 YU2LEA ?? 59 59, 1551 F6HLD G655a 59 59, 1551 F6GCT BI16j 59 59.



1555 F1HGU AI20d 59 59, 1556 G3JMB ZL80e 59 58, 1556 G4EFE ZL44f 59 59, 1556 F6FLV BI13h 59 59, 1557 G6OUZ AL43g 59 59, 1559 G4PSX ZL56e 59 59, 1559 HG6NQ JI80f 55 59, 1600 F6DDO BI02h 59 59, 1600 F1RQ ?? 59 59, 1601 G3HGL ZM41f 55 59, 1602 HG6NQ JI80f 55 59, 1603 G3TGL ZM41f 55 59, 1603 G4JY YM49c 55 59, 1604 G8HWB ZL55a 59 59, 1605 HG1VQ IH43c 59 59, 1607 DL1MBG GI64a 59 59, 1608 IN3TWX F623c 59 59, 1608 DC1NT FJ75d 59 59, 1609 DH2NAF FI17g 59 59, 1609 DL5MDL FI28a 59 59, 1610 DB5ML FI67g 59 59, 1611 DL5MAE FI60f 59 59, 1612 HG8UG JH78d 59 59, 1612 DB2RR FJ58f 59 59, 1613 D65NBB FJ08j 59 59, 1614 DF3RL FJ50h 59 59, 1614 DL0NM FJ58f 59 59, 1616 D67MBL FI68a 59 59, 1616 OK2STK JJ12d 59 59, 1616 YU2SZZ IG54d 59 59, 1617 YU2IS KF17e 59 59, 1617 YU7KPK ?? 59 59, 1618 OE3XUA HH10h 59 59, 1618 F2NU/p CG10h 59 59, 1619 HG4YF JG63b 59 59, 1620 F1FSH D673b 59 59, 1620 DL4RBK FJ50g 59 59, 1621 HG5KQD JH35c 59 59, 1623 YU2KDE FJ23g 59 59, 1623 OK3TJK II46g 59 59, 1624 YU1I IW KE36b 59 59, 1624 FSSE CJ51f 59 59, 1625 HG8ET KG22j 59 59, 1626 F1CNE CI?? 59 59, 1626 OK3KKF JI60f 59 59, 1626 OL9CPN JI60f 59 59, 1627 G4SWX ZM76c 59 59, 1628 HG3NX JG11d 59 59, 1629 HG6KNB JI69c 59 59, 1630 OK3CDP JI60f 59 59, 1631 OE3OKS IH21h 59 59, 1632 F16DV BJ20f 59 59, 1633 Y24IH ?? 59 59, 1634 HG8UL JH78d 59 59, 1634 HG1KYY IH53a 59 59, 1635 YU3HMT IG4? 59 59, 1636 SP9MM ?K65b 59 59, 1636 HG5KF/1 IH39j 59 59, 1636 OK3KMY II46g 59 59, 1637 OK3XI II20g 59 59, 1638 OK3WAN JJ64a 59 59, 1638 HG2PG JG72h 59 59, 1639 HG5BME JH46a 59 59, 1640 OK3KFF/p JI?? 59 59, 1640 HG8CE K632c 59 59, 1641 OK2BAR JJ21d 59 59, 1641 HG0HO KH18a 59 59, 1643 DF6NA EJ20d 59 59, 1643 HG5CI JH46a 59 59, 1644 OK1QI ?? 59 59, 1644 HB9RHV ?? 59 59, 1645 PA0HIP CL34b 59 59, 1646 F6CDZ DJ61c 59 59, 1646 LX1SI DJ22g 59 59, 1647 OK2BPB JJ22g 59 59, 1647 LX1DB DJ32b 59 59, 1648 OE6LXG HG09f 59 59, 1649 YU3CVU HG55f 59 59, 1649 OE1RKU II63f 59 59, 1650 HB9AMK DH77b 59 59, 1651 HG1ZA IG06j 59 59, 1652 G2RD ?? 59 59, 1652 OE3NV6 HG29b 59 59, 1653 OK3CBX II66g 59 59, 1654 SP6BQA IK30j 59 59, 1654 HG1YA IH63b 59 59, 1655 HG1W ?? 59 59, 1655 OK3CDR II66c 59 59, 1656 OE3JHC HI70j 59 59, 1656 OK2BUG IJ57c 59 59, 1657 OE3EFS HI69g 59 59, 1657 OE3OBC

HIS?? 59 59, 1657 OK3CQF II27c 59 59, 1658 OK2KYC JJ?? 59 59, 1659 OE3CEW II52f 59 59, 1659 HG1KVM IH63b 59 59, 1701 DKBVR DJ55c 59 59, 1701 OK3KJF II66e 59 59, 1702 OE6IWG HH47j 59 59, 1702 IW1ALW DF50a 59 59, 1703 SP6ZDA/9 JK24e 59 59, 1703 HB9POM EG08b 59 58, 1704 DB1VY DJ55f 59 59, 1704 OK3LU II43g 59 59, 1705 HG1YU IH64h 59 59, 1705 YU3UCI HG50j 59 59, 1706 YU7QCN JF16e 59 59, 1706 YU3UQX HG50j 59 59, 1707 PA0HMB ?? 59 59, 1707 DK8VS DJ66h 59 59, 1709 YU3TCW HG39f 59 59, 1709 PA0FTF CK10e 59 59, 1710 HG1KVP IH43e 59 59, 1710 OK2PGM IJ64a 59 59, 1710 YU2RQO HF74b 59 59, 1712 OE3NHW II51d 59 59, 1712 OE3WGS II73g 59 59, 1713 OK1PG HK50g 59 59, 1714 OK2KZR IJ32j 59 59, 1714 OK1KKH HJ06c 59 59, 1714 SP6ARE IL65d 59 59, 1715 OE3BBC II42b 59 59, 1717 YU3QV HG39g 59 59, 1718 OE6GRG HH39h 59 59, 1720 OE3PUW II72j 59 59, 1720 Y22ME HMS3a 59 59, 1721 OK1AFN/p IJ54g 59 59, 1721 OK2VMD IJ54g 59 59, 1722 YU3HNF/X HG39g 59 59, 1723 YU3USB HG38c 59 59, 1724 OE6BRG HH78j 59 59, 1803 PE1AYP DM51d 59 59, 1803 F8LW DI28d 59 59, 1804 PE1GXU CL09a 59 59, 1805 G4WY YK?? 59 59, 1816 G6EQM XK50e 59 59, 1833 F1KBF AJ14j 59 59, 1835 F1B0F/p ZI26b 59 59, 1837 GJBEZA YJ70j 59 59, 1839 GJ6SUI YJ70j 59 59, 1840 DF7DJ DL39a 59 59, 1840 DK1VI EJ54f 57 59, 1848 G3BDQ AK04f 55 57, 1850 G6OHR AK11h 57 55, 1851 G8LFB ZL30f 59 59, 1852 G6LEH ZL29f 59 59 and 1853 G3VXM ZK15d 55 59.

IW9AJZ/IH9 DX Expedition to FW20b on July 16th he wkd at 1738 GJ8KNV YJ70c 59 59, 1739 G3PBV YK32b 59 59, 1740 F2PC/p BC51h 59 59, 1743 GU2HML YJ47a 59 59, 1743 G8JDX XK50e 59 59, 1744 G4TJX XK56b 59 59, 1744 GU4HUY YJ?? 59 59, 1744 F6DBI ?? 59 59, 1747 F5ZA YI36b 59 59, 1747 GU4UUY YJ47c 59 59, 1748 T06EQO YI13d 59 59 and 1749 G6HRH XK57a 59 59. tks fer info ALL BANDS DX TEAM PALERMO (Team's manager: IW9AJZ G. La Parola, Via Vello d'Oro 14 I/90151 Mondello, Palermo, Italy).

OH0NC (KU) reports: the first opening was on June 6th carrying DL and I FM-stations but NIL on 144 MHz. In the second opening on July 2nd he had QSO's with F1ACP DG, IT9TQH/9 GY, HB9LF/p DH, F1GWL/p BF, F1KCO BH, F6CJG/p BF, F1KBF BI and F6BZA AG. Third opening on July 3rd: with G-stations only in the FM-band. 144 MHz NIL. At the fourth opening on July 8th: Italian stations only in FM-band. 144 MHz NIL. Fifth opening on Oct. 28th: Italian stations from 0907 to 0909 and DL and PA stations from 0953 to 0958 but again only in the FM-band. Sixth opening on Nov. 5th: OH0JN reported to me that there had been foreign stations in the FM-band, but no details. tnx fer info Holger

SP5AD (KM66g) wkd via Es on June 14th 1983 at 1706 EA3LL AB, 1706 EA3BKR AB and 1720 EA3DXU BB. On June 17th at 1805 G3UNU ZM, 1806 G3NSM ZL, 1811 G3IMV ZL, 1812 G4KPX ZL and 1812 G3POI AL. On June 21st at 1704 G3POI AL, 1708 G4KPX ZL and 1710 G3DAO XK. tks fer info.

Y23FG (FM69g) hrd on June 6th at 1701 RB5EHB RI56a 57, then he wkd at 1703 RB5EHB RI56a 59 59, 1704 UK5EDT RI 599 599, 1705 RA32DI RK48b 59 59, 1708 UB5LGE SJ45e 59 59, 1709 RB5ITP SI80d 59 59, 1713 UK5IEC TI32f 599 599 and hrd at 1715 RA6LRR UI 579 and 1717 RB5LAA ?? 579. On June 12th he hrd at 1241 F6FHP AE 49. On June 17th he hrd at 1603 9H1CD HV03f 45 (QSO with Y22QG) and wkd at 1615 UA6YAF TE30h 599 599 (new odx 2232km), 1622 EJ0WCY VN62d 59 59, 1624 hrd EI5BLB VN 59, 1627 UB5JIZ QF18j 59 59 (qsb), 1629 GW9FKB XN69g 59 59, 1637 GW6DDB XN70h 59 59, 1638 EI3V WN 59 59, 1642 UY5HF QG 59 59, 1643 UB5GFS RG51c 59 59, 1646 hrd RB5JAX QE38j 45, 1647 UB5JIN RE01f 59 59, 1650 UB5JIZ QF18j 59 58 (qsb), 1656 RB5GEY QG24c 59 59, 1700 UB5JIZ QF18j 59 59, 1701 RB5GBP RG73f 59 59, 1704 hrd UB5JIZ QF18j 59, 1705 RB5GIY QG18g 599 599, 1709 hrd UA6YAF TE 599, 1711 UB5HMZ RE01f 59 59, 1712 UB5GAN QG 599 599, 1720 hrd UA6AKD ?? 559 and 1736 G14LKA X021c 59 57. On June 18th at 1804 hrd RB5LGX RK50g 599, 1807 RB5LGX RK50g 559 559, 1812 UA3QHS TL27b 559 599, 1820 hrd UA3QER TL 429 (Qso with Y22QG) and 1832 hrd RB5IOJ SH10a 559 (QSO with Y22QG). On July 7th at 1810 EA1ED VD59h 59 -- (qsb), 1849 EA1TA VD 59 59 and 1850 EA1ED VD59h 59 59. On Aug. 14th he hrd at 0940 a Italian stn in a local QSO for 3 minutes. tks fer info Rolf

YQ2FP (KF27h) wkd on June 15th 1983 at 1652 PA3BIY CM72c, 1653 DF8KV DL76j, 1707 F1GTU/p ZE17c, 1709 F1FVP ZF10j, 1746 EA5ED ??, 2008 F6GMR ZH27h, 2009 F1FHI ZH63d, 2010 F1BQX/p ?? and 2035 F1GXX AH45e. On June 21st at 1702 G4COK YP04b and 1705 G4JCM YQ45b. On June 22nd at 1636 F6DKW BI12f, 1637 F1HDF

BI44a, 163B F6DPH ??, 163B F6GCP BI16j, 1639 F6GCT BI16j, 1640 F6DOD BI02j, 1641 F6GQE BI04d, 1642 F1DXE BI02h, 1642 F1GFV BI21c, 1643 F1B0F/p BI13f, 1644 F1HHV BJ61a, 1645 F1DPT BJ71j, 1645 F6DQL BI13h, 1646 F1EHN BI11d, 1648 F1DQK BI23a, 1649 F1GBU BI12h, 1652 F1HEQ AI41g, 1652 F1DXH AI20d, 1653 F6GIL AI67d, 1654 F1VJ BH12c, 1656 F1FVZ AI67d, 1656 F6APE ZH57b, 1656 F6GLH ??, 1657 F6DWG BJ41j, 1659 F1FPL AJ46f, 1700 F1DME BI12j, 1702 GU4IUW YJ47b, 1703 GJBEZA YJ77g, 1703 F1EQA BI13j, 1704 F6CGB BI03e, 1704 F6GKQ F6GKQ ??, 1705 F6BGR BI22e, 1705 F1FYE BI13f, 1706 F3UE BI01j, 1707 F1ERF BJ61d and 1708 F6CKZ AJ55c. On June 26th at 1529 UA6YAF TE30h (CW). On July 2nd at 1035 EB4AEM ??, 1039 EA4QR ??, 1052 EA4QV YA42f, 1059 EA3LL AB60j, 1135 EA2LY/p ZD74d, 1217 EA10D XD32d, 2103 PA0GSM CM70c, 2105PE1BNK CM76e, 2106 PI4JUT/p DM71j, 2108 PE1DAB CN68f, 2111 PA000S CN56f, 2112 DL0BI/p EM73g, 2113 PA3BGM DN61c, 2113 PE1CMO CM26e, 2114 PA3BYI CM27g, 2115 PA0BLD CM55j, 2116 PE0WOR/p DM63b, 2117 PA3CAH DL02e, 2117 PE1HPN DM63b, 2118 PA3BBX CM45e, 2121 G4CDC/p ZN49j and 2127 PA0LGJ/A ?? On July 19th at 1500 DL20M/EAS AY31f and 1501 EASAQU ?? tks fer info Fredy.

YU2EZA (IG54f) wkd: On June 7th at 1548 EA7BIH YX, 1549 EA7PW YX, 1552 EA5BPC ZY, 1554 EA5AZT ZY, 1603 EA3BBU AB, 1608 EA3DXU BB, 1615 EA4EPX YZ and 1622 EA4APW YY. On June 15th at 1615 EB1WV XD, 1700 EA3AIR BB, 1710 F6CIS ZE, 1714 EA10D XD and 1715 F1CCM ZE. On June 20th at 1656 UK6LDZ TH and 2054 F1EYB CD. On July 2nd. at 1102 CT1AUW WA, 1108 EB4BK YA, 1150 F1ETN BD, 1154 EA1MO XB, 1225 EA1QJ VD and 1230 EA10D XD. On July 16th at 1742 EA4AGW WZ. On July 29th at 1940 UA3QHS TL. tks fer info Nev.

WORLD WIDE VHF UHF SHF TOP LIST

ONLY A SINGLE CALL SIGN AND A SINGLE QTH COUNT FOR THE LIST (MAY BE /P BUT MUST ALWAYS BE THE SAME). SQUARES WORLD WIDE ARE VALID. QSO'S VIA PASSIVE REFLECTORS COUNT BUT NOT THOSE VIA REPEATERS OR SATELLITES. THE LIST IS PUBLISHED FOUR TIMES PER YEAR - DEADLINES ARE GIVEN AT THE FOOT OF THE LIST. SEND YOUR SCORE ON THE FORM BELOW. OR ENCLOSE IT WITH YOUR ACTIVITY REPORTS TO DL7QY.

FÜR DIE TOP LISTE ZÄHLT NUR EIN RUFEZEICHEN UND EIN QTH (KANN /P SEIN, MUSS ABER IMMER DASSELBE SEIN). GÜLTIG SIND ALLE FELDER WELTWEIT. NUR QSO'S ÜBER PASSIVE REFLEKTOREN SIND GÜLTIG, SOLCHE ÜBER RELAYS ODER SATELLITEN ZÄHLEN NICHT. DIE LISTE WIRD 4 MAL PRO JAHR VERÖFFENTLICHT - DER JEWEILIGE REDAKTIONSSCHLUSS BEFINDET SICH IN DER FUSSLEISTE JEDER TOP LISTE. SENDEN SIE IHREN QTH-KENNERSTAND AUF UNTERHALB BEFINDLICHEM FORMBLATT ODER MIT IHREM AKTIVITÄTSBERICHT AN DL7QY.

----- RETURN TO DL7QY -----

CALLSIGN:		QTH LOC:				
BAND	N.O.S.W.	TROPO ODX	AURORA ODX	METEOR SCATTER ODX	SPORADIC E ODX	
2M		KM	KM	KM	KM	
70CM		KM	KM	KM	KM	
23CM		KM	KM	KM	KM	
13CM		KM	KM	KM	KM	
9CM		KM	KM	KM	KM	
6CM		KM	KM	KM	KM	
3CM		KM	KM	KM	KM	
1.3CM		KM	KM	KM	KM	

RETURN TO DL7QY, CLAUS MEIE, D-7181 RUDOLFSBERG 24. ----- ODX = BEST DX ----- N.O.S.W. = NUMBER OF SQUARES WORKED.

MOON BOUNCE

BY DF 7 VX

EME-Net: 14.345 MHz Sat./Sun. starting at 16.00 utc;
Also OSCAR-10; Netfreq. is 145.950 MHz (Sat./Sun.22.00)

Activity and Conditions: Conditions on 144 MHz and 432 MHz were almost universally in the last three Month. The reports indicate good activity levels on all bands. During the November Sked-Weekend the weather in our location got extremely bad with heavy rain and windspeed about 120 km/h. So some of the EMEer lost their Antenna system.

There was no regular Sked-Weekend in December, but some very nice Random-work at the Christmas days. In January 84 it was possible to make some new contacts via the Moon because of stable weather and average conditions.

CONTEST NEWS: Jan ,DL9KR again leads the pack on 432 MHz with 86 QSO's in 32 sections. He is followed very closely by N9AB and K2UYH with 83 contacts in 31 sections. W0RRY/5 got 77 QSO's in 32 sections with only 8 Yagis. OE5JFL is also up there with 74 contacts into 28 sections on 70 cm's and on 1296 MHz he is the number 1 with 20 QSO's in 17 sections. OE9XXI was also very competitive on 23cm . He got 20 QSO's ,but only 15 sections. I5MSH worked 58 stations in 25 sections, G4EZN got 53 QSO's in 24 sections and ----now the result of a 4-Yagi-Station on 432 DK1PZ worked 23 stations in 14 sections!!!

LUNAR-LETTER: With the Lunar letter getting back ,we welcome Rusty Landes, KA0HPK. He will be doing the editing of the Station Report and any other information.

Please send all Info's to : Rusty Landes KA0HPK Po.Box 72
W.Terre Haute, Ind.
47885 u.s.a.

" 2 meter EME News and Station Report "

OK 1 KRA : (OK1GO,) Vasek sent the following Letter.

Our first QSO took place on the 30.of October 1983. The contact was with SM 2 GGF . Until the first part of the EME Competition ended we succeeded in 3 other QSOs with YU 2 USB , K9HMB, and DJ5DT. In the period between the first and the second part we developed and constructed a 32 channel spectrum analyser. Channel width and their separation was 12.5Hz. Overall Bandwidth was +/-200 Hz around the center frequency. In the center of the Analyser's band we used a 100 Hz passband filter. The Analyser's output was observed on the oscilloscope. This equipment proved to be an excellent tool for an exact RX-tuning and for the location of those weak signals. Sometimes 4 different Stations could be observed the same time on the screen..During the second part of the Competition we joined to our list 9 another QSOs; (I2ODI , W5UN, WA1JXN/7, K1FO incompl., SM5FRH, OZ1EME, KB8RQ, DK4MM, and K6MYC) . We reached the overall result of 12,000 points in the Competition on the 2 meter band.

Our Rig: 750 watts output, 4-times 16-Elem.Yagi(F9FT) and the BF981 preamp with about 1.2dB NF.

In the near future we intend to increase our output power a little

to improve our antenna system and spectral analyser and to introduce some simple computerized signal processing. What we need most of all is any literature concerning EME.

We are ready for skeds on 2 meters. Our mailing address is via
OK1GQ: Válav Vitous, OK1GQ / Mechenická 26 14100 Praha 4
 Telephone: Praha 765 0384 daily between 18.00 + 21.00 utc

F6CJG: AF68j / JNØ5SE worked on 144 MHz

29.October 1983: K9HMB 439/439; WA4LYS 439/449; WA8ZHE 439/439;
 W7IUV 449/449; KB7Q 0/0;
 19.November 1983: SM2ILF 0/0; UK5JAX 0/0; EA3ADW 0/0; UB5JMR 0/0;
 KØ2K 529/529; and K66DX 0/0 for the first contact between "K66
 and F"
 26.November 1983: OZ5VHF 0/0; PE1AGJ 0/0; YU3ZV 0/0; YU3DAN 0/0;
 YU3ULM 0/0; OK1MBS 0/0; K6MYC 0/0; KXØØ 0/0;
 27.November 1983: EA3LL 439/439; JAØJCJ 0/0; SM5GFS 0/0;
 OK2TU 0/0; OH5IY 0/0; DK4MM 0/0;

tnx very much for Info dr Om

DL2OM: Roland told us in his letter:

I took part in the EME-Contest Oct/Nov.83 and worked 14 stations. Another 18 were heard "O" or better:

K9XY ; WB5LBT ; LA1TN ; KB8RQ ; YV5ZZ ; Y22ME ; OK2TU ; F6CJG ;
 KXØØ ; K6MYC ; SM3AKW ; SM2ILF ; I1RSQ ; EA3LL ; YU3ZV ; SM4IVE ;
 VE2DFO ; YU1AW ;

I called some of them many times without success. So it seems to me, that an output of nearly 750 W on my side represents just the necessary minimum or less than that. On the other hand, - VØ7BQH was easily worked. Other stations too, like W7IUV and SM2GGF e.g.

It was the first time, that I participated in that contest and I enjoyed it very much. thank you Roland !

Y22ME: There is also a nice letter from Jürgen (HM53a / JØ72GI)
 Since 2 years Im qrv on 2-meter-EME. In that time it was possible to work 113 Stations located in 26-DXCC countries.
 Jürgen has also received the " WAC-144 MHz " !!! Congratulations!

After some improvement at the antenna he worked in the EME-Contest 36 stations in 24 sections! Now some results: Ø2.Oct.1983 W7IUV 0/0(random); PE1AGJ 0/0 ; and W1JR 0/0 ;
 29./30.Oct.1983 : K9HMB 0/0 ; KXØØ 0/0 ; OZ5VHF 0/0;
 26./27.Nov.1983 : K6MYC 0/0 ; SM2ILF 0/0 ; OH5IY 0/0 ; G4DZU 0/0 ;
 and WD8ISK 0/0 ;

In the contest I have heard 47 different stations. I called many of them some times, but there was heavy qrm around the EME-qrg. For the future I must build up some more antennas, I think, - to got 2 or 3dB more gain.

LZ1QM: There is a short Info from him: My friends and I have taken part in the EME-contest. We copy many signals from the Moon and some stations as follow : SM2GGF ; I2ØDI ; YU1AW ; W5UN ; K6MYC ; YU1IQ ;

EA3LL Here is a letter from him: I will bring you some information about our activity on 2 meter-EME in the 1983-Contest.

First weekend we Worked:

29.Oct.1983: SM2GGF, YU3USB, I2ODI, SM5FRH, OZ1EME, W5UN;

All signal reports "Q" or better.

Heard: SM7BAE, ZS6AVL, KB8RQ, K1WHS, K9HMB, YU3ZV, WA4LYs;

We must go QRT in the morning at 08.10 utc. The reason was quite simple--high wind -- about 100Km/h

The second weekend.

26.Nov.1983: Wkd OH7PI, SM4IVE, Y22ME, SM4GVF, UA1ZCL, SM7BAE,

K9HMB, YU3ZV, WA1JXN/7, WA4NJP, K1FO, OZ5VHF;

Hrd: K2OS, OK1MBS, DL8DAT, SM2ILF (called-grz?), WB5LBT (called but no answer);

27.Nov.1983 Wkd: F6CJG, OK2TU, PA2VST, HB9SV, I1RSQ, F6BSJ,

KB8RQ, WB0TEM, VE2DFO, K6MYC, VE7BQH, and the best:

JA6DR (First EA/JA-QSO on 144 MHz)!!

Hrd: LA1NN (539-called him for more than 1 hour, but no answer!

He had many stations calling him), G4BZU (called, but no answer),

YU1AW, YV5ZZ (called,-answered us??), DJ5DT;

So the total for the contest was 30 QSOs with 22 mult.

Our status now: 48 -Contacts with 36 stations. Stations heard and not worked 22.

EME II

Call	144 MHz				432 MHz				1296 MHz				ACT	AFT
	QSO	STW	DIC	CON	QSO	STW	DIC	CON	QSO	STW	DIC	CON		
YU1AW	163	81	21	3	510	127	26	MAC	29	14	11	4	++	12x Mch
YU1AMV	1	1	1	1	-	-	-	-	-	-	-	-	++	4x YU2B
YU1BU	2	2	2	1	-	-	-	-	-	-	-	-	++	4x YU2B
YU1BY	1	1	1	1	26	11	6	3	-	-	-	-	-	16x F212
YU1OPQ	-	-	-	-	1	1	1	1	-	-	-	-	swl	128 al.
YU1OYE	2	2	1	1	-	-	-	-	-	-	-	-	-	8x YU2B
YU1PRM	-	-	-	-	7	7	4	-	-	-	-	-	-	YU1AW
YU2OZE	2	2	2	2	7	7	6	4	-	-	-	-	4x 16 el.	-
YU2RGC	-	-	-	-	273	94	23	MAC	5	4	4	2	++	8x Dish
YU2RGG	1	1	1	1	-	-	-	-	-	-	-	-	+	4x YU2B
YU2RGO	11	3	3	2	-	-	-	-	-	-	-	-	++	4x 16el.
YU2SA	2	2	1	1	-	-	-	-	-	-	-	-	-	8x 16el.
YU3CAB	11	5	2	2	-	-	-	-	-	-	-	-	-	4x Loop
YU3CAB	5	5	3	2	-	-	-	-	-	-	-	-	-	4x F212
YU3DAN	14	7	7	7	-	-	-	-	-	-	-	-	++	4x LY
YU3DAN	1	1	1	1	-	-	-	-	-	-	-	-	-	4x 16el.
YU3ULM	33	23	7	3	-	-	-	-	-	-	-	-	++	4x 16el.
YU3USB	365	148	27	MAC	-	-	-	-	-	-	-	-	++	24x24elot
YU3EV	112	70	24	MAC	-	-	-	-	-	-	-	-	++	16xYU2B
YU7AR	52	25	8	2	-	-	-	-	-	-	-	-	++	4x YU2B

432-432-432-432-432-432-432-432-432-432-432-432-432-432

F1FEN: He reports: 28.Sept.1983 SSB-QSO with YU1AW 51/45 !!!
 29.Oct.1983 : DL9KR 0/0; 30.Oct.1983: JA4BLC M/O ;
 DJ9DL O/O ; JA6CZD 0/549 ; DL9KR 0/559 ; I5MSH O/O ; N4GJV M/M ;
 N9AB O/M ; G4EZN O/O ; HB9G O/O ;
 26.Nov.1983: OE5JFL O/O ; HB9SV O/O ; JA6CZD 449/559 ; F2TU O/M ;
 DK1PZ M/449 ; DJ6MB O/O ; I2COR O/O ; K2UYH 449/449 ; WØRRY/5
 O/M ; SMØDJW O/O ; WØRRY/5 559/449 ; OE9XXI O/O ; G3LTF O/O ;
 YU1AW 559/559 ;
 27.Nov.1983: WBØTEM O/O ;
 We heard during the contest: WA1RWV, W7FU, K9HMB, N2CB, W6ABN,
 JA9BOH, JA6ZMR, DK8MA/p, KL7WE ;
 Our rig: 8 times 21 elem. ; Preamp with MGF1402, Transverter+
 FT277zd; Ampl. is K2RIW =1,2Kw output.
Ops: F1FEN (SSB), F6IED, F9MS, F6GRB, and F1GMU !

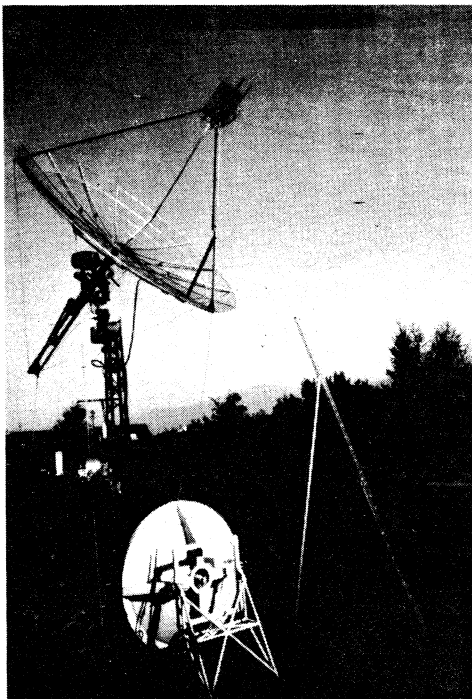
EA2BK : Now some Info about
 the EA2BK group on 432 MHz
 EME. Operators there: EA2LU
EA2HO, EA2BK, EA2AFM, EA2AVY;
 The Rig: 16 times 21 elem.
 Tonna, GaAs-Preamplifier, KW-Pa.
 They really had bad weather
 on both weekends, the first
 with snow and the second
 one with heavy rain and qrm.
29.Oct.1983 wk: DL9KR 549/
549; FIRST EME QSO 432 MHz
from SPAIN !!!!!

Hrd: JA6CZD 559; YU1AW 439;
 K2UYH 329; N9AB ;

26.Nov.1983: Wkd JA6CZD -
 559/559; DL9KR 559/559;
 HB9G 549/549; OE5JFL 449/
 449; F2TU M/O ;

27.Nov.1983 Wkd WØRRY/5 -
 O/O; K5JL O/O ; G3SEK O/O;
 G4EZN 559/569;
 Hrd: K9HMB, N9AB, G3LTF, DF1FE;

DK1PZ From Heinz I got a
 very long letter with many
 details about his rig.
 But now his activity report.
In the contest I Wkd. 23
different stations in 14
sections !! But heard 43!!!
 I spent many time to call
 them. Called WBØTEM and W1ZX
 more than one hour.
 Wkd on 22.Oct.1983: OE9XXI-



6 m Dish from DJ2US

O/O ; I5MSH 339/549; KAØY O/449; 23.Oct.1983: OH6NU 339/349; DL9KR 449/549; UA3LBO O/349; OH6NM 449/549; 30.Oct.1983: Wkd DJ6MB 449/449; DL9KR 549/549; DF7VX M/O ; JA6CZD 449/449; JA4BLC M/O; OE9XXI O-439/449; HB9SV O/O; G4EZN O/449; N9AB M/O; N4GJV M/O; LXØWCY M/O; I5MSH 449/549; OE5JFL 439/449; KAØY 449/449; K2UYH 449/449; 26.Nov.1983: DK8MA/p O/439; HB9G M/O; F1FEN M/449; I2COR M/349; WØRRY/5 O/449; HB9SV O/O; G3SEK M/M; G3LTF M/O; YU1AW 449/449; Heard many many others on both weekends!!!! The List would be to long.

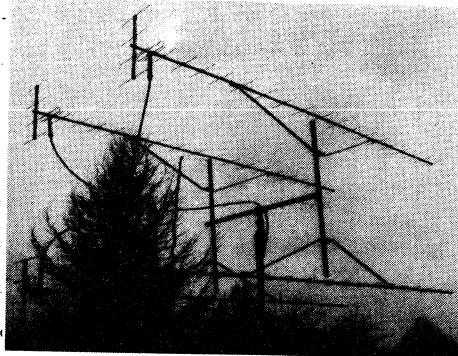
My Rig is very simple. The Amp. is an old Tv-Voice Transmitter with a single 7650 (YL1110). Plate voltage is 2000 V , G2 is 400 V and the anode current is 550-580 mA. The output must be in the range of 500- to 600 watts. Under normal condx it is possible to copy my own echos with "M" or "O" . The 432 MHz EME -Ant consists of only 4-modif. F9FT-Yagis. For better balance at the Feedpoint, I am using a quarter-wave section of tubing. So the sidelobes are very deep down. Also the Feedline from each Ant, to the Powersplitter is short as possible. (1.16m H 100 Cable) On every Ant. I put 4-reflectors. (Front to back ratio much better) The Rx is an old! FT-250 with a new If-section. CW-Filter and If-shift. Homebrew Transverter, Preamp : 2Stage MGF 1402/BF960.

DL9KR Jan was able to get his new antenna mounted in time for the November Contest weekend. 17.6 dB of Sun noise (solar Flux 90) wich is a 2.5 dB increase over his previous array and 4dB ground-to-cold sky noise!

26.Nov.1983 he wkd: DL7APV, SP5CIC/SMØ, F2TU, DL6WU, UA3LBO, EA2BK, YU2RGC, UB5BGY O/O, on random for the FIRST UB5 432 MHz EME QSO !!!

23.Dec.1983: Super condx! Wkd on SSB: DJ9DL, DF9CY, DF7VX ;

21.Jan.1984: UY5HF O/O !!



70 cm Antenna from DK1PZ

Some Net-News

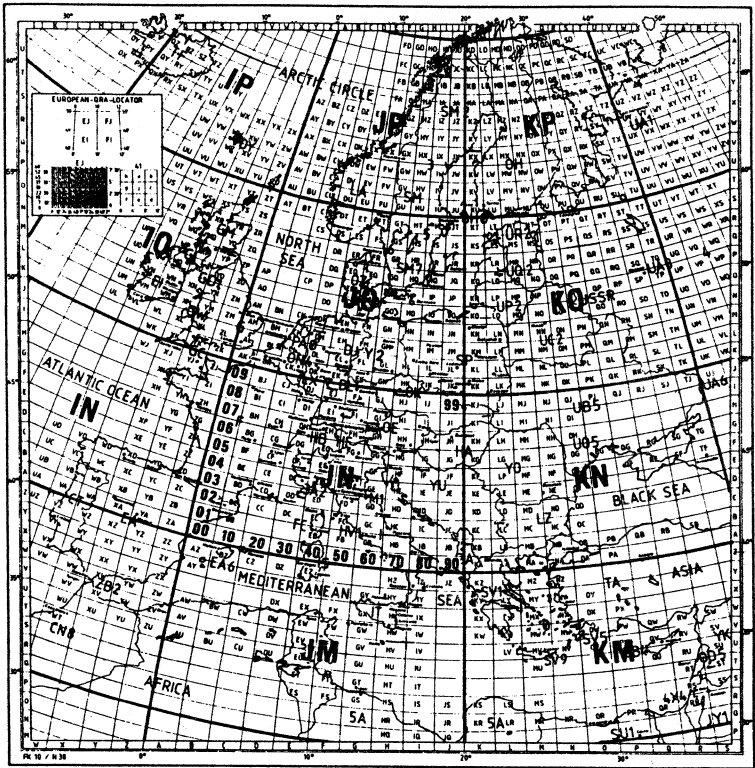
SP5CIC/SMØ, visite his brother in Poland. He (SP5CJT) tried to be on 144 MHz EME! But he did not get a License! At present he is using 2 longyagis(3.5L). He heard in the contest: W5UN, WA1JXN, I2ODI, YU2RGO;

2320 MHz DFØEME tests again on Dec.17/18. and he worked OE9XXI. DFØEME and OE9XXI using linear polarisation. Charlie, G3WDG copied both. He is using circular polarisation and his 13 foot Dish!! LX1DB is also ready on 13 cm EME. WB5LUA has just put a klystron on 2300 MHz with abt 400 watts output! 1296 MHz N6CA using a single water cooled 7289 (160watts) and 16 times 26 elem. Loopyagis. He worked VE7BBG O/O on random!! N6CA is receiving 9dB of sun noise!! (Flux 93).

Now 73,s Hellmuth

NEWS + SKEDS + COMMENTS + SUPPLEMENTS

Neues Weltweites QTH Locator System



1984 wird das Jahr der Umstellung auf ein neues weltweites QTH Kenner System, welches unser derzeitiges (seit über 25 Jahren in Europa gültig) ablösen wird. Keine Angst für die europäischen "Großfeldjäger", die Großfelder haben im neuen System gleiche geographische Abmessungen, nur eine andere Bezeichnung. Dieser Umgewöhnungsprozeß ist zwar für uns Europäer anstrengend, aber bietet langfristig gesehen doch Vorteile im weltweiten DX Verkehr, EME usw und bringt Erleichterungen in der Entfernungsberechnung. Es folgt eine kurze Beschreibung des neuen Systems:

- Größtfeld: 1. Stelle Buchstabe= Geographische Länge A=(180 Grad)-R=(180 Grad)
2. Stelle Buchstabe= Geographische Breite A=(-90 Grad)-R=(90 Grad)
Großfeld: 3. Stelle Zahl= Geographische Länge 0=(0 Grad)- 9=(20 Grad)
4. Stelle Zahl= Geographische Breite 0=(0 Grad)- 9=(10 Grad)
Kleinfeld: 5. Stelle Buchstabe= Geographische Länge A=(0 Min)- X=(120 Min)
6. Stelle Buchstabe= Geographische Breite A=(0 Min)- X=(60 Min)

In diesem Jahr wird auch im DUBUS Heft der WW-QTH Kenner zum E-QTH Kenner in den Listen hinzugefügt. (Die Bakenliste ist bereits in diesem Heft damit

ausgestattet) Es wird sich nicht vermeiden lassen in der Übergangszeit (meiner Meinung nach mind. 3 Jahre) beide Kenner zu verwenden. Wir werden in den Aktivitätsberichten erkennen, ob und wie der neue WW-QTH Kenner bei den europäischen OM's angenommen wird. In der Rubrik "Microcomputer News" in diesem Heft befindet sich ein BASIC Umrechnungsprogramm vom E-QTH Kenner auf den WW-QTH Kenner, sowie Entfernungsberechnung für das neue WW-QTH Kenner System.

Größtfeld Field						Großfeld Square						Kleinfeld Sub Square					
90°	AR	BR	CR	DR	RR	10°	09	19	29	39	99	60.0'	AX	BX	CX	DX	XX
80°						9°						57.5'					
-50°						4°						10.0'					
-60°	AD	BD	CD	DD	RD	3°	03	13	23	33	93	7.5'	AD	BD	CD	DD	XD
-70°	AC	BC	CC	DC	RC	2°	02	12	22	32	92	5.0'	AC	BC	CC	DC	XC
-80°	AB	BB	CB	DB	RB	1°	01	11	21	31	91	2.5'	AB	BB	CB	DB	XB
-90°	AA	BA	CA	DA	RA	0°	00	10	20	30	90	0.0'	AA	BA	CA	DA	XA
	180°	200°	220°	240°	260°		0	2	4	6	8		0	5	10	15	20
					160°	180°					18°	20°					115°

1984 is the year when the world wide QTH Locator system will establish and substitute the European QTH Locatorsystem, being valid for over 25 years now. No worry for the "European square hunters", because the geographical size of the old E-QTH 'squares' are equal to the new ones, except the signification. We Europeans have to get accustomed to this, but on long term it gives some advantage in respect to the world wide DX traffic (EME, ES aso), for us, too. A short discription of the new system follows:

- Field: 1. Position longitude A=(180 deg) - R=(180 deg)
 2. Position latitude A=(90 deg) - R=(90 deg)
 Square: 3. Position longitude 0=(0 deg) - 9=(20 deg)
 4. Position latitude 0=(0 deg) - 9=(10 deg)
 Sub Square: 5. Position longitude A=(0 min) - X=(120 min)
 6. Position latitude A=(0 min) - X=(60 min)

In 1984, DUBUS also will add in all lists and tables (already done in this issue see beacon list) the WW-QTH Locator. It takes (my own opinion) at least three years until the new system is really established here. In the meantime both systems will be in use. We will see in the coming DUBUS activity reports if and how the Europeans will accept the new system. In the "Microcomputer News" column in this issue you find a microcomputerprogram, written in common BASIC, which converts the old E-QTH Locator to the new world wide one.

Literaturhinweis/Reference:

CQ-DL 10/80 S.487 Weltweiter Standort Kenner v. DL9GS, OM A. Schlendermann

LABAK gives a comment to the Top list:

There are several natural limitations for the number of squares to be worked. Openings are not too often here, and only too often one cannot work DX because Fe1-stations are jamming, operators at FX-square and North should be very lucky to work 120 squares in 5 years. I think the top-list shall remain as it is because there are only too much difficulties to consider for a change. Also he writes to Dubus affairs:

I agree with PE1AAP (page 239): only DX shall be listed. Only one language is needed in technical articles, English or German. I would appreciate some "Microcomputer" info in Dubus, please also give some reference to hardware - it is very difficult to find info for. I use Apple 2+ with disk drive / cassette recorder.

OH0NC's reply to PA0RLS:

1.) I do not agree with his opinion to publish the technical part only in English. First: Dubus has always been published in German/English and probably owes a great part of its popularity to this fact. Second: Dubus is published in Germany and edited by German Hams and should therefore at least be printed in German. I will not go into any details why a PA would like to see only English, but let bygones be bygones. Third: (no offense intended) The translations into English are not perfect, so it is nice to look at the original manuscript what really is meant. Personally I always read the German text if the author is a DL or OE.

2.) My limited experience in MS supports the PA0RLS opinion of fair-play. However I would like to see a general support of the rule that when calling CQ for random QSO's your place on the random frequencies is governed by the last letter in your callsign, e.g.: OH0NC calls CQ on 144.103 and PA0RLS calls CQ on 144.119. As the situation is now, there is a complete chaos on 144.100 and nothing in the rest of the band. Personally I would operate much more if I would not have to be tied by skeds.

To Microcomputer column:

I have a program for finding your new Locator with a ZX-81. Costs for a listing are 3 IRCL's.

I also have a program to compute azimuth, distance and points from QRA (QTH-Locator), new Locator or Lat/Long-input. Costs are 10.- DM for a cassette. This program gives really accurate distances.

Address: Holger Granholm, Strandgatan 4, SF-22100 Mariehamn

OZ1DQQ writes:..I entirely agree with L8BAK, F6DRO and others who have made comments about the Maidenhead locator system, I think that the system is excellent for EME and satellite use, but for the "local" use in the regions I prefer the old locator system, not only because of the extra digit, but also because it is much easier to recognize two letters rather than two numbers, when determine a square. About the form of the DUBUS I think the present is ideal, with the many useful bandreports.

Y21PL, Thomas schreibt:...nach HL und HO haben wir nun dieses Jahr GN via MS aktiviert. Aber zu den Perseiden waren dort inzwischen auch ansässige OM's via MS QRV, so daß die Sache nicht mehr ganz so interessant war. Außerdem war das QTH schlecht (Hochspannungsleitung), so daß wir nur 38 QSO's komplett hatten. Für 1984 habe ich nun geplant, zum IARU-UHF-Contest (am ersten Oktober-Wochenende) mal HO71f auf 70cm zu aktivieren. Meines Wissens war dort bisher nur vor Jahren DM2CPA/p mit QRP und wenigen QSO's mal aktiv. Der Standort wäre durchaus brauchbar: nur etwa 15m ü.NN, aber von Süd über West bis NW hat man erst mal km-weit nur Wasser! 1981, zur MS-Aktivierung hatten wir von dort ja so "nebenbei" in der Woche auch über 800 Tropo-QSO's auf 2m. After activating HL and HO via MS, we went to GN this year. But in the meantime, this square was already activated by resident OM's, so things were not too interesting anymore, also the QTH was bad (power line) and we just completed 38 QSO's. For 1984 I am planning to activate HO71f on 70cm for the IARU-UHF-Contest (in the first Oct. weekend). As far as I know only DM2CPA/p was there once with QRP without any real success. The QTH is quite usable: abt 15m a.s.l., only sea from South to Northwest. In 1981, during MS-activation we made within one week more than 800 tropo-QSO's on 2m from over there. tks fer info Thomas.

G3FPE Norman writes:...we are expecting to have the 50 MHz band made available to more U.K. amateurs during 1984 - at the moment, only 40 permits for 50-52 MHz operation are in force. All 405-line, black-and-white TV in Band 1 is due to end at the end of 1984, so there will be no excuse on the grounds of TVI for not letting us all have the band. However, there will still be some BBC radio relay services somewhere in Band 1, and these will have to be protected. Also, the land mobile services are always complaining they have insufficient QRGs, so would like to take over the old Band 1 TV band! tks fer info Norman.

QTH SQUARES CENTURY CLUB

by Norman Fitch, G3FPK

In 1979, THE SHORT WAVE MAGAZINE created the QTH SQUARES CENTURY CLUB. The basic requirement for membership of the QTHCC is that you have received confirmations from at least 100 different QTH Locator squares. The starting date for this award is 1975-01-01 and there are certificates for 144 MHz and 432 MHz.

Up to 1983-12-16, 30 awards have been issued for 144 MHz to OMs in 9 countries. Only one award has been issued for 432 MHz operation. Here is the list for 144 MHz:

Cert. No.	Call	QTH	Date issued	Squares conf.	Cert. No.	Call	QTH	Date issued	Squares conf.
1	G3FPK	ZL60J	79-03-13	169	16	G4JZF	YM30b	82-01-19	103
2	G4DEZ	ZL34A	79-04-06	101	17	G4TIF	ZM53e	82-01-22	128
3	G3IMV	ZL07H	79-04-14	302	18	H89LE	EH57e	82-02-22	101
4	G3CHN	YK61B	79-05-10	175	19	G4HMF	AM76c	82-03-11	103
5	LA3WU	CU47d	79-07-30	100	20	G4MCU	AL23f	82-04-23	131
6	OK1KIR/p	GK45d	79-11-18	109	21	G6ADH	ZL70g	82-10-19	125
7	G3VYF	AL33j	79-11-19	250	22	OE3CEW	II52f	83-01-14	150
8	G3KEQ	ZL60j	80-01-30	104	23	I6DQE	GD48d	83-01-24	103
9	SP2PZH	JO44f	80-04-17	100	24	GBLFB	ZL30f	83-03-01	125
10	DK3UZ	EN20c	80-07-28	206	25	G8WPD	ZN51e	83-05-19	100
11	G3NAQ	ZL34f	80-12-16	101	26	G4NQC	ZL50c	83-05-26	103
12	G4IJE	AL12g	81-02-23	101	27	G6ECM	AL56b	83-06-29	125
13	G4DEZ	AL34h	81-03-16	102	28	G8TGM	ZK17f	83-07-05	101
14	EA3LL	AB56b	81-04-06	205	29	G8PNN	ZP52d	83-07-05	101
15	GBVR	AL42e	81-11-12	102	30	G4MJC	AK12f	83-12-09	101

and for 432 MHz:

1 G3VYF AL33j 82-12-06 100

Any reader wanting a copy of the rules and application form should send an IRC to: QTHCC, Short Wave Magazine, 40 Eskdale Gardens, Purley, Surrey, England CR2 1EZ.

Norman, G3FPK wrote in another letter abt. the tropo opening 29/30th Dec: We found the activity very great from here, but no real DX - nothing much further east than the 'D' squares. On Dec. 31st northern EA stations were worked on 2m and 70cm, including EB1MS/p in XC01b, which is rather rare. EA1ED (VD59h) says that the La Coruna Radio Club members are likely to get QRV on 23cm, which would be very nice. That club operates the 2m beacon EA1VHF and they say its QTE (ex QTF a.d.R) is 60 deg. and not 'N' as in the DUBUS beacon list. Finally, some news via GW3NYY about Johannes, LA6HL. I understand he will be QRV again from TF on MS from 26-07 to 18-08 on 144 MHz - taking in the Perseids. He will also be QRV on OSCAR 10. From 17-08 to 19-08 he will be QRV from The Faroes - OY - only on OSCAR 10. MS skeds by letter, 20m VHF net or over 0-10. tks fer info Norman.

PA0CIS writes:...DL7YS suggested to move the VHF net during bad 14 MHz propagation to 80 mtr, 3645 kHz. OE3CEW proposed the use of OSCAR 10. I also wish to move the VHF net but do not think OSCAR 10 is a good alternative. Many stations interested in 144 MHz DX do not have 70 cm equipment and also a antenna with elevation control will be necessary. So 80mtr is the best choice. I do oppose the frequency 3645 kHz, as suggested by DL7YS, because this frequency is in the middle of the USSR DX band (3635 - 3650 kHz). Strong opposition from 80mtr DX operators is to be expected. 3630 and 3625 kHz are occupied by fixed stations and 3610 to 3600 is quite crowded with RTTY. My suggestion is, use 3649 kHz +/- QRM after +/- 1900 GMT as VHF net.

European Top List in DUBUS has been changed now to World wide Top List because the new World Wide QTH Locator system. Valid are all squares around the world. Detailed rules on page 55.

DX-pedition to XS80d

Following a very successful preliminary expedition to XS during Summer '82, the 'Five Bells Contest Group' based in South Lincolnshire is pleased to give notice of a major DX-pedition to XS during Summer '84 using high power and group antennas for 2 metres and 70 cm.

Callsigns used will be GM4DHF/p on 2 metres and GM4SIV/p on 70 cm.

The group will be active between the dates 25th July until 4th August inclusive. No schedule will be taken before the group arrive on site as working via Tropo, Aurora and Sporadic E must take priority. Schedules for Meteor-Scatter will be taken on a day to day basis on the 20 metre V.H.F. net during the day and on the proposed 80 metre net in the evenings via GM40DA/p. Proposed operating frequencies will be 144.215 / 432.215 for Tropo S.S.B. and 144.028 for Meteor Scatter operation.

Equipment includes low noise TX/RX, BF981, LDF450 feeder, 4 x 9 ele, 2 x 4CX250B, 400W for 2 metre and for 70 cm K2RIW + 4 x 21 ele, 300W output.

Members of the group: G40DA, G4DHF, G8JNV plus various members of the family. mni tks fer info David.

G4IG0 (YK07f) writes: Please to note my comments that the format of DUBUS should be left as it is in its entirety. All sections are easily read through and information can be quickly obtained. Because of my comments I ask you to keep the same info-layout. I do not like the way you have tabled the Es data in DUBUS 3/83 - it is now very hard to study and check all the data - so please print all data in original tabular form - thankyou. Also your deadline for Es info is not good for 2 reasons: 1. The Es season does not really end until the end of August. 2. You do not leave much time for OM's to table info and to post to you - especially from abroad. I suggest end of September 1984 is better. As regards the Es maps you have given, in most cases, a very false picture of what occurred on each day as you have mixed up one or more openings per day on the same map. For example on 2.6.83 your map would indicate that 4 directions were open at about the same time which was of course not the case. One direction was open from abt. 1345 to 1527 and the others were open 1322 to 1412 and 1455 to 1527 - the map does not show the movement that occurred. Also on 12.6.83 there were 2 openings - from 1234 to 1343 and a different opening from 1504 to 1642 - again your map does not indicate this. I agree it would be more practicable to print all info in English - this would, of course, give more room for info. tks fer comment.

PEIGHG writes:...my station is on 2m QRT and for 70cm I use IC402 with Y01270 +/- 150W RX MGF1402. For 23cm: homemade trv, RX MGF1402. 13cm: homemade trv, +/- 25W, RX MGF1402. 9cm: TRX +/- 1 W and RX MGF1402. 3cm: TRX +/- 40mW in a 50cm dish with dipol feeder.

The arials for 70cm are 2x21 ele., for 23/13 and 9cm I use a 1,5m dish with a LPD. All the arials are 55m above ground (that is 55m a.s.l.). tks fer info John.

SP6XA, Ted writes:...In DUBUS 1/83, PA0FTF give some precious advices, how to minimize the terrific interference during Es openings. The split frequency is good for more elaborated transceivers and for stations, having separate receivers. However, many operators (like me) use more simple drivers e.g. IC202's allowed to work on a common frequency only. The main disadvantage of the split system is, that correspondents use two separate frequencies, increasing the actually existing QRM. In my opinion, a good cure is to disperse the stations uniformly over the SSB band and to use CW more frequently than until now. A CW contact should be past through within 25-30 seconds, if only necessary data were exchanged.

About DUBUS contents: I believe that the DUBUS contains the most interesting news for the amateur. We are thankful to the Leading committee for the labour, costs and timeloss. I personally read all articles, even the EME news, although I never will be active via the moon. Please leave DUBUS as it is. In the Top Lists there is no EME column, so this mode of operation should not be taken

into consideration. But- in contrary- I am for counting all contacts via Es, as they do not need super equipment, but they require a good deal of patience and a good operational ability. If the distances to amateurs living out of Europe could not be exactly pointed by QTH-Locators, then- so called- World Wide QTH Locator would be useless, since there is a strict relation between both QTH and WW-QTH Systems. I vote for the present QTH system, leaving the use of the WW-QTH for the EME and Transequatorial communication. 73 de Ted. tks for comment!

4U1ITU activity 1984 July 1st to July 8th

A group of danish amateurs are planning to be QRV from 4U1ITU in the period 1-7 to 8-7 1984. We hope to be QRV on 2m, 70cm, 23cm and maybe 50 MHz. On VHF we will mainly be operating on MS or Es, but we will participate in the July Contest. NO prearranged skeds but listen for further info on VHF net, from one of the operators: OZ1FDH, OZ1DOQ, OZ1FDJ, OZ9QV, OZ1EYE and maybe a few more. Vy 73 de OZ1FDH , Claus.

DUBUS affairs

DUBUS erscheint 1984 vierteljährlich. Die Auslieferungstermine für 1984 sind: 1/84 25.Feb, 2/84 26.Mai, 3/84 25.Aug und 4/84 24.Nov. Um größere Aktualität zu erreichen wird DUBUS 1985 voraussichtlich 6 Mal im Jahr erscheinen. Der Jahresabopreis beträgt 1984 18,-DM.

DUBUS is published 4 times per year. The shipment dates for 1984 are: 1/84 25.Feb, 2/84 26.May, 3/84 25.Aug and 4/84 24.Nov. To get the contents more actual we try to publish DUBUS in 1985 6 times per year. About anual subscription rate outside Germany, ask your Distributor. 73 de DL 7 QY

REGION 1 Conference and the 'VHF Net' by OE 3 LI

I guess, there is still a need for a basic VHF- and EME net, not only in Europe, but also as an intercontinental link. Using OSCAR 10 or i.e. the 80m-band is a good alternative, but by technical and propagational means, will not substitute the reliability of the 14.340 to 14.350 MHz in use at present in the 20m hf-band. Many VHF-people have made, in all, disciplined and flexible use of this segment so far.

This efforts may come under considerable pressure (in addition to the existing QRM from other services), if document SI/34 (see next page) would pass Committee A of the IARU Reg. 1 Conference at Cefalu this spring!

To the reader, this paper may suggest a greater support for the impact of additional modes on the 14.300-14.350 MHz segment in Austria. On the contrary, the document reflects the opinion of hardly half a dozen people in OE (i.e. an existing 'Teleprint Group' within OVSV had not even been asked. The case was brought before the Region 1 Working Group meeting in such a hurry, that representatives had not even a chance for any kind of feedback from Austrian members. etc.)

The motivation for the mentioned proposal can be seen in the last two sentences of doc. SI/34, where 'sharing out' or other operations within 14.300-14.350 MHz is declared desirable. This could be misunderstood by some RTTY-people as a 'charterfor ego-actions', like 'sweeping off' any person, not in favour by the RTTY-ops discretion. (Such 'actions' beyond existing RTTY-allocations are subject of a conference-proposal by SSA, the Swedish society.)

I tried to claim for a modification with very poor results. They changed the most unrealistic approach (exclusive allocation of RTTY/SSTV within the proposed segments), the apodictic language of the paper and its pronouncement remained unchanged. (No chance for enquierers even to take a look at the papers. The only official source was a survey in DARC's CQ-DL 1/84.)

I think, everybody interested in a basic VHF net should contact his delegation for the Cefalu '84-conference for ad-hoc modifications.

To my opinion, Doc. SI/55 of the DARC (see next page) is a good alternative, if other measures should fail. Please, keep in mind, that above proposals are for conference-committee A (HF & administration), so not only your VHF manager should be kept informed. Vy 73 Chris, OE 3 LI.



APRIL 8-13 hotel club COSTA VERDE

Committee A document SI/34

RTTY BAND PLAN
OVSV

General background

At the last meeting of the HF Working Group as at many local meetings in the OVSV a hard need for an expansion for RTTY operation was showing up. Aside of this need is the well known need of separation between contest operation and normal amateur traffic.

The market shows an increasing number of rather cheap RTTY gear (mostly computer surplus but also specially made RTTY equipment), therefore, a rapid increase in the number of RTTY operations can be anticipated.

The possible change of the present HF Band Plan should be done carefully and all other well allocated groups and operation modes should be kept in mind.

New HF Band Plan

- 80m: no change
- 40m: no change
- 20m: 14.080 - 14.100 RTTY (pref DX operation) ←
- 14.300 - 14.350 all-mode (including RTTY and SSTV)
- 15m: 21.080 - 21.120 RTTY (pref DX operation)
- 21.400 - 21.450 all-mode (including RTTY and SSTV)
- 10m: 28.150 - 28.200 RTTY only
- 29.550 - 29.700 all-mode (including RTTY and SSTV)

There is a possibility of sharing between this new plan and the present phone patch activity on 14.300-14.350MHz. As most of this traffic is not in accordance with the regulations, the possible band change could give a further help in reducing this kind of traffic.

Committee A

document SI/55

REALLOCATION OF RTTY PREFERRED SEGMENTS IN THE 21 and 28MHz BANDS

DARC

To reduce interference between rtty and cw, it is suggested to reallocate the current rtty preferred segments

1. from 21.080 - 21.120 to 21.130 - 21.170MHz
 2. from 28.050 - 28.150 to 28.300 - 28.400MHz
- the higher cw sections are normally (or by regulations) used by beginners (novice class) especially on 21MHz.

The proposed shifts will allow them a more undisturbed working with other novice stations in other regions.

In addition, implementation of the proposal will allow undisturbed reception of bulletins and morse code training programs from IARU HQ station W1AW, which has been well established on 21.080MHz for many years.

At present the RTTY preferred segment of the 28MHz band occupies an undue part of the cw only section. The bandwidth of the 28MHz band is sufficient to allow allocation of non-shared segments for operation in the various modes. A proportionate use is an additional advantage to defend the band against unwanted intruders.

NB - See annex IARU Region 1 Band Plan as it stands at the moment.

ALLGEMEINE HINWEISE

TAGUNGSSORT

Fachhochschule München
Dachauer Straße 98B
8000 München 2
Hörsaal E 0103
Straßenbahnlinien 15, 20 u. 26, Haltestelle Lothstraße
Parkplätze in der Loth- und Loh-Straße

INFORMATIONSBÜRO

Während der Tagung steht Ihnen das Informations-
büro im Foyer der Fachhochschule für Auskünfte zur
Verfügung

LEITSTATION

Die Clubstation der Fachhochschule München
DL O PY ist auf 145,5 MHz in F3 QRV.

RELAIS-FUNKSTELLEN

Im Raum München stehen folgende Relais zur
Verfügung

DB O 2 U (Zugsitze) Kanal R 5
DB O 2 M (München-Stadt) Kanal R 6
DB O X F (Hofedau) Kanal R 0
DB O 2 S (Zugsitze) Kanal R 78
DB O Y M (München-Stadt) Kanal R 82

UNTERKUNFT

Fremdenverkehrsamt München, Rindmarkt 5,
8000 München 2, Tel. (089) 23911
Am Hauptbahnhof (Außenfront) tagl. 8–23 Uhr,
nicht telefonisch
Am Flughafen in der Ankunftshalle, Mo–Sa 9–22 Uhr,
So 11–19 Uhr, nicht telefonisch

VERSCHIEDENES

Ärztlicher Notdienst, Tel. 559661
Rettungsdienst, Tel. 222666
S-Bahn-Zugauskunft, Tel. 557515
Bundesbahn-Zugauskunft, Tel. 593321
Apothekennotdienst, Tel. 594475
Flugauskunft, Tel. 9211 2127
Fundbüro, Tel. 2333503

VERANSTALTER

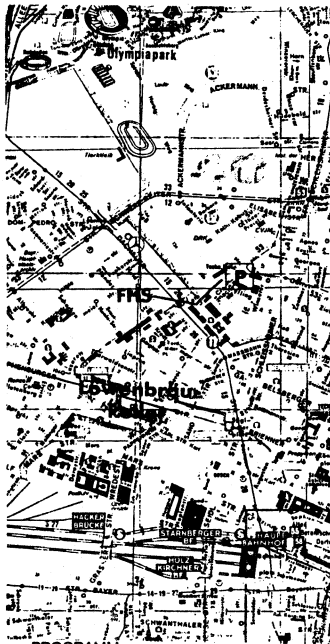
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VERANTWORTLICHER

Bernhard Sturm, DJ9MF
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8000 München 19
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T. Reind DL6AG, F. Schmeitl DG2EC,
B. Sturm DJ9MF, G. Sulyok DL7MAL,
L. Wagner DL3UJ, K. Zepfner DL5MBU.



PROGRAMM

Samstag, 10. März 1984

9:00–9:30 Eröffnung und Grußworte
9:30–10:15 K. Vogt, DJ7WI
Delta-Modulation
(Der leichte Einstieg in die digitale Übertragungstechnik in Theorie und Praxis)
10:15–10:30 Pause
10:30–11:15 K. Hupler, DJ7EE
Einfache Impedanzmessungen bis 3 GHz.
11:15–11:30 Pause
11:30–12:15 E. Schäfer, DL3ER
Neueste Ergebnisse auf dem 47 GHz-Band.
12:15–14:00 Mittagspause
14:00–14:45 G. Schwarzbach, DL1BU
Primärstrahl für Parabolantennen im Bereich 1–8 GHz.
14:45–15:00 Pause
15:00–15:45 J. Fahrnenich, DJ7FJ
Microstrip-Schaltung für den SHF-Amateur
am Beispiel eines 10 GHz-Transverters.
15:45–16:00 Pause
16:00–16:45 Dr. J. Gerstlauer, DG3SX
Entwicklungsstand der Metacoast-Empfangstechnik.
16:45–17:00 Pause
17:00–17:45 K. Werner, DJ9HD
Messungen, Berechnungen und Thesen zur
Wellenausbreitung im 70 cm-Band.

Sonntag, 11. März 1984

9:00–9:45 P. Biele, DJ3YB und G. Zopp, DL6SU
Erfahrungsbereiche über Entwicklung und Einsatz
von Doppler-Parametern im Amateurfunk.
Pause
10:00–10:45 P. Vogt, DL8RAH
SSB-Station für 10 GHz in Modul-Bauweise.
10:45–11:00 Pause
11:00–11:45 E. Zimmermann, HB9MUN
Einfacher Frequenzzähler für den UHF-Bereich
bis 25 GHz.
11:45–13:00 Mittagspause
13:00–13:45 E. Barwich, DL8ZX
Universelle analoge PLL für VCO's mit umschalt-
barem Rasterabstand.
13:45–14:00 Pause
14:00–14:45 K. Brenndörfer, DF8CA
Spannungs- und Leistungsmessung mit Halbleiter-
dioden im VHF/UHF-Bereich.
14:45–15:00 Pause
15:00–15:45 H. P. Köhler, DK1YO
Ordnung 10
Eine technische Herausforderung für den
VHF/UHF-Amateur.
abschließend Schlusswort. Änderungen vorbehalten.

VHF – UHF
1984

München, 10.–11. März 1984

Vortragstagung
für VHF-UHF-SHF-Funkamateure

Einladung und Programm



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TREFFPUNKT AM ABEND

Wird während der Veranstaltung bekanntgegeben.

TAGUNGSSUNTERLAGEN

Das Tagungshäft mit Kurzfassungen der Vorträge,
einem technischen Anhang und einem Inseratenteil
können Sie gegen eine Schutzgebühr von 10.– DM im
Foyer der Fachhochschule erhalten.
Der Versand der Tagungsunterlagen erfolgt (solange
Vorrat) gegen Vorauszahlung vom DM 12.– nach
Beendigung der Tagung durch den Verantwortlichen,
DJ9MF. Anfragen: Tel. (089) 162117

FIRMENAUSSTELLUNG

Vor dem Hörsaal E 0103 ist eine Ausstellung namhafter
Gerätehersteller und Fachfirmen zu besichtigen.

EUROPEAN VHF UHF SHF BEACON LIST										15.02.1984
CALL	QRB (MHZ)	WW-QTH	E-QTH	POWER (W)	ANTENNA	QTF	ASL(M)	MODE		
GB3STX	50.020	I0737J	XN49F	100 ERP	3EL. YAGI	W	58	F1A		
ZB2VHF	50.035	IM76HE	XW64B	20	5EL. YAGI	WNW	117	F1A		
SB4CY	50.500	KP60HT	XU14G	35	5EL. YAGI	WNW	2000	A1A		
GB3CTC	70.030	J070NJ	XK46D	40 ERP	2EL. YAGI	NE	320	F1A		
GB3WHA	70.040	J001BA	AL71D	16 ERP	2EL. YAGI	NW	168	F1A		
GB3BUX	70.050	I093BF	ZN61A	20 ERP	2*TURNSTILE	OMNI	460	A1A/F1A		
GB3ABX	70.060	I086LN	YQ35C	100 ERP	4EL. YAGI	SSE	370	A1A		
SB4CY	70.112	KP60LU	QU15B	10	4EL. YAGI	WNW	117	F1A		
ZB2VHF	70.120	IM76HE	XW64B	10	4EL. QUAD	N	117	F1A		
E1ARF	70.130	I063SN	WN38C	25 ERP	2*5EL. YAGI	NE/SE	120	A1A		
UB5SAY	144.007	KN29EA	HJ72D	5	V-DIPOLE	OMNI	300	A1A		
UK5EAS	144.050	KN78NH	RI56J	0.2	GROUNDPLANE	OMNI	??	A1A		
UK0FAI	144.090	KP16NK	LA46J	5	V-DIPOLE	OMNI	??	A1A		
OE3XAA	144.126	JN88BA	II71D	0.5	????	OMNI	840	A1A		
UP2WN	144.136	K025DB	MP72J	3	????	??	??	A1A		
SB4CY	144.139	KP60HT	XU14G	40	6*6EL. YAGI	NW	2000	A1A		
ZB2VHF	144.145	IM76HE	XW64B	15/35	8EL. YAGI	NE	117	F1A		
OZ3VHF	144.149	J055FT	FP53H	5	HALO	OMNI	35	F1A		
EA3XS	144.152	JN11DP	BB22E	20/250	16EL. YAGI	NE	??	??		
UK3MBQ	144.156	K087SV	SR08E	3	2*DIPOLE	OMNI	130	A1A		
UK5UDX	144.177	K050CG	PK52F	5	DIPOLE	N/S	169	A1A		
UK4NAU	144.185	L048WH	YS60G	3	DIPOLE	NNE/WSW	120	F1A		
UK4NBY	144.199	L049JJ	YT45F	5	9EL. YAGI	NNW	??	A1A		
UK5JAA	144.250	KN74FU	RE13A	1	TURNSTILE	OMNI	1000	A1A		
UK3TAA	144.250	L016WH	V060G	0.5	V-DIPOLE	OMNI	??	A1A		
UK3UMK	144.315	L006LY	U005B	1	HELTIX	OMNI	??	??		
UK56AA	144.371	KN66LV	Q005D	1	DIPOLE	N/S	??	A1A		
SP8VHA	144.430	K011GB	LI53D	1	DIPOLE	OMNI	??	A1A		
UK5YAB	144.500	KN28WG	M160E	5	DIPOLE	??	??	A1A		
YU3VHF	144.506	JN76NC	HG76A	2	CROSSDIPOLE	OMNI	1219	A1A		
UB5BBJ	144.725	KN29VA	MJ79D	5	DIPOLE	N/S	??	A1A		
OH8VHF	144.800	KP25TC	M779H	40	16EL. COLLINEAR	N/S	240	A1A		
150A	144.810	JN40SX	EA00A	25 ERP	TURNSTILE	OMNI	450	A1A		
17A	144.820	JN71UR	HB29A	2 ERP	BIG WHEEL	OMNI	1012	A1A		
10A	144.825	JN61ES	GB12D	28 ERP	BIG WHEEL	OMNI	30	A1A		
9H1VHF	144.830	JM75VF	HV03F	1.5	2*BIG WHEEL	OMNI	??	A1A		
11G	144.830	JN35SH	DF58C	20 ERP	BIG WHEEL	OMNI	625	A1A		
IT9G	144.840	JM68QE	GF67C	35 ERP	5EL. YAGI	N	150	A1A		
IX1A	144.845	JN35LU	DF15B	12 ERP	6EL. YAGI	NW	3350	A1A		
15A	144.850	JN53FR	FD23H	4 ERP	BIG WHEEL	OMNI	918	A1A		
DL0UB	144.850	J062QL	GH47B	5	4*DIPOLE	OMNI	80	F1A		
LA5VHF	144.855	JP99KF	JD25E	50	4*10EL. YAGI	SSW	80	A1A		
12E	144.860	JN45ST	EF16G	30 ERP	HB9GV	SE	1330	A1A		
LA1VHF	144.860	J049FS	ET13E	25	TURNSTILE	OMNI	1882	A1A		
IS0B	144.863	JM49NF	E766A	0.5	CROSS DIPOLE	OMNI	90	F1A		
HB9HB	144.865	JN37NE	DH66C	10	10EL. YAGI	NNW	1300	A1A		
LA6VHF	144.865	KP59??	PD7??	25	9EL. YAGI	??	??	A1A		
EA1VHF	144.867	IN53UG	VD59E	25	5EL. YAGI	N/E	??	A1A		
LA2VHF	144.870	JP53EG	FX52D	50	10EL. YAGI	NNE	710	A1A		
HB9W	144.875	JN47GJ	EH43D	0.036 ERP	HALO	OMNI	490	A1A		
SK2VHF	144.875	JP94TF	JY69H	30	2* CLOVER LEAF	OMNI	300	A1A		
LA3VHF	144.880	JN38PC	DS77A	25	16EL. YAGI	S	100	A1A		
OY6VHF	144.885	IP62NA	WW76D	60 ERP	4EL. YAGI	SE	350	A1A		
18A	144.890	JM76WD	HY70F	28 ERP	2*TURNSTILE	OMNI	1958	A1A		
LA4VHF	144.890	JP20DD	U276B	50	4*8EL. YAGI	NE	48	A1A		
SK2VHG	144.890	KP87MV	KB06F	60	16EL. YAGI	S	495	A1A		
EA3VHF	144.892	JN11MR	BB26H	1	HALO	OMNI	155	A1A		
FX0THF	144.895	JN08ML	A146H	30	2*TURNSTILE	OMNI	246	F1A		
3A2B	144.900	JN33RR	D028H	5	GROUNDPLANE	OMNI	60	F1A/F2A		
OH6VHF	144.900	KP02TB	KW59F	50/100	2*6EL. YAGI	N/SW	220	A1A		
FX3THF	144.905	IN88GG	YI13D	30	2*9EL. YAGI	E	80	F1A		
DL0PR	144.910	J044JH	E054C	150	6EL. YAGI	N/S	100	A1A		
GB3CTC	144.915	I070NJ	XK46D	40 ERP	3EL. YAGI	NE	320	A1A		
DK00E	144.915	J030DU	DK12A	1	10EL. YAGI	NNE	165	F1A		
EA6VHF	144.918	JM88PU	AY07J	25	5EL. YAGI	N	150	A1A		
SK7VHF	144.920	J063SN	GP58C	30	2* CLOVER LEAF	OMNI	190	A1A		
GB3VHF	144.925	J011DH	AL52J	50 ERP	2*3EL. YAGI	WNW/NNW	275	F1A/F1B		
DB0JT	144.927	JN53JT	GH14C	30 ERP	2*4*4 DIPOLE	NW	785	F1A		
YU2V	144.930	JN83VG	I054F	1	CROSSDIPOLE	OMNI	96	A1A		
OZ71GY	144.930	J055VO	FP39B	50 ERP	BIG WHEEL	OMNI	232	A1A		
Y41M	144.932	J061FH	GL53G	0.2 ERP	2*DIPOLE	OMNI	200	A1A		
SP9VHI	144.935	J090XB	KJ80C	0.05	CROSSDIPOLE	OMNI	385	A1A		
DL0UH	144.940	J041RD	EL68F	1 ERP	V-DIPOLE	OMNI	??	A1A		
UK2CAU	144.942	K034KI	NO55A	0.2	DIPOLE	N/S	240	A1A		
SP3VHF	144.945	J071SW	HL08J	6	2*DIPOLE	OMNI	60	A1A		
SK1VHF	144.950	J0978G	JR51D	1	2* CLOVER LEAF	OMNI	60	A1A		
DK0EA	144.952	J070SS	KL18D	12	2*DIPOLE	OMNI	1450	F1A		
FX8VHF	144.955	JN05TC	AF79H	2.5	BIG WHEEL	OMNI	450	A1A		
YD2KHP	144.957	KN05OS	KF17F	2.5	TURNSTILE	OMNI	80	A1A		
SK4MP1	144.960	JP70NJ	HU46D	100	4*6EL. YAGI	N	510	A1A		
OK0EB	144.963	JN78DU	HI12A	1	BIG WHEEL	OMNI	1083	F1A		
GB3LER	144.965	JP98JD	ZU65F	50 ERP	4EL. YAGI	NNE	107	F1A		
DF0ANN	144.966	JN59PJ	FJ47E	0.02	DIPOLE	OMNI	630	F1A		
SP6VHF	144.966	J070VP	HK29D	0.15	2EL. YAGI	NE	1602	A1A		

EUROPEAN VHF UHF SHF BEACON LIST										15.02.1984
CALL	QRG (MHZ)	WW-QTH	E-QTH	POWER (W)	ANTENNA	QTF	ASL (M)	MODE		
DH2NUA	144.970	KP28DH	MU52J	0.5	TURNSTILE	OMNI	40	A1A		
GB3ANG	144.975	1086LN	YQ35C	20 ERP	3EL. YAGI	SSE	370	F1A		
DL0SG	144.975	JN68EQ	G122C	15	4*4EL. YAGI	OMNI	500	A1A		
SP2VHC	144.980	JO94BI	JO51B	28	CLOVER LEAF	OMNI	??	F1A		
OK4VHF	144.985	JO28FP	CK23E	2.5	8IG WHEEL	OMNI	??	F1A		
Y41B	144.985	JO53RP	FN28E	10	2*8IG WHEEL	OMNI	??	F1A		
OK0ET	144.992	KN08SU	K118A	1	3EL. YAGI	N	981	F1A		
UK5UBZ	145.002	OK50EH	PK52C	2.5	V-DIPOLE	OMNI	187	F1A		
Y03KAA	145.900	KN34BK	NE41J	0.2	DIPOLE	OMNI	80	A1A		
LZ2F	145.980	KN33WM	ND40F	25 ERP	????	OMNI	295	??		
DL0RW/A	431.994	JN69ES	GJ12D	1	2*DIPOLE QUAD	NW/SW	825	A1A		
SP6VHF	431.998	JO70VR	HK29B	0.06	2EL. YAGI	NE	1622	A1A		
DB0AC	432.015	JN39KH	DJ55J	15	4*11EL. YAGI	OMNI	380	F2A		
Y41N	432.030	JO60JW	GK05G	0.1	DOUBLE QUAD	NW/SE	360	A1A		
DL0BQ	432.050	JN49GP	DJ23D	0.2	DISCONE	OMNI	??	F1A		
DK00E	432.087	JO30DU	DK12A	1.5	19EL. YAGI	NNE	165	F1A		
SP9VHB	432.093	JN39TS	JJ19F	5	DIPOLE	N	994	A1A		
DK1WY	432.095	JO42MG	EM56F	0.05	8IG WHEEL	OMNI	90	A1A		
SP8VHA	432.290	KO11GG	LL53D	1	????	OMNI	??	A1A		
OH2NRA	432.300	KP28JE	MU65G	5	TURNSTILE	OMNI	20	A1A		
OE3XAA	432.378	JN88BA	1171D	1 ERP	4EL. YAGI	NNE	840	A1A		
OE3XMB	432.400	JN78SX	1H08B	0.05	9EL. YAGI	NW	1246	A1A		
DJ4WG	432.455	JN59AQ	FJ21G	0.005	11EL. YAGI	NE	265	A1A		
YU3UHF	432.507	JN76NC	H574A	??	LOB PERIODIC	??	1219	A1A		
DB0QO	432.540	JO42BA	EM71E	2	SLOT RADIAT	OMNI	??	A1A		
IT9B	432.805	JM67LY	GK05B	12 ERP	2*MINI WHEEL	OMNI	825	A1A		
DB0JZ	432.805	JO31SN	DL38J	1 ERP	????	OMNI	125	F1A		
GB3WHA	432.810	JO01BA	AL71D	25 ERP	2*8+BEL. YAGI	NW/E	165	F1A		
IOB	432.825	JN61ES	GB12D	40 ERP	4*MINI WHEEL	OMNI	30	A1A		
FX1UHF	432.830	JN18BR	BI21B	10	4*8IG WHEEL	OMNI	160	F1A		
IIH	432.830	JN35SN	DF38C	12 ERP	3EL. YAGI	S	650	A1A		
LA7UHF	432.830	JP28QJ	CU47D	25	??EL. YAGI	S	558	A1A		
DB0KI	432.841	JO58SF	FK68B	20 ERP	4*4EL. YAGI	OMNI	690	F1A		
ISB	432.850	JN53JR	FJ25H	5	4*MINI WHEEL	OMNI	56	A1A		
DL0UB	432.850	JO62OL	G477B	10	4*DOUBLE QUAD	OMNI	80	F1A		
SK3UHF	432.855	JO82XD	1W40B	10	4*DOUBLE QUAD	OMNI	180	A1A		
LA5UHF	432.855	JP99KP	JD25E	15	7EL. YAGI	SW	490	A1A		
I2B	432.860	JN45NT	EF16J	35 ERP	2*10EL. YAGI	SE/SW	433	A1A		
DB0TW	432.860	JO42FA	EM73E	0.02	????	OMNI	364	A1A		
LA1UHF	432.860	JO59JW	FT05G	12	8IG WHEEL	OMNI	1050	F1A		
I2N	432.865	JN45JU	EF14B	50 ERP	10EL. YAGI	SE	85	A1A		
QZ2UHF	432.865	JO46JD	EG64D	10 ERP	8IG WHEEL	OMNI	900	F1A		
FX4UHF	432.870	IN93EH	ZD52C	10	2*6EL. YAGI	NNE	705	F1A		
I2H	432.870	JN55DN	FF32J	2 ERP	TURNSTILE	OMNI	990	F1A		
LA2UHF	432.870	JP53EG	FX52D	40	21EL. YAGI	NNE	710	A1A		
TV3B	432.880	JN65WR	GF30H	4 ERP	TURNSTILE	OMNI	418	A1A		
LA3UHF	432.880	JO48BB	SE71A	50 ERP	15EL. YAGI	S/SE	8	A1A		
OY6UHF	432.885	IF62NA	WM76D	30 ERP	3EL. YAGI	SE	350	A1A		
IGB	432.885	JO72AN	HC31B	12 ERP	2*TURNSTILE	OMNI	444	A1A		
OK0EP	432.885	JO80OC	IK77H	6	2*5 EL. YAGI	NW/SE	1500	F1A		
GB3SUT	432.890	IO92BO	ZM31B	60 ERP	2*8+BEL. YAGI	N/SE	270	F1A		
IBB	432.890	JM78WD	HY70F	12 ERP	2*MINI WHEEL	OMNI	1958	F1A		
LA4UHF	432.890	JO29PJ	CT47E	5	DIPOLE	OMNI	75	A1A/		
DB0AE	432.890	JO43GN	EN33C	??	????	??	??	F1A		
PA0DSW	432.895	JO22JM	CM35F	0.5	MALT. CROSS	OMNI	10	A1A		
QZ4UHF	432.895	JO75JE	HP64C	20 ERP	8IG WHEEL	OMNI	154	A1A		
IOB	432.900	JN61IS	GB14E	4 ERP	2*MINI WHEEL	OMNI	373	A1A		
DB0YT	432.900	JO42XC	EM80B	1	8IG WHEEL	OMNI	480	A1A		
PA0QHN	432.903	JO22FH	CM93J	1	BAIN JDB	OMNI	20	F1A		
GB3MLY	432.910	IO93ED	ZN32B	50 ERP	8+BEL. YAGI	SE	680	F1A		
DB0AD	432.913	JO38XS	DK28D	1	11EL. YAGI	W	290	F1A		
SK7UHF	432.920	JO77BO	HR21J	7	8IG WHEEL	OMNI	350	F1A		
DB0JG	432.925	JO31BT	DL13C	??	????	??	??	A1A		
SK6UHF	432.925	JO67BF	GR61A	10 ERP	8IG WHEEL	OMNI	75	F1A		
OZ71GY	432.930	JO55VO	FP39B	50 ERP	8IG WHEEL	OMNI	96	A1A		
OK0EA	432.935	JO70SS	HL18D	12	2*DIPOLE	NW/SW	1450	F1A		
DL0UH	432.940	JO41RD	EL68F	0.3 ERP	V-DIPOLE	OMNI	385	F1A		
SK7UHF	432.940	JO86FQ	IQ23J	1 ERP	2*CLOVER LEAF	OMNI	??	F1A		
DB0LB	432.945	JN48NV	ET06D	0.2	CORNER DIPOLE	N/S	367	F1A		
FX3UHF	432.950	IN97EF	ZH62B	10	4*8IG WHEEL	OMNI	160	F1A		
DB0AA	432.950	JO31NK	DL46E	1 ERP	????	N	??	F1A		
DB0AH	432.950	JO33JD	HE65F	3.5	DIPOLE	OMNI	118	A1A		
OZ1UHF	432.955	JO47WB	ER80J	30 ERP	2*MALTESER	OMNI	85	A1A		
SK4UHF	432.960	JO79KH	HT55J	60	4*10EL. LOG. PER.	N/SW/SE	285	F1A		
DF0ANN	432.966	JN59PJ	FJ47E	1	CLOVER LEAF	OMNI	650	F1A		
GB3CTC	432.970	IO70NJ	XK46D	5 ERP	4EL. YAGI	N	320	F1A		
DL0SG	432.974	JN68EQ	GJ22C	7	4*11EL. YAGI	OMNI	500	F1A		
SK5UHF	432.975	JP80TB	IU79B	25 ERP	8IG WHEEL	OMNI	90	A1A		
OZ2ALS	432.983	JO45VB	EF79C	10	8IG WHEEL	OMNI	32	A1A		
HB9F	432.984	JN36XN	DB40C	15 ERP	CORNER REFLECTOR	N/S	3573	F1A		
GB3JNG	432.990	IO86LN	YQ35C	100 ERP	9EL. YAGI	SSE	370	F1A		
DL0AAD	432.990	JO54IF	PO64A	10 ERP	8IG WHEEL	OMNI	250	F1A		
DL1XV	435.143	JN67LG	HK25C	40	SLOT	NW	1618	F1A		
OK0EA	1295.975	JO70SS	HK18D	1	2*10EL. YAGI	NW/SW	1450	F1A		

EUROPEAN VHF UHF SHF BEACON LIST								15.02.1984
CALL	ORG (MHZ)	VW-QTH	E-QTH	POWER (W)	ANTENNA	QTF	ASL (M)	MODE
LA2UHG	1295.985	JPS3FK	FX436	0.2	????	OMNI	??	A1A
LA1UHG	1295.990	J059FE	FT636	2	BIG WHEEL	OMNI	75	A1A
LA8UHG	1295.995	J059JW	FT056	2	MINI WHEEL	OMNI	364	A1A
DB0FB	1296.000	JN47AU	EH11H	4	DIPOLE	N/S	1200	F1A
DF5EO/A	1296.025	J031DV	DL02E	0.8	DBL.HELICAL	OMNI	170	F1A
DB0AJ	1296.180	JN57VX	FI09B	10	6EL. GROUP	N/W	720	A1A
SP9VHB	1296.280	JN99TS	J119F	5	6EL.REFLECTOR	N	944	A1A
DK1WV	1296.285	J042MG	EM56F	0.025	BIG WHEEL	OMNI	90	A1A
DB0JS	1296.800	JN596B	FJ73C	5 ERP	SLOT	OMNI	700	A1A
SK6UHI	1296.800	J066LJ	GG45D	10 ERP	CLOVER LEAF	OMNI	220	A1A
DB0GP	1296.805	JN48WQ	EI30G	4 ERP	4*SEL. YAGI	OMNI	760	F1A
GB3NWK	1296.810	J001BH	AL51J	100	2*8EL. YAGI	NNW	180	F1A
I11	1296.830	JN35SH	DF58C	0.4 ERP	SQUARE CORNER	S	625	A1A
GB3BP0	1296.830	J002PB	AM77J	700 ERP	2*32ELSLT.WAVES	W/E	85	F1A
SK0UHG	1296.835	J009WI	IT60H	15 ERP	2*HELICAL	OMNI	120	F1A
GB3FRS	1296.850	I091PH	ZL57J	3	DISC	OMNI	30	F1A
ISC	1296.850	JN53DV	FD02E	0.2 ERP	MINI WHEEL	OMNI	30	A1A
DL0UB	1296.850	J062QL	GM47B	3	DBL HELICAL	OMNI	80	F1A
DB0JO	1296.854	J031SL	DL48A	350 ERP	4*15*1SEL. YAGI	W	312	F1A
IS1	1296.855	JN53LL	FD45B	10 ERP	4*MINI WHEEL	OMNI	550	A1A
QZ2UHF	1296.865	J046JD	EQ64D	3	BIG WHEEL	OMNI	85	F1A
GB3AND	1296.870	I091GF	ZL63B	50 ERP	STACK. SLOTS	OMNI	85	F1A
FX1SHF	1296.870	JN18JU	BI14B	10	ALFORD SLOT	OMNI	160	F1A
PA0EHG/A	1296.875	J021SK	CL48J	4	GAIN 6DB	OMNI	61	F1A
ON5UHF	1296.880	J010UN	BK39J	10 ERP	MINI WHEEL	OMNI	569	F1A
GB3DUN	1296.890	I091SV	ZL08E	2 ERP	4EL.SLOT WAVES	OMNI	620	F1A
I6C	1296.890	JN78CT	HA12B	6 ERP	CORNER REFLECTOR	NNW	1560	F2A
DB0JC	1296.895	J040RV	EK08F	1.5	BIG WHEEL	OMNI	100	F2A
GB31OW	1296.900	I090IO	ZK34A	100 ERP	DIPOLE	W/E	290	F1A
DB0JR	1296.900	JN67CR	GH22H	0.2	2*15*1SEL. YAGI	N/S	573	F1A
DB0AN	1296.900	J031SK	DL08B	1	BIG WHEEL	OMNI	??	??
DB0AD	1296.905	J030XS	DK28D	1	GAIN 6DB	OMNI	20	F1A
GB3CLE	1296.910	I082RL	YM48H	10 ERP	2*BIG WHEEL	OMNI	250	F1A
DB0JB	1296.910	JN48FX	EI03A	1	4*BIG WHEEL	OMNI	350	A1A
PA0QHN	1296.917	J022FH	CM53J	4	CORNER REFLECTOR	SSE	600	F1A
DB0VC	1296.920	J054IF	F064A	10	BIG WHEEL	OMNI	96	A1A
SK7UHG	1296.920	J077BG	HR21J	2 ERP	2*CORN. REFLECTOR	NE/SW	937	F1A
SK6UHG	1296.925	J057TQ	FR29G	10	BIG WHEEL	OMNI	85	F1A
GB3MLE	1296.930	I093EO	ZN32B	50 ERP	4*DOUBLE QUAD	OMNI	630	F1A
077IGY	1296.930	J055VO	FP39B	5 ERP	2*15EL. YAGI	S	450	??
DB0YI	1296.935	J042XC	EM08B	3	????	??	??	A1A
HB9F	1296.945	JN36SW	DG08C	15 ERP	BIG WHEEL	OMNI	33	A1A
QZ1UHF	1296.955	J047WJ	B007J	10 ERP	2*CORN. REFLECTOR	NW/SE	117	F1A
GB3DNN	1296.960	JN59PJ	FJ47E	2	BIG WHEEL	OMNI	1150	F2A
SK4UHG	1296.960	JP60VA	GU79D	4	4*QUAD	OMNI	630	F1A
DB0JU	1296.975	J031BU	DL11B	??	2*15EL. YAGI	S	450	??
073ALS	1296.985	J045VB	EP79C	10 ERP	????	??	??	A1A
GB3EDN	1296.990	I085HW	YP04G	25 ERP	BIG WHEEL	OMNI	33	A1A
DB0JL	1296.995	JN68TU	GI19H	6 ERP	2*CORNER REFLCT.	NW/SE	117	F1A
DB0LB	1297.040	JN48NV	EI06D	0.2	4*QUAD	OMNI	1150	F2A
OE3XPA	1297.153	JN78SB	HI78C	0.1	DIPOLE	OMNI	367	F1A
GB3AND	2304.010	I091GF	ZL63B	5 ERP	11EL. YAGI	NW	725	A1A
GB3LDN	2304.050	J001BL	AL41A	25 ERP	????	E	85	F1A
SK6UHG	2320.800	J058RG	FSS8F	1	????	NW/NE	??	F1A
DB0JO	2320.899	J031SL	DL48A	0.1	2*??EL. YAGI	S/SW	80	A1A
PA0TGA	2320.900	J021WU	CL20A	1	DIPOLE	N	312	F1A
DB0VC	2320.920	J054IF	F064A	5	10 DB GAIN	NW/W	??	??
PA0QHN	2320.925	J022FH	CM53J	2	BIG WHEEL	OMNI	230	F1A
GB3LES	2320.955	I092TJ	FM24J	5 ERP	GAIN 6DB	OMNI	20	F1A
DB0ANN	2320.965	JN59PJ	FJ47E	0.5	ALFORDSLOT	OMNI	220	F1A
DB0AS	2320.967	JN67CR	GH22H	0.5	DOUBLE QUAD	OMNI	630	F1A
DC8EC/A	2321.050	JN58TB	FI79G	4	28EL. YAGI	NW	1560	F2A
GB3UOS	3456.000	I093EK	ZN42C	4 ERP	6EL. GROUP	NW	580	F2A
DL7QY/A	3456.000	JN49XC	EJ80B	0.05	SLOT WAVEGUIDE	N/S	400	F2A
DL0WY	3456.115	JN67CR	GH22H	0.08	HORN	E	450	A1A
DB0JO	3456.155	J031SL	DL48A	??	12EL. GROUP	NW	1560	A1A
DC0DA	3456.360	JN31SM	DL38E	120 ERP	????	??	312	F1A
DL7QY/A	5760.000	JN49XC	EJ80B	0.01	0.7M DISH	N	220	F1A
DL0WY	5760.192	JN67CR	GH22H	0.05	HORN	E	450	A1A
DC0DA	5760.600	JN31SM	DL38E	8.5 ERP	6 DB HORN	NW	1560	F1A
GB31OW	10100.000	I090IO	ZK34A	0.15 ERP	0.7M DISH	N	220	F1A
GB3LBH	10100.000	J001BN	AL31C	1.5 ERP	SLOT WAVEGUIDE	OMNI	250	F2A
GB3ALD	10120.000	IN89WR	YJ30H	1 ERP	WAVEGUIDE	OMNI	45	F3E
DB0JX	10350.000	J031FF	DL63A	0.01	SECT. HORN	NNW	90	F2A
DL7QY/A	10368.000	JN49XC	EJ80B	0.01	10 DB GAIN	OMNI	115	F2A
PA0MS/A	10368.045	J021SL	CL48A	0.05	HORN	E	450	A1A
PA0DBQ	10368.100	J022DB	CM72J	0.04	GAIN 21DBI	NW	56	F1A
PE1BLE	10368.200	J022KH	CM55J	0.01	GAIN 20DB	W	75	F1A
DL0WY	10368.345	JN67CR	GH22H	0.02	GAIN 14DB	SSW	35	F1A
SK6SHG	10368.800	J058RG	FSS8F	10 ERP	10 DB HORN	NW	1560	A1A
GB3MXX	10368.830	J002PB	AM77J	1 ERP	20 DB HORN	S	80	A1A
GB3XGH	10400.000	I083OF	YK67B	1 ERP	1.2M DISH	OMNI	100	F1A
GB3LEX	10400.000	I092TJ	FM24D	1 ERP	SLOT	OMNI	100	F2A
DL0WY	24192.805	JN67CR	GH22H	0.0005	SLOT WAVEGUIDE	SE	220	F1A
DL0WY	24192.805	JN67CR	GH22H	0.0005	15 DB HORN	NW	1560	A1A

EUROPEAN VHF UHF SHF BEACON LIST									15.02.1984
CALL	QRG (MHZ)	WN-QTH	E-QTH	POWER (W)	ANTENNA	QTF	ASL (M)	MODE	
DLQUB	144.850	J062QL	GM47B	5	4*DIPOLE	OMNI	80	F1A	
DLQPR	144.910	J044JH	E054C	150	6EL. YAGI	N/S	100	F1A	
DK0QE	144.915	J038DU	DK12A	1	10EL. YAGI	NNE	165	F1A	
DB0JT	144.927	J067JT	GM14C	30 ERP	2*4*4 DIPOLE	NW	785	F1A/F1B	
DL0UH	144.940	J041RD	EL68F	1 ERP	V-DIPOLE	OMNI	385	F1A	
DF0ANN	144.966	JN59PJ	FJ47E	0.02	DIPOLE	OMNI	630	F1A	
DL0SG	144.975	JN68EQ	GJ22C	15	4*4EL. YAGI	OMNI	500	F1A	
DL0RW/A	431.996	JN69ES	GJ12D	1	2*DIPOLE QUAD	NW/SW	825	F1A	
DB0AC	432.015	JN39KH	GJ35J	15	4*11EL. YAGI	OMNI	380	F2A	
DL080	432.050	JN49GP	EJ23D	0.2	DISCONE	OMNI	177	F1A	
DK0OE	432.087	J038DU	DK12A	1.5	19EL. YAGI	NNE	165	F1A	
DK1WY	432.095	J042M6	EM56F	0.005	BIG WHEEL	OMNI	90	F1A	
DJ4WB	432.455	JN59AQ	FJ25E	0.005	11EL. YAGI	NE	265	F1A	
DB0QO	432.540	J042BA	EW71E	2	SLOT RADIAL	OMNI	777	F1A	
DB0JZ	432.805	J031SN	DL38J	1 ERP	???	OMNI	125	F1A	
DB0KI	432.841	J050SF	FK68B	2	4*4EL. YAGI	OMNI	690	F1A	
DL0UB	432.850	J062QL	GM47B	5	4*DOUBLE QUAD	OMNI	80	F1A	
DB0TW	432.860	J042FA	EM73E	0.02	???	OMNI	433	F1A	
DB0AE	432.890	J043GN	EN33C	??	???	??	??	F1A	
DB0YI	432.900	J042XC	EM80B	1	BIG WHEEL	OMNI	480	F1A	
DB0AD	432.913	J038XS	DK20D	1	11EL. YAGI	W	290	F1A	
DB0JG	432.925	J031GT	DL13C	??	???	??	??	F1A	
DL0UH	432.940	J041RD	EL68F	0.3 ERP	V-DIPOLE	OMNI	385	F1A	
DB0LB	432.945	JN48NV	ET06D	0.2	CORNER DIPOLE	N/S	367	F1A	
DB0AA	432.950	J031NK	DL46C	1 ERP	???	N	??	F1A	
DB0AH	432.950	J051F	FM55F	3.5	DIPOLE	OMNI	118	F1A	
DF0ANN	432.966	JN59PJ	FJ47E	1	CLOVER LEAF	OMNI	630	F1A	
DL0SG	432.974	JN68EQ	GJ22C	7	4*11EL. YAGI	OMNI	500	F1A	
DF0AAD	432.990	J054TF	F064A	10 ERP	BIG WHEEL	OMNI	250	F1A	
DL1XV	433.143	JN67LQ	GH25C	40	SLOT	NW	1618	F1A	
DB0FB	1296.000	JN47AU	EH11H	4	DIPOLE	N/S	1200	F1A	
DF5ED/A	1296.025	J031DV	DL02E	0.8	DBL. HELICAL	OMNI	170	F1A	
DB0AJ	1296.180	JN57VX	FH09B	10	6EL. GROUP	N/W	720	F1A	
DK1WY	1296.285	J042M6	EM56F	0.025	BIG WHEEL	OMNI	90	F1A	
DB0JS	1296.800	JN59GB	FJ73C	5 ERP	4*5EL. YAGI	OMNI	700	F1A	
DB0GP	1296.805	JN48WQ	ET30G	4 ERP	4*5EL. YAGI	OMNI	760	F1A	
DL0UB	1296.850	J062QL	GM47B	5	DBL. HELICAL	OMNI	80	F1A	
DB0JD	1296.854	J031SL	DL48A	350 ERP	4*15*15EL. YAGI	W	312	F1A	
DB0JC	1296.895	J048RV	EK08F	1.5	4EL. SLOT WAVEG	OMNI	620	F1A	
DB0JR	1296.900	JN67CR	GH22H	0.2	CORNER REFLECTOR	NNW	1560	F2A	
DB0AN	1296.900	J031SX	DL08B	1	BIG WHEEL	OMNI	100	F2A	
DB0AD	1296.905	J038XS	DK20D	1	DIPOLE	W/E	290	F1A	
DB0JB	1296.910	JN48FX	E103A	1	BIG WHEEL	OMNI	??	??	
DB0VC	1296.920	J054TF	F064A	10	2*BIG WHEEL	OMNI	250	F1A	
DB0YI	1296.935	J042XC	EM80B	3	BIG WHEEL	OMNI	480	F1A	
DF0ANN	1296.956	JN59PJ	FJ47E	2	4*DOUBLE QUAD	OMNI	630	F1A	
DB0JU	1296.975	J031BU	DL11B	??	???	??	??	F1A	
DB0JQ	1296.995	JN68TU	GI19H	6 ERP	4*QUAD	OMNI	1150	F2A	
DB0LB	1297.040	JN48NV	ET06D	0.2	DIPOLE	OMNI	367	F1A	
DB0JD	1297.089	J031SL	DL48A	0.1	DIPOLE	N	312	F1A	
DB0VC	2320.920	J054TF	F064A	5	BIG WHEEL	OMNI	230	F1A	
DF0ANN	2320.965	JN59PJ	FJ47E	0.5	DOUBLE QUAD	OMNI	630	F1A	
DB0AS	2320.967	JN67CR	GH22H	0.5	28EL. YAGI	NW	1560	F1A	
DC8EC/A	2321.050	JN58TB	F179G	4	6EL. GROUP	NW	580	F2A	
DL7QY/A	3456.000	JN49XC	EJ80B	0.05	HORN	E	450	F1A	
DL0WY	3456.115	JN67CR	GH22H	0.08	12EL. GROUP	NW	1560	F1A	
DB0JO	3456.155	J031SL	DL48A	??	???	??	312	F1A	
DC0DA	3456.360	J031SM	DL38E	120 ERP	0.7M DISH	N	220	F1A	
DL7QY/A	5760.000	JN49XC	EJ80B	0.01	HORN	E	450	F1A	
DL0WY	5760.192	JN67CR	GH22H	0.05	6 DB HORN	NW	1560	F1A	
DC0DA	5760.600	J031SM	DL38E	8.5 ERP	0.7M DISH	N	220	F1A	
DB0JX	10350.000	J031FF	DL63A	0.01	10 DB GAIN	OMNI	115	F2A	
DL7QY/A	10368.000	JN49XC	EJ80B	0.01	HORN	E	450	F1A	
DL0WY	10368.345	JN67CR	GH22H	0.02	10 DB HORN	NW	1560	F1A	
DL0WY	24192.805	JN67CR	GH22H	0.0005	15 DB HORN	NW	1560	F1A	
EA3XS	144.152	JN11DP	B822E	20/250	16EL. YAGI	NE	??	??	
EA1VHF	144.867	JN53UG	VD59E	25	5EL. YAGI	N/E	??	F1A	
EA3VHF	144.892	JN11MR	B826E	1	HALO	OMNI	155	F1A	
EA6VHF	144.918	JM08PW	AY07J	25	5EL. YAGI	NE	150	F1A	
ET4RF	70.130	IO63SN	WN38C	25 ERP	2*5EL. YAGI	NE/SE	120	F1A	
FX0THF	144.895	JN08HL	AI46H	30	2*TURNSTILE	OMNI	246	F1A	
FX3THF	144.905	IN88G	YI13D	30	2*YEL. YAGI	E	80	F1A	
FY0VHF	144.955	JN05TC	AF79H	10	BIG WHEEL	OMNI	450	F1A	
FX1UHF	432.830	JN18BR	BI21B	10	4*BIG WHEEL	OMNI	150	F1A	
FX4UHF	432.870	IN93EH	ZD52C	10	2*6EL. YAGI	NNE	900	F1A	
FX3UHF	432.950	IN97EF	ZH62B	10	4*BIG WHEEL	OMNI	160	F1A	
FX1SHF	1296.870	JN18JU	BI14B	10	ALFORD SLOT	OMNI	160	F1A	
GB3SIX	50.020	IO73TJ	XN49F	100 ERP	3EL. YAGI	W	58	F1A	
GB3CTC	70.030	IO70NJ	XK46D	40 ERP	2EL. YAGI	NE	320	F1A	
GB3WHA	70.040	JO01BA	AL71D	16 ERP	2EL. YAGI	NW	168	F1A	
GB3BUX	70.050	IO93BF	ZN61A	20 ERP	2*TURNSTILE	OMNI	460	F1A/F1B	
GB3ANG	70.060	IO86LN	YQ35C	100 ERP	4EL. YAGI	SSE	370	F1A	
GB3CTC	144.915	IO70NJ	XK46D	40 ERP	3EL. YAGI	NE	320	F1A	

PAGE - 1 - DUBUS EUROPEAN VHF UHF SHF BEACON LIST: SUPPLEMENTS SEND TO: CLAUD NEITE / D-7181 RUDOLFSBERG 24 --- PRINTED BY DL 7 QY

EUROPEAN VHF UHF SHF BEACON LIST										15.02.1984
CALL	QRG (MHZ)	WW-QTH	E-QTH	POWER (W)	ANTENNA	QTF	ASL (M)	MODE		
GB3VHF	144.925	J001DH	AL52J	50 ERP	2*3EL. YAGI	NNW/NNW	275	F1A/F1B		
GB3LER	144.965	IP90JD	ZU65F	50 ERP	4EL. YAGI	NNE	107	F1A		
GB3ANG	144.975	I086LN	YQ35C	20 ERP	3EL. YAGI	SSE	370	F1A		
GB3WHA	432.810	J001BA	AL71D	25 ERP	2*8*8EL. YAGI	NW/SE	165	F1A		
GB3SUT	432.890	I092BO	ZN31B	60 ERP	2*8*8EL. YAGI	N/SE	270	F1A		
GB3MLY	432.910	I093EO	ZN32B	50 ERP	8*8EL. YAGI	SE	600	F1A		
GB3CTC	432.970	I070NJ	ZK46D	5 ERP	4EL. YAGI	NE	320	F1A		
GB3ANG	432.990	I086LN	YQ35C	100 ERP	9EL. YAGI	SSE	370	F1A		
GB3NNK	1296.810	J001BH	AL51J	100	2*8EL. YAGI	NNW	180	F1A		
GB3BPD	1296.830	J002PB	AM77J	700 ERP	2*32ELSLT. WAVEG	W/E	85	F1A		
GB3FRS	1296.850	I091PH	ZL57J	3	DISC	OMNI	120	F1A		
GB3AND	1296.870	I091GF	ZL63B	50 ERP	STACK. SLOTS	OMNI	85	F1A		
GB3DUN	1296.890	I091SV	ZL08E	2 ERP	HB9CV	N	263	F1A		
GB3TOW	1296.900	I090IO	ZK34A	100 ERP	ALFORD SLOT	OMNI	250	F1A		
GB3CLE	1296.910	I082RL	YM48H	10 ERP	2*15*15EL. YAGI	NSE	573	F1A		
GB3MLE	1296.930	I093EO	ZN32B	50 ERP	CORNERREFLECTOR	SSE	600	F1A		
GB3EDN	1296.990	I085HW	YP04G	25 ERP	2*CORNER REFLECT.	NW/SE	117	F1A		
GB3AND	2304.010	I091GF	ZL63B	5 ERP	2*CORNER REFLECT.	NE/SE	85	F1A		
GB3LDN	2304.050	J001BL	AL41A	25 ERP	2*CORNER REFLECT.	NW/NE	??	F1A		
GB3LES	2320.055	I092IO	ZN24J	5 ERP	ALFORDSLOT	OMNI	220	F1A		
GB3UOS	3456.000	I093EK	ZN42C	4 ERP	SLOT WAVEGUIDE	N/S	400	F2A		
GB3TOW	10100.000	I090IO	ZK34A	0.15 ERP	SLOT WAVEGUIDE	OMNI	250	F2A		
GB3LBH	10100.000	J001BN	AL31C	1.5 ERP	WAVEGUIDE	OMNI	45	F2A/F3E		
GB3ALD	10120.000	IN89WR	YJ30H	1 ERP	SECT. HORN	NNE	90	F2A		
GB3MHX	10368.830	J002PB	AM77J	1 ERP	1.2M DISH	E	60	F2A		
GB3XGH	10400.000	I083QF	YN67B	1 ERP	10EL. SLOT	OMNI	100	F2A		
GB3LEX	10400.000	I092JP	ZM24D	1 ERP	SLOT WAVEGUIDE	SE	220	F2A		
HB9HB	144.865	JN37NE	DH66C	10	10EL. YAGI	NNW	1300	F1A		
HB9W	144.875	JN47GJ	EH43D	0.036 ERP	HALO	OMNI	490	F1A		
HB9F	432.984	JN36XN	DB40C	15 ERP	CORNERREFLECTOR	N/S	3573	F1A		
HB9F	1296.945	JN36SW	DB08C	15 ERP	2*CORN. REFLECTOR	NE/SW	937	F1A		
IS0A	144.810	JN40SX	EA08A	25 ERP	TURNSTILE	OMNI	450	F1A		
I7A	144.820	JN71UR	HB29A	2 ERP	BIG WHEEL	OMNI	1012	F1A		
I0A	144.825	JN61ES	GB12D	28 ERP	2*BIG WHEEL	OMNI	30	F1A		
I1G	144.830	JN35SH	DF58C	20 ERP	BIG WHEEL	OMNI	625	F1A		
I79G	144.840	JM68QE	GY67C	35 ERP	5EL. YAGI	N	150	F1A		
I1A	144.845	JN35LU	DF15B	12 ERP	6EL. YAGI	NW	3350	F1A		
I5A	144.850	JN35FR	FD23H	4 ERP	BIG WHEEL	OMNI	918	F1A		
I2G	144.860	JN45ST	EF18J	30 ERP	HB9CV	SE	1330	F1A		
I50G	144.863	JM49NF	EZ66A	0.5	CROSS DIPOLE	OMNI	90	F1A		
I0A	144.890	JM78MD	HY70F	28 ERP	2*TURNSTILE	OMNI	1958	F1A		
I79B	432.805	JM67LX	GX05B	12 ERP	2*MINI WHEEL	OMNI	825	F1A		
I0B	432.825	JN61ES	GB12D	40 ERP	4*MINI WHEEL	OMNI	50	F1A		
I1H	432.830	JN35SN	DF38C	12 ERP	3EL. YAGI	S	650	F1A		
I5B	432.850	JN53JR	FD25H	20 ERP	4*MINI WHEEL	OMNI	56	F1A		
I2B	432.860	JN45NT	EF16J	35 ERP	2*10EL. YAGI	SE/SW	490	F1A		
I2N	432.865	JN45JU	EF14B	50 ERP	10EL. YAGI	SE	1050	F1A		
I2H	432.870	JN55DN	FF32J	2 ERP	TURNSTILE	OMNI	990	F1A		
I03B	432.880	JN65WR	GF30H	4 ERP	TURNSTILE	OMNI	418	F1A		
I6B	432.885	JN72AN	HC31G	12 ERP	2*TURNSTILE	OMNI	444	F1A		
I0B	432.890	JM78MD	HY70F	12 ERP	2*MINI WHEEL	OMNI	1958	F1A		
I0H	432.900	JN61IS	GB14E	4 ERP	2*MINI WHEEL	OMNI	373	F1A		
I1I	1296.830	JN35SH	DF58C	0.4 ERP	SQUARECORNER	S	625	F1A		
I5C	1296.850	JN53DV	FD02E	0.2 ERP	4*MINI WHEEL	OMNI	50	F1A		
I5I	1296.855	JN53LL	FD45B	10 ERP	4*MINI WHEEL	OMNI	550	F1A		
IC8C	1296.890	JN70CT	HA12B	6 ERP	MINI WHEEL	OMNI	589	F1A		
LA5VHF	144.855	JP99PK	JD25E	50	4*10EL. YAGI	SSW	60	F1A		
LA1VHF	144.860	J049FS	ET13E	25	TURNSTILE	OMNI	1882	F1A		
LA6VHF	144.865	KP59??	PD7??	25	9EL. YAGI	??	??	F1A		
LA2VHF	144.870	JP53E6	FX52D	50	10EL. YAGI	NNE	710	F1A		
LA3VHF	144.880	J038PC	DS77A	25	16EL. YAGI	S	100	F1A		
LA4VHF	144.890	JP280Q	CU27G	50	4*8EL. YAGI	NE	48	F1A		
LA7UHF	432.830	JP280Q	CU47D	25	7*7EL. YAGI	S	558	F1A		
LA5UHF	432.855	JP99PK	JD25E	15	7*7EL. YAGI	SW	60	F1A		
LA1UHF	432.860	J059JW	FT05B	12	BIG WHEEL	NNE	364	F1A		
LA2UHF	432.870	JP53E6	FX52D	40	15EL. YAGI	N/SE	710	F1A		
LA3UHF	432.880	J049FS	ET13E	50 ERP	21EL. YAGI	S/SE	8	F1A		
LA4UHF	432.890	J029PJ	CT47E	5	DIPLOLE	OMNI	75	F1A/F1A		
LA2UHG	1295.965	JP53FK	FX43G	0.2	???	OMNI	??	F1A		
LA1UHG	1295.990	J059FE	FT63G	3	BIG WHEEL	OMNI	75	F1A		
LA8UHG	1295.995	J059JW	FT05B	2	MINI WHEEL	OMNI	364	F1A		
L7ZF	145.980	KN33WM	ND40F	25 ERP	???	OMNI	295	??		
OE3XAA	144.126	JN88BA	II71D	0.5	???	OMNI	840	F1A		
OE3XAR	432.376	JN88BA	II71D	1 ERP	4EL. YAGI	NNE	840	F1A		
OE3XAS	432.400	JN78SX	HI08B	0.1	9EL. YAGI	NW	1246	F1A		
OE3XPA	1297.153	JN78SB	HI78C	0.1	11EL. YAGI	NW	725	F1A		
OH8VHF	144.800	KP225C	MZ79H	40	16EL. COLLNEAR	N/S	240	F1A		
OH4VHF	144.900	KP02TB	KN59F	50/100	2*6EL. YAGI	N/SW	220	F1A		
OH2NUA	144.970	KP20DH	MU52J	0.5	TURNSTILE	OMNI	40	F1A		
OH2NRA	432.300	KP20JE	MA65G	5	TURNSTILE	OMNI	20	F1A		
OK0EA	144.952	J070SS	HK18D	12	2*DIPLOLE	N/S	1450	F1A		
OK0EB	144.963	JN78DU	HI12A	1	BIG WHEEL	OMNI	1083	F1A		

PAGE - 2 - DUBUS EUROPEAN VHF UHF SHF BEACON LIST; SUPPLEMENTS SEND TO: CLAU NEIE / D-7181 RUDOLFSBERG 24 --- PRINTED BY DL 7 QY

EUROPEAN VHF UHF SHF BEACON LIST								15.02.1984
CALL	QRG (MHZ)	WW-QTH	E-QTH	POWER (W)	ANTENNA	QTF	ASL (M)	MODE
OK0ET	144.992	KN088U	K118A	1	3 EL. YAGI	W	981	F1A
OK0EP	432.885	J0800C	IK77H	6	2*5 EL. YAGI	NW/SE	1500	F1A
OK0EA	432.935	J070SS	HK18D	12	2*DIPOLE	NW/SE	1450	F1A
OK0EA	1295.975	J070SS	HK18D	1	2*10EL. YAGI	NW/SE	1450	F1A
ON4VHF	144.985	J020FP	CK23E	2.5	BIG WHEEL	OMNI	??	F1A
ON5UHF	1296.880	J010UN	BK39J	10 ERP	????	OMNI	180	F1A
OY6VHF	144.885	IP62NA	WM76D	60 ERP	4EL. YAGI	SE	350	A1A
OY6UHF	432.885	IP62NA	WM76D	30 ERP	5EL. YAGI	SE	350	A1A
OZ3VHF	144.149	J055F1	FP53H	1	BIG HALO	OMNI	35	A1A
OZ71GY	144.930	J055V0	FP39B	50 ERP	BIG WHEEL	OMNI	96	A1A
OZ2UHF	432.865	J046JD	O664D	10 ERP	BIG WHEEL	OMNI	85	F1A
OZ4UHF	432.895	J075JE	HP64C	20 ERP	BIG WHEEL	OMNI	154	A1A
OZ71GY	432.930	J055V0	FP39B	50 ERP	BIG WHEEL	OMNI	96	A1A
OZ1UHF	432.955	J047WB	ER80J	30 ERP	2*HAL TESSER	OMNI	85	F1A
OZ2ALS	432.983	J045VB	EP79C	10	BIG WHEEL	OMNI	32	F1A
OZ2UHF	1296.865	J046JD	O664D	3	BIG WHEEL	OMNI	85	F1A
OZ71GY	1296.930	J055V0	FP39B	5 ERP	BIG WHEEL	OMNI	96	A1A
OZ1UHF	1296.955	J047WB	ER80J	10 ERP	BIG WHEEL	OMNI	85	F1A
OZ3ALS	1296.985	J045VB	EP79C	10 ERP	BIG WHEEL	OMNI	33	A1A
PA0DSW	432.895	J022JM	CM35F	0.5	MALT. CROSS	OMNI	10	A1A
PA0QHN	432.903	J022FH	CM53J	1	GAIN 3DB	OMNI	20	F1A
PA0EHG/A	1296.875	J021SK	CL48J	4	GAIN 6DB	OMNI	61	F1A
PA0QHN	1296.917	J022FH	CM53J	4	GAIN 6DB	OMNI	20	F1A
PA0TGA	2320.900	J021WU	CL20A	1	10 DB GAIN	NW/W	??	??
PA0QHN	2320.925	J022FH	CM53J	2	GAIN 6DB	OMNI	20	F1A
PA0MS/A	10368.045	J021SL	CL48A	0.05	GAIN 21DBI	NW	56	F1A
PA0DBQ	10368.100	J022DB	CM72J	0.04	GAIN 20DB	N	75	F1A
PE1BLE	10368.200	J022KH	CM55J	0.01	GAIN 14DB	SSW	35	F1A
SK2VHF	144.875	JP947F	JY69H	30	2*CLOVER LEAF	OMNI	300	A1A
SK2VHF	144.890	KP07HV	K806F	30	16EL. YAGI	S	495	A1A
SK7VHF	144.920	J045BN	GP36C	60	2*CLOVER LEAF	OMNI	190	A1A
SK1VHF	144.950	J097BS	JR51D	10	2* CLOVER LEAF	OMNI	60	A1A
SK4MPI	144.960	JP70NJ	UH46D	100	4*6EL. YAGI	N	510	A1A
SK3UHF	432.855	JP82XO	1W40B	10	4*DOUBLE QUAD	OMNI	150	A1A
SK7UHF	432.920	J0778Q	HR21J	7	BIG WHEEL	OMNI	350	A1A
SK6UHF	432.925	J0676J	GR61A	10 ERP	BIG WHEEL	OMNI	75	A1A
SK7UHF	432.940	J086FQ	IQ23J	1 ERP	2* CLOVER LEAF	OMNI	285	A1A
SK4UHF	432.960	J079KH	HT55J	60	4*10EL. LOG. PER.	N/SW/SE	22	A1A
SK5UHF	432.975	JP80TB	IU79G	25 ERP	BIG WHEEL	OMNI	90	A1A
SK6UHF	1296.800	J066LJ	GO45D	10 ERP	CLOVER LEAF	OMNI	220	A1A
SK0UHF	1296.835	J089W1	IT60H	15 ERP	2*HELICAL	OMNI	30	F1A
SK7UHF	1296.920	J0778Q	HR21J	2 ERP	BIG WHEEL	OMNI	350	A1A
SK6UHF	1296.925	J0577D	FR79D	10	4*BIG WHEEL	OMNI	35	A1A
SK4UHF	1296.960	JP60BA	FT29B	4	2*15EL. YAGI	S	450	??
SK6UHF	2320.800	J058RG	FS58F	1	2*7EL. YAGI	S/SW	90	A1A
SK6SHG	10368.800	J058RG	FS58F	10 ERP	20 DB HORN	S	80	A1A
SP8VHF	144.430	K0116G	LL53D	1	DIPOLE	OMNI	??	A1A
SP9VHF	144.935	J090XB	JK80C	0.05	CROSSDIPOLE	OMNI	200	A1A
SP3VHF	144.945	J071SW	HL08J	6	2*DIPOLE	OMNI	240	A1A
SP6VHF	144.966	J070VP	HK29D	0.15	2EL. YAGI	NE	1602	A1A
SP2VHF	144.980	J094B1	J051B	28	CLOVER LEAF	OMNI	??	A1A
SP6VHF	431.998	J070VR	HK29B	0.06	2EL. YAGI	NE	1602	A1A
SP9VHF	432.093	JN99TS	JJ19F	1	DIPOLE	N	944	A1A
SP8VHF	432.290	K0116G	LL53D	1	????	OMNI	??	A1A
SP9VHF	1296.280	JN99TS	JJ19F	5	6EL. REFLECTOR	N	944	A1A
UB55AY	144.007	KN29EA	HJ72D	5	V-DIPOLE	OMNI	300	A1A
UK5EAS	144.050	KN78NH	RI56J	0.2	GROUNDPLANE	OMNI	??	A1A
UK0FAI	144.090	KP16NK	LA46J	5	V-DIPOLE	OMNI	??	A1A
UP2WN	144.136	K025DB	MP72J	3	????	??	??	A1A
UK3HBO	144.156	K087SV	SR08E	3	2*DIPOLE	OMNI	130	A1A
UK5UDX	144.177	K058CB	PK52F	3	DIPOLE	N/S	169	A1A
UK4NAU	144.185	L048WH	Y868R	3	DIPOLE	NNE/WSW	120	F1A
UK4NBY	144.199	L0491J	Y745F	3	DIPOLE	NNW	??	A1A
UK53AA	144.250	KN74FU	RE13A	1	TURNSTILE	OMNI	1000	A1A
UK3TAA	144.250	L016WH	VQ40B	0.5	V-DIPOLE	OMNI	??	A1A
UK3UMK	144.315	L006LX	UQ05B	1	HELIX	OMNI	??	A1A
UK56AA	144.371	KN66LV	Q605D	5	DIPOLE	N/S	??	A1A
UK5YAB	144.500	KN28WB	M160E	5	DIPOLE	??	??	A1A
UB5BBJ	144.725	KN29VA	MJ79D	5	DIPOLE	N/S	??	A1A
UK2CAU	144.942	K034K1	N055A	0.2	DIPOLE	N/S	??	A1A
UK5UBZ	145.002	K050EH	PK52C	2.5	V-DIPOLE	OMNI	187	A1A
Y02KHP	144.957	KN050S	KF17F	2.5	TURNSTILE	OMNI	80	A1A
Y03KAA	145.900	KN34BK	NE41J	0.2	DIPOLE	OMNI	80	A1A
YU3VHF	144.506	JN76NC	H676A	2	CROSSDIPOLE	OMNI	1219	A1A
YU2V	144.930	JN83HG	ID54F	1	CROSSDIPOLE	OMNI	780	A1A
YU3UHF	432.507	JN76NC	H676A	??	LOG. PERIODIC	??	1219	A1A
Y41M	144.932	J061FH	6L53B	0.2 ERP	2*DIPOLE	OMNI	232	A1A
Y41B	144.985	J053RP	FN28F	10	2*BIG WHEEL	OMNI	??	F1A
Y41N	432.030	J060J0	6K05B	0.1	DOUBLE QUAD	NW/SE	360	A1A
ZB2VHF	50.035	IM76HE	1W64B	20	SEL. YAGI	NNW	117	F1A

PAGE - 3 - DUBUS EUROPEAN VHF UHF SHF BEACON LIST: SUPPLEMENTS SEND TO: CLAU NEIE / D-7181 RUDOLFSBERG 24 --- PRINTED BY DL 7 BY

WORLD WIDE VHF TOP LIST 144 MHZ 14.02.1984

NR CALL										NR CALL												
WW-QTH	E-QTH	WKD	TROPO	AURO	MS	ES	WW-QTH	E-QTH	WKD	TROPO	AURO	MS	ES	WW-QTH	E-QTH	WKD	TROPO	AURO	MS	ES		
1	Y22ME	J072	HM	451	1577	1579	2293	2197						85	DK1PZ	J051	FL	257	1567	1364	1867	1866
2	SM7AED	J066	GQ	430	1522	1562	2326	2274						86	OH2BBF	K019	LT	257	1388	2000	2125	2144
3	DK6AS	J052	FM	438	1460	1885	2510	2260						87	DZ1FTU	J055	FP	257	1282	1558	1903	2315
4	3F301	J001	AL	411	1965	1935	1915	2208						88	DJ9CZ	J031	DL	256	1650	1862	1925	2015
5	PA0RDY	J022	CM	410	1578	1959	2262	2295						89	SM2CKR	JP03	KX	256	1630	1660	2310	1810
6	SM7FJE	J066	GQ	407	1642	1600	2241	1761						90	SM3AKW	JP92	JW	256	1598	2078	2142	2504
7	F6CJG/P	JN15	BF	402	1748	1892	2510	2836						91	SM7JUQ	J065	GP	255	1579	1646	1870	2027
8	OZ10F	J046	EQ	389	1765	1770	2134	2294						92	UR2BZ	K028	MS	253	1577	1794	2141	2174
9	SM4GVF	J079	HT	374	1796	1796	2099	2310						93	PA0HWM	J020	CK	252	1363	1508	1845	2103
10	DK5A1	J051	FL	361	1565	1510	2275	2282						94	YU3ES	JN65	GF	251	1677	1004	2074	2483
11	SM6E0C	J066	GQ	367	1730	1800	2000	2230						95	YU1UE	KN04	KE	250	1680	---	2200	2380
12	PA2VST	J022	CM	363	1572	1827	2572	2208						96	OJ13W	JN04	FO	249	1673	1863	1415	2100
13	SM6AEK	J066	GQ	368	1730	1800	1900	2330						97	DF1JC	J031	DL	249	1270	1830	2348	2007
14	OK1KKH	JN79	HJ	353	1500	1489	2379	2146						98	LX16R	JN39	DJ	249	1608	1104	2206	1409
15	OZ1EYX	J066	GP	350	1577	1602	1893	2182						99	SM5DRV	J077	HR	248	1330	1410	1810	---
16	SM5CHX	J078	HS	350	1262	1753	1991	2060						100	ON4YZ	J020	CK	247	1530	1510	---	2360
17	DL1MF	JN67	GH	348	1530	1512	2085	3255						101	YU7EW	KN05	KF	246	1868	1172	1930	2425
18	UA3LBO	K064	GO	347	1807	1939	2273	2467						102	OZ1EYE	J056	GF	246	1379	1271	2329	2260
19	SM6AFH	K064	GO	341	1730	1554	1900	2330						103	SM0DJJ	J088	IS	246	1340	1810	1840	2160
20	OZ1EKI	K045	EP	339	1450	1777	2088	2273						104	HG8ET	KN06	KG	245	1445	1845	2000	2279
21	OZ1FDP	J065	GP	337	1581	1762	2271	2287						105	LA9BH	JP40	EU	244	1612	1670	1892	2165
22	ON50W	J011	BL	335	1510	1927	2080	3285						106	OK1KHI/P	J070	HK	242	1803	180	---	2650
23	DF3XU	J053	FN	332	1643	1808	2106	2222						107	F02TW	JN18	BI	241	1476	1713	2207	2416
24	SM5BEI	JP90	JU	331	1525	1777	2702	2455						108	YU5EZA	JN18	IG	241	1416	1413	2084	2377
25	PA0DOM	J033	DN	328	1405	1986	2020	2455						109	PA3A0Z	JO32	DM	241	1392	1673	1763	2193
26	SM0FFS	J099	IT	327	1820	1580	2030	2190						110	OE6WIG	JN76	HG	241	1214	1728	1890	2629
27	OK2RZ/P	J043	EN	324	2131	1910	2021	3100						111	ON6UG	J011	BL	241	1089	1013	2640	3296
28	DJ5MS	JN68	GI	323	1260	1509	2102	1930						112	OZ6DL	J055	FP	239	1800	1700	---	1800
29	SM4IVE	J079	HT	322	1590	1940	2026	2122						113	OZ8SL	J065	GP	238	1476	1305	---	2180
30	OH7PI	KP32	NC	316	1902	1715	2511	2272						114	SM7GEP	J077	HR	238	1467	1768	1695	2043
31	16WJB	JN72	HC	315	2224	1500	2214	2374						115	OH0JN	JP90	JU	238	1451	1856	2108	2198
32	DK1KO	J053	FN	315	1625	1745	2124	2194						116	PA0RLS	J022	CM	238	1350	1890	1890	2204
33	F6DWG	JN19	BJ	314	1756	1880	2143	2448						117	YU7BCX	KN05	KF	237	1868	1172	1956	2265
34	H61YA	JN87	IH	314	1612	1534	2183	2885						118	SM3DCX	JP81	IV	237	1300	1850	1990	---
35	SP2DX	JP94	JO	313	1464	1730	2337	---						119	R02BBA	K026	NO	237	1432	1714	---	1973
36	OK1FM	JN69	GJ	311	1843	1438	2280	2031						120	PA3BBA	J022	CM	236	1300	1436	1907	2737
37	OK2RZ/P	JN09	IJ	311	1518	1947	2193	2598						121	UA3MJB	K088	SS	235	1506	2006	2573	2390
38	QZ1DOQ	J052	FM	308	1595	1515	2010	2232						122	DF60B	J052	FM	234	1421	1349	1877	2013
39	SM0HAX	J099	JT	306	1700	1640	1830	2240						123	DL7ZL	J062	GM	234	1401	1254	3200	3800
40	OZ9FW	J065	GP	305	1328	1618	1954	1963						124	SM5BSZ	J099	JT	233	1830	1720	1890	2080
41	YR5JIN	KN74	RE	303	1709	1497	2500	2026						125	PA3BRS	J022	CM	233	1494	1738	1613	2112
42	PA3BBI	J022	CM	302	1480	1850	2000	2296						126	Y24QO	J062	GM	232	1250	1660	1846	1840
43	UR2ROT	K028	MS	302	1210	1840	2172	1900						127	SM5FRH	J079	HT	231	1580	1690	1650	---
44	OE3YUA	JN77	HH	301	1610	1975	2150	2340						128	SM4BGC	J069	GT	231	1286	1815	1856	---
45	KA4TG	J031	DL	301	1410	1730	2448	2000						129	OZ1CL	J065	GP	228	1569	1929	1448	2208
46	DL4EA	JN63	DL	300	1468	1723	2078	2247						130	SM5CND	J078	HS	228	1468	1575	1915	1809
47	I3TJQ	J031	DL	300	1008	1250	2010	3120						131	SM3COL	J082	IW	226	1784	1693	2122	2367
48	EA3LL	JN01	AE	298	1595	---	2000	3215						132	SM6ACK	J067	GR	225	1530	1560	1470	1790
49	SM5GP	JN65	GP	297	1008	1387	2020	3150						133	YU3CAB	JN76	HG	225	1463	1530	2165	3356
50	OK3AU	KN08	KI	296	1608	1637	2065	2236						134	SM3UL	JP81	IV	225	1275	1521	2110	2363
51	GN5NM	I091	IL	295	1489	2003	1872	2481						135	G3LTF	J001	AL	224	1824	1846	2021	2174
52	OK1OA	J070	HK	295	1256	1509	2050	2054						136	G8FUF	J001	AL	224	1810	1410	2466	1800
53	DL7QY	J062	GM	293	1402	1751	2353	1845						137	IN89	VJ	223	1620	1100	2050	2090	
54	PA0KDV	J033	DN	291	1475	1610	2051	2352						138	UQ2GLO	K006	KO	223	1447	1802	1992	1576
55	Y21PL	J061	GL	289	1760	1360	2110	1960						139	DK8VS	JN39	DJ	223	1350	1080	2240	3230
56	SM4AXY	J079	HT	289	1714	1760	1880	2143						140	G3CHN	I080	YK	222	2656	2138	---	2358
57	OE3LFA	JN88	IL	289	1615	1795	1720	3550						141	DF2ZC	J030	CK	221	1090	1686	1820	2100
58	UR2EQ	K039	NT	288	1541	1840	2240	2245						142	SM01DT	J099	JT	218	1380	1700	1980	2280
59	SM7BNU	J078	HS	287	1585	1770	2290	2007						143	UC2AAB	K033	NN	217	1350	1850	1980	2280
60	DK2PR	J020	CK	281	1500	1800	---	1940						144	DK2LM	JN49	EJ	215	1014	1078	1956	2444
61	PA0WTF	JN54	FE	279	1600	1520	1916	2670						145	DL7YW	J062	GM	213	1299	1106	1895	2170
62	14BXSJ	JN26	CG	277	1510	1220	1815	2705						146	Y22HA	J064	GO	213	1250	1071	2058	2041
63	DF6NA	JN49	EJ	276	1156	1120	2000	1709						147	SM5EJN	J089	IT	212	1770	1630	2240	1920
64	F6BSJ	JN26	CG	274	1228	1196	2020	2720						148	SM5AQJ	J099	JT	212	1380	1580	1930	---
65	LA2PT	J059	FT	272	1438	1660	2020	2427						149	PA2CHR	J021	CL	211	1370	1108	1695	2300
66	SM5CUI</																					

WORLD WIDE VHF TOP LIST 144 MHZ 14.02.1984																											
NR	CALL	WW-QTH	E-QTH	WKD	TROPO	AURO	MS	ES	NR	CALL	WW-QTH	E-QTH	WKD	TROPO	AURO	MS	ES	NR	CALL	WW-QTH	E-QTH	WKD	TROPO	AURO	MS	ES	
169	Y23PA	J064	GO	202	1168	1150	1710	----	253	QESXPL	JN78	HI	159	1434	836	1929	1680	170	Y23PA	J064	GO	202	1168	1150	1710	----	
170	PA3GER	J021	CL	201	1327	1249	2118	----	254	Y25QL	J061	GL	158	1825	950	----	----	171	SM3FGL	JP81	IV	200	1563	1680	1955	----	
171	SM3FGL	JP81	IV	200	1563	1680	1955	----	255	QK2RY	JN59	FJ	158	1300	1400	1800	----	172	DL20M	J030	DK	200	1270	1712	2104	2488	
172	DL20M	J030	DK	200	1270	1712	2104	2488	256	EASHM	IM99	ZZ	157	1750	----	1800	2100	173	Q79PW	J046	EQ	200	1200	1200	1500	2168	
173	Q79PW	J046	EQ	200	1200	1200	1500	2168	257	Y2480	J062	GM	157	1800	1440	----	1854	174	EA3ADW	JN11	BB	199	2311	----	2245		
174	EA3ADW	JN11	BB	199	2311	----	2245	----	258	OK1IDK	JN69	GJ	156	1843	1438	1983	1776	175	G3FPK	I091	ZL	197	1828	1488	----	2069	
175	G3FPK	I091	ZL	197	1828	1488	----	2069	259	OK1ABE/P	J070	HK	156	1481	1136	----	1776	176	G3LQR	J002	AM	196	1776	2150	2150	----	
176	G3LQR	J002	AM	196	1776	2150	2150	----	260	OK1ABE/P	JN88	II	156	1468	1630	1895	2233	177	Y24TN	J060	GK	195	1790	1310	1920	1630	
177	Y24TN	J060	GK	195	1790	1310	1920	1630	261	OE1RKR	JN88	II	155	1497	1493	1658	2369	178	EA3AIR	JN11	BB	194	1241	----	1850	2580	
178	EA3AIR	JN11	BB	194	1241	----	1850	2580	262	PE1BDZ	J022	CM	155	1359	1547	1889	1990	179	OE5JFL	JN68	GI	193	1503	1155	1964	1823	
179	OE5JFL	JN68	GI	193	1503	1155	1964	1823	263	DF5JJ	J031	DL	155	1272	1256	1620	2074	180	IW5AVM	JN52	FC	192	1466	----	2016	2891	
180	IW5AVM	JN52	FC	192	1466	----	2016	2891	264	GMFFJ	I091	ZL	155	1209	1210	1329	2168	181	HE5KDD	JN97	JH	192	1307	----	1849	2195	
181	HE5KDD	JN97	JH	192	1307	----	1849	2195	265	Y06AFP	KN26	M6	154	1380	1175	2220	2138	182	SM5AGM	J099	JT	191	1930	1740	----	2000	
182	SM5AGM	J099	JT	191	1930	1740	----	2000	266	PA0VW	J022	CM	154	1372	1635	1845	1952	183	PA0BAT	J031	DL	191	1078	1377	2498	2042	
183	PA0BAT	J031	DL	191	1078	1377	2498	2042	267	EA0FB	JM08	AY	152	1964	----	1800	1960	184	DL7YS	J062	GM	190	1288	1052	1550	1891	
184	DL7YS	J062	GM	190	1288	1052	1550	1891	268	OE3PUW	JN88	II	152	1456	1019	1858	2289	185	PE1BNK	J022	CM	189	1328	1341	----	2257	
185	PE1BNK	J022	CM	189	1328	1341	----	2257	269	YH1CD	JM75	HV	151	1968	----	2400	270	UR2RDR	K028	MS	188	1200	1750	1600	2100		
186	UR2RDR	K028	MS	188	1200	1750	1600	2100	270	DK2NH	J053	FN	151	1687	1432	----	1996	187	OE5CEW	JN88	II	188	1464	1344	1842	2008	
187	OE5CEW	JN88	II	188	1464	1344	1842	2008	271	SMKDHN	J060	GU	151	1390	1300	1770	----	188	DL7AN	J062	GM	188	1310	1450	1845	----	
188	DL7AN	J062	GM	188	1310	1450	1845	----	272	EA1ED	IN53	VD	148	1181	----	1533	2119	189	PA3AHQ	J022	CM	188	1279	1586	1940	1879	
189	PA3AHQ	J022	CM	188	1279	1586	1940	1879	273	PE1GHG	J021	CL	148	1204	1007	----	1850	190	UQ2NX	K027	MR	187	1712	1745	1707	1870	
190	UQ2NX	K027	MR	187	1712	1745	1707	1870	274	OK1KIR/P	J060	GK	148	1172	1062	----	1551	191	DK3LL	J054	FO	187	1525	1187	1875	1812	
191	DK3LL	J054	FO	187	1525	1187	1875	1812	275	OK1A/P	J070	HK	147	1481	1065	950	----	192	SP5AD	K002	KM	185	1767	1697	----	1973	
192	SP5AD	K002	KM	185	1767	1697	----	1973	276	PE1JSE	J021	CL	147	1338	1015	----	----	193	DL1JF	J054	FO	185	1325	1775	----	2062	
193	DL1JF	J054	FO	185	1325	1775	----	2062	277	YH1BT	JM75	HV	144	1950	----	2031	2506	194	SP1JX	J084	IO	184	1617	1622	----	2090	
194	SP1JX	J084	IO	184	1617	1622	----	2090	278	SM0DRV	J089	IT	144	1820	1400	1533	2070	195	SM4FXR	J079	HT	184	1280	1430	1760	----	
195	SM4FXR	J079	HT	184	1280	1430	1760	----	279	EA7PZ	IM77	XX	143	1820	----	2406	280	LBA8E	J059	FT	182	2041	1573	----	1932		
196	LBA8E	J059	FT	182	2041	1573	----	1932	280	OK1RQ	JN69	GJ	143	1803	1374	1894	2115	197	UQ20W	K026	MQ	182	1092	1514	1845	1963	
197	UQ20W	K026	MQ	182	1092	1514	1845	1963	281	F1BB1	JN18	BI	142	1543	----	2115	198	SM5FND	J079	HT	181	1445	1601	1616	2060		
198	SM5FND	J079	HT	181	1445	1601	1616	2060	282	SM5CJF	J089	IT	142	1400	1280	----	----	199	OE5OLL	JN48	GI	181	1350	1500	----	2008	
199	OE5OLL	JN48	GI	181	1350	1500	----	2008	283	OE6L0G	JN76	H6	142	1307	1048	----	2318	200	EA1TH	IN82	YC	181	1366	1674	2229	----	
200	EA1TH	IN82	YC	181	1366	1674	2229	----	284	SM7FMD	J077	HR	142	1276	1031	----	1790	201	DG1BP	J033	DN	181	1201	1609	1475	2005	
201	DG1BP	J033	DN	181	1201	1609	1475	2005	285	DF5BL	J032	DM	142	1291	1659	----	2364	202	PA3CPL	J021	CL	180	1306	1080	1566	1961	
202	PA3CPL	J021	CL	180	1306	1080	1566	1961	286	PA0JMV	J021	CL	141	1220	1590	1790	----	203	G3SEK	I091	ZL	179	1560	1681	1872	2154	
203	G3SEK	I091	ZL	179	1560	1681	1872	2154	287	EA1BLA	IN53	VD	140	1226	----	1842	2358	204	SM0DFP	J089	IT	178	1830	1590	2030	----	
204	SM0DFP	J089	IT	178	1830	1590	2030	----	288	I8TUS	JM89	IZ	139	1448	----	1862	2458	205	SM5LE	J099	JT	178	1440	1470	2190	----	
205	SM5LE	J099	JT	178	1440	1470	2190	----	289	I11JTQ	JN35	DF	138	1887	----	1600	1550	206	UB5WN	K050	PK	178	1376	1270	2410	1457	
206	UB5WN	K050	PK	178	1376	1270	2410	1457	290	I2AV	JN45	EF	138	1860	----	2480	1730	207	OH0NC	JP90	JU	177	1525	1308	1670	2493	
207	OH0NC	JP90	JU	177	1525	1308	1670	2493	291	I2KX5/2	JM78	HY	138	1830	----	2183	2320	208	PA0CSL	J022	CM	176	1528	1610	1750	1960	
208	PA0CSL	J022	CM	176	1528	1610	1750	1960	292	OE1AP5	JN88	II	138	1343	1765	1847	2005	209	RR2TEJ	K039	NT	176	1422	1760	----	2070	
209	RR2TEJ	K039	NT	176	1422	1760	----	2070	293	G3KCE	I091	ZL	138	1335	1275	----	1800	210	OH2BW	KP20	MU	176	1056	1586	1981	2221	
210	OH2BW	KP20	MU	176	1056	1586	1981	2221	294	UR2DT	K029	MT	138	1300	1810	1855	----	211	G3CQJ	I091	ZL	175	1316	1650	1429	1852	
211	G3CQJ	I091	ZL	175	1316	1650	1429	1852	295	SM7FAF1	JN99	JJ	136	1540	980	----	----	212	UR2RGM	J029	MT	175	1316	1650	1429	2157	
212	UR2RGM	J029	MT	175	1316	1650	1429	2157	296	OE5UAL	JN68	GI	136	1357	1518	1065	3329	213	G4NCU	J001	AL	174	1567	1630	1627	2000	
213	G4NCU	J001	AL	174	1567	1630	1627	2000	297	SM6BFD	J068	GS	136	1200	1830	----	----	214	PA3CAP	J022	CM	174	1385	1230	1687	2008	
214	PA3CAP	J022	CM	174	1385	1230	1687	2008	298	EA4QR	IN80	YA	134	2092	----	1466	2584	215	DC70H	J062	GM	173	1349	1289	1680	2105	
215	DC70H	J062	GM	173	1349	1289	1680	2105	299	SP9FG	JN99	JJ	134	1647	1283	----	1630	216	F6FHP	JN04	AE	172	1752	----	2243	2168	
216	F6FHP	JN04	AE	172	1752	----	2243	2168	300	OE5UKL/5	JN68	GI	134	1557	832	1646	3329	217	G8KBC	I081	YL	172	1501	1775	1865	2235	
217	G8KBC	I081	YL	172	1501	1775	1865	2235	301	SM6FOB	J099	JT	133	1830	1490	1390	1860	218	D86BX	J032	DM	172	1398	1094	----	2059	
218	D86BX	J032	DM	172	1398	1094	----	2059	302	F6EAS	IN98	ZI	133	1380	----	2230	2020	219	G3PBV	I080	YK	171	1540	1466	1563	2315	
219																											

WORLD WIDE UHF TOP LIST 432 MHZ 14.02.1984

NR	CALL	WW-QTH	E-QTH	WKT	TROPO	AURO	MS	ES	NR	CALL	WW-QTH	E-QTH	WKT	TROPO	AURO	MS	ES
1	DL7YC	J062	GM	179	1225	---	---	---	85	DF10H	J042	EM	89	1261	1038	---	---
2	DL7ZY	JN59	FJ	178	1368	1618	---	---	86	DJ6XV	J031	DL	89	968	508	---	---
3	DL7ZL	J062	GM	176	1305	1249	---	---	87	LABAE	J059	FT	88	1585	843	---	---
4	DK5AI	J051	FL	166	1506	798	---	---	88	ONSQW	J011	BL	88	1395	---	---	---
5	DF3XU	J053	FN	165	1607	1057	---	---	89	F6DWG	JN19	BJ	88	1350	---	---	---
6	OZ7IS	J065	GP	160	1499	1048	1294	---	90	DD2EK	J031	DL	88	1284	---	---	---
7	SM3AKW	JP92	JW	151	1990	919	---	---	91	Y2ZHA	J064	GO	87	1414	---	---	---
8	SM6CKU	J067	GR	150	1293	660	---	---	92	DF5JJ	J031	DL	87	908	---	---	---
9	PA0EZ	J022	CM	149	1787	1028	---	---	93	ON4YZ	J020	CK	86	1468	---	---	---
10	OE3LFA	JN88	IT	149	1620	---	---	---	94	PE1JSE	J021	CL	86	1111	---	---	---
11	GL3QR	J002	AM	144	2031	873	---	---	95	G3UBJ	J021	CL	86	101	---	---	---
12	F1FHI	JN97	ZH	143	1892	---	---	---	96	PE1HQO	J033	DN	85	1273	460	---	---
13	PABRDY	J022	CM	143	1799	---	---	---	97	GAFRE	J001	AL	85	1225	---	---	---
14	UA3LBO	K064	QO	140	1426	1612	---	---	98	Y23PA	J064	GO	85	1102	---	---	---
15	SM6HYG	J058	FS	138	1685	720	---	---	99	OZ3GW	J056	FQ	85	1090	620	---	---
16	DJ9DL	J031	DL	131	1274	615	---	---	100	F1BUU	IN94	ZE	84	1250	---	---	---
17	PA0WWM	J022	CM	129	1342	724	---	---	101	F6CER	JN18	BI	83	1350	500	---	---
18	Y22ME	J072	HM	128	1364	876	---	---	102	DF3CK	JN57	FT	83	1283	867	---	---
19	Y23FG	J052	FM	127	1560	885	---	---	103	DL6NAQ	J040	EK	83	1253	---	---	---
20	G3LTF	J001	AL	127	1520	890	---	---	104	ONS9F	J020	CK	83	1115	---	---	---
21	DK6AS	J052	FM	127	1360	620	---	---	105	OZ1CFO	J047	ER	82	1338	---	---	---
22	DB6BX	J032	DM	126	1398	---	---	---	106	LABAK	J038	DS	82	1388	776	---	---
23	OZ9FW	J065	GP	125	1438	1026	---	---	107	V2400	J042	GM	82	1800	---	---	---
24	OK1CA/P	J070	HK	124	1287	---	---	---	108	GA4RT	1092	ZM	81	1394	---	---	---
25	Y23CQ	J032	DM	124	1484	490	---	---	109	PE1HWQ	J021	CL	80	1050	---	---	---
26	DJ9BV	J043	EN	123	1436	887	---	---	110	OZ1HDA	J047	ER	79	1370	---	---	---
27	OZ2OE	J045	EP	122	1429	1020	---	---	111	PA3BBL	J023	CM	79	1250	---	---	---
28	PA0FRE	J021	CL	122	1400	815	---	---	112	DB1BP	J033	DN	79	1165	---	---	---
29	G6NRR	IN97	ZH	120	1894	---	---	---	113	DF1JC	J031	DL	78	1270	---	---	---
30	OK1KHI/P	J070	HK	120	1525	---	---	---	114	DK2ZF	J053	FN	78	1223	---	---	---
31	OH0NC	KP00	KU	118	1544	864	---	---	115	PE1GVK	J021	CL	78	1208	---	---	---
32	PE1ALA	J022	CM	118	1336	788	---	---	116	HB9MIN/P	JN37	DL	78	1108	---	---	---
33	DB6NT	J050	FK	117	1505	---	---	---	117	DB5AQ	J051	FL	78	1058	---	---	---
34	DJ6MB	J030	DK	117	1253	921	---	---	118	PA0VV	J022	CM	77	1180	---	---	---
35	SM0FZH	J049	JT	116	1808	957	---	---	119	DB1NZ	JN59	FJ	77	1146	---	---	---
36	F6APE	IN97	ZH	116	1706	---	---	---	120	DJ7VP	J042	EM	77	971	---	---	---
37	F6BGO	J032	DM	116	1382	---	---	---	121	PA2CHR	J021	CL	76	1265	---	---	---
38	33SEK	IO91	ZL	116	1249	170	---	---	122	DL5FAU	J040	EK	76	1120	---	---	---
39	DL7APV	J062	GM	115	1308	850	---	---	123	Y22EN	J060	GK	75	1395	---	---	---
40	DF3EE	J031	DL	115	1267	1019	---	---	124	PA2DRV	J021	CL	75	1147	---	---	---
41	DL3UZ	J053	FN	114	1270	---	---	---	125	DL6WU	JN49	EJ	74	1305	740	---	---
42	OZ1EKI	J045	EP	113	1325	700	---	---	126	DL7HR	JN58	FJ	74	1256	980	---	---
43	SM7BAE	J065	GP	113	1220	850	---	---	127	DC9BU/A	J040	EK	74	1253	---	---	---
44	OH3TH	KP11	LV	113	1199	943	---	---	128	84MCU	J081	AL	74	1192	---	---	---
45	SM6FYU	J066	GO	112	1441	706	---	---	129	OH2BBF	K019	LT	74	1164	773	---	---
46	PA3A0H	J031	DL	112	1116	536	---	---	130	SP1IX	J084	IO	73	1128	---	---	---
47	DF7VX	J041	EL	112	1105	658	---	---	131	SM1AAZ	J079	HT	73	1055	1134	---	---
48	DK0NA	J050	HK	112	1094	---	---	---	132	SM78EP	J077	HR	72	1428	533	---	---
49	OE3JUA	JN77	HH	111	1408	---	---	---	133	Y23BD	J062	GM	72	1150	---	---	---
50	SM5BEI	JP90	JU	110	1235	1016	---	---	134	DF2YQ	J031	DL	72	1077	475	---	---
51	SM5CPD	J089	IT	110	1320	640	---	---	135	PA0XMA	J032	DM	72	980	485	---	---
52	ON5FF	J011	BL	110	1170	736	---	---	136	88HVV	1080	YK	71	1500	---	---	---
53	SM5DWC	J089	IT	109	1400	810	---	---	137	GA4BL	J082	AM	71	1175	---	---	---
54	SM0FFS	J099	JT	109	1380	740	---	---	138	UR2EQ	K039	NT	71	1160	907	---	---
55	PA0JOZ	J022	CM	107	1156	---	---	---	139	SM5CUI	J089	IT	71	1150	1260	---	---
56	SM4AXY	J079	HT	105	1714	1100	---	---	140	Y24B0	J062	GM	71	1066	838	---	---
57	DC2XK	J043	EN	105	1440	---	---	---	141	SH7CFE	J076	HQ	70	1420	---	---	---
58	DL4EA	J031	DL	105	1265	1009	---	---	142	OZ1HDB	J047	ER	70	1418	---	---	---
59	SM0CPA	J089	IT	104	1856	797	---	---	143	PA3BRS	J022	CM	69	1292	---	---	---
60	OK1KIR/P	J060	GK	103	1331	---	---	---	144	DF1EQ	J031	DL	69	811	---	---	---
61	OZ3ZW	J054	FO	103	1298	613	---	---	145	DK0IK/P	J043	EN	68	1436	---	---	---
62	G34ICD	IN89	YJ	102	1340	803	---	---	146	DF6NA	JN49	EJ	68	1201	650	---	---
63	DK2NH	J053	FN	101	1607	805	---	---	147	SM5CUL	J089	IT	68	1150	1260	---	---
64	G3C0J	IO91	ZL	101	1465	812	---	---	148	PE1AAP	J022	CM	67	1132	---	---	---
65	SM0DFP	J089	IT	101	1410	830	---	---	149	DG4GAN	JN48	ES	66	1504	---	---	---
66	DB2VY	JN39	DJ	101	1335	---	---	---	150	SM76WU	J078	HS	66	1192	628	---	---
67	DC7QH	J062	GM	100	1231	509	---	---	151	OK2ZRR/P	JN89	IJ	65	1333	---	---	---
68	PE1IST	J022	CM	99	1285	---	---	---	152	OZ2LD	J054	FO	65	1186	---	---	---
69	DL7AN	J062	GM	99	1240	---	---	---	153	OZ9SW	J046	EQ	65	1050	---	---	---
70	G3P8V	1080	YK	98	1572	---	---	---	154	SH7FMD	J077	HR	64	1594	---	---	---
71	DC9XO	J042	EM	96	1600	---	---	---	155	DG4AB	J043	FN	64	1494	---	---	---
72	DC9CSA	J062	GM	96	1171	---	---	---	156	OZ1ASL	J054	FO	64	1187	---	---	---
73	F1FEN/P	JN53	CF	95	1540	---	---	---	157	G3WSN	J081	AL	63	1385	---	---	---
74	OK1AIY/P	J078	HK	95	1410	---	---	---	158	SP9FG	JN99	JJ	63	1327	---	---	---
75	DL7ACB	J062	GM	95	1279	---	---	---	159	DL0SP/P	G062	GM	63	1150	709	---	---
76	OZ7LY	J055	FP	93	1515	720	---	---	160	RQ26AB	K026	MP	62	1317	---	---	---
77	PA3BSK	J031	DL	93	1129	---	---	---	161	UP2BBC	K015	LQ	62	1125	807	---	---
78	DK1PZ	J051	FL	93	1018	---	---	---	162	DH4NAG	J050	FK	62	1096	---	---	---
79	PA2DOL	J021	CL	92	1088	---	---	---	163	F6CJ6/P	JN15	BF	61	1170	---	---	---
80	88KBQ	IO81	YL	91	1327	---	---	---	164	DK3DL	J031	DL	61	909	---	---	---
81	SM0DYE	J099	JT	91	1205	845	---	---	165	Y21PL	J061	GL	61	864	---	---	---
82	PA0CRA	J022	CM	90	1412	---	---	---	166	HB9ADF	JN36	DS	61	820	---	---	---
83	F9FT	JN29	CJ	90	960	---	---	---	167	SM5DSN	J089	IT	60	1470	---	---	---
84	PE1GHH	J021	CL	89	1323	---	---	---	168	OK1KTL/P	J060	GK	60	993	---	---	---

THE LIST IS PUBLISHED CONTINUOUSLY. DATA COMPILED ABOVE BASED ON UNCONFIRMED CLAIMS BY OPERATORS.

PRINTED BY DL 7 QY

WORLD WIDE SHF TOP LIST 1296 MHZ 14.02.1984											
NR	CALL	WW-QTH	E-QTH	WKD	TROPO	NR	CALL	WW-QTH	E-QTH	WKD	TROPO
1	PA0EZ	J022	CM	88	1261	58	F1FEN/P	JN25	CF	41	1190
2	PE1CQR	J032	DM	88	1200	59	DL3NI	J031	DL	41	798
3	G3LQR	J002	AM	80	1232	60	PA0JOZ	J022	CM	40	892
4	F1FHI	JN97	ZH	79	1538	61	SM0FZH	J099	JT	39	1254
5	PA0WMM	J022	CM	79	1298	62	G3CQJ	J091	ZL	39	963
6	DL7QY	JN59	FJ	79	1261	63	DC7QH	J062	GM	38	1216
7	F5DZK	JN08	AI	77	1229	64	DL5FAU	JN40	EK	38	740
8	DF3XU	J053	FN	74	1277	65	SM5DWC	J089	IT	37	1060
9	SM6HYG	J058	FS	71	1685	66	PA3BSK	J031	DL	37	821
10	H89AHP	JN37	DM	71	1264	67	DL9BU	JN49	EJ	37	678
11	G3LTF	J001	AL	71	1078	68	SM6CPA	J089	IT	36	1141
12	PA0FRE	J021	CL	70	1337	69	SM6ESG	J067	GR	36	980
13	PE0AGO	J032	DM	70	1196	70	DL2EC	J031	DL	36	845
14	G4BYV	J002	AM	69	1028	71	PE1HWO	J021	CL	36	830
15	DN5GF	J020	CK	69	1010	72	SM0FFS	J099	JT	35	1040
16	PE1CQO	J032	DM	67	1167	73	SM5BEI	JP90	JU	35	877
17	DN5GF	J020	CK	67	1010	74	PA3BGL	J023	CN	34	1155
18	DB6NT	J050	FK	65	1105	75	DL7APV	J062	GM	34	1112
19	DC9XO	J042	EM	64	963	76	DF7VX	J041	EL	34	886
20	DB6BX	J032	DM	62	1052	77	DK1PZ	J051	FL	34	865
21	PA2DOL	J021	CL	62	1027	78	DL3NO	JN49	EJ	33	920
22	Q20ZE	J045	EP	61	1425	79	DL0SO/A	J031	DL	33	642
23	PA0CRA	J022	CM	61	1286	80	F6DNG	JN19	BJ	32	1196
24	DK7UC	J053	FN	60	1223	81	LA8AK	J038	DS	32	1117
25	OZ7IS	J065	GP	60	1205	82	OE9XXI/9	JN47	EH	32	742
26	DK0NA	J050	FK	59	1096	83	LY1DU	JN29	CJ	32	600
27	DL7ZL	J062	GM	57	1285	84	G4BEL	J002	AM	31	1025
28	OE3LFA	JN88	II	57	1260	85	DC0DA	J031	DL	31	815
29	PA3AOH	J031	DL	57	940	86	PA2HJS	J020	CK	31	690
30	DF5JJ	J031	DL	56	897	87	DK0IK	J043	EN	31	672
31	OK1AIY/P	J070	HK	55	1351	88	G3PBV	I080	YK	30	996
32	DL6NAG	J040	EK	55	1253	89	OZ1HDA	J047	ER	29	888
33	OK1KIR/P	J060	GM	55	1208	90	DF3CK	JN57	FH	27	1240
34	G4LRT	J092	ZM	55	1152	91	DJ6MB	J030	DK	27	879
35	DN5GF	J020	CK	55	1010	92	DC8UB	J030	DK	27	802
36	DL4EA	J020	CL	55	906	93	DB4SB	J043	EN	27	741
37	DC9BU/A	J040	EK	54	1253	94	PE1USE	J021	CL	26	737
38	PA2DRV	J021	CL	53	1518	95	OE3XUA	JN77	HH	25	900
39	DK6AS	J052	FM	52	990	96	F6B5J	JN26	CG	25	720
40	DF1EQ	J031	DL	52	908	97	UR2EQ	K039	NT	25	588
41	DF3EE	J031	DL	50	882	98	SM4AXY	J079	HT	24	1000
42	H89RG	JN47	EH	50	820	99	I2FUM/2	JN44	EE	24	779
43	DL7YC	J062	GM	49	1040	100	PA0VV	J022	CM	24	622
44	DB3KL	J030	DK	48	713	101	SM5CPD	J089	IT	24	610
45	OH0NC	KP00	KU	47	1529	102	G4FRE	J001	AL	23	641
46	DB2VY	JN39	DJ	46	783	103	PA0JME	J021	CL	22	867
47	SH0DFP	J089	IT	45	1057	104	DF1EO	J031	DL	22	756
48	PE1BHG	J021	CL	45	867	105	H89ADF	JN36	DB	22	581
49	PE1ALA	J022	CM	44	1315	106	OZ2LD	J054	FO	21	1186
50	DK4NAG	J050	FK	44	1096	107	I37VN	JN55	FF	20	972
51	H5SAI	J051	FL	44	883	108	PA0KDV	J033	DM	20	724
52	SM6CKU	J067	GR	44	820	109	OE1ERC/9	JN57	FH	20	657
53	F6CER	JN18	BI	43	1350	110	SM0DYE	J099	JT	20	485
54	OZ3ZY	J054	FO	42	1183	111	DL7AN	J062	GM	19	814
55	OK1CA/P	J070	HK	42	1089	112	DK0IK/P	J034	DO	19	758
56	DK2NH	J053	FN	42	805	113	OE3PQU	JN78	HI	19	546
57	LA8AE	J059	FT	41	1271	114	OE9PMJ/9	JN47	EH	18	890
115	PE1HQ	J033	DN	18	770	115	PE1HQ	J033	DN	18	770
116	IWSAVM	JN52	FC	18	672	116	IWSAVM	JN52	FC	18	672
117	OE3RLC	JN77	HH	18	554	117	OE3RLC	JN77	HH	18	554
118	ON6UG	J011	BL	17	700	118	ON6UG	J011	BL	17	700
119	OK1KTL/P	J060	GK	17	467	119	OK1KTL/P	J060	GK	17	467
120	DB6AGN	JN48	EI	16	580	120	DB6AGN	JN48	EI	16	580
121	HB80A	JN38	DH	15	675	121	HB80A	JN38	DH	15	675
122	OK1QUL/P	JN48	EI	15	675	122	OK1QUL/P	JN48	EI	15	675
123	SM3AKM	JP92	JW	14	805	123	SM3AKM	JP92	JW	14	805
124	JD80L	JN49	EJ	14	778	124	JD80L	JN49	EJ	14	778
125	I4XCC/6	JN63	GD	14	425	125	I4XCC/6	JN63	GD	14	425
126	F6HLR/L	JN26	CG	13	740	126	F6HLR/L	JN26	CG	13	740
127	OE3EFS	JN78	HI	13	881	127	OE3EFS	JN78	HI	13	881
128	OZ3GVM	J056	FO	12	760	128	OZ3GVM	J056	FO	12	760
129	OZ1CFDQ	J047	ER	12	622	129	OZ1CFDQ	J047	ER	12	622
130	OE1KT/5	JN68	GI	12	545	130	OE1KT/5	JN68	GI	12	545
131	OKAKP/P	JN61	GB	11	166	131	OKAKP/P	JN61	GB	11	166
132	OKAKP	JN61	GB	11	166	132	OKAKP	JN61	GB	11	166
133	OK1LEK	J070	HK	11	429	133	OK1LEK	J070	HK	11	429
134	SP1BB	JN78	HI	11	321	134	SP1BB	JN78	HI	11	321
135	OE5BPL	KP20	MU	10	1098	135	OE5BPL	KP20	MU	10	1098
136	OH2XVL	K026	MQ	10	562	136	OH2XVL	K026	MQ	10	562
137	QJ6XV	J031	DL	10	325	137	QJ6XV	J031	DL	10	325
138	OE3JHC	JN78	HI	10	290	138	OE3JHC	JN78	HI	10	290
139	QXNXX	K027	MR	9	522	139	QXNXX	K027	MR	9	522
140	DB9SB	JN49	EJ	9	438	140	DB9SB	JN49	EJ	9	438
141	DLWSP/P	J062	GM	9	430	141	DLWSP/P	J062	GM	9	430
142	OE1KTC	JN88	II	9	423	142	OE1KTC	JN88	II	9	423
143	OK1H3	J060	GK	9	408	143	OK1H3	J060	GK	9	408
144	DB6AV	JN68	EI	8	588	144	DB6AV	JN68	EI	8	588
145	OK3CBD	JN88	II	8	380	145	OK3CBD	JN88	II	8	380
146	DF2CA	J043	EN	8	378	146	DF2CA	J043	EN	8	378
147	IWEYEG	JN55	FF	7	505	147	IWEYEG	JN55	FF	7	505
148	QO26AG	K026	MQ	7	192	148	QO26AG	K026	MQ	7	192
149	I2KXS/X/8	JN78	HI	6	1396	149	I2KXS/X/8	JN78	HI	6	1396
150	EAP7Z	IN67	WY	6	1360	150	EAP7Z	IN67	WY	6	1360
151	EA5XU	JN11	BB	6	730	151	EA5XU	JN11	BB	6	730
152	UQ2AD	K026	MQ	6	522	152	UQ2AD	K026	MQ	6	522
153	DB6FPQ	J040	EK	6	380	153	DB6FPQ	J040	EK	6	380
154	I2CVC/2	JN45	GP	6	365	154	I2CVC/2	JN45	GP	6	365
155	HLGVA	J067	GR	6	219	155	HLGVA	J067	GR	6	219
156	OE1JH	J011	BL	6	261	156	OE1JH	J011	BL	6	261
157	ON9SQW	J011	BL	6	257	157	ON9SQW	J011	BL	6	257
158	OE1JH	J011	BL	6	257	158	OE1JH	J011	BL	6	257
159	SP9FG	JN99	JJ	5	876	159	SP9FG	JN99	JJ	5	876
160	EAGET	JN19	BZ	5	670	160	EAGET	JN19	BZ	5	670
161	DF1DH	J042	EM	5	229	161	DF1DH	J042	EM	5	229
162	EATBVD	I077	XX	4	1475	162	EATBVD	I077	XX	4	1475
163	OE8JDK/8	JN66	GG	4	232	163	OE8JDK/8	JN66	GG	4	232
164	GB8XG	J081	LY	4	180	164	GB8XG	J081	LY	4	180
165	OE2BM/2	J067	GR	4	159	165	OE2BM/2	J067	GR	4	159
166	SM7G	J057	FM	3	803	166	SM7G	J057	FM	3	803
167	DL7HG	J062	GM	3	270	167	DL7HG	J062	GM	3	270
168	EATL	JN01	AR	3	254	168	EATL	JN01	AR	3	254

WORLD WIDE SHF TOP LIST 2320 MHZ 14.02.1984

NR	CALL	WW-QTH	E-QTH	WKD	TROPO	NR	CALL	WW-QTH	E-QTH	WKD	TROPO
1	PA0EZ	J022	CM	39	827	24	DC0DA	J031	DL	17	429
2	DL7QY	JN59	FJ	34	1018	25	OZ7IS	J065	GP	16	860
3	DB6NT	J050	FK	34	746	26	PE1BHG	J021	CL	16	559
4	G3LQR	J002	AM	30	724	27	DN5GF	J020	CK	15	800
5	DK0NA	J050	FK	30	527	28	PA2DOL	J021	CL	15	781
6	G4BYV	J002	AM	29	1028	29	DK2UC	J053	FN	15	809
7	OK1KIR/P	J060	GM	29	866	30	OZ2DE	J045	EP	13	809
8	PE1CQO	J032	DM	28	685	31	DL7YC	J062	GM	13	634
9	SM6HYG	J058	FS	27	1290	32	DC3QJ	J032	DM	13	419
10	PE0AGO	J032	DM	27	730	33	OE1ERC/9	JN57	FH	12	657
11	DC9XO	J042	EM	23	701	34	OE3LFA	JN88	II	11	870
12	OK1AIY/P	J070	HK	20	1027	35	DC8UB	J030	DK	11	648
13	G4LRT	J092	ZM	20	1022	36	PA0JGF	J032	DM	11	444
14	DL5FAU	JN40	EK	20	582	37	OE9XXI/9	JN47	EH	11	439
15	PA0FRE	J021	CL	19	868	38	DF5QZ	J031	DL	10	468
16	DN5GF	J020	CK	19	808	39	DF5QZ	J031	DL	10	468
17	DL3NI	J031	DL	19	880	40	G3LTF	J001	AL	9	1017
18	DL3NO	JN49	EJ	18	592	41	G3LTF	J001	AL	9	1017
19	PA0WMM	J022	CM	18	542	42	LA8AE	J059	FT	9	829
20	DH4NAG	J050	FK	18	528	43	DF3CK	JN57	FH	9	418
21	DL9BU	JN49	EJ	18	374	44	PA2HJS	J020	CK	9	388
22	PA2DRV	J021	CL	17	776	45	PA0JME	J021	CL	9	262
23	DF1EQ	J031	DL	17	461	46	SM6ESG	J067	GR	8	880
47	G4FRE	J001	AL	8	641	47	DB6BX	J030	DK	8	641
48	JN59	JN59	FJ	8	463	48	JN59	JN59	FJ	8	463
49	DN5GF	J020	CK	8	320	49	DN5GF	J020	CK	8	320
50	DB2VY	JN39	DJ	7	339	50	DB2VY	JN39	DJ	7	339
51	LY1DU	JN29	CJ	7	207	51	LY1DU	JN29	CJ	7	207
52	I2FUM/2	JN44	EE	6	114	52	I2FUM/2	JN44	EE	6	114
53	DF3XU	J053	FN	6	114	53	DF3XU	J053	FN	6	114
54	OE3XUA	JN77	HH	6	414	54	OE3XUA	JN77	HH	6	414
55	I2FUM/2	JN44	EE	6	215	55	I2FUM/2	JN44	EE	6	215
56	I1PE/1	JN34	DE	5	550	56	I1PE/1	JN34	DE	5	550
57	OK1KTL/P	J060	GM	5	235	57	OK1KTL/P	J060	GM	5	235
58	IW2ALW/1	JN35	DF	5	198	58	IW2ALW/1	JN35	DF	5	198
59	I2RDM	JN45	EF	5	185	59	I2RDM	JN45	EF	5	185
60	I2SG	JN45	EF	5	185	60	I2SG	JN45	EF	5	185
61	IW1ALW/1	JN35	DF	5	182	61	IW1ALW/1	JN35	DF	5	182
62	DK5AI	J051	FL	4	275	62	DK5AI	J051	FL	4	275
63	OK1E/P	JN34	DE	4	267	63	OK1E/P	JN34	DE	4	267
64	OK1E/P	JN34	DE	4	267	64	OK1E/P	JN34	DE	4	267
65	I20BC/2	JN70	HK	4	243	65	I20BC/2	JN70	HK	4	243
66	IW3EYG	JN55	FF	4	192	66	IW3EYG	JN55	FF	4	192
67	DD2EC	J031	DL	4	187	67	DD2EC	J031	DL	4	187
68	OE9PMJ/9	JN47	EH	3	178	68	OE9PMJ/9	JN47	EH	3	178
69	PE1HGO	J033	DN	3	116	69	PE1HGO	J033	DN	3	116

THE LIST IS PUBLISHED CONTINUOUSLY. DATA COMPILED ABOVE BASED ON UNCONFIRMED CLAIMS BY OPERATORS.
DUBUS 1/64

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UHF TOP LIST 432 MHZ													14.02.1984				
NR	CALL	WW-QTH	E-QTH	WKD	TROPO	AURO	MS	ES	NR	CALL	WW-QTH	E-QTH	WKD	TROPO	AURO	MS	ES
169	DN6UG	J011	BL	60	970	420	----	----	253	UR2B2	K028	MS	35	1035	----	----	----
170	DK8VS	JN39	DJ	60	920	----	----	----	254	DL9DAK	J031	DL	35	824	----	----	----
171	SM5LE	J099	JT	59	1560	710	----	----	255	UR2RGM	K029	MT	35	820	----	----	----
172	G8SFM	I081	YL	59	1255	----	----	----	256	D858Q	J043	EN	35	739	----	----	----
173	DL7RU	J062	BM	59	1231	----	----	----	257	DL7VW	J062	GM	35	739	----	----	----
174	DE5UKL/5	JN68	GI	59	1077	----	----	----	258	YU3UGB/3	JN66	BG	35	632	----	----	----
175	DC4XH	J043	EN	59	1545	----	----	----	259	I37VN	JN55	FF	34	866	----	----	----
176	F6HL0/P	JN26	CG	58	1525	----	----	----	260	F6EAS	JN98	ZI	34	630	----	----	----
177	F8S5J	J021	CL	58	1033	----	----	----	261	SM3UL	JP81	IV	34	585	674	----	----
178	PE00DL	J021	CL	58	1033	----	----	----	262	OK1VAM	J060	GK	34	511	----	----	----
179	D87FZ	J040	EK	57	1147	----	----	----	263	OE3HJW/9	JN77	HH	33	1643	----	----	----
180	DL40L	J052	FM	57	1018	----	----	----	264	DK2PR	J043	EN	33	1200	----	----	----
181	I6GQA	JN63	GD	56	813	----	----	----	265	SM3BIU	JN77	HX	33	920	720	----	----
182	DK3UC	J053	FN	55	1380	600	----	----	266	OE1KTC	JN88	II	33	808	----	----	----
183	OE1RKU	JN80	II	54	1354	----	----	----	267	DF1EO	J031	DL	33	767	----	----	----
184	64MUT	I091	ZL	54	1197	----	----	----	268	EA3LL	JN81	AB	32	1315	----	----	----
185	PA0JME	J021	CL	54	1046	----	----	----	269	UR2RLW	K018	LS	32	1106	----	----	----
186	PA2HJS	J020	CK	53	832	----	----	----	270	DJ5LZ	JN58	IT	32	853	----	----	----
187	DL5LH	J054	FC	53	1255	630	----	----	271	D859B	JN49	EJ	32	853	----	----	----
188	IWSAFB	JN52	FC	53	945	----	----	----	272	SM5EVK	J088	IS	32	740	----	----	----
189	DK1KO	J053	FN	53	920	----	----	----	273	OE3RRA	JN88	II	31	889	----	----	----
190	PA0KDV	J033	DN	53	920	----	----	----	274	UR2RIC	K018	LS	31	673	----	----	----
191	PA0JTA	J021	CL	52	920	----	----	----	275	UQ2GCG	K017	LR	30	1275	396	----	----
192	DL050/A	J031	DL	52	888	----	----	----	276	DK3AU	KN08	KI	29	1172	----	----	----
193	OE5EFM	JN78	II	52	809	----	----	----	277	DC7HF/A	J043	EN	29	1001	----	----	----
194	DL20M	J030	DK	52	780	639	----	----	278	DB7NMW/A	J050	FK	29	649	----	----	----
195	OE1AFS	JN88	II	51	1341	----	----	----	279	I0AKP/P	JN61	GB	28	1158	----	----	----
196	OE3PQU	JN78	II	50	1220	----	----	----	280	Y021S	KN05	KF	28	1020	----	----	----
197	DF7YU	J041	EL	50	1147	----	----	----	281	68HFJ	I091	ZL	28	941	----	----	----
198	SM6FHZ	J066	GO	50	1010	800	----	----	282	DF5BL	J032	DM	28	616	----	----	----
199	SM41VE	J079	EH	50	938	703	----	----	283	EA1ED	IN53	VD	27	1200	----	----	----
200	HB90Q	JN47	EH	49	1080	----	----	----	284	OE9JDK/8	JN66	GS	27	585	----	----	----
201	PA3BBA	J022	CM	49	1028	----	----	----	285	EA1RCA/P	IN63	WD	26	1166	----	----	----
202	YU3CAB	JN76	HG	49	684	----	----	----	286	DK5OD	J042	EM	26	1023	----	----	----
203	DL0UP/P	JN48	EI	49	676	----	----	----	287	EA3FD	JN12	BC	26	1011	----	----	----
204	SP10SU	J073	HN	48	1340	730	----	----	288	UR2QA	K038	NS	26	893	----	----	----
205	UR2NW	K019	LT	48	1060	675	----	----	289	I2KSY/8	JN78	HY	25	1830	----	----	----
206	EA3XU	JN11	BB	47	1230	----	----	----	290	OE3PUW	JN88	II	25	1315	----	----	----
207	SP1FFG	J073	HN	47	968	----	----	----	291	EA2AA	IN83	YO	25	1082	----	----	----
208	OD3KF	J030	DK	47	862	----	----	----	292	DB6AV	JN48	EI	25	788	----	----	----
209	OE9XXI/9	JN47	EH	47	844	----	----	----	293	OE1KTC/5	JN68	GI	25	706	----	----	----
210	EA3BBU	JN11	BB	46	1225	----	----	----	294	DH6FAB	J048	EK	25	669	----	----	----
211	SP5JC	K008	KN	46	1120	866	----	----	295	UR2JL	K029	MT	25	405	----	----	----
212	SR2MT	K028	MS	46	853	853	----	----	296	UA3TCF	I066	WQ	24	1131	903	----	----
213	SP9MM	J090	JK	45	1547	----	----	----	297	IW0AQF	JN61	GB	24	1080	----	----	----
214	UQ2NY	K027	MR	45	1355	----	----	----	298	DL0SZ	JN58	FI	24	931	----	----	----
215	OE3EFS	JN78	II	45	1303	----	----	----	299	IW3EYG	JN55	FF	24	751	----	----	----
216	SP6LB	J070	HK	45	1301	----	----	----	300	UB5JIN	KN74	RE	24	561	----	----	----
217	OH2BWL	KP20	MU	45	1223	1005	----	----	301	IS0DKU	JM49	EZ	23	1092	----	----	----
218	SM3COL	JP82	IW	45	621	455	----	----	302	OE1FQS	JN88	II	23	540	----	----	----
219	IWSAVM	JN52	FC	44	1458	----	----	----	303	DL40J	J052	FM	22	1040	----	----	----
220	OZ1FDH	J065	GP	44	1033	822	----	----	304	IW1AH	JN35	DF	22	885	----	----	----
221	F6ECI	JN18	BI	44	880	----	----	----	305	IW0AAH	JN61	GB	22	580	----	----	----
222	I2FUM/2	JN44	EE	44	875	----	----	----	306	UQ2AO	K026	HQ	22	487	----	----	----
223	DL2HAD	J043	EN	44	798	----	----	----	307	UR2QY	K019	LT	21	650	----	----	----
224	SM2CKR	KP03	KX	43	1215	820	----	----	308	DK0MB/P	J042	EM	21	514	----	----	----
225	OE3RLC	JN77	HH	43	1131	----	----	----	309	OE3OKS	JN87	II	20	1354	----	----	----
226	DF3XZ	J053	FN	43	956	----	----	----	310	OE3CEW	JN88	II	20	702	----	----	----
227	DC8LG	JN57	FH	43	934	----	----	----	311	EA7PZ	IM77	XX	19	1824	----	----	----
228	DC9VA	JN39	DJ	43	920	----	----	----	312	OY7O	IP62	WW	19	1560	----	----	----
229	OE6LOG	JN76	HG	43	470	----	----	----	313	EA1TA	IN53	VD	19	1519	----	----	----
230	DC7OH	J062	GM	42	1079	----	----	----	314	DF2CA	J043	EN	19	680	----	----	----
231	SM0ABP	J089	IT	42	740	410	----	----	315	IW2BNA	JN45	EF	19	404	----	----	----
232	OE5UAL	JN68	GI	41	1287	----	----	----	316	EA4AAW	IM69	WZ	18	1533	----	----	----
233	SM4DHN	JP60	GU	41	1240	1030	----	----	317	EB5BOD	IM98	ZY	18	1407	----	----	----
234	OE5XVL	JN67	GH	41	707	----	----	----	318	EA4AB	IN80	YA	18	544	----	----	----
235	UQ2OW	K026	HQ	40	934	833	----	----	319	EA4AB	K082	KM	17	1331	----	----	----
236	DL7WC	J062	GM	40	795	----	----	----	320	OE1BBW	JN88	II	17	620	----	----	----
237	DF3FW	JN44	EE	40	700	----	----	----	321	OE2BM/2	JN67	GH	17	465	----	----	----
238	GBR0U	I093	ZN	39	1255	----	----	----	322	IW2AEN	JN45	EF	16	877	----	----	----
239	DL9HN	J053	FN	39	1093	----	----	----	323	IW9ACT	JM68	GY	15	818	----	----	----
240	GM3ZSS	I087	YR	38	1400	----	----	----	324	OE5XDL	JN78	HI	14	1030	----	----	----
241	UQ26FZ	K037	NR	38	1328	590	----	----	325	EA7BVD	IM77	XX	13	1481	----	----	----
242	OE3JHC	HM61	38	38	1017	----	----	----	326	I2LVN	JN45	EF	13	406	----	----	----
243	HB9MI0/P	JN37	DH	38	1010	----	----	----	327	EA7AG	IM86	WZ	12	1620	----	----	----
244	DK0IK/P	J034	DO	38	800	----	----	----	328	OE1WEB	JN88	II	12	600	----	----	----
245	DL0UL/P	JN48	EI	38	676	----	----	----	329	OE6TWS	JN77	HH	11	335	----	----	----
246	H61YA	JN87	IH	38	631	----	----	----	330	EA18S	I128	SO	10	1805	----	----	----
247	OE5XPL	JN78	II	37	716	----	----	----	331	EA1BLA	IN53	VD	10	1092	----	----	----
248	DL8DBU	J031	DL	37	737	----	----	----	332	EA3CCK	JN11	BB	9	480	----	----	----
249	JA3MBU	K088	SS	36	1200	800	----	----	333	OE36RA	JN88	II	7	128	----	----	----
250	OE1ERC/9	JN57	FH	36	709	----	----	----	334	EA7APD	IM67	WZ	6	1480	----	----	----
251	HB2KML	JN97	JH	36	600	----	----	----	335	EB4KI	IN80	YA	6	419	----	----	----
252	UR2AO	K029	MT	35	1131	----	----	----	336	EA1YV	IN52	VC	5	188	----	----	----

WORLD WIDE SHF TOP LIST 3456 MHZ 14.02.1984																	
NR CALL WW-QTH E-QTH WKD TROPO						NR CALL WW-QTH E-QTH WKD TROPO						NR CALL WW-QTH E-QTH WKD TROPO					
1	DB6NT	J050	FK	14	528	12	PA2DOL	J021	CL	9	528	23	FE16HG	J021	CL	4	234
2	PA0CRA	J022	CM	13	802	13	DF50Z	J031	DL	7	587	24	DF1EQ	J031	DL	4	118
3	DK0NA	J050	FK	13	528	14	DC3QS	J032	DM	7	419	25	G4AGN/P	J093	ZN	4	115
4	DF5JY	J031	DL	13	417	15	PA2DRV	J021	CL	7	243	26	FE0AGO	J032	DM	2	134
5	G3LQR	J002	AM	12	924	16	DH4NAG	J050	FK	6	528	27	DN80K/P	J030	DK	2	106
6	G4BYV	J002	AM	11	903	17	DD3KL	J030	DK	6	434	28	DF5JJ/P	J030	DK	2	80
7	DC0DA	J031	DL	11	429	18	G4FRE/P	J001	AL	5	251	29	DL3NI	J031	DL	2	74
8	DL3NO	JN49	FJ	11	398	19	PA0JME	J021	CL	5	220	30	DK3UC	J053	FN	2	63
9	FE1CQQ	J032	DM	11	344	20	SM6HYG	J058	FS	4	925	31	DJ6TA	J030	DK	2	42
10	DL7QY	JN59	FJ	10	565	21	PA2HUS	J020	CK	4	388	32	G4LRT	I092	ZM	1	26
11	DC90X	J042	EM	10	341	22	PA0JGF	J032	DM	4	376	33	DD2EK	J031	DL	1	10

WORLD WIDE SHF TOP LIST 5760 MHZ 14.02.1984																	
NR	CALL	WW-QTH	E-QTH	WKD	TROPO	NR	CALL	WW-QTH	E-QTH	WKD	TROPO	NR	CALL	WW-QTH	E-QTH	WKD	TROPO
1	SM6HYG	J058	FS	9	980	9	PA2DOL	J021	CL	4	529	17	DJ7IF/P	JN37	DH	2	95
2	PA0CRA	J022	CM	7	802	10	H89AJF	JN47	EH	3	217	18	G4FRE/P	J001	AK	2	93
3	G3LQR	J002	AM	6	924	11	DF50Z	J031	DL	2	326	19	ON80K/P	J010	BK	1	191
4	DB6NT	J050	FK	6	528	12	OK1WFE	J080	IK	2	303	20	H89MDP/P	JN47	EH	1	54
5	DH4NAG	J050	FK	6	528	13	OK1VAM/P	J070	HK	2	303	21	OE9PMJ/9	JN47	EH	1	43
6	DK0NA	J050	FK	6	528	14	G4BYV	J002	AM	2	254	22	PA0MGA	J032	DM	1	30
7	DC0DA	J031	DL	5	212	15	H89MIN/P	JN37	DH	2	178	23	G4KGC/P	I091	ZL	1	26
8	DL7QY	JN59	FJ	5	171	16	F060H/P	JN37	DH	2	109	24	DK3UC	J053	FN	1	15

WORLD WIDE SHF TOP LIST 10368 MHZ 14.02.1984																	
NR CALL WW-QTH E-QTH WKD TROPO						NR CALL WW-QTH E-QTH WKD TROPO						NR CALL WW-QTH E-QTH WKD TROPO					
1	16ZAU/P	JN63	GD	17	832	25	14FKD/4	JN54	FE	6	260	49	OK1AIY/P	J070	HK	2	285
2	I3CLZ/3	JN55	FF	13	571	26	H89MDP/P	JN47	EH	6	205	50	DJ6XV	J031	DL	2	121
3	YU3JN/3	JN65	GF	13	563	27	F060H/P	JN37	DH	6	184	51	DF1EQ	J031	DL	2	74
4	I4KCC/6	JN63	GD	12	563	28	IW3QCV	JN65	GF	6	290	52	DL0SO/A	J031	DL	2	65
5	I4CHY/4	JN54	FE	11	633	29	DB6NT	J050	FK	6	285	53	DF1EQ/P	J031	DL	2	63
6	I3ZJL/3	JN55	FF	11	572	30	H89MIO/P	JN37	DH	6	217	54	DJ6TA	J030	DK	2	63
7	IWA4KY/P	JN54	FE	11	570	31	OE2BM/2	JN67	GH	5	153	55	OE1WEB	JN88	II	2	50
8	I4QIG/4	JN54	FE	11	440	32	OE8JDK/8	JN66	GH	5	127	56	PA0FRE	J021	CL	2	10
9	YU3UR1	JN76	HG	10	344	33	DL3NQ	JN49	EJ	5	113	57	DB8FP/P	J040	EK	1	62
10	DJ4YJ/P	JN47	EH	9	358	34	DK0NA	J050	FK	4	285	58	SM0DYE	J099	JT	1	60
11	I4BER/P	JN54	FE	9	340	35	PA0JME	J021	CL	4	220	59	OE1CHC/3	JN88	II	1	54
12	YU3TAL	JN65	GF	9	322	36	FE16HG	J021	CL	4	215	60	OE3PUW/3	JN88	II	1	54
13	I2BBH/2	JN44	EE	9	237	37	PA2DRV	J021	CL	4	215	61	OK1KTL/P	J060	GK	1	42
14	H89MIN/P	JN37	DH	8	314	38	DK7GN/P	JN48	EI	4	166	62	OE3GRA	JN88	II	1	37
15	I1ANP/1	JN44	EE	8	214	39	OE3XUA	JN77	HH	4	77	63	SM5CPD	J089	IT	1	32
16	G3LQR	J002	AM	7	376	40	SM0DFP	J089	IT	4	60	64	I2DZG/2	JN45	EF	1	27
17	I4AOR	JN54	FE	7	320	41	OH2BWL	KP20	WU	4	57	65	DL0UL/P	JN57	FH	1	24
18	I4ZT0/4	JN54	FE	7	290	42	IW3EYG	JN55	FF	3	254	66	OE3POU	JN78	HI	1	21
19	PA0CRA	J022	CM	7	268	43	OE5KE/5	JN68	GI	3	174	67	OE3EFS	JN78	HI	1	21
20	PA0EZ	J022	CM	7	262	44	ON6UG	J011	BL	3	174	68	DK3UC	J053	FN	1	17
21	DJ7FJ/P	JN37	DH	7	243	45	DH4NAG	J050	FK	3	171	69	LABAK	J038	DS	1	16
22	PA2DOL	J021	CL	7	217	46	DB4BB	J043	EN	3	132	70	DF2CA	J043	EN	1	15
23	H89AJF	JN47	EH	7	204	47	OE6L0G	JN76	HG	3	127	71	OE1KTC	JN88	II	1	12
24	DL7QY	JN59	FJ	7	171	48	YU3CAB	JN76	HG	3	107	72	OE1KTC/5	JN68	GI	1	5

WORLD WIDE EHF TOP LIST 24192 MHZ 14.02.1984																	
NR CALL WW-QTH E-QTH WKD TROPO						NR CALL WW-QTH E-QTH WKD TROPO						NR CALL WW-QTH E-QTH WKD TROPO					
1	DJ7FJ/P	JN47	EH	5	170	4	OE2BM/2	JN67	GH	2	153	7	DL7QY	JN59	FJ	1	13
2	H89MIN/P	JN37	DH	3	178	5	F060H/P	JN37	DH	2	89	8	OE6L0G	JN76	HG	1	1
3	DJ4YJ/P	JN57	FH	2	243	6	DK0NA	J050	FK	1	34	9	A	----	----	1	0

DEADLINE IN 1984 (1)15.2. (2)15.5. (3)15.8. (4)15.11.

WKD=NUMBER OF SQUARES WORKED

+OP. HAS DIED

PRINTED BY DL 7 QY

WORLD WIDE VHF UHF SHF TOP LIST

ONLY A SINGLE CALL SIGN AND A SINGLE QTH COUNT FOR THE LIST (MAY BE /P BUT MUST ALWAYS BE THE SAME). SQUARES WORLD WIDE ARE VALID. QSO'S VIA PASSIVE REFLECTORS COUNT BUT NOT THOSE VIA REPEATERS OR SATELLITES. THE LIST IS PUBLISHED FOUR TIMES PER YEAR - DEADLINES ARE GIVEN AT THE FOOT OF THE LIST. SEND YOUR SCORE ON THE FORM P. 55. OR ENCLOSE IT WITH YOUR ACTIVITY REPORTS TO DL7QY.

FÜR DIE TOP LISTE ZÄHLT NUR EIN RUFSZEICHEN UND EIN QTH (KANN /P SEIN, MUSS ABER IMMER DASSELBE SEIN). GÜLTIG SIND ALLE FELDER WELTWEIT. NUR QSO'S ÜBER PASSIVE REFLEKTOREN SIND GÜLTIG, SOLCHE ÜBER RELAYS ODER SATELLITEN ZÄHLEN NICHT. DIE LISTE WIRD 4 MAL PRO JAHR VERÖFFENTLICHT - DER JEWEILIGE REDAKTIONSSCHLUSS BEFINDET SICH IN DER FUSSLEISTE JEDER TOP LISTE. SENDEN SIE IHREN QTH-KENNERSTAND AUF SEITE 55 BEFINDLICHEM FORMBLATT ODER MIT IHREM AKTIVITÄTSBERICHT AN DL7QY.

EIRE 1984 EXPEDITION 4-18 August

The Derbyshire Hills Contest Group are organising an expedition to the Republic of Ireland to coincide with the Perseids meteor shower. Operation is planned on the 70, 144, 432 MHz, 1.3, 2.3 and 10 GHz bands with a station on the VHF Net to make skeds. Tropo operating frequencies are 70.220, 144.325, 432.230, 1296.230, 2320.230 MHz and 10.100 GHz. Operation on the 2.3 and 10 GHz bands will probably be by sked only or as arranged on the lower bands. For meteor scatter operation two stations may operate simultaneously if there is sufficient demand with the frequencies to be used being 144.444 MHz (+144.154 MHz if a second station is used) for SSB and 144.144 MHz for CW. Operation will be from WL square for the VHF stations and the UHF stations will initially be located at this site but may also operate from the adjacent WM, VM and VL squares. Meteor scatter skeds can be made in advance by contacting Nigel, G4VVZ. If anyone is interested we would be also willing to try meteor scatter tests on 432 MHz and anyone interested in this should contact David, G8ROU who will also provide further information on any of the other bands that we are using.

Nigel Wilson G4VVZ, 8, Greythorn Drive, West Bridgford, Nottingham NG2 7BG, Tel: 0602 231900.

David Hardy G8ROU, Thorntree House, Wensley, Matlock, Derbyshire DE4 2LL, Tel: 0629 732620.

