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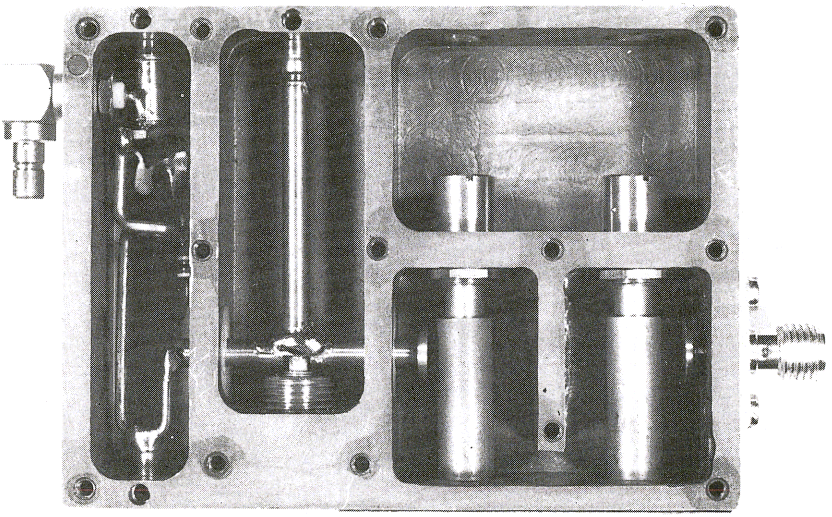

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COVERPICTURE: DL7 QY's Varactor multiplier (s. page)

CONTENTS:

TECHNICAL **R**EPORTS Edited by DL 7 APV

Announcement for 1984

Vorankündigung für 1984

1) stripe line filter for 13, 9, 6, and 3 cm
Microstripfilter für 13, 9, 6, 3 cm

2) GaAs Fet amplifier with 2 x NE 72083 for 23, 13 and 9 cm (24 dB gain) noice matched or as a linear amplifier with 60mW output
GaAs Fet Verstärker mit 2x NE 72083 für 23, 13 und 9cm (24 dB gain) rauschangepasst oder als Linearverstärker mit 60mW Ausgangsleistung

3) 6cm two stage GaAs Fet amplifier with 2x NE72083, 24 dB gain, as a preamp. or with 60mW output
6cm zweistufiger GaAs Fet Verstärker mit 2x NE72083, 24 dB gain, als Vorstufe oder Linearverstärker mit 60mW Ausgangsleistung

4) two stage GaAs Fet amplifier for 9cm with NE 8001 and NE 8004 with 2 W output
2 stufiger GaAs Fet Verstärker für 9cm mit NE 8001 und NE 8004 mit 2 W Ausgangsleistung

5) 9cm power amplifier with GaAs Fet NE 8008 or FLM 3742-5 with 5W output and 8.5 dB gain
9cm Endstufe mit GaAs Fet NE 8008 oder FLM 3742-5 mit 5W Ausgangsleistung und 8,5 dB Verstärkung

6) 6cm 3 stage GaAs Fet amplifier 22 dB gain, with FSX 52, FLC 151 and FLM 6472-5 5W output
6cm 3 stufiger GaAs Fet Verstärker 22 dB Verstärkung mit FSX 52, FLC 151 und FLM 6472-5 5W Ausgangsleistung

7) 13 and 9cm amplifier with low cost tansistor (HP) HXTR 3101 (15 DM) with 9 to 8 dB gain
13 und 9cm Verstärker mit billig Transistor HXTR 3101 von HP (ca. 15DM) mit 9 bzw. 8 dB Verstärkung

8) 13cm linear amplifier (4 stage) with 7W output and 30 dB gain with 2x NEL 230353 in the pa
13cm Linearverstärker (4 stufig) mit 7W Ausgangsleistung bei 30 dB Verstärkung mit 2x NEL 230353 in der PA

9) 23cm transistor power amplifier with 10, 20 and 40W with NEL 1308 and 1320 at the pa
23cm Transistor PA für 1o, 2o und 40W mit NEL 1308 und 1320 in der PA

10) multiplier 70cm/3cm with Step Recovery diode and stripe line filter 0,5W in 12mW output
Vervielfacher 70cm/3cm mit Speicherschaltdiode und Microstripfilter 0,5W in 12mW Ausgangsleistung

11) 3cm amplifier 11 dB gain with NE 70083 40mW output
3cm Verstärker 11 dB Verstärkung mit NE 70083 40mW Ausgangsleistung

IC 402 Modification Supplements

by Kor de Vries, PA Ø KDV

E. : The modifications by DC Ø HW / G 8 LRH (Dubus 1/83 page 10-14) are very satisfactory, but there are some other, minor problems.

When the key is plugged into the IC 402, at receive you will loose af. This is due to the fact, that jack j4 switch disconnects the BFO ground path.

Since the mf-gain and noice have been significantly reduced, the side-tone in cw transmitting is now a real strain on the ears, unless af-gain is turned down.

These two problems can be solved in a few minutes:

Connect an insulated wire from jack j4- c6 to the cw switch only free pin left. At cw receive the BFO ground-path is now reestablished via the cw switch.

Cut into lead of R49 upper side and insert a 500 K resistor. This will reduce the audio side tone level satisfactory.

To carry out this modifications it is neccessary to have a print lay out of the main board, which is in the manual.

D. : Die Änderung nach DC Ø HW /G 8 LRH (Dubus 1/83 Seite 10-14) sind sehr gut, aber es gibt noch einige andere, kleine Probleme.

Wenn die Taste ins Gerät gesteckt ist, verliert mann NF-Rauschen beim Empfang. Ursache ist der Schalter in J4, der die Masse des BFOs ausschaltet. Bei den Änderungen hat sich die NF-Verstärkung und das Rauschen so erniedrigt daß nun der Mithörton viel zu laut ist.

Diese zwei Probleme können in nur einigen Minuten gelöst werden:

Es wird ein Draht zwischen J4-C6 und dem CW-Schalter zu dem unbenutzten Anschluß gelegt. Beim Empfang wird nun die Masse des BFOs wieder zugeschaltet durch den CW Schalter.

R49 wird unterbrochen an der Oberseite und ein 500 k Widerstand dafür dazwischengelötet. Damit wird der Mithörton genügend gedämpft.

Man sollte unbedingt eine Beschreibung der Hauptplatine zur Verfügung haben um diese Änderungen durchzuführen, sie ist in jedem Handbuch enthalten.

Correction to ETM-8c for MS

by Erik Cechota, OE 3 CEW

E. : It is better to use a 22K spindle potentiometer in series to P2 (25 K lin.) at the range from 300 to 1500 lpm to calibration.

At the calibration it is correct 12x PARIS = 12 Wpm or 60 Lpm and 1x PARIS = 50 point length. sorry

D. :Für die Regelung der MS-Geschwindigkeit in einem Bereich von 300-1500 lpm hat sich ein 22K Spindelpot. mit P2 (25K lin.) in Serie bei der Eichung als besser erwiesen.

Bei der Eichung hätte es heißen sollen : 12x PARIS = 12 WPm oder 60lpm 1x PARIS = 50 Punktlängen usw.

PART 2

Figure 19 shows the cascade connections of the device's noise and S-parameter equivalent circuits. The circuit should be designed so that matching is obtained for the input-output impedance given to this equivalent circuit. After the design goals have been chosen, the noise figure, NF, and impedance matching networks are calculated. The circuits and characteristics of an amplifier designed by this method are shown in Figures 20(a) and 20(b).

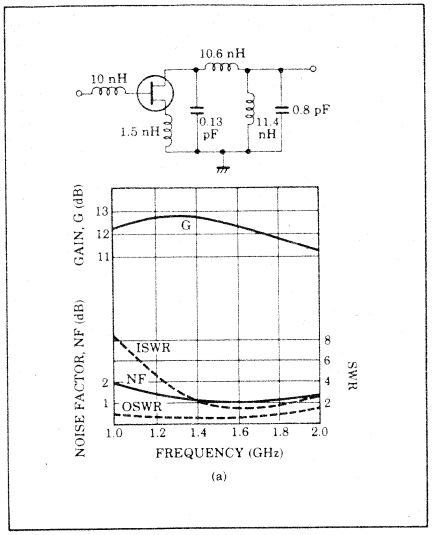


Figure 20(a). Lumped Element Matching Network

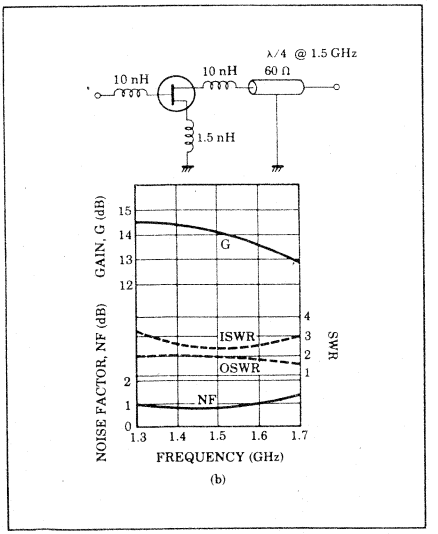


Figure 20(b). Transmission Line Matching Network

(B) Ultra-wide band amplifiers using GaAs FETs.

The method normally used to achieve wide-band amplification involves applying negative feedback to the transistor. This method improves the VSWR and dynamic range characteristics and also ensures very flat gain response. Another method for achieving wide-band amplification involves using a balanced amplifier design which ensures good VSWR. This method is widely used in applications that cover frequency ranges of one to several octaves in the higher frequency bands. However, it is difficult to obtain a very wide band using a 3 dB, 90° coupler while also trying to ensure good input-output VSWR in ranges exceeding 10 octaves, or in the low frequency ranges. Figure 21 shows an equivalent circuit for the balanced amp.

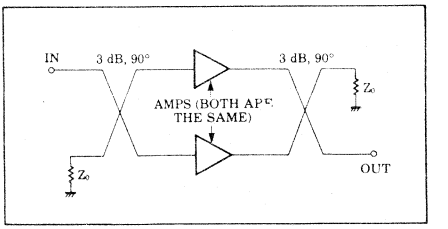


Figure 21. Balanced Amplifier Allowing Wide-Band Amplification

The use of GaAs FETs with negative feedback is an effective method of ensuring low cost and simplicity for bandwidths exceeding 10 octaves.

Figure 22 shows the basic circuit for negative feedback amplifiers. For the sake of simplicity, the DC bias circuit and the coupling capacitors have been omitted. If the characteristics of the GaAs FET to be used are suitable at frequencies of 10 MHz to 2 GHz, the device's parasitic elements will be small in size, and the equivalent circuit can be simplified to that shown in Figure 23. The simplified equivalent circuit shown in Figure 24 is obtained by adding the negative feedback resistor shown in Figure 22 to the circuit in Figure 23. The S-parameters may now be calculated for this situation.

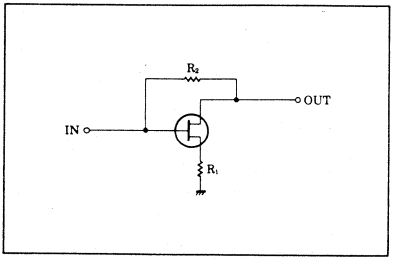


Figure 22. Basic Feedback Amplifier Circuit

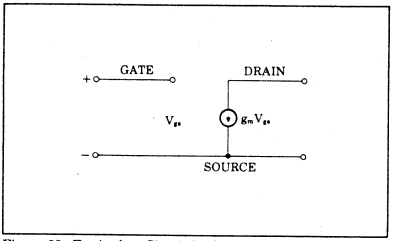


Figure 23. Equivalent Circuit for GaAs FET at Low Frequency

The admittance matrix can be determined by using the following expression.

$$\begin{bmatrix} I_1 \\ I_2 \end{bmatrix} = \begin{bmatrix} \frac{1}{R_2} & -\frac{1}{R_2} \\ \frac{g_m}{1 + g_m R_1} - \frac{1}{R_2} & \frac{1}{R_2} \end{bmatrix} \begin{bmatrix} V_1 \\ V_2 \end{bmatrix} \quad (13)$$

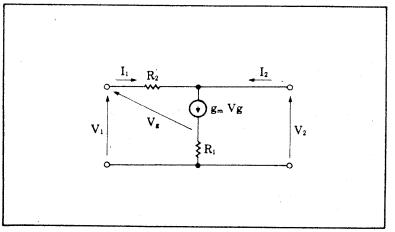


Figure 24. Simplified Feedback Amplifier Equivalent Circuit

If at this time, the input-output for Figure 24 is terminated at Z_0, the S matrix can be easily obtained by using expression (13).

$$S_{11} = \frac{1}{\Delta}\left[1 - \frac{g_m Z_0^2}{R_2(1 + g_m R_1)}\right], \quad (14)$$

$$S_{22} = \frac{1}{\Delta}\left[1 - \frac{g_m Z_0^2}{R_2(1 + g_m R_1)}\right] \quad (15)$$

$$S_{12} = \frac{1}{\Delta}\left[\frac{2Z_0}{R_2}\right] \quad (16)$$

$$S_{21} = \frac{1}{\Delta}\left[\frac{-2g_m Z_0}{1 + g_m R_1} + \frac{2R_0}{R_2}\right] \quad (17)$$

$$\Delta = 1 + \frac{2Z_0}{R_2} + \frac{g_m Z_0^2}{R_2(1 + g_m R_1)}$$

Assuming that a negative feedback amplifier must improve VSWR, the input and output reflection coefficient must be 0, then expressions (14) and (15) become

$$S_{11} = S_{22} = 0$$

From this, the following expression can be derived:

$$1 + g_m R1 = \frac{g_m Z_0^2}{R_2} \quad (18)$$

When expression (18) is substituted into expressions (16) and (17), the following results are obtained

$$S_{21} = \frac{Z_0 - R_2}{Z_0} \quad (19)$$

$$S_{12} = \frac{Z_0}{R_2 + Z_0} \quad (20)$$

Then, using expression (18), R_1 is obtained as follows

$$R_1 = \frac{Z_0^2}{R_2} - \frac{1}{g_m} \quad (21)$$

Since the transconductance, g_m, in a GaAs FET is not usually large enough, the equation $S_{11} = S_{22} = 0$ will not be satisfied. However, the range of the g_m values needed to satisfy the expression can be calculated. If $R_1 = 0$ then

$$S_{21} = 1 - g_m Z_0 \quad (22)$$

is obtained, and thus

$$g_m|min = \frac{1 - S_{21}}{Z_0} \qquad (23)$$

For example, consider the design of an amplifier with 10 dB gain. Logically, if we take the input-output VSWR as a low value and the characteristic impedance, Z_0, as 50Ω, when $S_{11} = S_{22} = 0$, then substituting this in expression (23) yields,

$$\frac{1 - (-3.16)}{50} = 0.082\ S$$

It will therefore be acceptable if $g_m \geq 83mS$.

Figure 25 shows the characteristics of an ultra-wide band amplifier designed using this method.

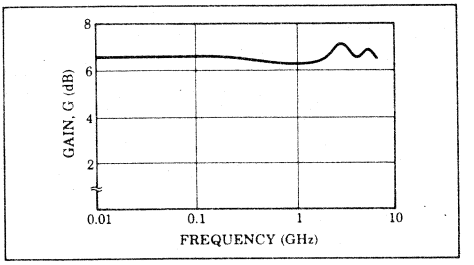


Figure 25. GaAs FET Feedback Amplifier

6. Relation of Ambient Temperature, Frequency and Noise Temperature in GaAs FETs

Up to this point, only the applications of GaAs FETs in amplifiers have been examined. Now, the discussion will turn to the relationship between ambient temperature and noise temperature.

Noise in a GaAs FET is chiefly thermal noise. Since there is rarely shot noise, the noise temperature in an amplifier changes greatly in response to the ambient temperature. Figure 26 shows the relationship of operating temperature and the noise temperature for the NE24406. The noise temperature, T_e, and ambient operating temperature, T_a, can be shown to correspond to the following:

$$T_e = K \frac{\omega C_{gs}}{g_m} T_a \qquad (24)$$

Figure 26 shows the linearity in the relationship between the ambient operating temperature and the noise temperature. By taking advantage of this characteristic, a super low-noise amplifier can be produced by cooling the amplifier with carbonic gas, liquid nitrogen or liquid helium.

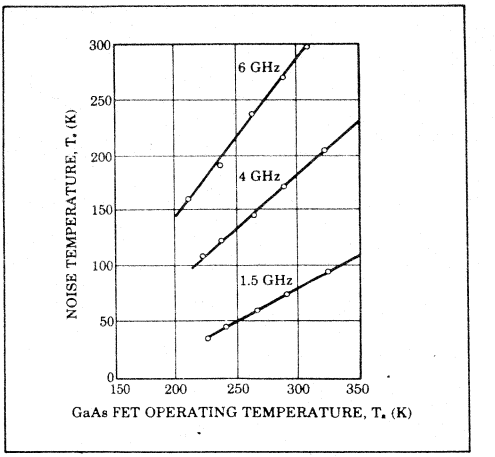


Figure 26. T_e vs. T_a in the NE24406 and NE24483

7. Power GaAs FET Applications

For the small signal GaAs FETs discussed so far, we have covered only those signal levels in the range in which operating characteristics are not dependent on signal voltage or signal current. In other words, each terminal's voltage and current was in a range which satisfied a linear relationship. As the signal level increases, this relationship is no longer satisfied and we have a situation known as large signal operation. Of course, even if the element is in non-linear operation, the electrophysical quantity of the signal frequency is still in a linear relationship if non-linearity is small. Thus, the S-parameter relationship in a GaAs FET can be determined for small signal operation.

Because the voltage and current-to-terminal conditions which define each parameter are not fixed for large signal operation, it is difficult to determine parameters indicating a linear relationship.

Figure 27 is a simplified diagram showing the small and large signal operation of a Class A GaAs FET. Load lines A and B indicate the optimum conditions for maximum input and output when the input gate signal voltage is V_{GA} and V_{GB}.

The optimum load for small signal operation is equal to the drain conductance $(\partial I_{DS}/\partial V_D)$. In large signal operation, however, the input signal level will increase and gate voltage, V_G, will enter the nonlinear zone. The output current, which is the drain current, I_D, will then reach its upper limit and the load line gradient must increase to increase the output power. Therefore, when designing a circuit, it is necessary to use data which takes all factors into consideration.

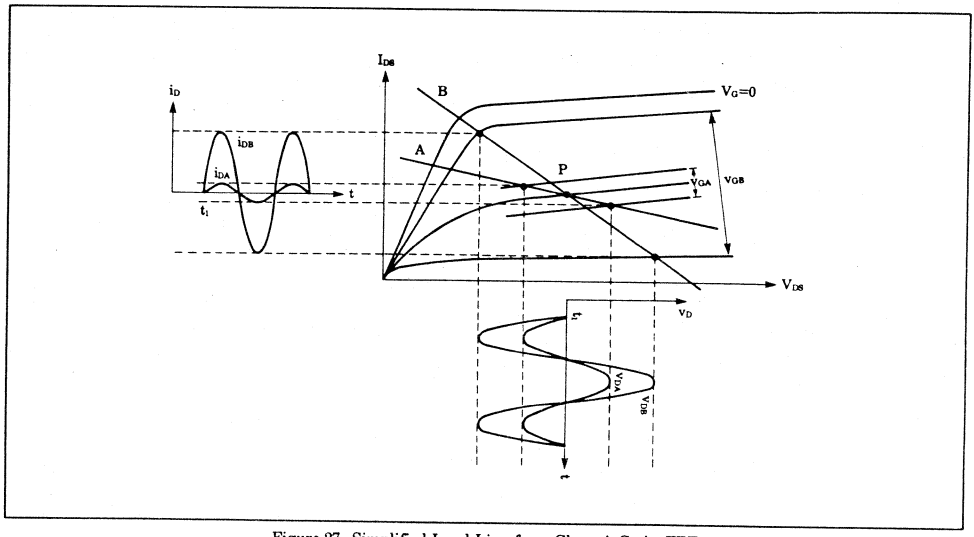


Figure 27. Simplified Load Line for a Class A GaAs FET in Small and Large Signal Operation

8. Operating Methods for Power GaAs FETs

(A) Introduction

An important factor to consider when working with Power GaAs FETs is power GaAs FETs are basically a group of small signal GaAs FETs connected in parallel so that they can handle a large power source. Therefore, they have an extremely high transconductance. Another important and necessary factor to consider is at which bias point operation takes place. Consideration must be given as to whether there is adequate bias resistance to suppress the gate current. As mentioned previously, Schottky gates are used in a GaAs FET, and there is the possibility that the operating point will cause an excessive current to flow across the gate.

The gate structure in a GaAs FET is very delicate, with a typical gate length of 0.5μm to 1.0μm. In some cases, just a slight current flow across the gate will have a current density of 10^6A/cm^2. With such high current density, the gate will eventually fail.

Figure 28 shows the change in input-output characteristics due to the increasing gate current. Here, the operating drain voltage is constant, but direct current begins to flow in the opposite direction at the gate when the input signal level is increased sufficiently. When the input signal power increases, the Schottky gate is biased in the forward direction and gate current begins to flow in that direction. Caution must be taken at this time since the amount of gate current has a bearing on whether or not the FET will be destroyed.

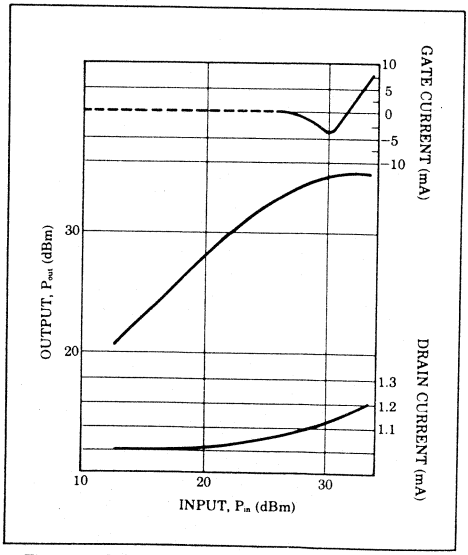


Figure 28. Relationship of Input-Output Characteristics to Increasing Gate Current

(B) Bias Circuits

Table 1 shows the maximum permissible gate current for each of NEC's high power GaAs FETs. Care should be taken at all times when planning bias circuits and input power to ensure that these values are not exceeded.

NE8681	3.0 mA
NE8682	6.0 mA
NE8684	10.0 mA
NE8688	15.0 mA
NE8691	1.3 mA
NE8692	2.6 mA
NE8694	5.0 mA

Table 1: Maximum Permissible Gate Currents for the NEC NE868 and NE869 Series

One thing that is very basic when biasing power GaAs FETs is the need for increased impedance of the gate bias circuit. The example in Figure 29 shows a type of feedback circuit incorporating a resistor in series with the bias circuit which produces a drop in potential when the current across the gate begins to increase, and adds to the gate series bias. By inserting a low pass filter, such as an RFC or capacitor, unnecessary oscillation or phase shift will be prevented.

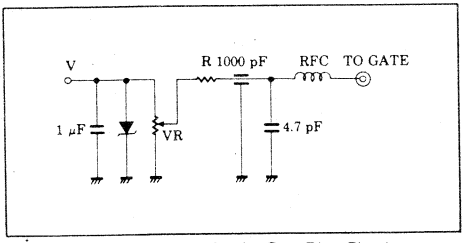


Figure 29. Example of a Gate Bias Circuit

Another important factor is the order in which bias is applied. It is generally disadvantageous, both thermally and electrically, to self-bias a power GaAs FET. Therefore, a positive and negative dual power source should be used to bias the drain and gate separately. For a GaAs FET, maximum current will flow when the gate voltage is at zero. With a high output level FET, I_{DSS} is sometimes greater than several amps and since typical g_m is extremely high, oscillation will occur and the FET will be destroyed either thermally or electrically. For this reason, any appreciable flow of high current must be prevented from reaching the drain. The bias method used must be one whereby negative voltage is applied to the gate first, after which positive voltage is applied to the drain. The following is a detailed example of this method.

(1) Add a negative potential to the gate which is close to -5V or to the pinch off voltage.

(2) Specify the drain voltage in such a way that it moves as rapidly and smoothly as possible from zero volts to the preset V_D. If there is no possibility of a surge voltage being produced and the drain voltage is completely stable, add the preset voltage instantaneously.

Figure 30 gives three recommended bias circuits for biasing power FETs. Figure 30(a) is an excellent bias circuit because there are no limitations requiring that either positive or negative voltage be applied to the circuit first. Drain voltage, V_D, will reach its preset value according to the time constant determined by C and R. When the power source is OFF, the electrical charge will pass through diode D_1 and return quickly to the power source side, thus the FET can then be safely biased.

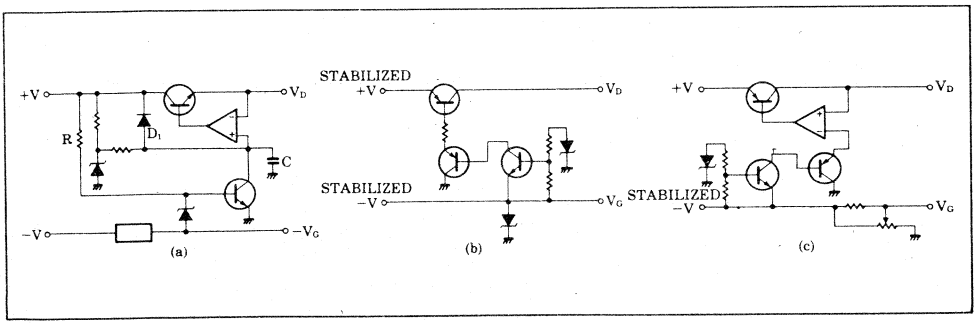


Figure 30. Power GaAs FET Bias Circuits

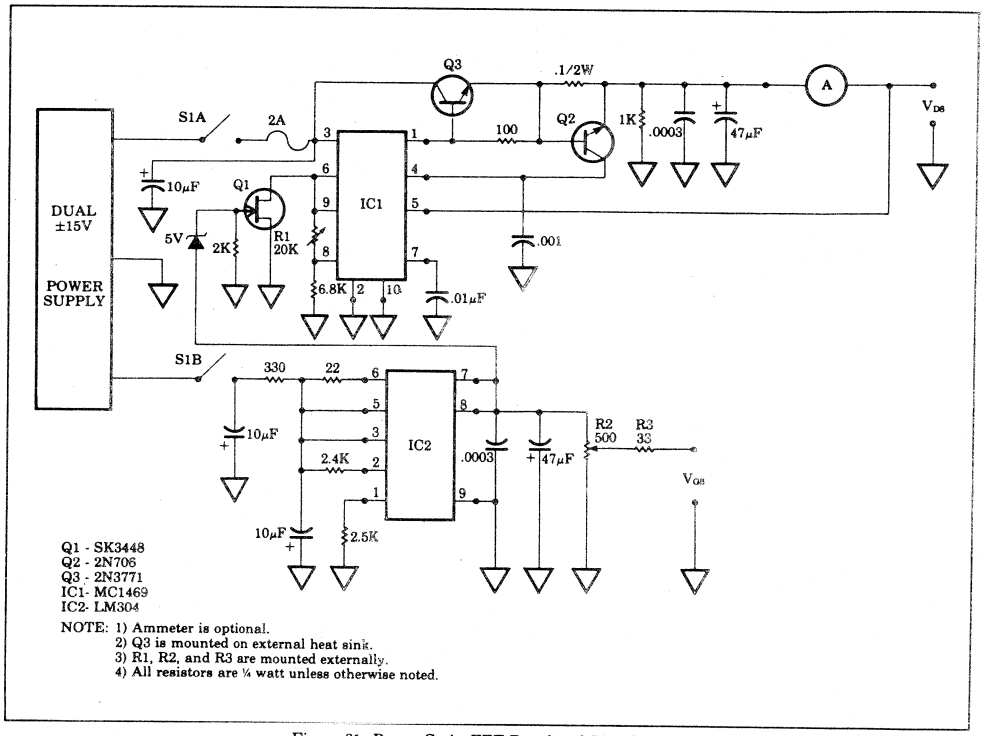


Figure 31. Power GaAs FET Regulated Bias Supply

Figure 31 shows a bias circuit recommended for biasing a multistage (5 stages) power GaAs FET amplifier.

9. Examples of Application Circuits Using NEC's NE868 Series Power GaAs FETs

With the exception of the NE868196 and the NE868296, NEC's NE868 series using multiple chips contain internal matching network (IMN) circuits within the packages. The IMNs are not intended to match the devices to 50Ω but to facilitate and reduce the external matching networks. The NE868898 is a state-of-the-art device with input and output matching circuits close to VSWR (1:2.5 to 1:3.0). The NE8684 and NE8688 series with internal matching circuits are identified by the numbers -4, -5, -6, -7 and -8. Each of these numbers indicates the center frequency at which the IMN circuit is optimized and tested. For example, -4 is at 4 GHz (3.5 GHz to 4.5 GHz) and -8 is at 8 GHz (7.5 GHz to 8.5 GHz).

Figures 32 to 48 relate typical characteristics and illustrate application circuits using an 0.8 mm thick teflon glass circuit board. The units used in these charts are millimeters (mm). The two solid lines in the diagrams' microstrip lines are locations for inserting chip capacitors. Figure 49 gives AM-PM conversion factors for the NE868 series. This data is particularly effective when designning a PCM transmitter. Figure 50 gives the standard characteristics for the third order distortion levels of the NE868898 transistor.

This report has been necessarily short but gives as complete an explanation as possible of current GaAs FET technology. Improvement of device characteristics is a major theme for applied technology and research in electronics throughout the world today. The reliability of the device has already been confirmed, so much so that there is little doubt that the FET will be used eventually at 20 GHz and higher frequencies.

There is no way of telling where the coming years of research will take the GaAs FET, but it is easy to predict that its use will be widespread, sweeping away almost every other device that has come before it.

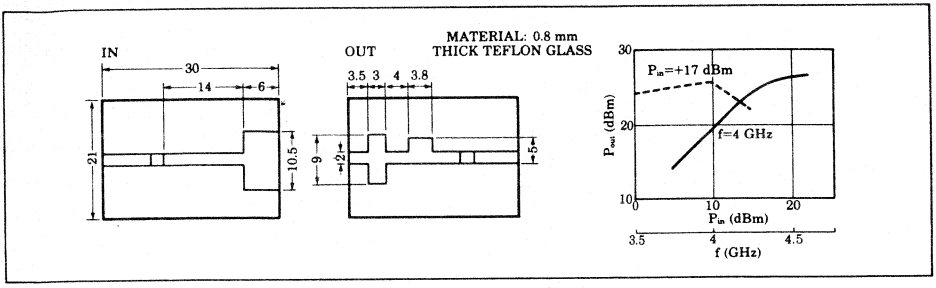


Figure 32. NE868196, 4 GHz Circuit

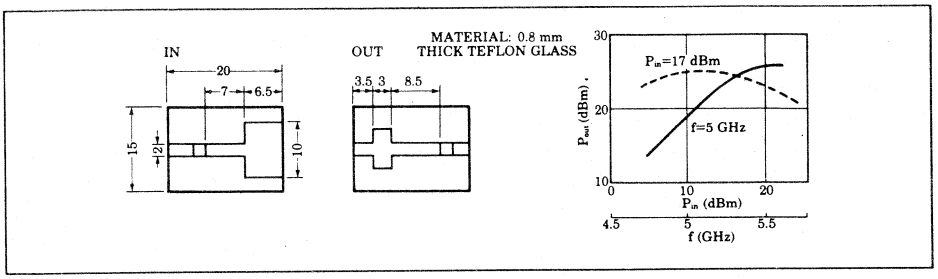


Figure 33. NE868196, 5 GHz Circuit

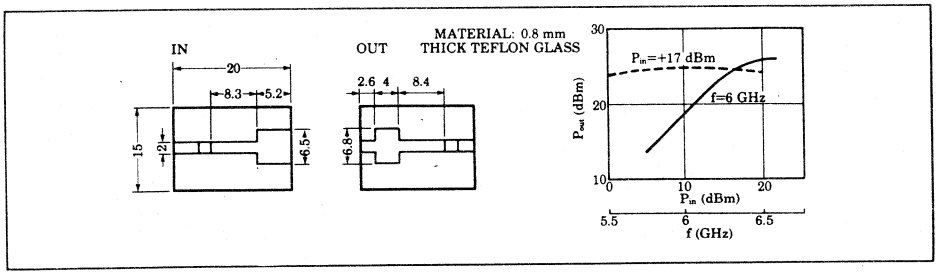


Figure 34. NE868196, 6 GHz Circuit

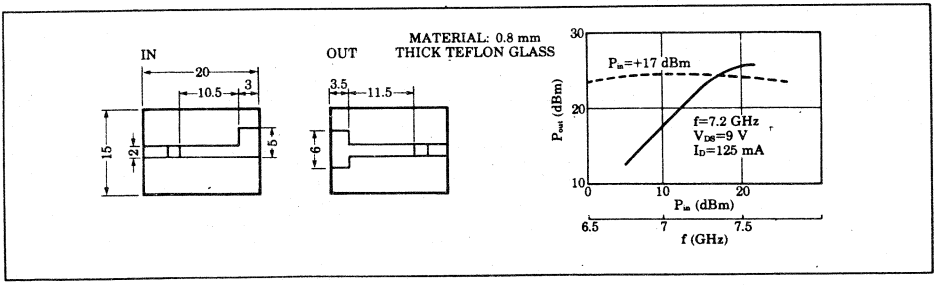


Figure 35. NE868196 Test Circuit (6.5 GHz and 7.5 GHz)

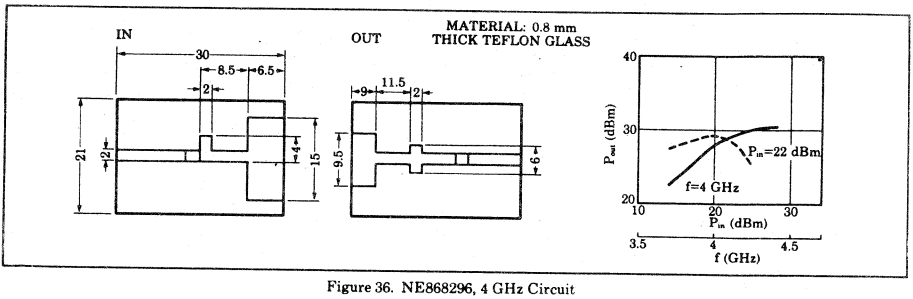


Figure 36. NE868296, 4 GHz Circuit

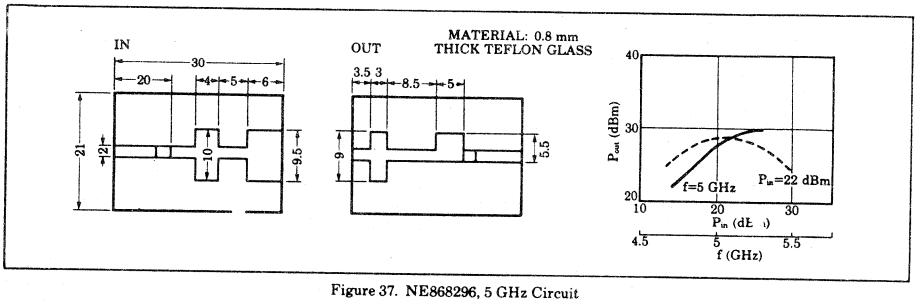


Figure 37. NE868296, 5 GHz Circuit

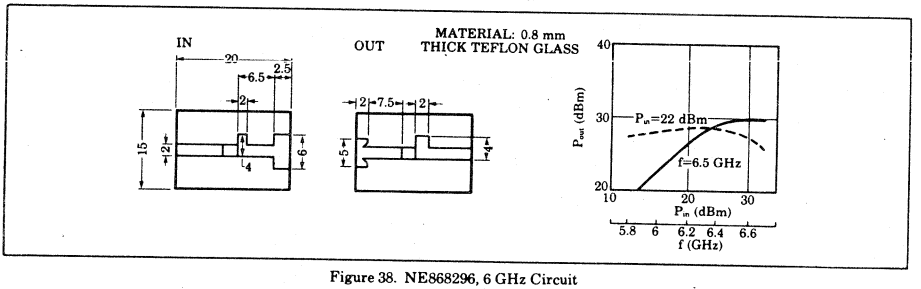


Figure 38. NE868296, 6 GHz Circuit

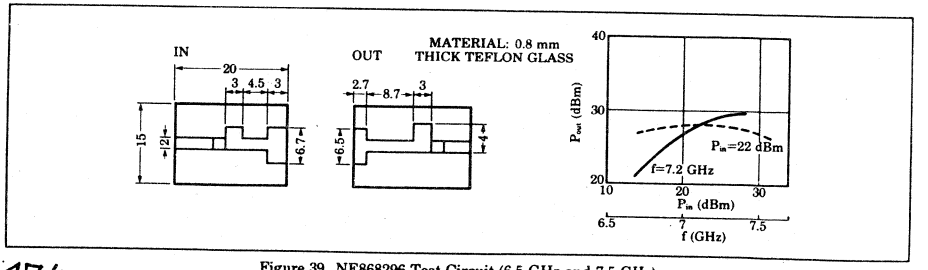


Figure 39. NE868296 Test Circuit (6.5 GHz and 7.5 GHz)

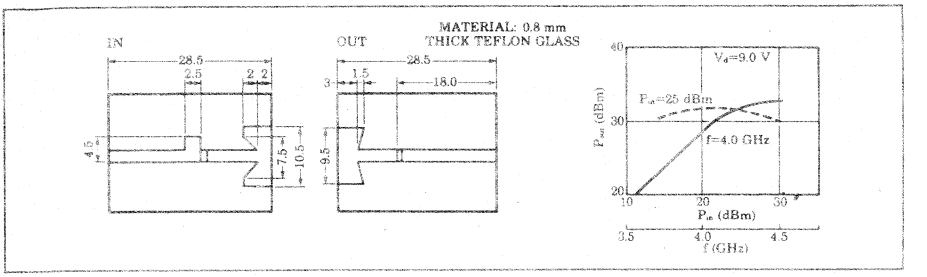


Figure 40. NE868495-4 Circuit

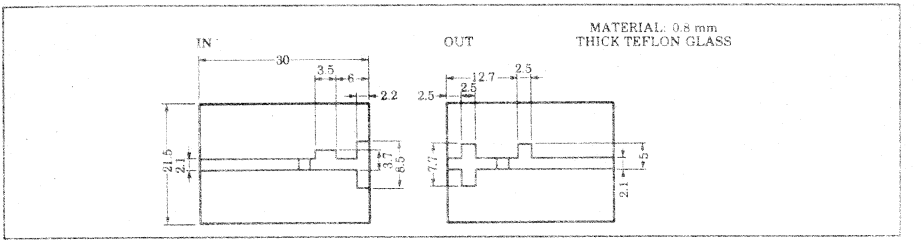


Figure 41. NE868495-5 Circuit

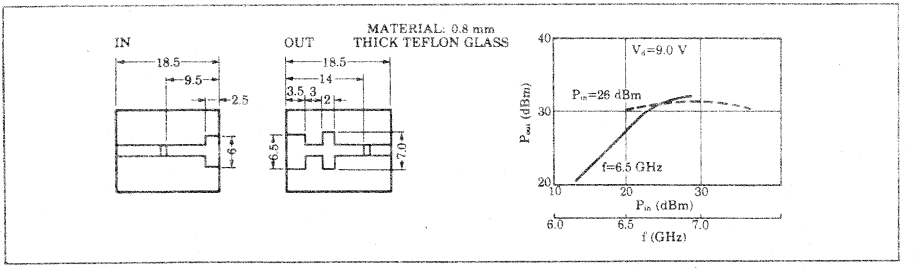


Figure 42. NE868495-6 Circuit

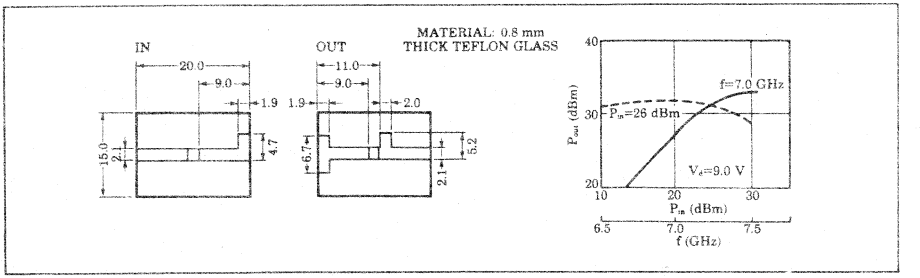


Figure 43. NE868495-7 Circuit

175

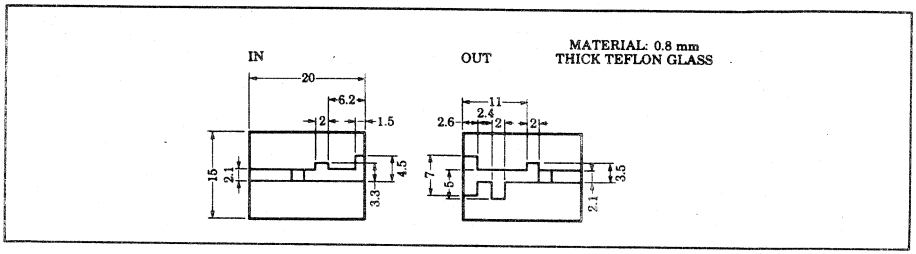


Figure 44. NE868495-8 Circuit

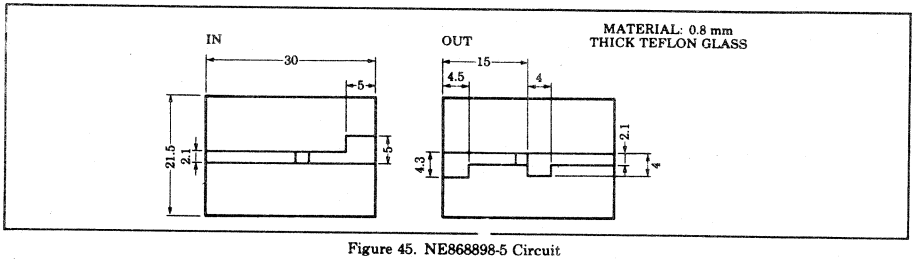


Figure 45. NE868898-5 Circuit

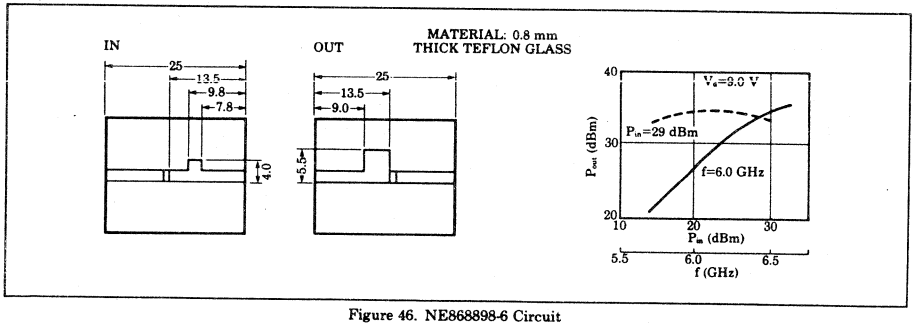


Figure 46. NE868898-6 Circuit

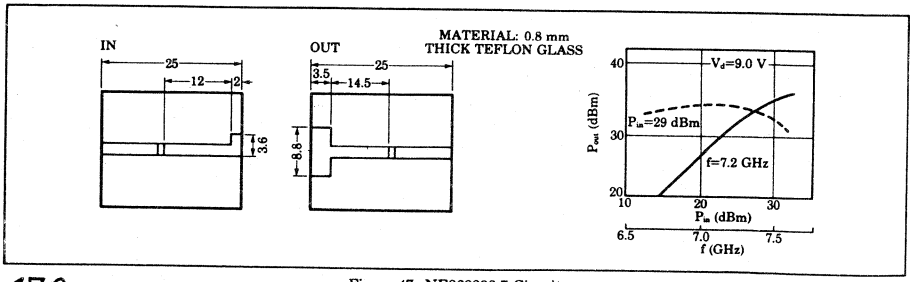


Figure 47. NE868898-7 Circuit

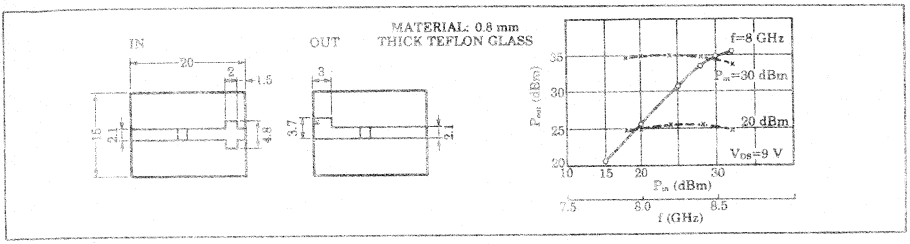


Figure 48. NE868898 Circuit

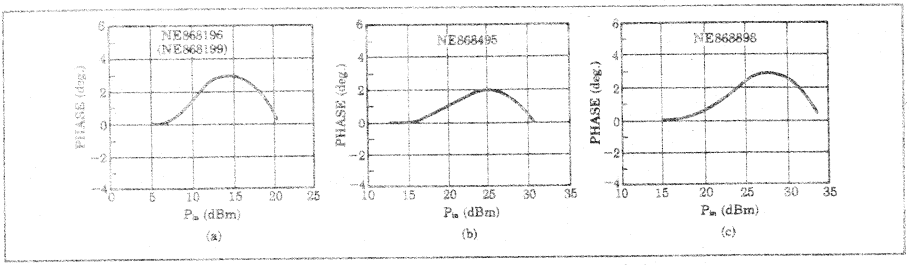


Figure 49. AM-PM Conversion Factors for the NE868 Series

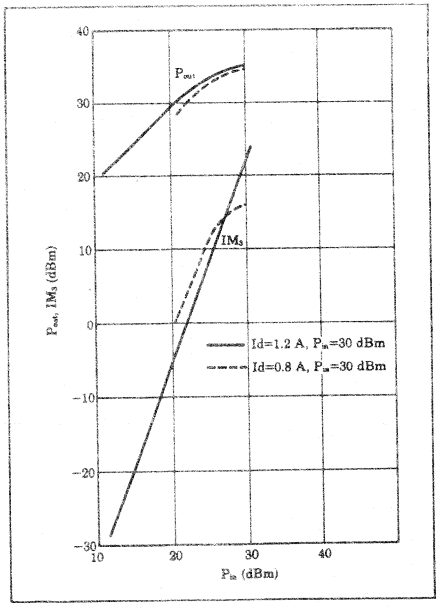


Figure 50. NE868898 Third Order Intermodulation Distortion

Referen es

[1] Masuo Fukuda, et. al., "Low Noise GaAs FET Amplifiers," MW77-21.

[2] Charles A. Lie Chti, et. al., MTT-22, No. 5, May 1974.

[3] Herman Sfatz, et. al., ED-21, No. 9, Sept. 1974.

[4] P. Bura, Electronics Letters, Vol. 10, No. 10, p. 181- , 16th, May 1974.

[5] L. Nevin, et. al., "L-Band GaAs FET Amp.," Microwave Journal, Apr. 1979.

[6] Eric Ulrich, "Use Negative Feedback to Slash Wideband VSWR," Microwaves, Oct. 1978.

[7] K. Honjo, et. al., "Broadband Internal Matching of Microwave Power GaAs MES FETs.," IE3, Trans, Mit. Jan. 1979.

[8] Y. Takayama, "A New Load-Pull Characterization Method for Microwave Power Transistors," 1976 MTT-S, Digest, p. 218-220, June 1976.

Deutsche Übersetzung folgt im nächsten Heft

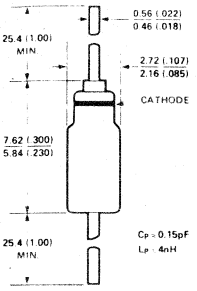
MULTIPLIER FROM 70cm TO 13, 9 AND 6cm

by Claus Neie, DL 7 QY

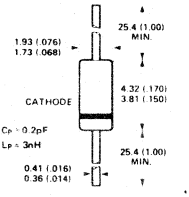
E. : This multiplier is useful to get IF-frequencies for linear mixer or as a direct transmitter multiplier. There are Step Recovery diodes used (fig. 1). The following description is for 13cm. For 9cm only L4 and L5 have to be changed to L4 ✕ and L5 ✕. For 6cm the dividing barrier with the window at the secondary part has to be removed, in the filter section has a stripe line filter replaced. The input power can be between 50mW to 5W. With 0.5 W input the output power is at 13cm 90mW, at 9cm 40mW and at 6cm about 18mW. It is possible to use this multiplier also for 3cm (about 12mW output), but the tests are not complet at this time. Results of this tests are following in the next Dubus. The case form of the diode can be outline 40 or 31 (fig. 1). The dates are from HP, but also similar Step Recovery diodes from other companies are useful. For 13cm use type 800 or 801, for 9cm 0805 or 0806 and for 6cm 0810 or 0811. Fig. 2 shows the circuit. At fig. 3-7 the mechanical details are shown. Fig. 10 shows the version with the stripe line filter. The mechanical filter details shows fig. 11 . If there is a great call for this filter, it is possible to get it by me for own costs. The electric dates of the filter are shown at fig. 14-16. Fig. 14 shows the pass band, fig. 15 the near selection, fig. 16 far-off selectivity. Fig. 12 shows a multiplier for 6cm and fig. 13 for 9cm. Fig. 17 shows a single filter where the measurement was done.

D. : Nachfolgend beschriebener Frequenzvervielfacher kann sowohl zur Aufbereitung von Oszillatorsignalen zur linearen Weiterverarbeitung (Transverter, Konverter) oder auch direkt als Sendevervielfacher benutzt werden. Zur Verwendung gelangen (Fig. 1) Step Recovery Dioden. Die nachfolgende Baubeschreibung gilt für 13cm. Bei 9cm sind lediglich L4 und L5 auszutauschen gegen L4 ✕ und L5 ✕ . Bei 6cm Betrieb muß die Trennwand mit Koppelschlitz im Sekundärteil ausgefräst werden; in der Filterkammer findet dann ein 4-poliges Microstripfilter Platz. Die Ansteuerleistung des Vervielfachers kann sich im Bereich von 50mW-5W bewegen. Bei einer Ansteuerleistung von 0,5W beträgt die Ausgangsleistung etwa bei 13cm 90mW; bei 9cm 40mW und bei 6cm etwa 18mW. Der gleiche Vervielfacher soll auch noch für 3cm zum Betrieb gebracht werden (Ausgangsleistung etwa 12mW) bei Frequenz Ver 2ø zigfachung. Die Tests sind aber noch nicht abgeschlossen. In einem der nächsten Dubus Hefte wird darüber berichtet werden. Als Gehäuseformen der Varactor Diode können sowohl Outline 40 oder 31 Verwendung finden (Bild 1). Die Datenangaben sind von HP, es können aber auch ähnliche Step Recovery Dioden verwendet werden. Für 13cm empfiehlt sich die Type 800 oder 801; für 9cm 0805 oder 0806 und für 6cm 0810 oder 0811. Bild 2 zeigt das Schaltbild. In Bild 3-7 sind die mechanischen Teile dargestellt. Bild 8-9 zeigt den Aufbau. Bild 10 zeigt die 6cm Version mit eingebautem Microstripfilter. Die mechanischen Leiterabmessungen zeigt Bild 11. Sollte größere Nachfrage nach dem dargestellten Filter sein, wenden Sie sich an DL7QY, kann das Filter gegen Kostenerstattung geliefert werden. Die elektrischen Daten des Filters sind in Bild 14-16 dargestellt. Bild 14 Durchlassbereich, Bild 15 Nahselektion, Bild 16 Weitabselektion. Bild 12 zeigt einen Vervielfacher für 6cm und Bild 13 für 9cm. Bild 17 zeigt ein einzeln aufgebautes Filter, an welchem die Messungen vorgenommen wurden.

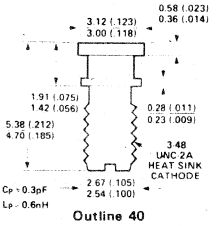
Package Dimensions



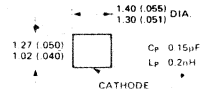
Outline 11



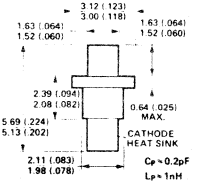
Outline 15



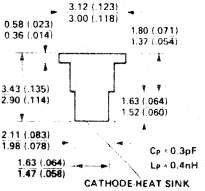
Outline 40



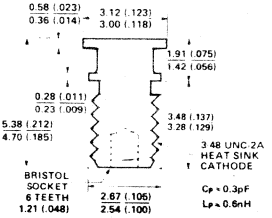
Outline 56



Outline 31



Outline 41



Outline 65

DIMENSIONS IN MILLIMETERS AND (INCHES).

Diodes for High Efficiency Multipliers (All Specifications at T_A = 25°C)

Fig.1

Ceramic Packaged Diodes

ELECTRICAL SPECIFICATIONS

TYPICAL PARAMETERS

Part Number 5082-	Junction Capacitance at -6V, $C_{j(-6)}$ *[1] [pF]		Minimum Breakdown Voltage, V_{BR} * at I_R = 10μA [V]	Minimum Cutoff Frequency, f_c[2] [GHz]	Package Outline	Output Frequency Range [GHz]	Output Power, P_o[3] [W]	Lifetime, τ [ns]	Transition Time		Thermal Resistance, Θ_{jc} [°C/W]
	Min.	Max.							t_t [ps]	Charge Level [pC]	
X0800 0801 0802	3.5	5.0	75	100	40 31 41	1-3	10	250	350	1500	15
X0805 X0806 0807	2.5	3.5	60	140	31 40 41	3-5	6	100	250	1500	20
X0810 X0811 0812	1.5	2.5	60	140	31 40 41	5-8	4	100	200	1000	25
0820 0821 0822	0.7	1.5	45	160	31 41 40	7-10	2.5	50	100	300	30
0830 0831	0.35	1.2	25	200	31 41	8-12	1.0	20	75	300	45
0835 0836 0885	0.1	0.5	15	350	31 41 56	10-20	0.3	10	50	100	60

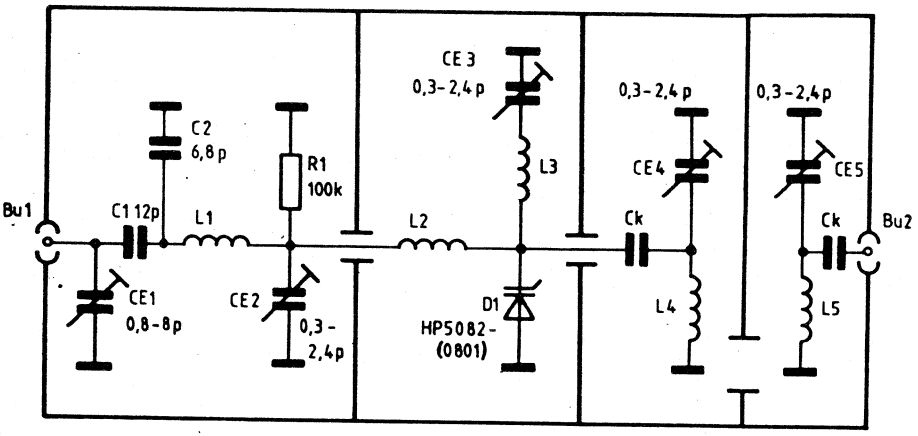

Bu1
C1 12p
C2
6,8 p
L1
R1
100k
CE1
0,8-8p
CE2
0,3-
2,4p
L2
CE3
0,3-2,4 p
L3
D1
HP5082-
(0801)
0,3-2,4 p
CE4
Ck
L4
0,3-2,4p
CE5
Ck
L5
Bu2

Fig 2

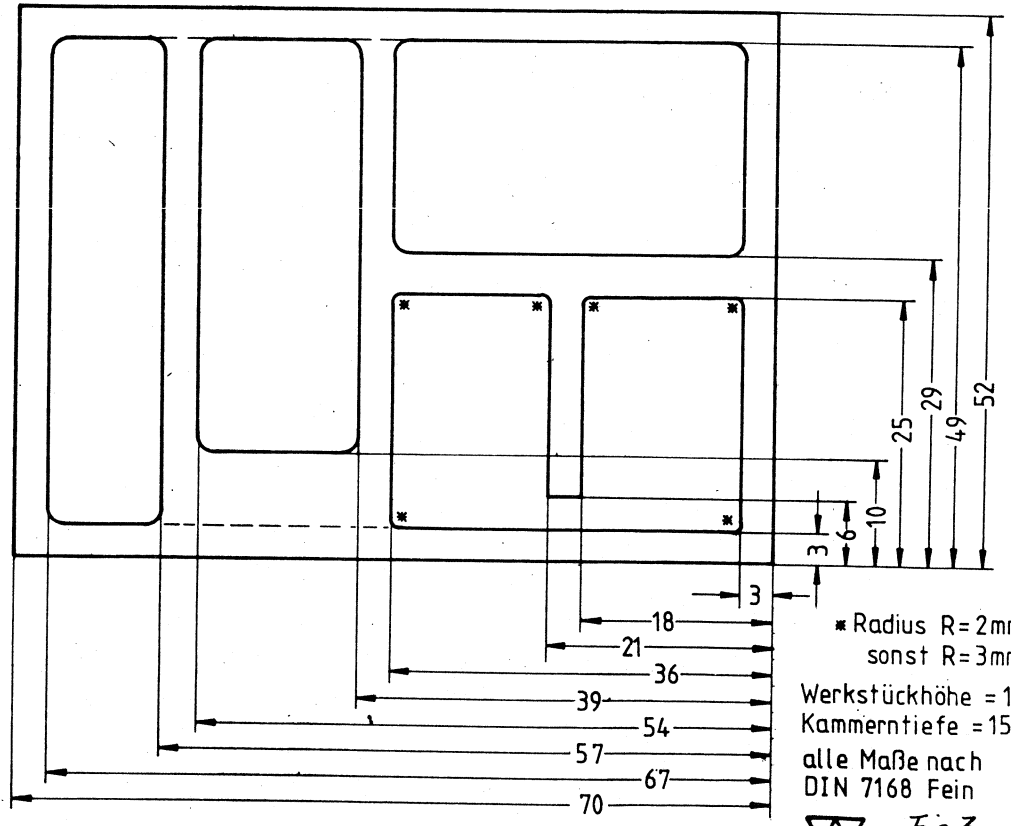

3
6
10
25
29
49
52
3
18
21
36
39
54
57
67
70
* Radius R=2mm
sonst R=3mm
Werkstückhöhe = 17mm
Kammerntiefe = 15mm
alle Maße nach
DIN 7168 Fein

Fig 3

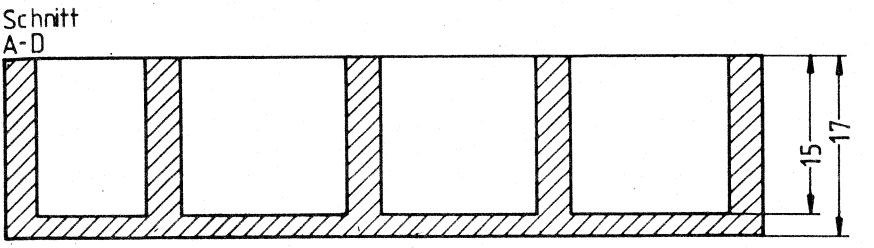
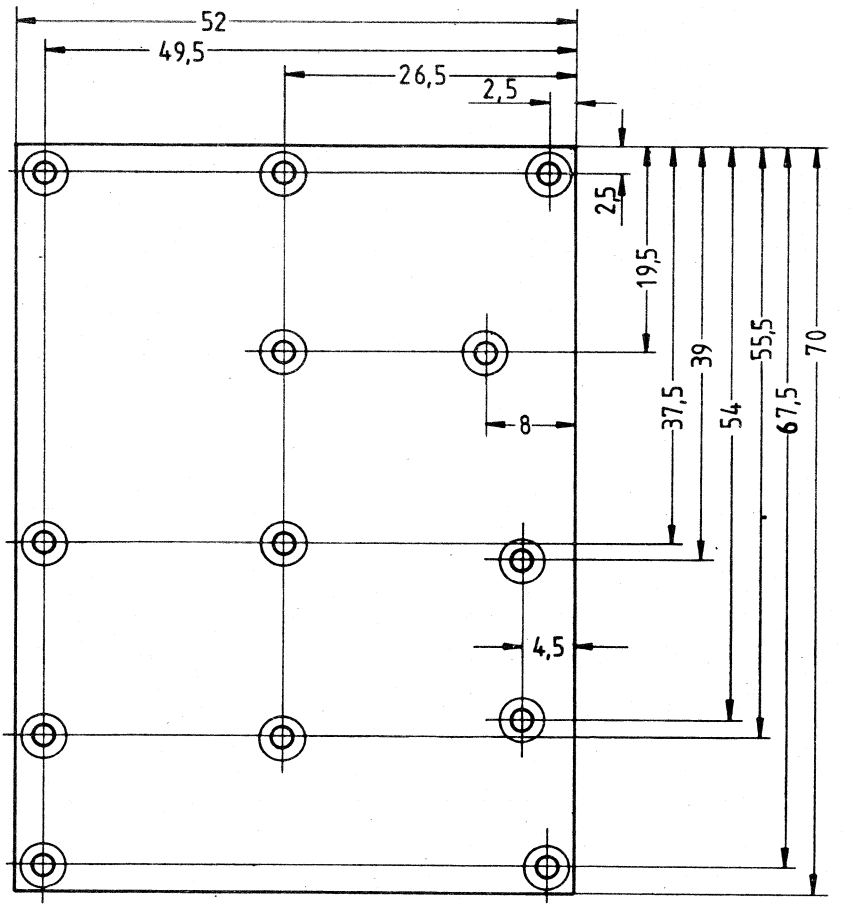


Fig 4



Bohrungen 2mm ⌀ , 4mm ⌀ angesenkt

Deckel 2mm Alu
Unterseite: 0,25mm Schaumstoffschicht (beids. klebend)
+ Alufolie

Fig 5

181

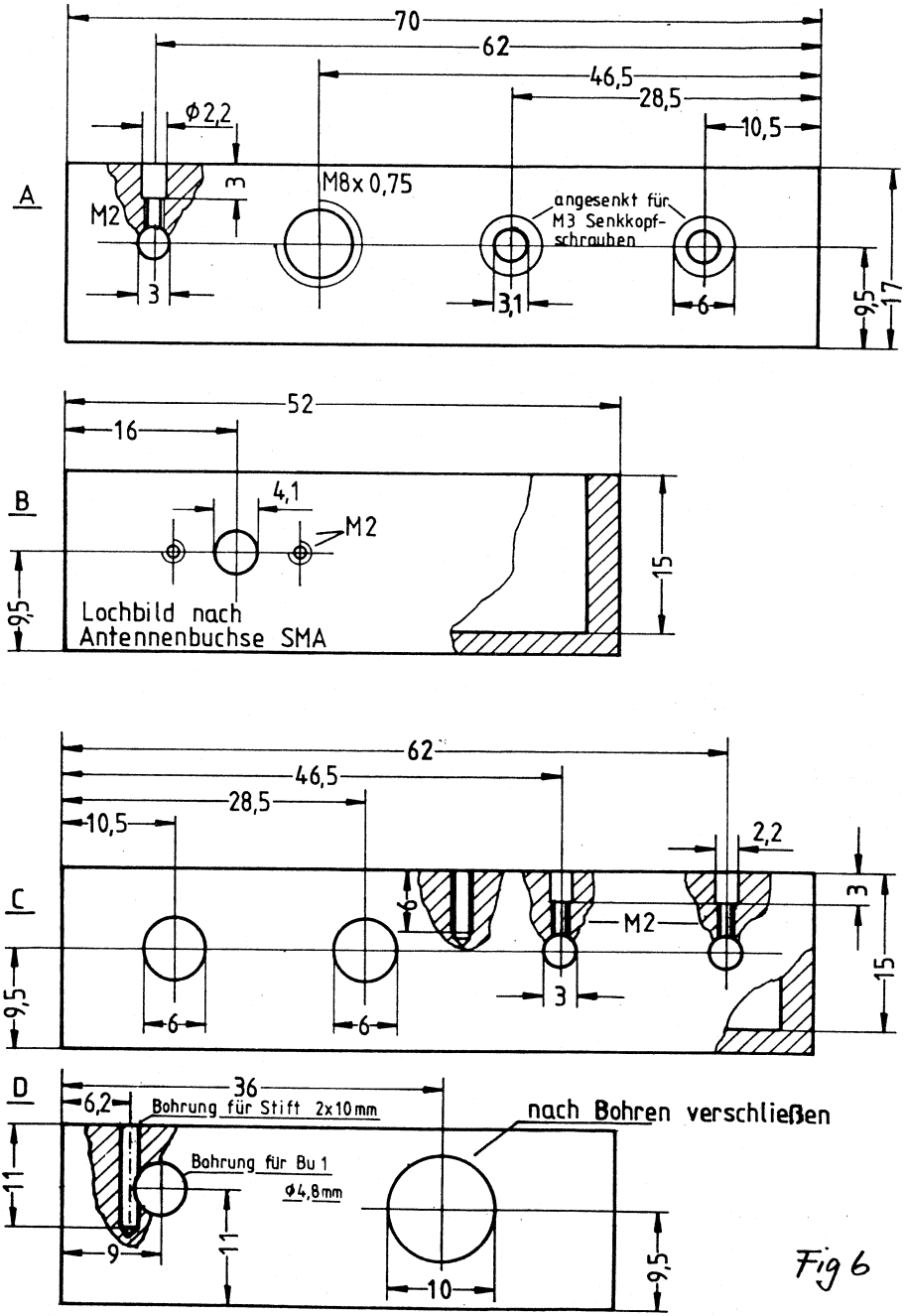
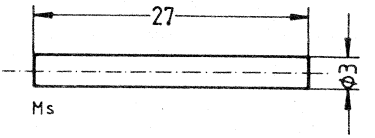
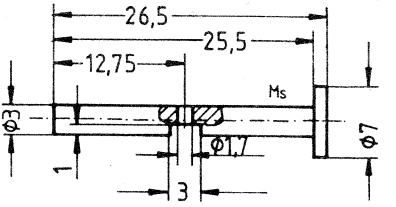

A
70
62
46,5
28,5
10,5
Ø2,2
3
M2
M8x0,75
angesenkt für
M3 Senkkopf-
schrauben
3
3,1
6
9,5
17
B
52
16
4,1
M2
9,5
15
Lochbild nach
Antennenbuchse SMA
C
62
46,5
28,5
10,5
2,2
3
6
M2
3
9,5
15
6
6
D
36
6,2
Bohrung für Stift 2x10mm
nach Bohren verschließen
Bohrung für Bu 1
Ø4,8mm
11
9
11
10
9,5

Fig 6

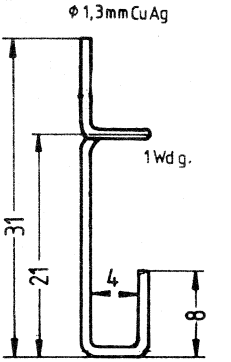
Teil 1



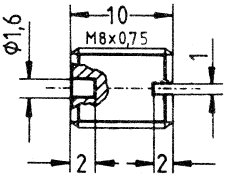
Teil 2



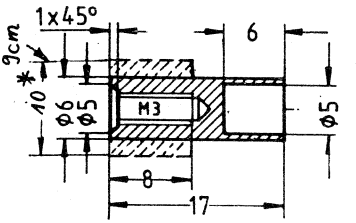
L1

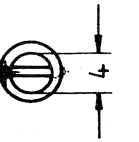


Teil 3

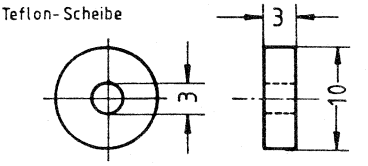


Teil 4,5





Teil 6,7



Teil 8

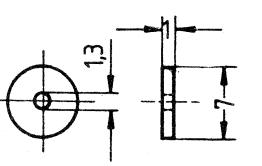


Fig 7

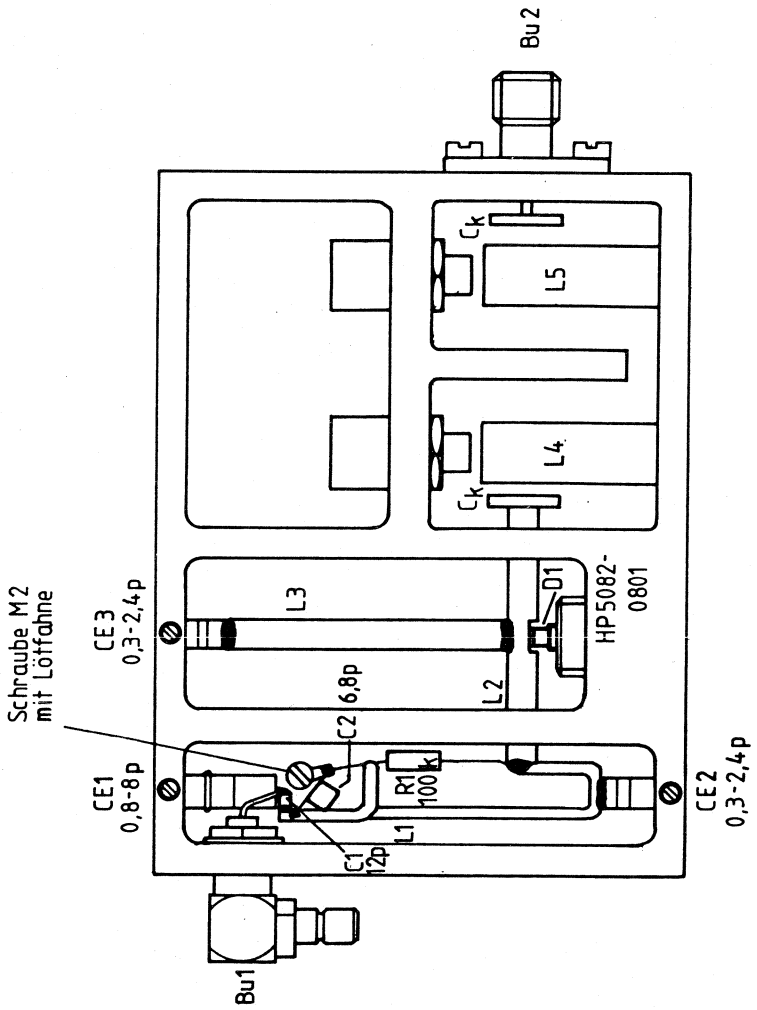

Bu2
Ck
L5
Ck
L4
L3
D1
HP5082-
0801
L2
6,8p
C2
Schraube M2
mit Lötfahne
CE3
0,3-2,4p
CE1
0,8-8p
R1
100k
L1
C1
12p
CE2
0,3-2,4p
Bu1

Fig. 8

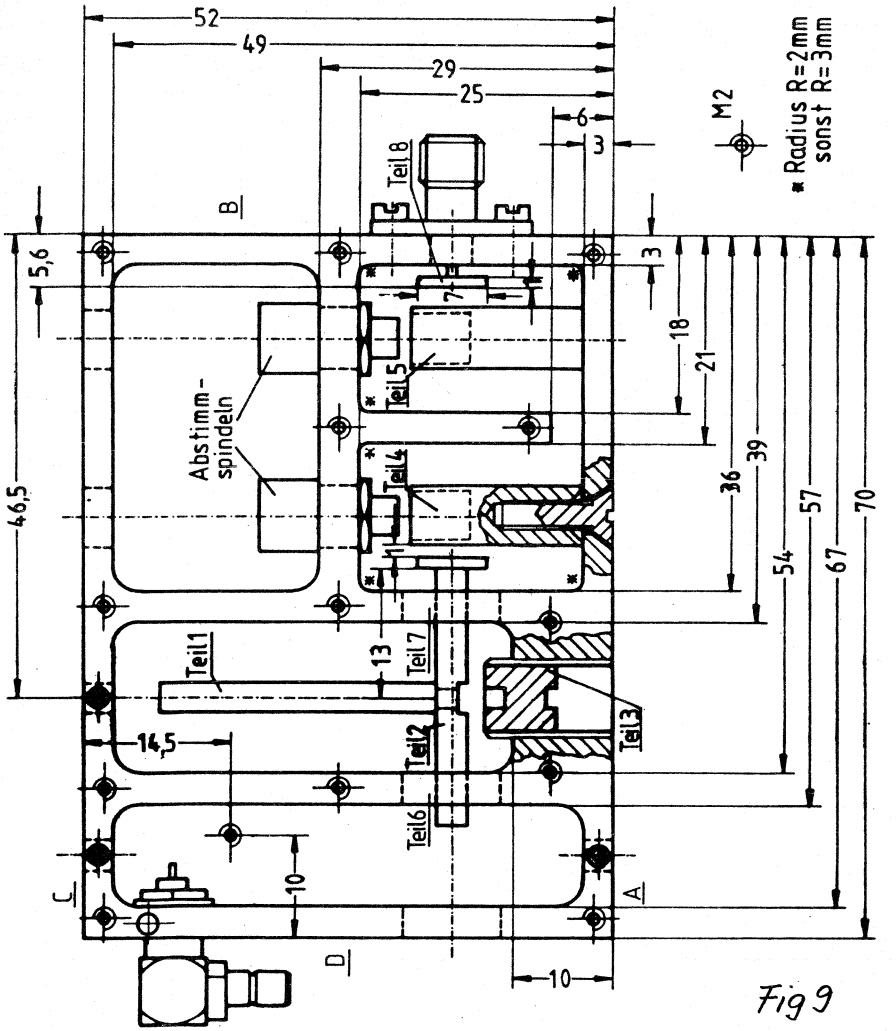

52
49
29
25
6
3
M2
* Radius R=2mm
sonst R=3mm
B
Teil 8
5,6
3
18
21
39
36
54
57
67
70
46,5
Abstimm-
spindeln
Teil 5
Teil 4
Teil 1
13
Teil 7
Teil 2
Teil 3
14,5
Teil 6
10
C
A
D
10

Fig 9

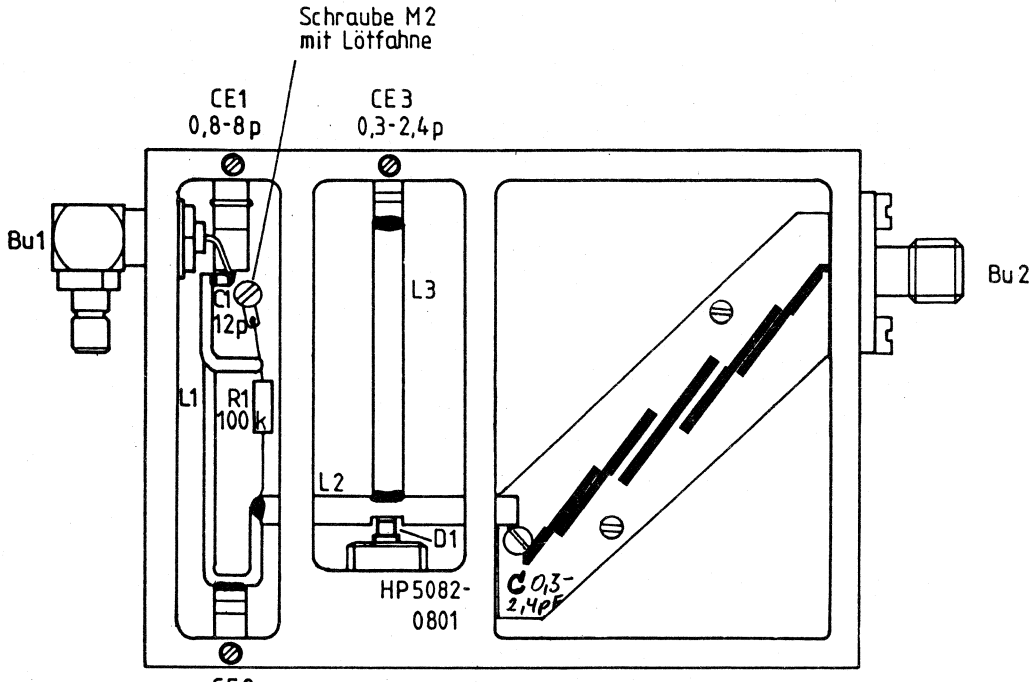
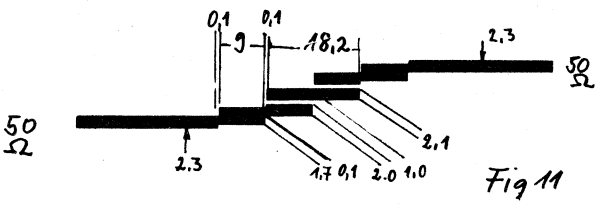
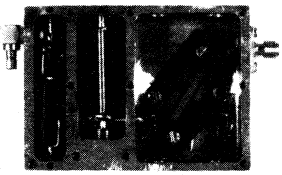


Fig 10



DUROID $\varepsilon_r = 2{,}35$
0,79mm

Fig 11



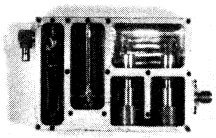


Fig 13

186

Fig 12

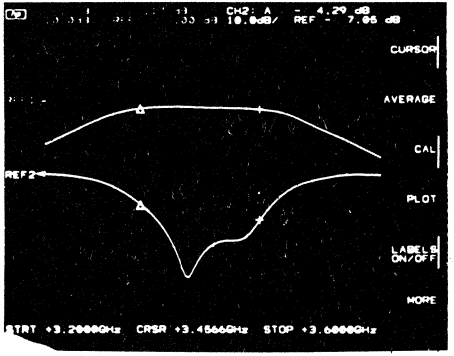


Fig 14

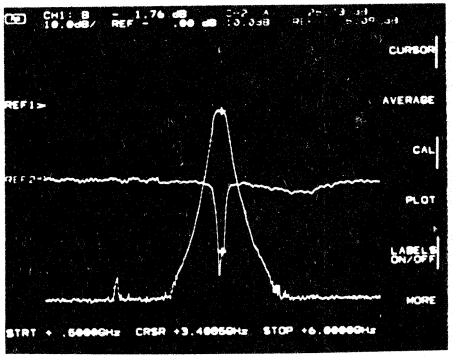


Fig 15

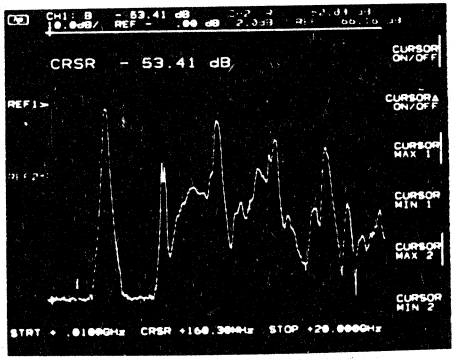


Fig 16

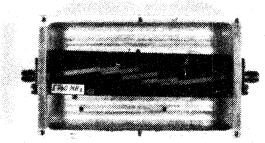


Fig 17

187

NOISE GENERATOR WITH BAT 31

by Harald Fleckner, DC 8 UG

The circuit at fig. 1 is made on RT 5870 substrate with 0.79mm substrate, and has a speciall 10 GHz chocke to avoid an ENR loss. The metal R has a value of 470 ohm or more. For wide-band using, the diode current has to be 15mA(144-10000 MHz). The diode is running with (min.) 28V from a constant current source. The ENR of about 35 dB (+/- 1dB) permitted the insertion of a 20 dB attenuator, so that you get a good matching to 50 ohm. Detailed describtion for amateurs by me.

D. :Die abgebildete Schaltung ist auf RT 5870 mit 0,79mm Substrat aufgebaut und besitzt eine spezielle 10 GHz Verdrosselung um einen ENR Abfall zu vermeiden. Der Metallfilmwiderstand R sollte mindestens 470 Ohm betragen. Für Breitbandbetrieb (144-10000 MHz) muß der Diodenstrom 15mA betragen. Die Diode wird über eine Konstantstromquelle mit mindestens 28V geschaltet. Die ENR von ca. 35 dB (+/- 1 dB) gestattet den Einsatz eines 20 dB Dämpfungsgliedes vor der Quelle. Hierdurch wird eine gute Anpassung an 50 Ohm erreicht. Nähere Angaben für interessierte AMATEURE gibt der Verfasser.

6cm AMPLIFIER

as pre-and low power amplifier

The circuit shown at fig. 2 uses the transistors of the MGF 1400 series. The circuit uses the same material as the other, RT 5870; h=0.79mm. At the input he can optimizied to minimum noice or to maximum gain. For experiments it is better to do not print Z1 and Z2, but to make them out of 0.3mm copper stipes.Through sliting of Z1 and Z2 on the 50 ohm stripes it is possible to match the input to minimum noice or maximum gain. So it is also possible to compensate reactances in the output or input of following stages. Also other GaAs Fets can be matched by this way.The transformer are soldered very careful now at the experimental founded place (distance from the transistor). The source must be soldered to ground as short as possible. The negative pre voltage can be done by an IC or a battery.

The shown low power amplifier at fig. 3 uses the MGF 1801, input and output are 50 ohm. It is here also better to print not Z1 and Z2, but to test where they are belonging. So you can win some last dBs, and mostly input and output impedance are rare 50 ohm. Tuning is also possible with the drain current. More information also from transveter with subharmonic mixer by DC8UG, Marksburgerstr.58, 5409 Becheln Tel. 02603/70709

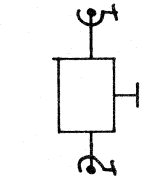
D. : Der in Bild 2 dargestellte Verstärker arbeitet den Transistoren der MGF 1400 Reihe. Er ist auf RT-Duroid 5870 mit einer Trägerstärke von h=0,79mm aufgebaut. Eingangsseitig kann er auf Rausch/ oder Leistungsanpassung ausgelegt werden. Zu Experimentierzwecken ist es sinnvoller die $\lambda/4$ - Trafos Z1 und Z2 nicht zu printen, sondern aus ca. 0,3mm Kupferblechen herzustellen. Durch Verschieben von Z1 und Z2 auf der 50 Ohm Leitung die bis zum Transistor geht, kann der Verstärker auf Leistung bzw. Rauschen angepaßt werden. Das heißtes können so auch Blindwiderstände im Ausgang und Eingang der nachfolgenden Stufen mit Kompensiert werden. Auch andere GaAs Fet Typen lassen sich so anpassen. Die Trafos werden dann in der experimentell gefundenen Stellung (=Abstand vom Transistor) festgelötet. Vorsichtiges hantieren und Gefühl ist notwendig! Die Source muß auf kürzestem Weg an Masse gelegt werden. Die negative Vorspannung kann durch ein IC oder durch eine Batterie erzeugt werden.

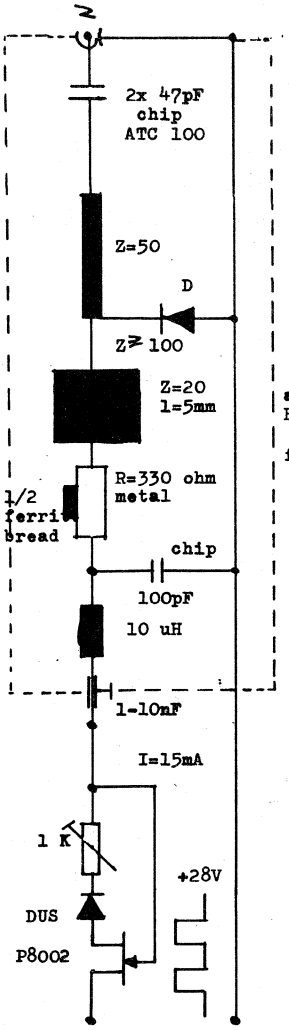
Der in Bild 3 dargestellte Kleinleistungsverstärker ist für den MGF 1801 ausgelegt, wobei Ein-und Ausgang auf 50 Ohm liegen. Auch hier bietet sich an , die $\lambda/4$ Trafos Z1 und Z2 nicht gleich mitzuprinten, sondern unter Test zu positionieren und festzulöten. So kann man letzte dBs holen, zumal selten exakt 50 Ohm Ausgang-und Eingangswiderstände vorliegen.

DC 8 UG noice generator

ENR = 35 dB
1-10 GHz at 15mA ENR +/- 1 dB

external
20 dB DC-10 GHz





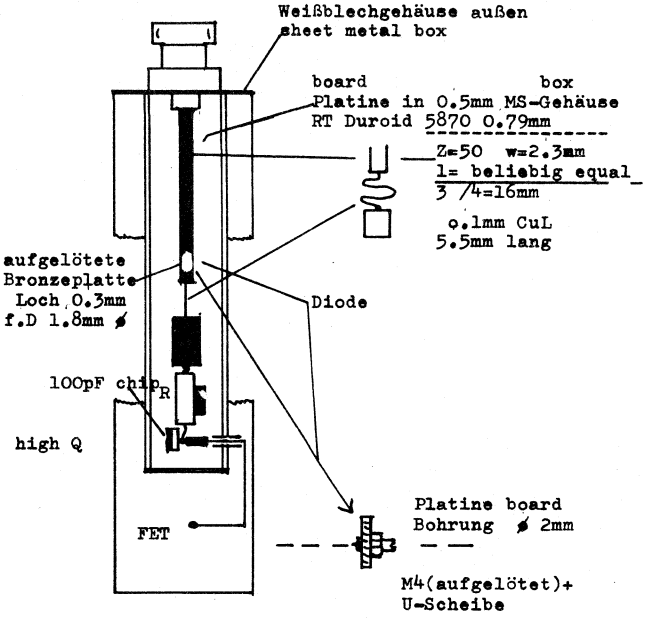
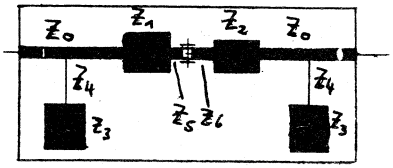


FIG.1

Diode von unten mit M4
Schraube durch Platine
stecken und festschrauben
Dioden Gehäuse muß flach
gegen die Bronzeplatte drücken
diode with M4 screw from lower
side through the board
diode has to press flat against
the bronze plate

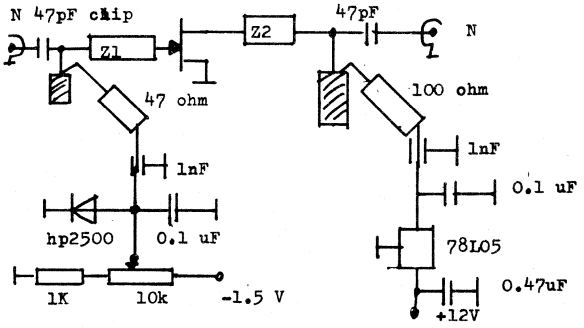
Weitere Feinabstimmung kann mit Hilfe des Drainstromes erreicht werden.
Nähere Angaben auch zum Aufbau von Transvertern mit Subharmonischen Mischer
und mehrstufigen Verstärkern sind bei DC8UG, in 5409 Becheln, Markeburgstr.58
Tel 02603/70709 Maßstab 1: 2 Scale

fig.2



Layout MGF 1400-12
Vp max =11 dB
at 1400 , NF=3.3 dB at Z1=18 ohm

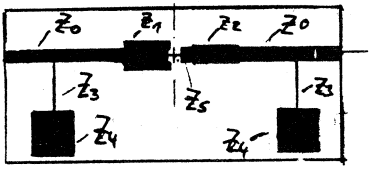
Zo=50 ohm l= equal beliebig
Z1 noice =27 ohm; w=6 l=10mm
" power ≤18 ohm; w=9 l=10mm
Z2=22 ohm;w=7 l=10mm
Z3≤20 ohm;w=9 l=10mm
Z4≥100 " w=0.3mm l=11mm
Z5= 50 " l=2mm
Z6= 30 " l=4mm



negative Spannung muß vor + anliegen!!
negative voltage has to be switched on before + !!!

FIG. 2

power amplifier for 6cm



Layout MGF 1801
I=100mA Uds=6V

Zo=50 ohm w=2.3mm l=equal
Z1=25 " w=6.5mm l=10mm
Z2=37 " w=4 " l= "
Z3≥100 " w=0.3mm l=11mm
Z4≤20 " w=9mm l=10mm
Z5=50 " w=2.3 l=3mm

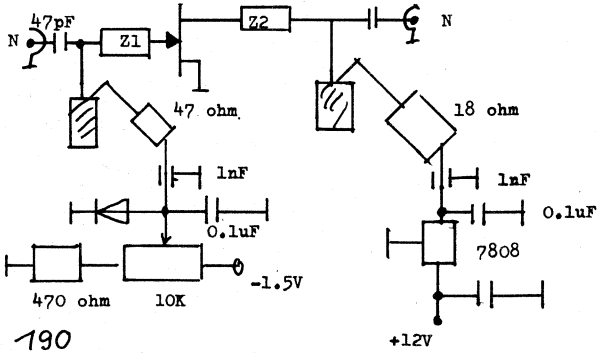


FIG. 3

TECHNICAL NEWS

BY DL 7 QY

Low Noise GaAs FET's

NEC offers: The NE700 is a low cost GaAs FET featuring low noise figures and high associated gain thru 18 GHz. 0.7dB noise figure with 14dB gain at 4 GHz, and 1.9dB noise figure at 12 GHz with 9dB gain. The chip's 0.5 micron gate and channel are glassivated with a thin layer of Si02 for mechanical protection. All bounding pads use a Ti-Pt-Au metallization system.
The NE710 features a super low noise figure and high associated gain thru K band by employing a recessed 0.3 micron gate and triple epitaxial technology. 0.6db nf Ga=14dB at 4 GHz, 1dB nf Ga=11dB at 8 GHz, 1.6dB nf Ga=9.5dB at 12 GHz, 2.1dB nf Ga=7.5dB at 18 GHz and 3.5dB nf Ga=5.5dB at 26 GHz!!
NE41137 low cost (below 20,--DM) is a N-channel GaAs dual gate MES FET. Features: Low Crss 0.03pf Gps 20dB and 1.3dB noise figure at 900 MHz. The S-parameter are specified for this transistor up to 4 GHz.
Fujitsu announce a low noise low cost GaAs FET typed FSC10LF with nf 0.6dB at 4 GHz and 13dB associated gain. The FSC series are 0.5 micron recessed gate N-channel gallium arsenide Schottky barrier field effect transistors designed for low noise application in L, S and C bands.

Power FET's for the 70cm band

Power FETs for the 70cm band are now available from Siliconix. UPM1 gives 5W rf at 10 dB gain. 30V Drain Voltage. UPM2 10W rf at 7dB gain. Total device dissapation is 40W.
Fujitsu offers now 2 new designed GaAs FET's fro 2300MHz use. FLL50MJ 36dBm rf output at 10dB gain and FLL100MJ 39dBm rf (10W!) at 8dB gain.

Bipolar Power on 1300 MHz

New bipolar low cost transistors from NEC NEL1306 and NEL1320 are available. NEC's NEL1300 series of NPN epitaxial power transistors are designed for mobile and base station in 1300 MHz band. This series is available in low cost package offering power levels of 6 and 20W. The series provides high linear gain, high linear power and high resistance to burn-out with load mismatch. NEL1306: P1dB=38dBm G=7.5dB, NEL1320 P1=43dBm at 6dB gain. Pt-Si/TiPt/Au metallization system. Emitter ballasting and silicon nitride passivation. Collector Efficiency at Vss =13.5V and f=1300 MHz typ. 55% at NEL1306 and 60% at NEL1320.

Negative Gate Voltage Supply For GaAs FET's

are realized on an easy way using the Intersil voltage converter chip ICL7660. This chip (8 pol dual inline package) produces from a positive stabilized voltage in the range up to 10 Volts a negative up to 40 mA output current. The IC needs only 2 tantalium 10 µF capacitors and the price is below 10,-- DM.

A lot of new microwave semiconductor products appeared on the marked now. In the next issue of DUBUS we will inform you about the news of matched GaAs power FET devices in the 3 to 12 GHz range. About detailed informations, of the here discribed semiconductors, and prices write to DL7QY.

MICROWAVE NEWS

by DL7QY

Activity Reports

DJ5AP/p(EH11h) worked on 3456 MHz on 2nd July 83: DB3UU 56 54 in EJ34f 190 km, DL3NQ 57 56 in EJ34i 196 km, DK4GD 59 59 in EH03c 41 km, DL7QY 559 579 in FJ61e 209 km and on 3rd July DK0PX 59 59 in EI74b 61 km.

DC9XO(EM14a) reports: following stations were worked on 23cm: 18th June OZ1HDA ER, OZ9SL FP, G4BYV AM, G8FMK ZL, G3DY ZM, G3ZUD ZM, G4KIY ZM, G4LRT ZM, G4FRE AL, G8PNN ZP, G8ZQP ZM, G3APY ZN, G3NNG ZL, G8GRT ZM, G3OSS ZL, G3GIM ZL, G8PSF ZL, SM6HYG FS, G8ULU AL, G3ZEZ AL, G8DKK ZL, G3COJ ZL, G5DS ZL, G4PEC ZP, G4KCT ZN, G6DER ZN, G8BJG AL, G8SFI ZN, G4CCH ZN, G8MWR ZM, G8HPU AM, GW3CCF YN, G3TDG AL, G3DAH AL, GW8UCQ/p YL, G4TXG YM, G8FUO ZL, G3ZQU AM, G4ROB ZN, G4CMV ZM. On 19th June: DL7APV GM, OZ7LX FP, G8TFI YL, G4STO ZN, G3JXN ZL and ON600 in CL. On 2nd July: OZ9SL FP, DF0SG EK, PA0JRS/A CK, PE1DAP CK, G4ANT/p AM, ON7WR/A CK, DK0OX EI, DK2DB EI, DJ6GQ EI, PE0MAR/p CL and on 3rd July DL7QY FJ and OE9XXI/9 EH. Working condx at Manfred DC9XO on 23cm: TS120V and transverter, MGF1402 in front, PA 2 times 2C39 and 4 times 23el longyagi (F9FT) in a square. Feedlineloss abt. 1.5dB. The antenna is located abt 12m above ground level and 60m a.s.l. Manfred wkd during the Contest 18/19. June 95 Stations with a score of 38969 points, 26 QTH squares and 7 countries.
Here follows a list of stations he worked on 13cm: 30th May DK0NA FK, 4th June PA0GUS/p CN. On 18th June: DF9LN FO, DL3NI DL, PE0AGO DM, PE1DPX DM, DK0NA FK, DL4BV DN, G4BYV AM, PE1AEO CM, DC4BK EN, G4LRT ZM, PA0FRE CL, SM6HYG FS, G3LQR AM, G4LOJ AM, PA0WWM CM, DD2EK DL, DB4LT FO, OZ9SL FP (.5W only 56 58!). On 19th June: PA0GUS CN, G8VLL AM, PA0CRA CM, G8LMW ZM, DD8BD DM. On 2nd July: DF9LN FO, DF0SG/p EK, PA0JRS/A CK, PE1DPX DM, DC4BK EN, PA3BPC/p CM, PE0MAR/p CL and PA0EZ in CM. On 3rd July DC0DA DL and DL0SHF FO. Discription of the 13cm equipment: Driver SE401 2m Transceiver, RX front end 2x MGF1402, TX 2W transistor driver (BFQ68) into a 2C39BA abt. 25W rf, 0.9m parabol 10m a.g.l. and 58m a.s.l. Feetlineloss abt 3dB. Manfred told me that he will be qrv on 9cm as soon as possible. Tks fer info Manfred.

DB2VY(DJ56a) wkd on 2320 MHz on 8th June PA0CRA 519 519 CM75a and on 9th July DL7QY 52 42 FJ61e. He writes... DK8VR and myself hase been qrv during the Microwave Contest in June from DJ26a on 23 and 13 cm using a 1.2m parabol and BFR34a in front, TX 5 W rf on 13 cm. Only 5 QSO's were made. 19th June: DF1EQ 59 57 DL76a 153 km, DC6TV 59 59 DK16g 120 km, DL3NI 54 41 DL47h 195 km, DK5IE 52 58 EJ72c 118 km and DJ9VS 59 57 EJ33a 102 km.
DB2VY is planning to activate the "DJ" square also on 9 cm. He hopes to complete his 9 cm station in time of the UHF contest in October.

DK6AS(FM44d) wkd via Tropo on 23cm: 12th Jan. 1983 DK0NA FK and DL7APV GM, on 23rd G8PNN ZP and PA0QHN CM. On 24th OZ2OE EP, DC8QB EO, DC0LY EO, DH0LAC FO, OZ1FEF EQ and OZ9SL FP.

DL7QY(FJ61e) wkd on 23cm 5th June 1983: F1KNO/p BH20c 51 51, F6HLD/p CG55a 519 519, F1FEN/p CF74c 51 51. On 19th June DL6WT/p DJ09b 51 52. On 3rd July F1EA DI39j 57 57, HB9AMH/p DH66c 59 59, PA3CLS/LX CJ20b 53 54, F6KNO BH20c 52 52. On 14th July F1KBF/p AJ14j 51 52. On 15th July ON1JE BL80f 57 55, F1DME BI12j 51 54. On 27th July PE1HWO CL03e 42 52

and LX2RV DJ31h 59 59. On 22nd Aug. F6HVH/p DI47j 53 53. Stn: TX 146 MHz IF, 2x 2C39 abt 170W rf, RX NE720 GaAs FET and 1.75m parabol DL7QY feed, 5m feedline.
On 2320 MHz on 19th June DK8SG EI13j 59 59. On 2/3. July DJ9VS EJ33a 419 519, DKØNA FK58b 57 56, DC9BU/A EK60b 59 59, DL6NAQ EK60b 55 59, OE1ERC/9 FH41h 59 59, DJ5AP/p EH11h 57 57, DKØHT/p EK53d 53 52, DFØSG/p EK34e 54 54, DKØOX EI13j 59 57, DL9GU EJ33a 52 55, OK1KIR/p GK45d 559 529, OE9XXI/9 EH39c 59 59 and DK2UO DL74e 529 549. On 9th July DB2VY DJ56a 42 52 and DC9XO EM14a 53 53. On 27th July LX2RV DJ31h 54 59 (0.5W rf). Stn:TX 146 MHz IF, driver transistorized 5 stage 2x NEL2303 paralelle PA 7W rf into a single 2C39BA with 50W rf, RX 2 stage preamp using NE720 GaAS FET and 1.75m parabol.
On 3456 MHz on 19th June DKØNA FK58b 52 55 and on 2nd July DJ5AP/p EH11h 579 559. Stn:TX 146 MHz IF, transmitter transistorized 5 stages GaAS FET NE720-NE720-NEL8001-NEL8004-FLM3742/5 6W rf output. rx: frontend 2 times NE720 GaAs FET and antenna 1.75m parabol. Stn on 6cm band is quite similar to 9cm also fully transistorized using GaAs FET's up to the PA with 6 W rf output.

DF5JJ(DL44e) wkd on 23cm Tropo: 11th June PE1HQD DN on 18th June DK8VR/a DJ, DL6WT/p DJ, DKØNA FK, DC9XO EM, DK3UC/p FN, DKØHT/p EK and DJ6GQ EI. On 19th June: OZ1QZ EP (1W), G4KCT ZN, G3JXN ZL, G4STO ZN, G4LRT ZM, PAØGUS CN, DF9LN FO and OZ7LX FP. On 2nd July G4NXO/p AL, DJ9PC DI, DJ5AP/p EH and DL7QY FJ. On 11th July G8ULU AL, G3FHG AL, G8ECI AN, G4KCT ZN and G8HVU AM. On 12th July G8FUO ZL, F6DWG BJ, G4PEC ZP, OZ1HDA ER and LA3VW ES. On 14th July DC3XY EN.
On 3456 MHz 22nd July DCØDA 58/539. Now qrv on 9cm with .7m parabol and abt Ø.2W rf output. For Tropo skeds call: 02135/64990.

F1FHI(ZH) writes.....I try to be qrv in autumn 1983 on 2320 MHz, but we were allowed only to listen on 2320 MHz and have to transmitt on 2304 MHz!

G4FRE(ALØ7b) worked on 23cm (5W rf MGF1400 preamp and 26el qlv) on 6th June: G8PNN ZP52d 55 59 On 18th June DCØLY EO18q 59 57, PA3BGL CN70a 59 59, OZ2OE EP10f 529 519, DC9XO EM14a 58 41 and DF9LN FO61a 59 59. On 19th June DF8DO DL47h 51 51 and G6DER ZN33c 59 59. On 8th Aug. GM4KNZ/p in YQ and on 19th Aug. ON1HAQ in CK
On 2320 MHz (TX Ø.3W MGF1400 preamp and 42 el qlv): 18th June G4LRT ZM45d 55 55 and DF9LN FO61a 55 519. On 25th June PAØCRA cm75a 599 519. GW4FRE/p (YN75f) heard 13.8. G3LQR AM. PAØQHN CM and GB3LES ZM. Wkd G3WDG ZM65d 559 539 using 2.5W 1.2m dish, qth 1860 feet asl.
G4FRE/p(AL07a) worked on 3456 MHz (TX 1.25W rf output 2x NE645 preamp Ø.8m dish)on 26th June: G3LQR AM67b 59 59, PA2DRV/A CLØ3c 599 599, PE1GHG CLØ3c 599 599, PA3BPC CM66b 599 589, PA2DOL CLØ3a 59 589 and PE1CKK CM66b 599 559.
G4FRE/p from AM78f worked on 10 GHz (TXØ.5 mW CW/SSB from G3JVL Xverter + .6m dish) on 26th June PA3BPC CM66b 59 54 256 km, PAØEZ CM66b 59 56, PA2DRV/A CLØ3c 59 519 215 km, PE1GHG CLØ3c 58 519, G3LQR AM67b 55 549 23 km, PA2DOL CLØ3j 59 529 210 km and PE1CKK CM66b 589 419.

G4BYV(AM) writes:...I now have a 1.8 m dish with DL7QY feed. I had just put it up when the DX in June came. My best DX on 3456 MHz: On 18th June DF9LN FO 55 55 623 km. On 19th June DC9XG EN 59 59. On 24th June DK1ZD EO 59 59. On 24th June SM6HYG heard me 59 (903 km!) but he had TX problems so only one way QSO. On 6cm I heard DC9XG (558 km) 100 mW beacon at 52, but no replay (bad receiver?!?).

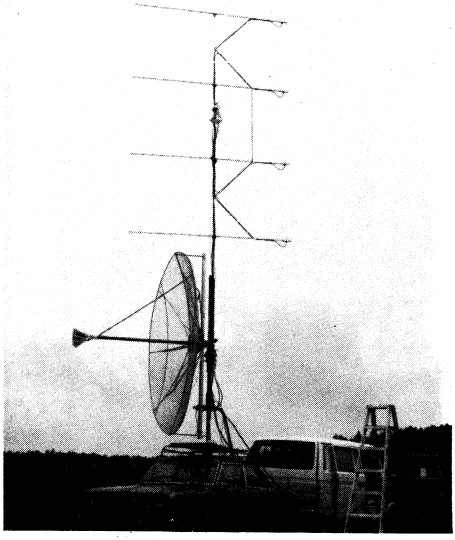
PAØPLY(CM54f) wkd during the Contest 3rd July >400 km on 23cm: G4JAR/p YK, DK5IV EJ, DKØOX EI, F1KAW/p DI, DL5GBG/p EI, G4THI ZN, G3AKF/p ZL,

OE1ERC/9 FH, OE9XXI/9 EH, DJ9PC DI, DL0UH FO.
On 2320 MHz >200 km: G3LQR AM, G4BYV AM, OE9ERC/9 FH (heard), DL9GU EJ (heard), DF9LN FO (heard).
On 10368 MHz G3LQR AM 250 km. Under Contests we are regulary qrv from a tower 150m asl nearly Amsterdam from 70cm up to 3cm.

PA0KDV(DN71f) writes: I am now regulary qrv on 23cm with 70W, MGF1400 and 16 el 15m asl, near future 1.9m dish. Wkd on 23cm 27th July DJ9XO FN, DK3UC FN and DC4BK EN. On 30th July GM4NBS/p YP, OZ2OE EP, OZ7LX FP, DK1KR FN, SM7DEZ GP, LA6LCA FT and SM6HYG FS. On 31st July G8FEZ AL, 7th Aug. GM4KNZ/p YQ, 8th Aug. GM8AAP/p YQ, G8VLL AM, G4BYV AM, G6CBN ZO, G8SFI ZN and GM4KNZ/p YQ. Hope to get 13cm as well qrv in near future: 20W MGF1402 and 1.9m dish.

PA0EZ(CM66b) schreibt: LA ist jetzt qrv auf 13cm. LA8AE hat 0.5W und LA8AK 0.1W. Die OM's werden bald eine Endstufe haben. Auf 13 cm ist jetzt endlich mehr Aktivitaet in OZ gekommen. Auf 3 cm immer noch nichts neues, wegen mangelnder Aktivitaet, speziell in DL. Die Bake DL0QQ ist hier regelmaessig aus DL07 auf 3cm zu hoeren. Mit den QTH Feldern AM und AL geht es auch immer, aber das ist ueber die Nordsee und nur etwa 50 km Land.

LA8AK(DS80b) writes: QRV now in Norway on 13 cm: in FT LA6LCA 100 mW SSB, LA8AE 500 mW SSB. DS LA8AK 50 mW. All use 1.2 m dishes.
LA8AK wkd on 1296 MHz on 12th July at 2323z F6CER 529 529 BI34q and at 2320z ON1JE 53 53 in BL80f. On 9th July on 2320.2 MHz at 2010 SM6HYG 59 419 in FS58f.



OE1ERC/9(FH41h) photograph beside, qrv on 70-, 23- and 13cm.(70cm: 4x 19el F9FT TX 60W RX MGF1402, 23cm 3m dish TX 200 W RX MGF1412, 2320 MHz 3m dish TX 30W and RX MGF1412). wkd during Contest 2/3. July on 23cm >500 km: DL1EBR DL, PA0CRA CM, ON7WRA CK, DK0SM/p EM, PE0MAR CL, PA0EZ CM and PA0PLY/A CM. On 2320 MHz >300 km DF0SG/p EK, DB1PM DK, OK1KIR/p GK, DC8VJ DL, DK2UO DL, DF1EQ DL, PE0MAR CL, PA0EZ CM and PA0CRA CM. PE0MAR was odx with 657 km and first OE / PA on 13 cm.

OZ3ZW(FO) wkd on 23cm via Tropo: On 25th Feb. DL40X FM43j, on 18th June DL1EBR DL11b, 19th June DC9XO EM14a, DB6BX DM64c, PA0TGA CL19c, ON600 CL54c, DF9LN FO61a, ON6UG BL79q, PA0FRE CL03j. On 25th June DC4BK EN, DB3HM EN40a. On 9th June DK2UO/OZ ER71e and on 15th July DB6BX DM46c.

SP9FG(JJ70b) writes: On 31st of July I was able to hear the 23 cm beacon DB0VC in FO51 with 599 between 0525 and 0925 gmt.
SM6HYG(FS58b) writes:....First I want to inform you about our 2 beacons that have questionmarks in last DUBUS: SK6UHJ is QRT because we have no

permission to move it to 2320.800 MHz instead of 2304.800, and as no one is listening on 2304 any more it is no need to keep that beacon qrv. We hope that we get permission for the shift in frequency soon. It is rather silly because we are allowed to work 2320 since long time. The SK6SHG 10368.800 is beaming south (180°). I am also qrv now on 3456 MHz until the end of 1983 now. TX RW4 TWTA abt. 16W rf, RX MGF1402 interdigital conv. and 1.5m dish+DL7QY feedhorn.

LA8AE(FT) writes:...let me tell you abt 13cm in Norway: It looks like the 13cm will be officially opened here very soon (Aug/Sept). It also looks like we will be able to work on 2320 MHz! Three LA's have been given a prelimenary permit and are now qrv on 13 cm: LA8AK, LA6LCA and LA8AE. LA6LCA dnd LA8AE work with SSB Electronic transverters. LA8AK with homebrew. LA6LCA has worked SM6HYG and OZ8WK as first contacts. On July 30 I worked PE1CQQ in DM and DK3UC in FN as first contacts. In addition I also worked DF9LN in FO, PA0EZ in CM, DB4LT in EO and DC9XO in EM. I have previously worked LA6LCA in FT, SM6HYG in FS and OZ8WK in ER bringing the total up to 9 squares. As for the future 6 cm is also in the works! For skeds call me at any time, priv.34 58809 or qrl 34 61000. 73de Ole LA8AE

A pair of parabolic ridgeds available from DB9SB for the discribed "Multi Octave Radiator" by DL7QY in DUBUS 2/80 page 66. Price for a pair is 30.-- DM. Contact DB9SB, Manfred Muehlbacher, Ringstr. 2, D-7189 Frankendardt 1, West Germany, Tel: 07959/2122. Ein Paar Parabolstege fuer den oben erwaehnten Strahler sind fuer 30.-- DM bei DB9SB erhaeltlich.

Now here following some more Microwave informations from The Shortwave Magazine issued in Sept. 1983:
G4NBS, was one of the team that went to Scottland recently. They operated from XO10f on July 24/25; XQ80d on 26-28 and YP20j on 29/30. Heavy rain then messed things up so they returned home on Aug. 2. On 23cm 21 QSO's were completed from XO; 18 from XQ and from YP, 21 different U.K. stations were worked, plus 12 PAs, 6 Ds and an OZ. G4KIY, G4KGC, G3JXN, G8AGU and GNQC were worked from all sides.

From RAD COM issue Sept. 1983: G3LTF (AL) finally installed his 2.3 GHz equipment on his tower, just in time for the July lift. He worked the following stations in a space of a few days: PA0WWM CM, PA2DOL CL, PA0FRE CL, G4FRE AL, PE1HQO DN, PE1DPX DM, G4LRT ZM, G3WDG ZM and 2 stations in DL. G3WDG (ZM) put up a temporary antenna for the lift, and worked G3LQR as well as G3LTF, on 2.3 GHz. The PA0OHN beacon was also heard, but unfortunately there were no Dutch stations on the band at that time! SM6HYG has a permit to operate on 3456 MHz, and this resulted in what is probably a new record for this band, when he worked G3LQR on 11 July, over a 924 km path. The same night, they also worked on 5.7 GHz, which must also have been a new record. However, a few minutes later the record was broken again, when SM6HYG worked G3ZEZ over a distance of 978 km!

G8PSF was active on 1.3 GHz during the June lift, with 600 mW and a 15/15 el yagi. Despite the low power, he made a number of very interesting QSO's. On 18 June, he began the evening by hearing GB3BPO at needlebending strenght, as well as PA0OHN and DB0VC. His first QSO was with PA3BGL (S9 report received), followed by DC9XO and then a very exciting QSO at 2222 gmt with OZ7UX (FO) at 825 km (S5 received). Adrian notes that one can achieve excellent results on 1.3 GHz with low power when condx are good -- what chance would you have to work this sort of DX on 144 MHz with 600 mW?

Tropo News

2m: > 500 km
70cm: > 300 km

by DL7ACG

2m	2m	2m	2m	2m	2m	2m	2m	2m	2m

DC8QB (EO38d) wkd:

14.7.		LA5XAA	CS	31.7.		SP6BQA	IK	OK1YA/p	HJ
TO1BPO	BJ	GB4CDD	ZN	OK1KSD/p	HK	UB5DAA/p	LJ	Y25IL/p	HL
F1FYE/p	AI	LA9ZV	FT	OK1MAC	HJ	OK1OAZ	HK	SP6GZZ	IL
30.7.		OK2BFH	JJ	OK1DIG	HK	OK1KFB/p	HJ		
GM8TIC/p	YP	OK1AMO	HK	OK1AIY/p	HK				

tnx fer info, Andy

DF5BL (DM37d) wkd > 800 km:

8.3. G3DAO XK

tnx fer info, Hannelore

DF9PY/p (DK65g) wkd:

4.6.		12.6.		7.8.		YT3V	HF	IK4CTR/4	FE
F1KLO/p	AF	OE3KSU	HH	SP6ASD	HL	YT3A	HF	I4MJQ/6	GD
F6GNR	ZH	IW2BXY/4	EE	I2FHW	EE	I4ERN	GE	I4TDK	FE
F1DPX	ZH	I4EAT	GD	YT3N	HG	YU3UAN	GF	I1KTC/4	EE
OE3RLC	HH			YU2AAX/2	GF	YT3B	GF		

DF9PY/p (DK64b) wkd:

8.5. I4IND/4 FE 3.7. I2XAV/2 EE I1AXE/1 DE

tnx fer info

DG1BP (DN37h) wkd > 700 km:

18.6.		24.6.		30.7.		11.8.		25.8.	
G4CBW	YN	GM6JUK	YR	GW6NLP	YN	LA9UX	FU	LA9UX	FU
GW4GSS	YN	GM6KXS	YR	8.8.		SM7FXH	GU	28.8.	
20.6.		3.7.		GB2XN	XN	SMØFFH	IT	GD8ODB	XO
GM8DIN	ZR	GW3GSS	YN	9.8.		24.8.		GI6DRK	WO
GM6KXS	YR	12.7.		GB2XN	XN	GM4LER	ZU	GI4CXH/p	XO
GM6KJD/p	YR	LA1HCA	CU	10.8.		GM4LBE	ZU	GI4SXV	WO
GM6IUE/p	ZR	14.7.		LA3F	FT			EI5AOB	VN
GM3JFR	XR	F8DP	CG	SM4MNE	GT				
		PAØOOM/ SM1	JQ	LA9UX	FU				

tnx fer info, Arend

DL7YS (GM46b) wkd > 700 km:

2.7.		3.7.		F6FMR	ZJ	SM5MIX	hrd	SP4DCS/4	KN
HG1W/p	IH	HB9GT	EH	F1KSL/p	CI	8.8.		UQ2GGD	KQ
IV3HWT/3	GG	HB9AC/p	DG	8.7.		SM7IWG	HR	SP2FAV	JO
		HB9AJ	DH	OZ1CFO	ER				

tnx fer info, Peter

DB1LH (FO42f) wkd >800 km:

23.1.
G8HQA ZL
G3BRA YP
G3TGL ZM
G4MEK ZN
G6IDC/p YN
GW6EUR/p YM
G6OES ZM
GW6EUT/p YM
GW4GSS YN
GW6NLP YN
G4KLX ZN
G6AUS YM
G6LZC ZN
G4MAB ZN
G6JSZ ZN
GM8UPI YP
GM6KXS YR
GM8BZX YQ
G8UHU ZN
G6FOB ZN
G3HDT YP
GM8OEG YQ
GM6JUK YR
GM8MBP YR
24.1.
SM3COL IW
SM5LMT HU
SMØKFV IT
SKØLM IT

tnx fer info, Carsten

EA3LL (AB56b) wkd >1000 km:

31.5.
9H1BT HV
9H1E/A HW
9H4P HW
1.6.
9H1BT HV
9H4P HW
9H1E/A HW
5.6.
9H1BT HV
9H1CD HV
9H1GB HV
9H4P HW
9H1B HV
9H1E/A HW
9H1ES HV
9H1BW HV
IW9ANS GX
9.6.
9H1BT HV
IT9VHS GY
IW9ANS GX
IKØCAJ GB
10.6.
9H5T HV
IT9VHS GY
9H1CD HV
9H1BT HV
9H4P HW
9H1CG HV
9H1ES HV
IC8EGJ HA
IT9DQZ GY
11.6.
9H1BT HV
24.6.
9H1BT HV
I8WY HA
4.7.
9H1BT HV
9.7.
IW9AJZ/
IH9 GW
IK8AUC HB
10.7.
9H1BT HV
9H1CG HV
9H1GB HV
IT9WGZ GY
9H1BW HV
I8LPR HB
11.7.
9H1BT HV
9H1GB HV
13.7.
I8WY HA
16.7.
I8LPR HB
17.7.
I8LPR HB
18.7.
I8WY HA
23.7.
9H1ED HV
9H1FN HV
9H1GB HV
9H1GP HV
9H1B HV
IWØAIJ GB
IØSVS GC
IWØBNM/Ø GB
I2SRM/8 HA
I8LPR HB
I2KSX/8 HY
24.7.
9H5V HV
IØAKP GB
IWØAKA GB
IØYLI GB
IT9TVF GY
IØKHY GB
IW8AFO HB
IØPCP/Ø GB
25.7.
IØEIO GB
27.7.
I8LPR HB
29.7.
I8CEE HA
31.7.
I4MKN GE
9H1GB HV
7.8.
IT9ZRQ/
IF9 GY
IT9ZGY GY
15.8.
IW4ARD GE
I4RSH GE

tnx fer info

G4FRE (ALØ7a) wkd:

6.6.
G4JHV YO
G8PNN ZP
18.6.
OZ1DPR EP
OZ1HXM EP
OZ9PW EQ
OZ1HRA EQ
DFØIRK/p EN
PA3BGL CN
DD2QM EO
OZ2VM GP
PAØKDV DN
20.6.
DC6ZZ/A EO
LA6HL CS
OZ1FJJ FR
OZ1CFO ER
21.6.
OY9JD/p WW
1224 km
GM8BDX YP
GM5DTB ZR
25.6.
DL7AN DN
DF6HT FN
DHØDAR FN

tnx fer info, Dave

ON4YZ (CK53e) wkd >900 km:

21.6.
GM3WCA YR
13.7.
LA1BM CT
LA8EW DS
LA3BAA DS
14.7.
LA8DY DS
LA1JU ES
LA7BI ES
LA2SN ES
PAØOOM/
SM1 JQ
SM6JDO GQ
15.7.
PAØOOM/
SM1 JQ

tnx fer info, Paul

PA2REH (CM54h) wkd >700 km:

25.6.
Y22HA GO
12.7.
LA1BM CT
SM6MNS GR
OZ6FH ER
14.7.
PAØOOM/
SM1 JQ
OZ3VHF hrd
SK7VHF hrd
SM7MBH HP

tnx fer info, Eric

OZ1EYX (GQ73h) wkd:

5.7.		12.7.		7.8.		13.8.
OH1AV/SM3/MM	IU	TO2YT	BK	UR2RQN	KS6Øc	LA5X EW
OHØBA	KU	TO1BPO	BJ	UP2BJB	LP	
OH1AU/MM	JV74	F6FLV	BI	12.8.		
SKØLM	IT			SM3LBN	IU	

tnx fer info

OZ3ZW (FO18e) wkd:

22.6.		G6RBI/A	ZO	GB2SDS	ZM	12.7.		F9LT	AI
UP2BKQ	KP	25.6.		G4KLX	ZN	TO1BPO	BJ	F1FYE/p	AI
UP2BJB	LP	G8LJU	YM	GW4EAI	YL	ON7EG/A	BK	F6BBO	BI
UQ2GGD	KQ	G8GAU	ZN	G4SFY	AM	14.7.		F1BBD	BJ
RQ2GGS	LQ	G8RBY	ZM	G4DHF	ZM	F1CYB	BH	F6FJE	BI
UQ2GCI	KQ	G8VFV	ZN	11.7.		F6FLV	BI	F6GEO	BK
SP1AAY	IO	G8GSG	ZL	PAØOOM/					
23.6.		G6LTH	ZL	SM1	JQ				
G4PLZ	ZN	G3UNU	ZM						

tnx fer info, Torben

PA2CHR (CLØ9b) wkd > 700 km:

13.7.		7.8.		GM3WCS	YQ	SM4MNE	GT	SM4LLP	HT
LA1HCA	CU	GM3OUR/p	YQ	GM8OEG	YQ	SK6HD	GS	LA9ZV	FT
LA3BAA	DS	8.8.		10.8.		SM4COK	HT	SM6MFA	GS
PAØOOM/		GM8MJV	YP	I2FAK	EF	SM6CJK	GT	SM6LIF	GR
SM1	JQ	GM8ZEQ	YR	SM4HEJ	GT	LA9UX	FU	SM5CAK	HS
31.7.		GM4SOG/A	YR	SM6JLZ	GS	SM5MIX	HS	SM6OEF/6	GS
SM6NQE	GR	GM4UFD	ZR	LA9LS	DS	11.8.		13.8.	
SM5AKU	HT	GM3WTA	YR	SM4KXA	GT	LA1BM	CT	OE5KE	HI
SM6MNS	GR	GM4ILS	YR	SM4KYN	HT				
SK7HW/7	HR	GM8LHP	YR	SM6GWA	FS				

tnx fer info

YU2JL (HD3Øa) wkd > 700 km:

7.5.		IW9AOR	HY	IT9DQZ/9	GY	3.7.		12.7.	
OK3CPZ/p	KJ	2.6.		IT9TDN	HY	KG9KOB/p	KI	IW9AJZ/	
8.5.		IT9TDN	HY	I1ANP/1	EE	6.7.		IH9	
IT9TQH/9	HX	IW9AOR	HY	IW9AJZ/9	GY	F1JG	CD	IT9TDN	HY
F1BAV	DD	IW8PCW	HY	5.6.		F1EYB	CD	IT9DTU/9	HY
OK1KHI	HK	3.6.		IT9XJJ	GY	8.7.		IT9JLU/9	HY
21.5.		IT9TDN	HY	OK1ATQ	HK	F1FEN	CF	16.7.	
TO1BAV	DD	IW9AOR	HY	OK1MBS	HK	11.7.		IW9AJZ/	
I1DMP	DF	4.6.		18.6.		IT9OPF	GX	IH9	FW
1.6.		IT9JLG	GY	F6EBF	DD	IK1BXW	DD	IW9AOR	HY
F6FXP	DD	IØ9DWV/9	GY					17.7.	
		IT9VHS/9	GY					F8OP	CG

The best things are QSO's with IT9's, rst at least S9 except when antenna was out of direction only. IW9AJZ/IH9 (QRB abt 850 km) all days heard with S9 (his pwr was 10 W only).
I am qrv all weekends for tropo and MS, looking for EH,FH,EI,DG... but all proposals for sked are welcome. Equipment here: TX-200 W out, RX-MGF1200/3SK97, ANT-8x10ele DL6WU yagi.
Address: Slobodan Bukvić, YU-59000 Šibenik, Vilsonova 4.

tnx fer info, Boban

70cm 70cm 70cm 70cm 70cm 70cm 70cm 70cm

DC8QB (EO38d) wkd:

14.7.
F1CVU AJ
F1DZB ZJ
F1BGN AJ
F1DQK BI
GJ8KNV YJ
30.7.
GM8TFI/p YP
LA8AK DS
G8PNN ZP
31.7.
OE5EFM HI
OK1AGI HK
tnx fer info, Andy

DK6AS (FM44d) wkd:

18.2. G3NWU ZO ON4ASL BL G4FXW ZN G3SEK ZL tnx, Andreas

DL7QY (FJ61e) wkd:

5.6.
F6AKV/p DF
F1FEN/p CF
F1ANT CE
2.7.
I4LCK/p FE
F6CTT/p ZH
14.7.
ON4ASL BL
ON6AT BL
F1K8F/p AJ
ON7PO BK
F1CPQ BJ
G3AUS YK
ON1JE BL
F1FHI ZH
F6APE ZH
F6ETI YH
27.7.
G6KCG AM
31.7.
OZ3NH EQ
LA8AE FT
OZ2OE EP
SM6HYG FS
OZ9FW FP
F2NU CG
SM7CMY GP
SK4MPI hrd
14.8.
F6KNO/p BC
F6EYM/p BE
tnx fer info, Claus

DG1BP (DN37h) wkd > 600 km:

30.7.
GM8TFI YP
SM6GWA FS
31.7.
GW4ERP YN
7.8.
GM3YGF/p YQ
GM4OBD YR
8.8.
GB2XN XN
GM6LMN XP
9.8.
G4IOQ YM
10.8.
GW8FBK XN
LA6LCA FT
LA9DI FT
LA3OV FT
LA9T FT
SM4FXR HT
SM4KVM HT
LA9UX FU
11.8.
SM4FXR HT
SM4FXH GU
25.8.
GM5DTB ZR
G6FRB YM
G6DZH ZM
G8TFI YL
G6XID YM
28.8.
G8TZT/p YO
GI4SXV WO
tnx fer info

LA8AK (DS8Øb) wkd (only squares listed):

22.6. GM,GP 7.7. IO,GN,CS,GM 9.7. CK,CM,CN,DL,DN
11.7. AJ,AL,AM,AN,BI,BJ,BK,BL,CK,CL,CM,CN,DK,DL,DM,DN,EL
13.7. BI,BL,AL,ZM tnx fer info, Jan-Martin

OE1RKU (II63f) wkd:

3.7. DKØII EJ I4LCK/4 FE YU4EBL/4 ID I5BQN/6 GD tnx fer info

OZ3ZW (FO18e) wkd:

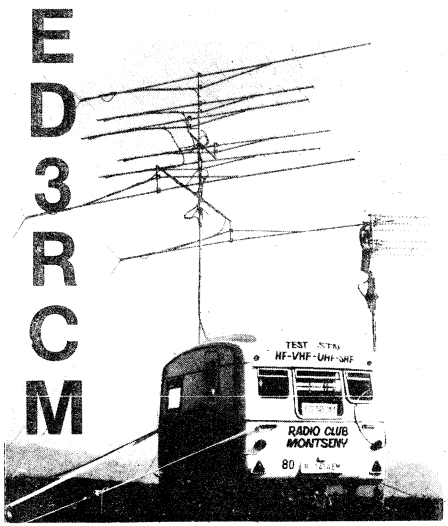
8.7.
OK1KHI/p HK
Y79ZL HK
OK2TU IJ
F1DBN/p AK
15.7.
F6DKW BI
DB6BX DM
tnx fer info, Torben

Ex SP9FG (JJ7Øb) hrd:

31.7.
DBØAH
OZ2UHF
OKØEA
DFØAAD
OZ7IGY
DLØUB
DBØAH
DC7QH
tnx fer info, Jurek

PAØKDV (DN71f) wkd > 600 km:

18.6.		G8TIC	YM	25.6.		22.7.		7.8.	
LA8AE	FT	20.6.		LA1YCA/p	DS	LA6PV	FT	GM3YGF/p	YQ
LA3FV	FT	GM4OBD/p	YR	9.7.		30.7.		8.8.	
LA9DI	FT	GM8BDX	YP	LA8AK	DS	GM8TFI/p	YP	GM6LNM	XP
SM6CEN	FR	LA1YCA/p	DS	10.7.		SM6HYG	FS	9.8.	
SM6CMU	FR	21.6.		G6HKT	YL	LA8AE	FT	G3JYP	YO
OZ7TW	FP	GM8XZY	YQ	14.7.		31.7.		GM8VBX	YP
G8NWR	YM	GM5DTB	ZR	F6HLD/p	CG	G4DDL	YK	GB2XN	XN
G6AUS	YM			OZ1CSI	HP				
G6FRB	YM			PA2JOK	JQ			tnx fer info	



Clubstation ED3RCM
(BC46c)

**GRUP MULTIOPERADOR
DE CONCURSOS,
A LA PROVINCIA DE GIRONA**

BC · SQUARE

QSL MANAGER EA 3 ADW

tnx for info, EA3ADW

PAØPLY/A (CM56g) wkd > 400 km:

3.7.		G4MBZ/p	ZL	F6DZK	AI	DKØBN/p	FH	OE1ERC/9	FH
F1FDB/p	DI	DG7NBE/p	EK	HB9RBB/p	EG	DJ5AP/p	EH	PAØPLY	CM
DL3WU/p	EK	OE5EFM	hrd	HB9MDO/p	DH	OE9XXI/9	EH		
DKØOX	EI	F6KNO	BH	G4RAM/p	YL			tnx fer info	

PA2REH (CM54h) wkd > 700 km:

25.6.		12.7.		OZ6FH	ER	14.7.		OZ3VHF	hrd
Y22HA	GO	LA1BM	CT	SM6MNS	GR	PAØOOM/		SK7VHF	hrd
						SM1	JQ	SM7MBH	HP

ATV: 23.1. DB9KY DL36c, 201 km tnx fer info, Eric

Continued on page 221

METEOR SCATTER NEWS

by DF2ZC, B. Mischlewski
PO Box 16 12
2390 Flensburg

MS-Lists

There are still MS-Lists available at my address. Costs are 3 IRCs each list plus 1 IRC for mailing. -2ZC

Deadline

Deadline for any expedition anouncements for 4/83 is 15th Nov.

Supplements/Corrections to the MS-List

G8TZT	ZN	C.S. Camm/151 Hebden Rd/Keighley BD22 8RE/Yorks. Tel.: 535-42466
OY9JD	WV	J.Dam/Sandagöta 1/3800 Argir/Faroe Islands Tel.: 4542-13365
OZ9PW	EQ	nw also CW up to 1200 LPM/Tel.: 08-645330
YU2JL	HD	S.Bukvić/Vilsonova 4/59000 Šibenik
IW4ARD	GE	G.Matteini/Via C.Pavese,20/47041 Bellaria(FO)
DL7AN	DN	new address:M.Hörning/Harringastr.22/2984 Hage Tel.: 04931-74179

please keep your infos about address changes coming!

Special thanks to all the OM that have sent their infos already typed on a machine and saving very much time for me this way.
Please remember to keep a 17 cm x 24 cm! Thanks Bernd

PA3BIY reminds of the "Missing information code":

Though it is rarely used it can be very handy when information is missing:
BBBB-both callsigns missing or not complete
YYYY-your callsign " " " "
MMMM- my " " " "
SSSS-I received your rogers but have not the report o.k.

Moreover, please put only two times the report in a message. 5,6 or 7 times the report is a nonsense! In many skeds that were NC I got the report many times but not the callsign o.k.

thanks for the reminder, Peter

Please keep on sending your MS-Infos directly to my address, not to Claus/7QY.
thank you in advance, yours Bernd 14.9.83

F6DRO AD38h wkd:

2.o9.	o6oo	OZ1ALS	FO	26	27	C		NIL/NC: OZ1ALS,GM4COK,DF7DJ,
14.o9.	o4oo	DL9GS	DL	26	26	C		Y24QO,OZ1FTU,OZ2ZB,YU1ADN,
16.o9.	o5oo	OE3XUA	HH	26	36	C		I3TJQ,PA3CGR,OH3MF,G4ISM,YU1OO,
	23oo	GM3WCS	YQ	37	26	C		PE1GHV
22.o9.	o4oo	OE6WIG	HG	26	27	C		
1.1o.	o4oo	I3TJQ	GF	37	26	C		
2.1o.	o6oo	G4IJE	AL	26	26	C		
4.1o.	o5oo	DF7DJ	DL	26	37	C		
12.1o.	o5oo	DJ5MS	GI	27	26	C	ufb	
16.1o.	o6oo	DF5HC	FN	26	27	C		
18.1o.	22oo	PAØOOM	DN	26	27	C	ufb	
2o. o.	o4oo	GW3NYY	XL	26	28	C		NIL/NC: OZ1OF,Y24QO,LA5IH,
21.1o.	o6oo	GM4CXM	XP	37	37	C		9H1CD,OZ1FDH,LA7KK,SM6CMU,
22.1o.	o2oo	OZ1FTU	GP	26	27	C		DF5DE,DL7YS,G4GZA,PA3CGR,G3UNU,
	o4oo	OZ1DOQ	GP	26	27	C		YU2RGO
23.1o.	o6oo	PA3BIY	CM	27	37	C		
26.1o.	o5oo	F6DWG	BJ	27	27	C		
29.1o.	o5oo	DK8VS	DJ	26	27	C		
31.1o.	o7oo	YU3ES	GF	26	27	C		
	o81o	YU3ULM	GF	26	26	C		
4.11.	o5oo	F6DDV	XI	26	26	C		
9.11.	23oo	OZ1FDH	GP	26	27	C		
14.11.	o8oo	PA2REH	CM	26	26	C		
17.11.	o5oo	DF1CF	FH	26	26	C		
18.11.	22oo	IW3QBC	GG	26	26	C		
21.11.	o6oo	HG1YA	IH	26	28	C	ufb	
26.11.	o4oo	DL6NAA	FK	27	26	C		NIL/NC: LX1GR,HB9PUY,G8ECI,
27.11.	o7oo	I3LGP	GF	26	26	C		PA3BHF,LA6QBA,DL5MCG,DF7RG,
28.11.	o8oo	DL4NAA	EJ	27	25	C		G3UNU,GM4IPK,I1DMP
7.12.	o5oo	DKØTU	GM	26	27	C		NIL/NC:I6DQE,YU1ADN,YU3TSB,
1o.12.	22oo	PE1BTX	CN	26	26	C		OZ1OF,OZ6ZR,LA1TV,GI4OPH,
12.12.	22oo	GI4OPH	XO	28	26	C		LA7KK,LA5IH,SM5CHK,OK1DIG,
13.12.	oooo	EA1ED	VD	26	26	C		LA6HL,SM6EOC,LA6QBA,OK1FM,
	23oo	EI2CA	WM	47	26	C		LX1GR,EA7AG,DL5MCG
14.12.	o5oo	OZ1EYE	FQ	26	26	C		Not qrv: SMØHAX,OK1KKH,OK1FM
17.12.	o5oo	ON5SA	CJ	26	26	C		
2o.12.	o6oo	DL6KAI	DK	26	26	C		

Hrd RANDOM: PA3BBI,PA3BIY,DK4TG,DF5HC,I1ANP,DK1KO,OZ5?,PAØOOM, I1MBC,EA3ADW,F1JG,G8OPR,SK2?
Not too bad but many nil or nc. After 1.o5.83 I changed my QTH and my results became much better; nc is now rare!

2.o5.	o7oo	SM7GEP	HR	26	26	C		
9.o5.	o7oo	OK1FM	GJ	26	27	C		
1o.o5.	o7oo	OK1KKH	HJ	26	37	C		
17.o5.	o7oo	OK2KZR	IJ	26	27	C		
19.o5.	o7oo	SM5MIX	HS	26	27	NC	no R	NIL/NC: DK2UO/OZ,
2o.o5.	o7oo	SM4IVE	HT	26	?	NC		SM5MIX but they
26.o5.	o7oo	OZ1FDJ	GP	26	27	C		were not qrv
3o.o5.	o7oo	PA3GCR	DM	27	26	C		UC2AA: sri, QRN

see over

F6DRO continues:

2.o6.	o7oo	DF9PY	DK	27	38	C	
7.o6.	o7oo	SP6FUN	IL	26	37	C	
9.o6.	o7oo	G4IJJ	AM	27	27	C	
13.o6.	o7oo	SM5MIX	HS	27	27	C	
	o8o5	OZ1OF	EQ	37	37	C	ufb
14.o6.	o8oo	PA3CNN	CM	27	27	C	
15.o6.	o7oo	SM6AEK	GQ	26	26	C	
16.o6.	o6oo	I4MKN	GE	26	26	NC	no R
17.o6.	o8oo	I4MKN	GE	26	27	C	
24.o6.	o8oo	YU7AU	KE	26	27	C	
7.o7.	o7oo	LA3UU				sri QRN	
8.o7.	o7oo	SM6AFH	GQ	26	27	C	
1o.o7.	o75o	I6WJB	HC	27	??	NC	
19.o7.	o7oo	YU3TSB	HF	27	38	C	
21.o7.	o7oo	GM4COO	YS	26	39	C	ufb
25.o7.	o7oo	SM6EOC	GQ	27	??	NC	
26.o7.	o7oo	SM4GVF	HT	26	27	C	
27.o7.	o7oo	G8ECI	AN	27	27	C	
	o8oo	YU7MKN	JF	26	26	C	
28.o7.	o7oo	SP6GZZ	IL	26	26	C	
	o8oo	SM6EOC	GQ	27	26	C	
29.o7.	o7oo	SM5CHK	HS	27	27	C	
	o81o	SM5CNQ	HS	27	27	C	

NIL: GM4IPK'

IW5AVM: sri, not qrv

NIL:IT9GSF,IØSNY/EA9, PAØOOM/SM1,DF1JM

merci pour les infos, cher Dom

peut-être on pourrais faire un sked à l'avenir_2ZC

Y22HA wkd fm GQ:

11.o3.	o5oo-o7oo	I4GOC	GE	26	26	C	4s
1.o4.	21oo-2215	I1JTQ	DF	26	26	C	2s
7.o4.	o6oo-o755	DJ1OJ/IMØ	EY	26	26	C	
22.o4.	o3oo-o455	IW3QBC	GG	26	27	C	2s
	23oo-oo35	F9HS	BD	26	26	C	6s
5.o5.	o3oo-o5oo	RB5LGX	RK	26	26	C	1s
7.o5.	o3oo-o435	F5DE	AF	26	26	C	1s
	o6oo-o755	UA3TCF	WQ	26	26	C	1s 2o58 km
28.o5.	o4oo-o51o	YU7NTU	KF	26	26	C	1s
7.o6.	o9oo-o955	YO2IS	KF	26	26	C	16s
26.o6.	o4oo-o44o	YU7AU	KE	26	26	C	
27.o6.	o3oo-o337	IW5AVM	FC	26	26	C	4s SSB

tnx fer info, 1br Detlev

QZ3ZW (FO18E) WKD ON MS:

4.1.83.

o135-o15o	YU1EU	KE	27	37	1o	5	3	sec.
? ?	I4MKN	GE	27	27	15	7	5	"
113o-12oo	IØCUT	GB	26	26	7	3	3	"

26.2.83.

23oo-o1oo	I1DMP	DF	26	26	2o	many 2sec

11.7.83.

o5oo-o53o	F9HS	BD	26	27	15	many 2sec.

tnx fer info

-DH1LAC- 1042F wkd:

16.7.	0400-0453	I4YNO	FE	26	26	8b	31p	C	ssb (my first ms-qso)
	1018-1041	I4MKN	GE	26	26	7	29	NC	ssb
17.7.	0700-0748	I4MKN	GE	26	26	16	41	NC	ssb no final r
20.7.	0945-1015	GM4COO	YS	26	--	3	14	NC	ssb
22.7.	0600-0700	C31XV	AC	26	26	18	mni	C	ssb 25sec
	0700-0800	GM4COO	YS	26	26	6	20	NC	ssb no final r
23.7.	0600-0700	I4MKN	GE	26	26	8	10	C	ssb 4sec
	0800-0820	HG1YV/p	IH	--	--	2	8	NC	ssb qrn
24.7.	0700-0743	IV3HWT	GF	26	27	6	mni	C	ssb 5sec
4.8.	2000-2200	YU3TYZ	HG	26	26	5	33	C	2sec
6.8.	0600-0800	HG8CE	KG	--	--	2	8	NC	local qrm
7.8.	0700-0845	YU7MAU	JF	26	26	5	29	C	8sec
8.8.	0000-0200	YU1POA	KE	26	26	8	19	C	4sec
	2100-2155	YU1AWW	KE	26	26	7	8	C	2sec
10.8.	0900-1000	I2FAK	EF	26	26	7	mni	C	ssb 8sec
	1600-1630	F6FOE	YI	26	--	1		NC	
	2200-2235	HG8CE	KG	26	26	6	6	C	16sec
11.8.	0100-0128	IW4ARD	GE	26	26	4	6	C	ssb 20sec
	2100-2150	I1ANP	EE	26	26	4	6	C	8sec
12.8.	0400-0600	YU7NTU	KF	26	26	4	20	C	59sec!!!
	1818-1820	F1KBF	ZC	37	27	2		C	ssb 8sec
13.8.	1100-1145	HG4XH/p	JH	37	27	3	5	C	ssb 6sec

Besides these skeds I had many skeds that resultet NIL
Noch eine Info für einige "besorgte" DL's: Ich bin keinesfalls ein Schwarzsender (o.ä.) wenn ich auf dem 20m VHF-Net unter DH1LAC auftauche.Ich habe freundlicherweise von der OPD Kiel eine SONDERGENEHMIGUNG für das 20m Net bekommen.

73's

tnx for info
Ibr Carsten

DL7YS wkd + hrd via MS from GM46b

830421 RB5LGX NIL 830424 UB5LNR NIL 830616 YU3TSB NIL

830712 0400-0500 F9HS BD 26 26 4b 42p C (wkd 2,5 Min-periods !)

" 0500-0535 GI4OPH - - 3b NC

830713 SM3AZV NIL UK6LDZ NIL (two times, early morning + late evening)

830714 UA6LJV NIL IW5AVM NIL

830718 EA6FB NIL

" 0600-0700 F6EAN-EA5 ZY 26 -- 1b 6p (vy weak) NC

tnx for info
Ibr Peter

830719 C31XV NIL

830720 0400-0455 F1FHI ZH 26 26 12b 59p (refl. strong like in a good shower) C

DF9PY in DK65g wkd via MS:

25.5.83	2000-2100	SP6FUN	IL	26	-	-	2p		NC	
26.5.83	0400-0530	YU3FM	HG	27	26	11b	20p	2s	C	
2.6.83	0700-0740	F6DRO	AD	28	27	12b	mni	5s	C	
"	0900-1035	YU1AWW	KE	26	26	8b	18p	5s	C	
3.6.83	0400-0500	SM2CKR	KX	26	-	-	1p		NC	
4.6.83	0500-0600	GM3WCS	YQ	27	26	11b	mni	6s	C	
"	0710-0810	EA6FB	AY	26	-	1b	11p		NC	SSB
5.6.83	0400-0520	UB5BAE	MJ	26	-	3b	7p	0,5s	NC	
"	1320-1430	LA3UU	FT	26	26	2b	5p		NC	
11.6.83	0500-0545	I1ANP	EE	38	26	3b	mni	5s	C	
"	0840-1015	YU3TSB	HF	27	27	8b	17p	2s	C	
"	1100-1145	YO2IS	KF	27	27	9b	6p	3s	C	
"	2200-2300	IW5AVM	FC	27	-	-	11p		NC	SSB
12.6.83	0525-0536	IW5AVM	FC	28	27	5b	mni	4s	C	SSB R
23.7.83	2200-2350	GM4COO/A	YS	27	26	12b	7p	1s	C	
25.7.83	0600-0640	IW5ACZ	FD	26	-	2b	7p		NC	SSB
"	2200-2300	I2CVC/7	HB	27	26	4b	7p	2s	C	
26.7.83	2000-2100	F6EYM/EA5	ZY	26	26	3b	7p	3s	C	
"	2100-2210	SP6GZZ	IL	26	-	2b	8p		NC	
28.7.83	0600-0750	I4MKN	GE	38	26	13b	19p	13s	C	
"	0800-0845	OE3PUW	II	26	-	1b	5p		NC	
29.7.83	0600-0700	SM3COL	IW	26	-	-	3p		NC	
30.7.83	2000-2130	YU7AU/2	HD	26	26	7b	9p	1s	C	
31.7.83	0600-0658	EA1OD	XD	26	27	1b	8p	1s	C	SSB
"	0700-0850	YU4BMN	JE	27	27	9b	16p	4s	C	
1.8.83	0400-0610	YU2DI	JF	26	26	8b	15p	5s	C	
2.8.83	0700-0745	HG9KOB	KI	26	-	-	5p		NC	
3.8.83	1415-1515	F1KBF/p	ZC	26	26	-	10p		NC	SSB
4.8.83	0700-0752	F1KBF/p	ZC	27	26	3b	18p	1s	C	SSB
"	0830-0910	F9HS	BD	27	27	6b	18p	2s	C	
13.8.83	0500-0522	IW4ARD	GE	27	26	5b	5p	4s	C	SSB
"	0600-0700	UA3LBO	QO	26	26	11b	8p	5s	C	
"	0910-0916	EA5DFY	AY	27	37	3b	-	40s!	C	SSB
"	1900-2000	YU6AA/6	JB	26	-	1b	10p		NC	
14.8.83	0000-0100	GI4OMK	XO	26	27	1b	7p	2s	C	SSB
"	0800-0835	EA3LL	AB	27	26	6b	20p	5s	C	
"	2100-2155	YU7MAU	JF	26	26	5b	10p	4s	C	

NIL: YU7NTU, UB5BAE, UA3LAW, OH5LK, UY5OE, CT1AUW, I4YNO, OE3PUW, OH4UC, YU2CBM, IT9GSF, YU7KMN, CT1ADW.

Not QRV (sri QRN): HG8CE, YU1ABH, YU1ADN

hrd random: YU7NTU, YU1EU, YU2RSG, YU7AJH/5, OK1MBS

73's Stefan DF9PY tnx for info
lbr Stefan

DL7YS (GM46b) wkd via MS

30.7.83	0400-0600	YU7NTU	KF	26	26	6b	21p	C
3.8.83	1200-1255	F8OP	CG	26	27	11b	35p	C
"	1420-1530	LA1K	FX	26	27	18b	30p	C
"	1705-1750	SM3JLA	JX	26	26	8b	5p	C
"	2100-2200	G4DHF	ZM	26	26	6b	16p	NC
"	2200-0000	YU2AU-2	HD	26	26	7b	29p	NC
4.8.83	0920-1035	G4DHF	ZM	26	26	21b	15p	C
"	1240-1340	YU1POA	KE	27	27	5b	8p	C
5.8.83	2030	YO5TP		38		1b	hrd	Random
8.8.83	0710-0900	YO6AZL	MF	26	26	6b	5p	C
"	1200-1310	OH6CH	MX	26	26	7b	5p	C
"	1700-1830	DLØIV-I7	JZ	26	27	5b	5p	NC
9.8.83	2200-2320	YU2JL	HD	26	37	6b	21p	C 3 sec
10.8.83	0000-0030	YU2EZA-2	IC	QRM from HG6KMG on freq. sri !!				
"	0200-0235	F1DPU-ISØ	EA	26	26	12b	18p	C
"	0955-1110	YU3EW	IG	26	26	4b	14p	NC too close te me
"	2200-2245	TO6DMD	DD	--	--	-	7p	NC
11.8.83	0000-0125	LA8KV	FW	26	27	6b	12p	C
"	0210-0325	DLØIV-I7	JZ	38	--	mni		NC QrM on their side
"	0328	G4PVM	XJ	38	hrd	random cq, but no breaks !?!?		SSB
"	0356	YU2JL	HD	27	27	1b		C Random SSB
"	0400-0530	F6EOQ	YI	26	27	10b	20p	C
"	1800-1905	GB2XN	XN	26	37	26b	44p	C
"	2200-2218	GI4OPH	XO	26	27	4b	6p	C SSB
"	2220-2320	GI4OMK	XO	26	--	7b	6p	NC SSB
12.8.83	0000-0046	IW4AHX	GE	26	26	5b	11p	C SSB
"	0100-0145	I5WHC	FD	27	--	1b	-	NC
"	1300-1345	DLØIV-I7	JZ	27	27	7b	4p	C
"	1515-1530	F1KBF	ZC	27	27	5b	12p	C
"	1624	SM2ILF	KY	38		1b	hrd	Random
"	2000-2050	G8TIC	YM	27	27	4b	5p	C SSB 20 sec S7
"	2200-2300	OH2AUK-Ø	KT	26	27	11b	14p	C ?
"	2305-2340	F1FIB	BD	26	26	1b	-	NC SSB

13.8.83	0000-0100	G4NFD	XJ	38	38	mni	mni	C
"	0900-0950	LA6CU	CU	26	27	4b	4p	C ? 1 Min CW
"	1000-1100	G4HUP	YM	26	37	9b	7p	NC SSB
14.8.83	1800-2000	OH5LK	NU	26	26	6p	8b	C
"	2200-0000	YU7ADH5	LB	NiL, same time YU1POA + YU1BDJ on random				

NIL:9.8.YU2JL, 11.8.I6CXD,GW6APZ-p,YU7KMN, 12.8. UA6YAF,YU3TSB
I slept over a1 12.8.: I4TSB es TO6DMD vy sri

ber-vhf-net during shower 3645 khz-remember-vhf-net during shower 3645 khz-reme

tnx fer info, 1br Peter

PE1ALA (CM44e) MS-tests 432 Mhz:

7.08.	02-04	HG9KOB/p	KI	-	-	-	2p NC
12.08.	01-04	FØCNR/FC	EA	26	-	2b	4p NC
12.08.	08-10	UA3LBO	QO	-	-	2b	7p NC
13.08	08-10	UA3LBO	QO	-	-	-	- Nill

As perhaps expected results were very pover,
but I should be happy to try again in jan.84.
My equipment is homebrew: tranverster 28/432
with 3SK97, K2RIW final and 4 x 21 el.

vy 73,

Theo Köhler
Floris Balthasarstraat 17
2064 XK Spaarndam -NL-

tnx fer info, Theo

Pa2REH (CM54h) wkd via MS ;

02-01	YU3TSB	HF	26	26	C	3b	-p	
	YU3FM	HG	26	--	NC	6b	1p	
03-01	YU3FM	HG	27	27	C	5b	3p	
25-06	SM3AZV	IX	26	26	C	10b	11p	
26-06	I4YNO	FE	26	26	C	6b	16p	SSB!
	OH3MF	MU	26	26	C	5b	14p	

Nil from YU100 on 13-07.

73's Eric PA2REH.

EA3LL (AB56b)

				s.	r.	b.	p.		
23-4-83	23.00-24.00	SP6FUN	IL	26	26	3	5	NC	
24-4-83	00.00-01.05	OK1MAC	HJ	26	27	11	15	C	50/144(3 min)
7-7-83	06.00-06.35	G4IJE	AL	57	26	mni		C	croosband
7-7-83	08.00-08.15	DL8DAT	DL	27	27	16	30	C	5 sec.
8-7-83	06.00-07.00	PA3CSG	CL	26	27	15	25	C	
8-7-83	07.00-09.00	GM4CXM	XP	27	26	5	15	NC	
9-7-83	06.00-06.30	G4PLZ	ZN	37	28	mni		C	8 sec.
9-7-83	08.00-09.00	OZ1IUK	GQ	26	26	10	10	C	3 sec.
10-7-83	07.oo-08.20	OZ1FDJ	GP	26	26	5	8	C	
12-7-83	06.00-08.00	GM4CXM	XP	26	26	12	6	C	
16-7-83	04.00-06.00	PAØOOMSM1	JQ	26	--	4	4	NC	
16-7-83	06.00-06.30	G8KBQ	YL	27	27	20	35	C	3 sec.
17-7-83	05.00-05.30	DF7RG	GI	26	27	mni		C	4 sec.
20-7-83	21.00-21.30	PA3BBV	CM	27	28	12	16	C	
20-7-83	21.35-22.30	ON5EX	BK	27	27	15	20	C	4 sec.
20-7-83	23.00-24.00	GM4COO	YS	26	--	4	6	NC	
23-7-83	05.00-06.00	Y22HA	GO	26	26	11	25	C	
24-7-83	05.00-05.40	PAØHIP	CL	26	26	10	22	C	
29-7-83	06.00-06.20	GM4COO	YS	37	26	6	10	C	35 sec!
30-7-83	06.00-06.30	G4IJJ	AM	36	28	12	30	C	10 sec.
30-7-83	21.00-21.30	PAØXMA	DM	27	27	mni		C	3 sec.
30-7-83	22.00-22.30	G4DHF	ZM	27	27	mni		C	4 sec.
30-7-83	22.35-23.00	PAØBLD	??	27	27	mni		C	6 sec.
30-7-83	23.00-23.30	G4KUX	??	27	27	mni		C	3 sec.
31-7-83	06.00-07.15	OZ1DOQ	GP	26	26	5	15	C	
31-7-83	09.35-09.50	I4MKN	GE	27	--	10	15	NC	
1-8-83	21.00-21.45	DK3LL	FO	26	27	13	18	C	
4-8-83	09.50-10.15	DKØTU	GM	27	27	20	35	C	20 sc.
10-8-83	05.00-05.25	DLØIV/I7	JZ	26	37	15	30	C	20 sec.
11-8-83	08.00-10.00	SM5AQJ	JT	26	26	6	8	C?	no RRRR 2300 KM
11-8-83	10.00-12.00	SM1BSA	JR	26	--	2	13	NC	
11-8-83	23.00-23.55	GM3OUR	??	37	37	mni		C	Random
12-8-83	00.00-02.00	SM7GEP	HR	26	26	7	10	C?	no RRRR 1)
12-8-83	02.00-02.40	G3LTF	AL	27	26	15	46	C	
12-8-83	03.00-03.3o	DF8IK	EJ	27	28	13	20	C	
12-8-83	06.00-07.00	SM7JUQ	GP	36	26	16	18	C	
12-8-83	20.00-21.00	G8OPR	ZL	26	37	13	20	C	
12-8-83	21.00-22.00	Y25IL	HL	26	37	7	10	C	
12-8-83	22.00-24.00	UA6ALT	UF	--	--	-	4	NC	3182 KM!
13-8-83	00.00-00.18	DG5CH	GI	26	27	8	7	C	
13-8-83	01.00-02.40	OZ1EYE	FQ	26	26	10	14	C	
13-8-83	06.00-06.20	Y22UL	GN	37	37	mni		C	30 sec.
13-8-83	08.00-10.00	SM5BEI	JU	26	--	1	3	NC	2)
13-8-83	10.00-11.00	EA1KV	VC	26	26	10	7	C	4 sec.

→

13-8-83	20.00-21.00	DK7RW/A	FJ	26	27		mni	C	
13-8-83	22.00-23.00	YU6AA/A	JB	27	27		mni	C	
14-8-83	02.00-02.28	HG4XH	JH	26	28	13	11	C	10 sec.
14-8-83	08.00-08.30	DF9PY	DK	26	26	8	35	C	

Nil:SP6FUN,SM4LMV,PAØOOM/SM1,LA1JU,SM5MIX,CT1AUW,DL4NAA,G4SGK/P, EA7PZ,LA9BM,CT1AUW,SM5BEI,DG4NAE,

1) QRM QSO YU/DL
2) QRM EA3AQJ (SSB) and QSO G4CDC/YU1APS.

The shower was not very good, and many days in July or begi nning of August the reflections were much better.

Well, this is all. Best 73 and DX! EA3LL

tnx for info, dr José

PAØHWM CKIØe wkd:

2.04.83	0600-0745	LA6QBA	GV	26	26	3	2	c	3s
28.05	0400-0455	YU7AU	KE	27	26	27	36	C	
29.05	0300-0445	OH3MF	MU	26	27	I4	II	C	2s
2.06	0400-0450	SM3AZV	IX	37	27	I0	I3	C	7s
4.06	0300-0430	IIANP	EE	26	26	5	6	C	Is
5.06	0500-0545	OH5LK	NU	26	27	I3	6	C	7s
6.06	0300-0500	RB5LGX	RK	-	-			NIL	
6.06	I335-I430	YU7AJH	JF	26	27	I3	7	C	2s
7.06	I045-II45	CT4KQ	WA	26	-	2	3	NC	
8.06	0900-II00	UB5LNR	RJ	-	-			NIL	
8.06	II00-I200	IW4ARD	GE	27	26	8	I0	C	3s SSB
9.06	0600-0700	I2WSG	EF	26	-	2	7	NC	
II.06	0400-0445	F9HS	BD	27	27	28	26	C	7s
II.06	0700-0730	SM3LGO	IX	27	27	29	26	C	IOs
I2.06	0400-0435	YU3FM	HG	26	26	25	I0	C	3s
I2.06	0500-0525	IW5AVM	FC	27	27	I8	I0	C	5s SSB
I2.06	0545-0700	I4MKN	GE	27	26	II	I5	NC	2s SSB
I8.06	0700-0800	I4MKN	GE	26	-	I3	24	NC	SSB

→

3.07		CTIAUW	WA	-	-			NIL	
10.07	0400-0510	YU3TSB	HF	26	26	10	8	C 10s	
12.07	2000-2100	F6EYM/EA5	ZY	-	-			NIL QRM	
16.07	0300-0500	YU3EW	IG	-	-			NIL	
17.07	1000-1200	PAØOOM/SMI	JQ	26	26	20	30	NC ?? 6s	
19.07	2200-2310	PAØOOM/SMI	JQ	26	26	32	35	C 3s	
23.07	0400-0600	UB5LNR	RJ	-	-			NIL	
24.07	0400-0600	YU3ZW	IG	27	26	9	12	C 2s	
29.07	0400-0500	SM3JIA	JX	26	26	13	8	C 3s	
31.07	0330-0430	YU7AU/2	HD	26	26	13	18	C 2s	
6.08	0600-0630	F6KBF/P	ZC	26	26	6	5	C 30s SSB	
7.08	0420-0600	OH5IY/5	NV	26	26	16	10	C 6s	
11.08.83	1000-1200	UB5LNR	RJ	-	-			NIL	
11.08	1420-1500	F6CTW/P	BC	37	-	mni		NC 6s no rpt	
11.08	1500-1700	UK2RDX	MT	26	28	5	7	NC 2s	
12.08	0600-0700	EB5AZT	ZY	-	-			NIL SSB	
12.08	0700-0800	C3ØAAR	AC	-	-			NIL SSB	
12.08	0800-0900	EA5DFY	AY	26	-			NC	
12.08	1240-1400	YUIPOA	KE	26	27	11	11	C 12s	
12.08	1400-1430	FIDPU/ISØ	EY	-	-			NIL SSB	
12.08	2200-2237	IØCUT	GB	27	27	5	8	c 15s SSB	
12.08	2238-2248	IWØAKA	GB	27	27	5	3	C 10 s SSB	
13.08	0000-0200	LZILH	NC	-	-			NOT QRV QRM	
13.08	0810-0900	EA5DFY	AY	27	26	mni		C 15s SSB	
13.08	0930	FIDPU/ISØ	EY	37	27	I burst		C 25s SSB (I)	
13.08	1000-1100	EA7AJX	YX	-	-			NIL SSB	
14.08	0745-0945	I4MKN	GE	26	-	5	29	NC	
14.08	1200-1400	YU7KMN	JF	-	-			NIL	

(I) RANDOM.

tux for info

73's de PAØHWM
Jo Hanssen.

OZ9PW EQ27j wkd 144MHz MS: (all 1983)

03101	22.00-22.57	DD5TD	EI	26	27	m n i	C	5s SSB
04.01	00.00-01.00	OE6IWG	HH	29	27	m n i	C	SSB
08.06	04.00-04.48	IW4ARD	GE	26	27	4b 28p	C	3s SSB
12.06	06.40-07.40	YU7AU	KE	36	27	m n i	C	los random CW
18.06	06.00-07.45	YU3EW	IG	26	27	11b 73p	C	2s CW 800lpm
06.08	05.00-06.00	F1EIT/p	BG	--	--	was you asleep José		
06.08	07.00-07.24	F1KBF/p	ZC	37	37	5b 16p	C	5s SSB
10.08	15.00-16.00	YO2IS	KF	59	26	8b 26p	C	125s ES? CW 800lpm
11.08	15.00-16.00	F6ETI	YH	37	26	8b 10p	C	20s CW 800lpm
12.08	01.00-02.00	F6EZV	ZG	--	--	Sorry not QRV. QRL problems		
12.08	15.00-16.00	EA1CR	XD	37	--	1b 2p	NC	15s SSB
12.08	21.00-22.00	F6CTW/p	BC	26	--	QRM	NC	new skeed?
13.08	04.00-05.35	SM2IUE	IZ	26	26	13b 27p	C	3s CW 500lpm
	07.00-07.50	I1KTC/p	EE	26	49	15b 22p	C	3s CW 800lpm
	10.00-11.00	F6HVK	CH	27	26	4b 38p	C	7s SSB
	13.00-14.00	I3LGP	GF	26	26?	QRM	NC	other wkd on QRG
	15.00-16.00	IWØAKA	GB	--	--		NC	Was you QRV?
14.08	07.00-08.00	F8OP	CG	sorry could not be QRV.				
	12.00-13.00	G4MUT	ZL	sorry Steve QRL problems.				
20.08	04.00-05.25	I3LGP	GF	20b 107p	26	27	C	5s CW 800lpm

Heard random 12.08: OK1FBL,F1FHI,IW9AJZ,F6CJG,I3JPQ, YU3EW, YU1AD,OE1EFP.

I have written to abt 60 stations for skeds during the Perseids, and recieved only answer from abt 20 stations, to bad. Therefore I am looking for sked-managers allover Europe, is there anyone who is interested to be my sked-manager?

I am interested in skeds with stations all over Europe and fore the whole year, I can work both SSB and CW(CW RX-max: 800 LPM TX-max: 1500 LPM). My rig: RX BF981 TX 200W ant 4x6 elm L.Y. home made. I have written to many russian stations, and have not got one single answer from them?

Do you want to be my sked-manager in your country, or do you only want a sked please write me on this addres: OZ9PW, Lyngvej 17, DK-9631 Gedsted, Denmark. or ring me on: 45-08-64 53 30.

73's de OZ9PW, Erling.

tux for info

LA8KV (FW27C) - portabel ØTH

						B	P	
06.08	0400-0445	DL1MF	GH	27	26	19	18	C
	0600-0740	SP6FUN	IL	27	26	22	22	C
	0800-0940	DL5DAV	DL	36	26	35	MN	C
07.08	0400-0500	G3IMV	ZL	27	26	11	19	C
	0600-0630	PA3CNN	CM	27	26	13	24	C
	1000-1200	DK1PZ	EL	26	-	MN	MN	NC
10.08	0400-0500	DL1MBV	FI	27	-			NC (1)
	0600-0700	G8KBQ	YL	-	-		7	NC
	0700-0800	G8TZT	ZN	26	-	1	-	NC
	0800-1040	G4DHF	ZM	27	26	MN	MN	NC
	2200-2400	OK1VMD	IJ	26	-	4	7	NC
11.08	0000-0130	DL7YS	GM	27	26	29	19	C
	0400-0550	G4FUF	AL	26	26	34	45	NC
	0600-0725	G4ERG	ZN	26	26	40	MN	C
	0800-0950	DL5MCG	FI	27	36	13	18	NC
	1000-1130	DL3MBG	GI	26	26	25	25	C
	2000-2130	PA0UMV	CL	27	27	20	20	C
	2200-2300	Y23FG	FM	27	27	15	40	C
12.08	0000-0100	DK4TG	DL	37	36	23	60	C
	0200-0310	DF6NA	EJ	59	26	MN	MN	C (1)
	0400-0450	PA0HHP	CL	27	36	MN	MN	C
	0800-0920	GM4CXM	XP	27	26	MN	MN	NC
	1000-1050	DJ4DX	DL	59	37	MN	MN	C
	1050-1130	DF7DJ	DL	37	37	MN	MN	C

211

SM4GVF HT76a wkd 1983:

1.01.	1000-1055	HG2SU	JH	26	26	18b	C 3s S9+10dB
2.01.	1600-1800	UA9GL	CR	--	--	1p?	NC 2361 km
	1800-2000	UA6BAC	SE	--	--	nil	NC 2216 km
3.01.	0100-0200	YU6AA	JC	--	--	nil	NC 1875 km
	0200-0400	9H1CD	HV	--	--	nil	NC 2580 km
8.01.	0920-1020	YO5AVN	NE	26	--	3p?	NC 1788 km
17.01.	0300-0500	UK5IEC	TI	26	--	1p	NC 1909 km
11.02.	2100-2300	UA6LJV	TH	--	--	nil	NC 2059 km
22.04.	0100-0300	UA6BAC	SE	--	--	nil	NC 2216 km
	0300-0500	I1JTQ	DF	26	26	4b	C 15s 1640 km
5.06.	0800-1000	CT1WW	WB	--	--	nil	NC 2532 km
26.06.	1400-1505	EI2CA	WM	26	26	15b	C 1478 km
	1900-1926	OE3XUA	HH	27	37	Mni	C 1239 km
10.07.	0800-0835	DF4NAA	EJ	28	27	NC	stop tx, wrong call
25.07.	0600-0640	F6FHP	CE	37	26	15b	C
26.07.	0700-0835	F6DRO	AD	27	26	12b	C
28.07.	0600-0700	GM8TIC	XQ	26	27	8b	NC 1191 km SSB
29.07.	0300-0318	DL4NAA	EJ	27	27	9b	C 1086 km
8.08.	0400-0500	TO6DMD	DD	27	--	NC	called after SM5CHK
	2105-2130	SM4AXY/LA	HB	27	28	5b	C random
9.08.	0400-0500	TO6DMD	DD	--	--	NC	call after SM5CNQ
	0700-0800	TO6DMD	DD	27	--	Mni	NC
	2030-2105	SM4AXY/LA	HC	38	39	Mni	C 4s S9 1003 km
	2200-2400	YU7AJH/5	LB	--	--	1b?	NC 1991 km
10.08	0600-0700	G8OPR	ZL	--	--	nil	NC 1370 km SSB
	0900-0958	TO6DMD	DD	27	26	11b	C 2s S9 1794 km
	1000-1054	F1KBF	ZC	26	26	6b	C 2099 km SSB
	1300-1335	GB2XN	XN	49	48	Mni	C 40s S9+40dB 1356 km
	2234-2300	SM4AXY/LA	IC	39	47	8b	C 6s S9 random
11.08.	0200-0400	UA4CDT	YL	--	--	nil	NC 2197 km
	0800-1000	F5DE	AF	26	26	10b	C 1798 km
	1000-1020	G4NFD	XJ	27	26	Mni	C 1648 km
	1100-1130	G8TIC	YM	27	27	5b	C 1329 km SSB
	1130-1210	G8XVJ	?	27	37	6b	C random SSB
	2000-2200	UA6YBH	UG	--	--	nil	NC 2224 km
	2200-2400	UA9GL	CR	26	--	4p	NC 2361 km
12.08.	0000-0200	UA6BAC	SE	--	--	nil	NC 2216 km
	0700-0900	EA3AIR	BB	--	--	2p	NC 2167 km
	0849	F1FLA	?	37	37	1b	C random SSB
	0900-1015	F9HS	BD	27	36	7b	C 1882 km
	1015-1200	EA10D	XD	--	--	nil	NC 2238 km SSB
	1200-1400	UA9GL	CR	--	--	nil	NC static rain 1 hour
	2030-2110	SM4AXY/2	LC	38	38	Mni	C random
	2200-2400	UA4CDT	YL	26	--	1b?	NC 2197 km
	2144	HG6KVB	?,	27	27	1b	C random SSB
13.08.	1800-2000	UK5IEC	TI	--	--	sorry	not qrv
14.08.	1400-1445	F6ETI	YH	28	26	8b	C 1749 km
	2100-2255	UA6LJV	TH	38	26	6b	C 15s 2059 km

Rig: FT-221R BF981 2x 4CX250B 4 x 17 el 4.2 lambda

73 de Kjell Kjell

tnx for info

12.08	1105-	DL5MBE		27	27	1		NC
	1130-1250	DF7KF	DK	37	37	MN	MN	C
	2300-2400	DG4NAE	EJ	37	-	MN	MN	NC(1)
13.08	0000-0050	HG8CE	KG	26	36	8	5	C
	0100-0125	DL6NAA	FK	27	26	MN	MN	C
	0125-0945	DL8NBI	FK	37	37	MN	MN	C
	0200-0310	ON7EH	CK	26	27	28	32	C
	0700-0740	DL8DAT	DL	27	27	MN	MN	C
	0900-1010	DJ5MS	GI	27	26	45	MNI	C(1)
14.08	0800-0925	G4IJJ	AM	27	26	41	85	C

(1) QRM during QSO

NIL : 14MKN, ON6UG, PA0OOM, PA3CS6, F6DKQ, F6FHP, DL3AAL, OK2KZR, OK3TJK, SP6GeZ.

tux for info

73 Ken

OE3CEW II52f wkd CW:

1983

03.01.	1600-1715	GM3ZXE	YQ	26	26	8b	5p	C	3sec/S6
04.01.	0500-0545	SM3COL	IW	26	37	9b	mni	C	3sec/S2
30.03.	0000-0200	DF1CF/IMØ	EY	26	26	25b	mni	C	0,2s/S2
01.04.	0800-1000	LA6QBA/p	GV	26	26	7b	mni	C	2sec/S6
03.04.	0800-0945	SK2KW	KY	26	26	19b	mni	C	0,2s/S2
03.04.	1010-1200	GM4CXM	XP	26	27	8b	mni	NC	
17.04.	0600-0800	LA6CU	CU	26	26	12b	5p	C	1sec/S3
22.04.	0900-1000	GM4CXM	XP	26	27	12b	3p	C	
04.05.	0600-0800	G4DSC	ZO	26	26	6b	mni	C	QRM OK2KZR
05.05.	0600-0710	RB5LGX	RK	26	27	8b	mni	C	1sec
07.05.	0950-1015	SK5AJ/Ø	JS	26	26	14b	mni	C	random
19.05.	0500-0640	SM3JAW	JX	26	26	16b	mni	NC	0,5s
21.05.	0600-0725	OH5LK	NU	26	27	15b	mni	C	0,5s
28.05.	0700-0745	SM3AZV	IX	26	27	10b	mni	C	0,5s
29.05.	1600-1635	SM4IVE	HT	26	27	14b	mni	C	1sec
05.06.	0900-1100	F6EAS	ZJ	26	37	15b	mni	C	400 lpm
06.06.	0850-0950	UB5LFS	RI	26	27	6b	15p	NC	
07.06.	0500-0600	F6FOL	YI	26	26	20b	mni	C	1sec/S3

NIL: LA1TV, OH1[illegible], UB5LFS, RB5[illegible]X, LA2[illegible], DJ3[illegible], SM4I[illegible], UK6[illegible], OH1AU, UK6L[illegible].

tux for info

YU 2 JL (HD3Øa) wkd 2m MS:

26.12.82.	1800-1925	DK2PH	EL	27	27	15b	13p	2s	C	
29.12.82.	2000-2055	Y22QG	FM	27	27	6b	4p	1s	C	
	2200-2250	DL6NAA	FK	27	26	6b	6p	1s	C	
03.01.83.	0000-0100	GM4CXM	XP	26	-	2b	3p	1s	NC	ssb
	0100-0155	DKØTU	GM	28	27	17b	40p	1s	C	
	0300-0410	GW3NYY	XL	27	28	26b	31p	1s	C	
	1100-1135	F6FHP	AE	28	27	29b	26p	3s	C	
	1600-1740	SM7GEP	HR	28	28	5b	8p	2s	NC	
	2000-2150	OH5LK	NU	27	26	3b	7p	1s	C	
	2200-2256	G6HKS	AM	27	27	8b	10p	2s	C	ssb
	2300-2335	PAØCIS	CM	28	27	22b	18p	1s	C	
13.05.83.	2000-2100	GI8YDZ	WP	-	-	1b	2p		NC	ssb
	2100-2200	UC2AA	NN	37	26	12b	12p	4s	C	
15.05.83.	2200-2240	OZ1DOQ	GP	26	27	5b	6p	13s	C	
	2235-2320	OZ1FDJ	GP	26	27	8b	11p	7s	C	
28.05.83.	0405-0450	DK1KO	FN	27	27	20b	37p	2s	C	
	0700-0800	DL5DAV	DL	27	26	8b	26p	4s	C	
03.06.83.	2200-2330	SP6FUN	IL	27	26	15b	9p	0,5s	C	
04.06.83.	0500-0620	F6DKQ	DH	27	27	14b	23p	4s	C	
06.06.83.	1000-1055	PA3BBI	CL	37	26	21b	27p	14s	C	
08.06.83.	1600-1800	PA3CPL	CL	27	26?	4b	5p	0,5s	NC	
10.07.83.	2200-2255	OZ1EYX	GQ	26	27	14b	35p	1s	C	
	2255-2340	OZ1CLL	GP	26	27	13b	19p	1s	C	
12.07.83.	2000-2100	G4PLZ	ZN	36	26	17b	26p	9s	NC	
	2200-2300	OZ5VHF	FQ	26	26	5b	9p	2s	C	ssb

73's Boban

tux for info

OE1APS II63g 144 MHZ MS-SSB:

830606	04^{00}-05^{00}	EA6FB	AY07j	27	27	mny	mny	15 sek	
07	04^{00}-05^{00}	Y22HA	GO71j	27	27	6b	14p	NC	
08	04^{00}-05^{00}	G8TGM	ZK17f	26	26	13b	53p	3 sek	
09	04^{00}-04^{35}	SM5CNQ	HS46c	26	26	11b	20p	3 sek	

73 DE Alfred

tux for info

212

MS-Log DD 5 TD in EI55j (SSB)

22.04.83	06.00-07.02	OZ1EYE	FQ	27	27	5b	5p	C	3sec
07.06.83	06.00-07.00	GI4OMK	XO	27	27	7b	5p	NC	7sec
11.08.83	22.00-23.03	SM6EAN	FR	26	26	6b	10p	NC	3sec
12.08.83	06.00-07.00	EA1KV	VC	26	-	4b		NC	local QRM
	11.00-12.00	GW6APZ/P	XM	26	-	2b		NC	-
	12.03	LA9ZV		27	37	1b		C	30sec .400
	15.52	GI4PUP		37	37R	1b		C	20sec .400
19.08.83	20.00-20.59	GI3YDZ	WP	26	37	7b	10p	C	10sec
	22.00-22.38	GM5MIX	MS	26	26R	14b	12p	C?	7sec

Nil: EA1ED,F1FIH,G8KBQ

hrd on RANDOM 11.08.83 G4PDM, 12.08.83 DF2ZC,G8TZT,GM3YJU,LA9BM, LA6R,G8VHF(?),IWØBFZ,F1DBW,PAØACM,SM5NIK(.400) 13.08.83 F6FSF, F1FHI,F6FMP,GW8CKA,GM3OBI,EA1TN,GM4CXM,LA9YW,SM6AEK,HG4XH

Rig here IC-R45E/35K07, PA KB1 09, EA11 Elt DY

Dietmar Plessie, Am Brunnen 7, D-7407 Bisingen, Tel.: 07476/578

tnx for info

PAØJMV CL37e MS-report

830811	0800-0900	I2WSG	EF	27	26	mni b	C	5 sec.
	0940-1000	F1KBF	ZC	27	26	mni b	C	5 sec.
	1010-1100	EA6FB	AY	26	26	3 b	C	15 sec.
	2000-2130	LA8KV	FW	27	27	mni b	C	15 sec.
830812	0000-0100	HG6NQ	JI	--	--	NIL stop after 1 hr.		
	0817-0830	EA6FB	AY	37	27	mni b	C	25 sec. random
	0900-0950	IW5AZC	FD	27	27	mni b	C	25 sec.
	1036-1100	TO6DMD	DD	27	--	1 b	NC	
	2100-2125	IØCUT	GB	27	27	mni b	C	20 sec.
	2315	HG6KVB	KH?	57	27	1 b	C	60 sec. random
	2341	YT3V	HF	37	27	1 b	C	30 sec. random
830813	0006	YU3FM	HG	27	27	1 b	C	20 sec. random
	1440-1500	OH7PS	OX	--	--	NIL		
	2200-2250	YU2JR	HD	27	37	mni b	C	10 sec.
	2300-0000	YO7CJI/8	NH	26	--		NC	vy qrm tropo
830814	0700-0800	OH7PS	OX	--	--	NIL		

hrd ± 25 stns random between 830811-830813, max.on 830812/13

PAØJMV is re-activated in new qth with new station qro.
qrv all major showers CW 1200 lpm and SSB
Pse skeds to: Joop Mutter--De Schutter 10--NL5688VH Girschot
tel.(0)4997-2587 or qrl (0)40-442600. Also qrv 14Mc VHF-net.

tnx for info

DG1BP (DN37h) :

23.07.	0400-0500	F5DE	26	26	6?	p6	NC
24.07.	0400-0500	F5DE	26	26	5	7	C
28.07.	0700-0800	F6DRO	dated postmark 2.8.!!!				
29.07.	0700-0800	F6DRO	Letter arrived at 6.8. sri				
09.08.	0800-0816	F1KDF/p	36	38	3	16	C 15s S8, ufb
10.08.	0800-0900	EA4 V	27	26	5	5	NC Tropo qrm
	2100-2300	YU4CF	-	-	-	-	NIL qrv?
11.08.	0400-0430	F6FHD	27	26	8	10	C
	2200-2231	F1RLL	27	27	16	20	C qrm
12.08.	0600-0700	EA6FB	47	26	4	8	NC
	0700-0800	EA1KV	47	-	1	3	NC 22s in 1st period
	2200-2300	SM3GHB	37	39	3	4	C
13.08.	0000-0116	OH3CU	26	27	6	5	C 40+15+7s
	1041	I4YNO	37	27	1	-	C 13s S5-9 random
14.08.	0600-0800	OH5NW	27	26	35	mni	C 20s S9

Proposals are every time wellcome !!!

'73 DG1BP

tnx for info

G8TZT ZN13g wkd:
(QTH G15556)

11.08	0100	0114	YU2JL	HD	26	26	4	1	S	C	SSB
	0200	0236	IW4ARD	GE	26	27	15	6	S	C	"
	1104	1136	SP6FUN	IL	26	27		2	S	C	"
	2100	2200	DB5ML	FI	26		6	1	S	NC	"
12.08	0142	0146	YU3ES	GF	26	27		2	.4	C	"
	0200	0300	YU3TTL	HG	26	27	10	2	S	C	"
	1902	1903	I4YNO	FE	26	26		1	*	C	"
	1941	1951	YU3EW	IG	26	27		1	.2	C	"
	2326	2327	HG4XT/P		26	27		1	.2	C	"
13.08	0030	0031	YU2RGK	HF	26	27		1	.4	C	"
	0056	0142	YU3C		26	38	36	5	.4	C	"
	1130	1200	OK2BFH	JJ	26		1	1	S	NC	"
	1224	1224	DL9MCC	GH	26	38		1	.2	C	"
	1240	1241	DL9MCC	GH	26	28		1	.2	C	"
	1244	1246	OE3OBC	II	38	38		2	.2	C	"
	1400	1500	SP9AI	JJ	26	27	4	2	S	NC	"
	2300	0000	IV3HWT	GF	27	27	12	2	S	NC	"
14.08	0055	0100	YU2RSD	HF	26	38		1	.2	C	"

* Tailended G4KUX on Sked.

tnx for info

OY9JD WVØ7h wkd:

3.01. 2200-2300 OZ1FDH GP 27 36 5b 27p 6s tnx for info
12.08. 2100-2135 DK6AS FM 27 27 5 14 10s

83 08 09

2300-2334 SM5CBN 37 26 5b 14p 3sec C

830810

1900-1942 F6ECI 26 26 6b 11p 3sec C

2100-2200 SM5CHK nil

83 08 11

1900-1902 G8APZ 37 37 1b 10sec C

1903 G3ZXZ 37 37 1b 8sec C ran

2000-2024 GW6APZ/P 27 26 3b 14p 7sec C

2200-2300 F6FDR 27 26 2b 7p 3sec C?

83 08 12

tux for info

1900-1930 PAØCOR nil

2044-2130 GB4ULX 26 26 16b 39p 4sec C

F6EYM/EA ZY1Øj wkd (all RRR) last July:

F8OP	CG	OK1MAC	HJ	ON5QW	BL
HG6KNB	JI	G3BW	YO	OK1KKH	HJ
F6BSJ	CG	F6EOQ	YI		
G3UNU	CM	OK1FM	GJ		
F6CER	BI	G4ABB	AM		
F6DWG	BJ	PA3BBV	CM		
PA2GFL	DM	PA3BBI	CM		
DL9GS	DL	G3POI	AL		
PAØHIP	CL 26s	I3TJQ	GF		
GM3WOS	YQ	DL4NAA	EJ		
PA3BIY	CM	G4IJJ	AM		
DK2PH	EL	F1FHI	ZH		
PAØBLD	CM	DJ4AX	DL		
DF7DJ	DL	F6HWY	AH		
PAØCIS	CM	PAØXMA	DM		
GM4CXM	XP	ON6UG	BL		
DF9PY	DK	DF1OH	EM		
DK1PZ	EL	DL3MBG	GI		

Note:
Speed and keying were not good. Sri, it would be better next time.

merci pour les infos, Guy. Peut-être ils etaient un peu plus interessantes avec les numeros des reflections!?

Still MS-Lists available!!!!!!!!

83 08 10

1600-1700 G6GGE ZL 26 26 4p 6b 3sec C?

1800-1900 F6ECI AF 26 27 16p 3b 2sec C

2000-2045 GW6APZ/P XM 27 26 14p 10b 2sec C

83 08 11

1800-1850 DK3LL FO 27 27 6p 3b 3sec C

1942 OZ1ELF ran 27 27 1b 5sec C

2000-2050 DL7AN DN 27 26 16p 3b 2sec C

83 08 12

1800-1820 PAØCOR CN nil

2000-2038 GB4ULX XJ 26 26 4p 15b 5sec C

2200-2216 G4HUP YM 26 38 4p 8b 50sec C

2218-2258 G8VG/P? ran 27 37 3p 4b 5sec NC

2300-2320 OZ1EYE FQ 28 38 12p 5b 40sec C

83 08 13

2100-2145 F6FDR BJ nil

2300-2332 G6RDX ZL 27 27 3p 6b 2sec C

tux for info

vy 73 de Alfred

Y22ME HM53a wkd:

5.05.	0300-0345	UB5LNR	RJ	25p	8b	1os	
	0400-0530	UK6HAR	UD	12	3		2212 km
7.05.	0800-0950	UA3IDQ	QQ	25	14	5	
8.05.	0400-0600	UA6YAF	UE	16	3	11	
6.06.	0200-0400	UA6BAC	SE	3	1		NC
2.07.	0700-0800	YU1AWW	KE	19	8		
5.07.	0500-0522	SM2LTA	JY	20	16	2	SSB
12.07.	0500-0505	GM8YJU	YO	6	4	10	SSB

dk fer info, 1br Jürgen

IW 4 ARD (GE63f):

DATE	TIME	CALL	LOC	TX	RX				
24.07.1983	0700-0733	DK3FW	EM	26	26				C
26.07	0500-0600	F6FDR	BJ	26	--	3B	3P		NC
28.07	0500-0600	OZ1DSK	EP	26	27				C
29.07	0500-0600	SM6CMU	FR	26	26	4B	6P	3"	NC
	2200-2300	F6GGF	BI	NIL					
30.07	0200-0300	G4KTP	ZO	NIL					
	0300-0400	F1FHI	ZH	NIL					
	0400-0500	G4MJC	AK	NIL					
	0500-0600	PA3AIZ	CM	--	--		7P		NC
	0600-0700	GI4OPH	XO	NIL					
01.08	2200-2220	PA3APH	CL	27	27				C
05.08	0500-0544	SM6CMU	FR	26	27	6B	12P	4"	C
10.08	0500-0550	SM7AED	GQ	27	26				C
	1400-1500	F6EVT	BJ	NIL					
11.08	0000-0100	PE1HWO	CL	NIL					
	0100-0128	DH1LAC	FO	26	26	10B	8P	25"	C
	0200-0239	G8TZT	ZN	27	26	9B	7P	5"	C
	0300-0400	OH6KJ	MW	NIL					
	0326-0330	PA3AQN	CM	37	37	5B		35"	C Random
	0500-0600	G4SIX	ZN	27	26	6B	3P	4"	NC
	0700-0800	G6CHJ	ZN	27	26	2B	8P	3"	NC
	0800-0900	LA9PX	EX	NIL					
	0900-0920	G4PLZ	ZN	26	37	4B	4P	35"	C
	0920-1000	G6VGI	ZN	27	--	1B	1P	4"	NC
	2300-2400	LA5IE	CU	NIL					
12.08	0000-0041	G8NGO	ZK	27	26	12B	21P	8"	C
	0100-0142	G8XVJ	YN	27	37	11B	10P	15"	C
	0200-0226	Y21PL	GN	37	37	5B	8P	12"	C
	0300-0326	OZ1IVW	FN	26	26	6B	2P	27"	C
	0400-0500	DC9LC	FO	27	26	4B	16P	2"	NC
	0500-0600	PA3CGR	DL	NIL					
	0600-0954	OZ1EYE	FN	26	27	13B	16P	22"	C
	0700-0800	DL5DAW	DL	NIL					
	0800-0900	G6VGI	ZN	NIL					
	0900-1000	G8VR	AL	NIL					
	1000-1100	SM7IWG	HR	NIL					
	1100-1200	DK9TU	GH	26	26	4B	9P	10"	C
	2200-2239	EI8EF	VO	27	47	5B	7P	10"	C
	2300-2313	GW6APZ/p	XN	27	26	10L	5P	10"	C
	2317-2318	GM8YJU		38	38	5B		15"	C Random
13.08	0000-0050	Y23FG	FN	26	26	11B	13P	13"	C
	0100-0105	PA3GSG	CL	27	27	6B	3P	15"	C
	0106-0124	PE1IHA		27	27	8B	6P	22"	C End Sked
	0144-0146	OZ1CLL		37	37	6B		20"	C Random
	0158-0200	PA9OOM	DN	38	39	4B		15"	C Random
	0200-0300	DH9IAR	FN	NIL					
	0223-0224	DL9MCC		38	38	4B		13"	C Random
	0300-0303	G8LWX	XJ	38	38	4B		15"	C
	0400-0500	SM7BNK	HP	NIL					
	0500-0521	DF9PY	DK	26	27	6B	2P	4"	C
	0700-0751	DK2PR	EK	27	26	15B	24P	4"	C
	2000-2042	GM2XN	XN	26	27	16B	25P	5"	C

:S-SSF PROPOSAL ARE EVERY TIME WELCOME!
VIA: P.O.Box 40 - 47041 BELLARIA - ITALY - 73s

215

Only SSB IW 4 ARD GE

12.12	1000	1100	F1FHI	ZH	26	26	6B	8P	NC
03.01	0400	0500	Y22QG	FN	--	--			NIL
"	"	0500	0555	GW8JLY	YL	26	26	8B	15P C
"	"	0600	0700	DF7KF	DK	26	--	1B	4P NC
"	"	0700	0800	OZ5QF	EP	26	26	7B	7P NC
"	"	0800	0900	F6FHP	AD	--	--		NIL
"	"	0900	1000	DK4TG	DL	26	27	5B	6P NC
"	"	1000	1052	DG7AT	FN	26	37	8B	12P C
"	"	2000	2100	G6ABB	AL	--	--		NIL
07.06	1100	1200	G8MJD	ZN	--	--			NIL
"	"	1200	1300	GW4LXO	YL	--	--		NIL
08.06	0400	0441	OZ9PW	EQ	26	26	7B	11P	C
"	"	0500	0551	PE1EVX	CN	26	26	16B	35P c Random
"	"	1100	1156	PA9HWM	CK	27	26	11B	20P C
"	"	1157	1216	PA3BBI	CN	27	27	12B	6P C Call me on end Sked

BEST '73

tnx for info

LA9FY EV75g reports:

We where going to EV 75g on friday 12th and was putting up everything for our first sked 18.00 utc. We was just finished for the first one and we discovered we had some tape problems. We was hearing alot of burst but could not get it out from the tape again. But we worked SP9AI as the first and then we was only listening and trying to repar the tape recorder. At night 8 OW was working 3 on ssb.

All skeds was worked in the morning 13th. And then we got a new taperecorder from LA 4 QI he was helping and a are now ready for MS also. He has built his key and can be worked. He is able to work south to north. Other directions at his home qth EV75b is impossible coused of high mountains.

We will also soon be on with a Commodore 64 doing all the work for us. We plan to go back in Aug. next year and work more days. Maybe also from DU square. Enclosed is our list for what we worked from EV 75 g. It was LA9FY, LA 8 OW and LA 4 QI. All qsl goes to LA 9 FY.

PA3BIY CM72c wkd:

14.11.	o6oo-o73o	OH1ZAA	KV	27	26	18	43	C	6s	
21.11.	o415-o6oo	EA3IH	BB	26	--	12	3o	NC		
28.11.	o4oo-o6oo	I1DMP	DF	27	26	38	65	C	1,5s	
4.12.	o6oo-o8oo	EA3IH	BB	26	26	vy short		NC		
5.12.	o2oo-o4oo	UK3AAC	SP	26	--	2	3	NC		
12.12.	o2oo-o252	LA6QBA	GV	27	27	21	22	C	4,5s	
	o552-o7oo	I7IWN	JA	27	27			NC		
13.12.	oooo-o1oo	I4GOC	GE	27	27			C		
	o2oo-o4oo	UO5OGX	OG	26	26?			NC		
14.12.	o7oo-o8oo	SM3GHB	HW	37	--	5	7	NC	1os	
18.12.	o4oo-o6oo	SM2JDN	IY	26	26?	12	21	NC	6s	
1.o5.	o4oo-o515	OH3MF	MU	26	26	15	33	C		
5.o5.	o6oo-o7oo	SM3GHB	HW	26	--	2	1o	NC	11s	
7.o5.	o545-o645	SK5AJ/ØJS		37	37	2o	42	C	13s	
12.o5.	o3oo-o5oo	SM2JDN	IY	27	26	22	41	C	17s	
17.o5.	o4oo-o6oo	SM3AZV	IX	27	26	55	1o3	C	wkd with only 1oW	
7.o6.	o6oo-o7oo	IW5AVM	FC	26	26	5	6	NC	NIL after 15 min	
9.o6.	o5oo-o515	IW5AVM	FC	27	26	2o	26	C		
13.o6.	o4oo-o42o	SM3LGO	IX	28	26	33	58	C	fb 4,5s	
6.o7.	o4oo-o512	SM3GHD	GW	26	37	28	46	C	23s	
11.o7.	o4oo-o6oo	SM2IUE	IZ	27	--	5	15	NC		
13.o7.	o3oo-o412	SM2IUE	IZ	26	27	1o	23	C	5s	
17.o7.	o5oo-o542	F6EYM/EA5		27	27	18	65	C	4s ZY-Square	
23.o7.	o4oo-o542	OH5IY/4		26	26	21	44	C	2s NV- "	
26.o7.	o3oo-o333	YU7AU/2		47	27	12	22	C	53s HD	
31.o7.	22oo-23oo	I2CVC/7		26	26	5	3o	C	HB	
11.o8.	o325-o435	SMØFSK/3		26	27	21	3o	C	GY	
12.o8.	o2oo-o4oo	YU4WEU	IE	37	37	mni		NC	my call incorrect	
	o4oo-o5oo	YU4WEU	IE	27	37	34	87	C		
	o5oo-o546	F6CTW/pBC		37	36	fb		C	23s	
	o7oo-o8oo	SM3GHB	HW	37	--	2	3	NC	7s	
	1ooo-11oo	SM3KJO	JW	27	26	12	26	C	16s	
13.o8.	o5oo-o6oo	F1KBF/pZC		27	--	5	18	NC	NIL after 15 min	
14.o8.	o4oo-o5oo	EA1OD	XD	--	--	vy short		NC		
19.o8.	o4oo-o6oo	YU7PXQ/4		26	27			NC	JD	

I got a 8s burst only containing rogers and the 27 report. No callsigns!Why?

tnx fer info, Peter

PA2CHR CLØ9b wkd:

3.o1.	23oo-24oo	YU4AVW	JE	26	--	1	2	NC	
7.o8.	22oo-23oo	OK2KZR	IJ	25	27	14	6	C	4s
8.o8.	1o3o-11oo	LA1K	FX	27	--	3	5	NC	
9.o8.	oooo-oo22	LA1K	FX	26	26	12	14	C	15s
	o929-o944	F1KBF	ZC	27	26	8	4	C	12s
1o.o8.	12oo-1222	I2FAK	EF	26	26	4	3	C	2os
	124o-134o	I6CXD	GD	47	--	8	1	NC	
12.o8.	o9oo-1ooo	SP6FUN	IL	25	27	9	3	C	1os
13.o8.	o5oo-o553	YT3V	HF	25	27	4	7	C	1os

NIL: I4XCC,UR2EQ,YU4BMN,SP6FUN,OH7PS,I3YXQ

tnx fer info

LA9FY EV75g wkd:

12.08	1700-1800	SP9AI	JJ	26	28	20b Mni	C	30 sec
"	1900-2100	YU3TSB	HF	-	-	NIL	NC	
"	2100-2200	HG4XT	JH	-	-	"	NC	
"	2221	F6CVT		26	37		C	144.200
"	2313	OE6WIG	HG	37	37		C	144.400
13.08	0150	YU3C	HG	37	37		C	144.400
"	0600-0735	YU7AU	KE	26	26	18b Mni	C	20sec
"	0800-0840	PAØXMA	DM	26	39	20b "	C	15 "
"	0900-0940	ON6UG	BL	37	26	MNI MNI	C	2C "
"	1000-1045	YU3ES	GF	27	26	16b Mni	C	4 sec.
"	1045-1110	F6CJG	BF	37	27	12b	C	3 sec.
"	1200-1300	OE3PUW	II	27	27	Mni	NC	
"	1300-1345	DF6NA	EJ	27	27	9b Mni	C	12 sec.
"	1400-1430	OK1KKH	HJ	37	27	10b	C	2 sec.
"	1440-1525	DL1MBV	FI	27	27	22b Mni	C	5 sec.
"	1600-1800	DL4NAA	EJ	-	-	NIL	NC	
"	1700-1800	G4KCG	ZM	26	-	Mni stn on the same burst.		
"	1800-1845	Y22ME	HM	26	37	18b Mni	C	10 sec.
"	1850-1955	OK??ZR		27	27	Mni pings	NC	QRM
"	2000-2200	YU7KMN	JF	26	-	1b f. peri.	NC	"
"	2200-2400	YU7MAU		-	-	NIL	NC	
14.08	0500-0700	UB5LNR	RJ	-	-	NIL	NC	
"	0700-0725	F6DWG	BJ	26	37	18b Mni	C	5 sec.
"	0800-0845	G3IMV	ZL	27	26	15b Mni	C	4 sec.
"	0900-0930	PAØRDY	CM	27	26	24b "	C	6 sec.
"	0930-0955	DK6AS	FM	27	27	Mni all time	C	13 sec.
"	1000-1030	DK4TG		27	26	Mni	C	8 sec.
"	1030-1100	G3BW	YO	27	37	Mni	C	4 sec.
"	1100-1200	DL9GS	DL	38	37	Mni	c	50 sec.
"	1200-1230	G4FUF	AL	37	26	25 b Mni	C	7sec.

A lot of stns calling at the same time made it difficult for us especially on Friday and Saturday morning, because of the tape problems but also later. It was a beautiful QTH and we will tra again. We found out that to arrange skeds for nights in advance and for days on 2om was best. See you next time. QSLs go to LA9FY for confirmation directly!
LA9FY Steinar-LA8OW Arvid-LA4QI Øyvind

tnx fer info

Aurora News

by DHØHAR

DL5BBL (EM52f) wkd via Aurora in CW 144MHz :

830204											
1841	LA8SJ	FTØ5J	59a	57a	0°	2047	UQ2GMD	LR73C	51a	55a	350°
1844	SM4KVM	HT56D	52a	53a	0°	2050	SM6CMU	FR5ØB	56a	57a	10°
1855	SM4JEV	HT69E	53a	55a	0°	2103	UR2RQT	MS8ØE	52a	55a	0°
1905	SM5CAK	HS36H	58a	59a	0°	2122	GM3ZXE	YQ35G	53a	54a	355°
1920	SM7EBI	HR12F	55a	58a	0°	2145	GM4JEJ	YQ73G	51a	51a	0°
1925	LA3UL	FT78H	53a	54a	0°	2149	GM4IPK	YPØ5H	51a	51a	20°
1929	SMØFMT	IT5ØF	51a	53a	355°	2335	GM4OBD	YR6ØA	52a	55a	0°
2002	OZ1CGQ	FR53J	53a	55a	0°	2348	GM3WTA	YR68B	53a	55a	0°
2032	OZ1FGP	EQ68A	52a	54a	0°						
830205											
1245	SM6AEK	GQ56G	57a	53a	35°	1414	SM7EBI	HR12F	52a	54a	15°
1324	OZ1FGP	EQ68A	54a	54a	30°	1429	G4ITR	YN16J	52a	52a	20°
1338	G4KTP	ZO11B	53a	55a	30°	1439	GM4CXP	YP37C	52a	51a	20°
1409	GM3JXN	YR39E	52a	52a	15°	1714	SM5CBN	HS56C	54a	55a	0°
1410	SM7DZD	HR25C	53a	55a	15°	1720	SM5MIX	HS66G	53a	53a	0°
830207											
1456	LA9CM	FT72H	51a	52a	15°	1540	OZ1FGP	EQ68A	52a	53a	20°
1516	SM5CFS	JT24G	54a	52a	0°	1544	OZ1CLL	GP23C	53a	55a	20°
1528	LA6VL	CSØ9G	59a	57a	10°						
830302											
1457	DL2LAH	EO29A	53a	55a	25°	1524	G4DEE	YN39B	56a	56a	25°
1501	SM7GEP	HR24E	52a	51a	25°	1532	LA6VBA	ES26G	52a	54a	25°
1510	OZ1FGP	EQ68E	53a	54a	25°	1537	G4IJE	AL12G	52a	51a	35°
1519	G6NB	ZLØ6D	57a	55a	35°	1549	GM4DJS	YP11E	41a	41a	25°
830429											
1652	SM5CBN	HS56C	56a	53a	0°	1705	SM5EFP	HT5ØE	53a	55a	0°
1658	UQ2GMD	LR73C	52a	53a	0°	1729	SM6CMU	FR5ØB	53a	56a	0°
830511											
1718	LA6VBA	ES26G	52a	53a	10°	1759	OZ7RD	FQ41H	51a	55a	20°
1743	GM4ILS	YR24E	54a	55a	15°						

DØYS wkd + hrd Aurora from GM46b

830311	2237	LA9BM	58a	hrd	EU32g	20°	2255	SM5BEI	53a	hrd	JU72c	20°
"	2252	LA7KK	56a	hrd	FU62j	30°	2320	SM4GVM	55a	hrd	HT76a	330°
830524	2051	LA8SJ	58a	58a	FT05j	20°	2124	SM5DIC5	53a	hrd	IT14c	20°
"	2057	SM4ANQ	54a	42a	HU66d	20°	2128	LA2OJ	55a	hrd	FT43e	20°
"	2111	SMØLRN	53a	hrd	JT	20°	2130	LA9BM	51a	hrd	EU32g	20°
"	2117	SM7GEP	42a	hrd	?	20°	2142	LA2OJ	52a	52a	FT43e	20°
"	2120	SMØEJY	51a	hrd	?	20°	2146	LA7EU	51a	hrd	FT15g	20°

OZ3ZW (FO18E) WKD VIA AURORA ON 144 MHZ IN CW.

1.1o.82.

21o7	LA1GCA	CU38E	53a	55a	1o
2111	LA1BR	FU15H	55a	57a	1o
2117	SM3KIF	IU33A	56a	56a	1o
2137	GM4IAO	YR47H	53a	55a	5

29.1o.82.

1455	LA6CU	CU47J	53a	53a	2o
1456	LA6QBA	FTØ5C	55a	54a	2o

1.11.82.

1454	LA6QBA	FTØ5C	54a	53a	25
15o6	LA6CU	CU47J	57a	57a	3o

2.11.82.

1558	LA6ZW	FV64J	55a	55a	1o
173o	SM3AKW	JW41H	57a	56a	35
1733	SK7JD	IR14F	55a	55a	35
18oo	OH2AI/OHØ	KTØ5G	56a	57a	34o
18o5	OH1AA	LU42F	55a	55a	34o
18o8	LA9BM	EU32G	55a	52a	34o
1842	LA6ZW	FV64J	55a	55a	355

23.11.82.

161o	SM5EFP	HT5oE	55a	56a	15
1616	LA5EBA	FT22B	54a	54a	2o
1619	OH1DP	LU42J	56a	55a	2o
1626	LA1TV	ET29G	58a	57a	2o
1642	LA3UL	FT78H	57a	55a	2o
1654	SM5CFS	JT24J	57a	51a	2o
17o5	PAØOOM	?	59a	59a	2o

24.11.82.

1329	SM4DHV	HU27J	52a	52a	o5
1337	LB8IB	FTO5J	55a	57a	o5
1353	G4IJE	AL12G	53a	51a	o
14o7	UA2FCH	KO5oH	52a	53a	2o
1412	DF7KF	DKo4E	53a	53a	2o
1413	Y22IC	GN28D	55a	58a	25
1415	G3UTS	ZO11B	55a	55a	25
1418	F6DWG	BJ31J	58a	57a	25
1419	ON4YZ	CK53E	57a	58a	25
1421	DØ3IK	DJ55F	54a	53a	25
1423	Y21T?	?	52a	?	25
143o	UQ2GFZ	NR57A	55a	57a	35
1452	F6CEL	CJ41G	55a	55a	4o
15o1	PA3BLU	CLo3E	52a	54a	75
15o4	DF3XZ	FN21F	53a	53a	75
1511	LA6VBA	ES26G	54a	53a	o
1517	SM3JGG	HV6oH	55a	56a	o
1526	OK1KGS	HK63F	53a	55a	55
1548	DK2LM	EJ21F	53a	53a	5o
155o	DK5ZO	EK14B	55a	55a	5o
1551	DL8DA	DL5oC	53a	53a	5o
16oo	UR2JL	MT45A	55a	57a	45
1611	DL6WU	EJ14H	59a	57a	15
1613	DF6NA	EJ2oD	56a	55a	45
162o	OK2JI	IJo5C	53a	55a	2o
1623	UQ2GAK	MQo1G	55a	57a	55
1627	OK3KNM	JI2oE	54a	55a	55
1629	YU3ZV	HG3oD	56a	?	6o
165o	DF1NY	FK64D	55a	55a	6o
1653	DL1MBV	FI7oH	53a	52a	6o

17oo

24.11.82.

OK2PEW		IJ32F	57a	59a	6o
17o4	SM7EL	GQ55F	55a	55a	6o
1721	GM4CXM	XPo9G	56a	57a	o
1727	OK1AOV	HK7oG	56a	55a	3o
1733	OK3CFN	II4oA	53a	53a	3o
1736	OK3TEG	JI51E	51a	55a	45
1739	HG1W	IH63B	56a	59a	45
1746	G4GPX	ZK19J	53a	53a	o
175o	DJ1XP	DL28F	51a	55a	o
18o3	DJ4AM	DL64F	53a	59a	8o
18o4	OK3RMW	JI62A	52a	57a	8o
18o6	OE1XRA	II62B	57a	57a	8o
1811	OK3CNW	II58B	54a	59a	8o
1816	DL8DF	DJ65C	52a	53a	8o

29.11.82.

1558	LA6CU	CU47J	53a	53a	25
16o3	LA9BM	EU32G	55a	54a	25
1636	UP2BJB	LPo6D	55a	55a	3o

7.12.82.

1543	LA6PV	FTo5J	59a	55a	45
1658	GM3WCS	YQ73C	54a	52a	335
1827	OH2TI	MU65A	54a	55a	45

8.12.82.

1555	LA7KK	FU62B	55a	55a	1o
1626	LA6ZW	FV72A	55a	56a	o
1648	SM3JGG	HV62H	51a	55a	o
165o	LA3UU	FT12D	55a	52a	33o

1o.12.82.

1622	SM4GVA	HT76A	52a	52a	3o
1637	SM5CAK	HS36H	53a	55a	35
1744	LA2DK	EU23D	52a	53a	o
1753	RQ2GGV	LR74E	55a	55a	o
181o	GM4IPK	YPo5H	55a	55a	o
1834	LA2OJ	FT43E	55a	55a	o
1842	SM3JGG	HV6oH	56a	57a	o

16.12.82.

1632	SM5CFS	JT24J	53a	53a	3o

17.12.82.

1411	SM1BSA	JR22E	54a	55a	3o
1414	SMØEPM	IT5oF	53a	55a	35
1424	LA5LBA	FT78A	55a	55a	o5

18.12.82.

1624	RP2GGV	LR74E	55a	56a	3o
1717	LA4B	FU75E	51a	52a	o
1721	LA6MP	FT15H	51a	53a	o
1723	OH1DP	LU42J	59a	59a	o
173o	LA3F	FT14D	52a	55a	15
174o	LA2YT	FU62G	53a	54a	o
1844	SM3AZV	IX79C	56a	55a	o
185o	OH2PH	MU61G	52a	53a	o
1855	UR2EQ	NT61C	56a	57a	o
1858	LA6BD	FV73H	52a	55a	o
19o7	SM3JGG	HV62H	57a	57a	355
1913	LA2DK	EU23D	55a	55a	355
1919	LA3EU	DW24A	53a	55a	355
1928	UR2RDX	MT35G	55a	55a	355
1932	OH1BS	LU41E	54a	55a	355

OZ3ZW (FO18E) WKD VIA AURORA ON 144 MHZ IN CW.

20.12.82.

1514	LA6QBA	FTo5C	55a	54a	25
1521	SM5EFP	HT5oE	52a	55a	3o
1526	LA7KK	FU62B	55a	55a	25
1554	SK4NI	GT48D	55a	55a	25
1624	LA2DK	EU23D	53a	52a	1o

23.12.82.

1614	SM3KIF	IU33A	53a	52a	2o
1624	OH3RW	MU25B	53a	52a	o
1654	LA6ZW	ET29G	55a	55a	o
1719	GM4IPK	YPo5H	55a	54a	355

9.1.83.

1647	LA6QBA	FTo5C	53a	53a	25
1711	LA1TV	ET29G	55a	54a	25
1734	LA6VBA	ES26G	52a	51a	o
1745	SM3KIF	IU33A	53a	55a	5
1748	SM5CRV	IT18G	57a	57a	5
18oo	LAØCX	FT78H	52a	53a	5
18o5	LA2HC	FT56D	52a	55a	5
1811	GM4ILS	YR24E	52a	52a	o
1835	SM3GHD	GW7oE	55a	57a	35o
2146	LA9BM	EU32G	56a	55a	o

16.1.83.

1819	SMØNEZ	JT51A	51a	51a	3o
183o	OH3TR	LV5oG	56a	56a	35o
1837	LA8OW	EU31G	55a	55a	34o

4.2.83.

2322	LA6ZV	ET68B	53a	53a	25
2326	RQ2GAG	MQo1G	55a	55a	345
2349	GM4CXM	XPo9G	54a	52a	315

5.2.83.

13o8	DL5YBZ	DLo6C	55a	55a	1o
131o	G3TLF	AL11D	53a	54a	1o
1315	OZ1DOQ	GP	53a	54a	2o
1318	DJ4UF	DK21A	53a	53a	2o
1325	LA6ZV	ET68B	54a	54a	2o
1335	OZ1EYX	GQ73H	52a	54a	1o
1339	ON5QW	BL8oF	55a	52a	15
1347	SM5CXO	IT53B	52a	55a	45
1351	OZ1EYE	FQ62	57a	57a	45
1355	DL4NAA	EJo6A	54a	54a	35
1358	ON5EX	BKo9H	55a	57a	2o
14o2	DJ9EV	EJ77G	57a	59a	2o
1415	DL8DAU	DL59C	55a	55a	2o
1417	OK1ATQ	HK5oH	55a	55a	2o
1419	OK2BDH	JJ?	52a	55a	2o
1427	OZ4EM	HP	55a	55a	345
1438	DK1KW	EJo?F	51a	41a	35o
1447	OH5LK	NU37G	52a	53a	35o
1455	GM3XOQ	ZTo4J	55a	54a	35o
15o7	SM6EUZ	GS74J	53a	54a	35o
1516	LA6P	FTo3C	54a	55a	o
1525	LA5BT	FTo4C	55a	59a	3o
1528	DK5FA	FKo1G	56a	57a	3o
1534	LA2RZ	CU38F	51a	53a	3o
18o3	UP2BJB	LPo6B	58a	59a	345
1812	GM4JLY	YR8oA	55a	55a	34o

7.2.83.

124o	SM5CFS	JT24J	56a	54a	25
1259	SM5MGW	HS56B	52a	53a	15
1312	OH2BAZ	MU54H	56a	56a	15
1426	SM3JGG	HV62H	52a	53a	355
1428	SM5CAK	HS36H	54a	52a	355
1431	LA9BM	EU32G	59a	59a	355
1447	OH2BJM	LTo8A	55a	55a	1o
151o	OH3TR	LV5oG	51a	51a	355
1522	LA6HL	CSo9G	57a	57a	355
1537	DK4TG	DL63H	53a	54a	32o
1558	UQ2GMD	LR73C	53a	54a	1o

12.2.83.

1523	LA2DK	EU23D	52a	53a	5

2.3.83.

1259	SMØFOB	JT62A	51a	41a	3o
13o6	OH3RW	MU24C	53a	54a	2o
1315	GM3JFG	XR3oB	57a	55a	15
1322	SM3JGG	HV6oH	57a	57a	5
1333	PAØJMH	CN69C	55a	33a	1o
1439	SM4JEW	GT59B	54a	55a	45
1447	GM3WCS	YQ73C	57a	56a	1o
1449	DL2LAH	EO29A	55a	56a	1o
15o2	SM4KL	GT46D	53a	53a	1o
1544	UR2RIW	LSo2E	56a	56a	1o
1558	OH2DG	NU42G	56a	56a	1o
16o7	OH1DP	LU42J	56a	55a	1o
1622	UA3MBJ	SS78E	56a	55a	2o
1642	UQ2GMD	LR73C	55a	55a	2o
1656	SM4KL	GT46D	52a	53a	2o
1715	UK2RDX	MT35G	54a	55a	2o

11.3.83.

23o2	OH3AWH	LV5oB	52a	53a	o

12.3.83.

2153	LA2XB	FT15G	55a	54a	15
22o2	SM6QP	GR21H	56a	57a	15
2219	SM3KIF	IU33A	57a	56a	25
2359	SM4HFI	HU39H	54a	53a	25

20.3.83.

1523	GM3XOQ	ZTo4J	54a	52a	335
1533	LA5IH	CU47J	55a	52a	335
1558	LA9BM	EU32G	59a	54a	o

25.3.83.

124o	SM4HFI	HU39H	54a	54a	1o
1327	LB8IB	FTo5J	55a	55a	o
1335	OH3RW	MU24B	52a	52a	15
1338	SM7DZD	HR25C	55a	55a	15
1343	SM4MBC	HT37H	53a	55a	15
135o	SM5DYC	ITo4G	52a	54a	5
1411	LA7SL	FT16B	57a	55a	15
1443	LA6VBA	ES26G	55a	55a	1o
1529	UQ2GLO	KQ49G	55a	55a	45
1556	SM5EFP	HUo5E	56a	59a	25
16o2	UA3MBJ	SS78E	53a	55a	25
1613	UQ2GMD	LR73C	55a	55a	45

tnx for info, dr Torben !

OZ3ZW (FO18E) WKD VIA AURORA ON 144 MHZ IN CW.

28.3.83.

1551	LA6QBA/P	GV41E	54a	52a	5
1626	LA5MT	FW46F	55a	55a	5
1651	SM3AKW	JW31H	56a	56a	o
17o7	UP2BJB	LPo6D	55a	59a	45
1710	SM4IRG	HT63D	55a	57a	45
1718	OH2BYA	MU46F	55a	56a	25
1736	RR2TEJ	NT71A	51a	51a	35o
1743	LA2RZ	CU38F	55a	55a	35o
1747	SM5EFP	HT5oE	56a	56a	35o
1750	UK2RBM	MT43J	54a	55a	35o
1754	OH1DP	LU42J	56a	55a	35o
2352	LA6QBA/P	GV41E	53a	51a	1o

29.3.83.

1238	LA6QBA/P	GV41E	52a	51a	15
1648	SM3KIF	IU33A	52a	44a	2o

23.4.83.

1122	SM4HFI	HU39H	51a	?	25

24.4.83.

15o6	SM4HFI	HU39H	55a	55a	2o
1517	OH1AJ	LU41C	53a	55a	2o
1532	SM5KWU	IT34H	55a	57a	1o
1537	LA3UL	FT78H	53a	54a	1o
16o6	SM3KIF	IU33A	52a	52a	34o
1611	SM5BEI	JU72?	55a	55a	345

25.4.83.

2249	LA7KK	FU62B	53a	53a	34o

17.5.83.

1538	LA2DH	ET18G	52a	53a	o
154o	LA3TA	FT14H	52a	54a	o
?	LA4IAA	CSo9H	52a	52a	35o
?	SM5BZQ	IS1oD	56a	59a	o
?	SM5MGW	HS56B	57a	59a	o
?	RQ2GAG	MQo1G	55a	55a	o
?	OH2AUK	? ?	52a	?	o
?	LA8ZX.	FT12A	55a	55a	o
?	OH3XAII	MU12G	51a	55a	o
1745	OH1DP	LU24J	59a	59a	o
1750	GM4CXM	XPo9G	53a	53a	35o
1758	G4KUX	ZO21E	52a	52a	35o
1812	GI4TAP	XO31G	53a	54a	285
1816	LA2RZ	CUØ8F	54a	55a	35o

18.6.83.

1654	SM3KIF	IU33A	52a	52a	45
1657	OH5LK	NU37G	53a	53a	45

tnx for info !

DB1LH (FO42F) wkd via Aurora:

7.2.

1503	SM7CAD	HR4ØF	53A	54A
1512	SM5MCZ	IS44C	57A	55A
1517	SM6NJC	GRØ3C	55A	52A
1522	G6CGY	ZO45J	51A	54A
1553	SM4LXZ	GT48F	54A	51A

12.2.

1333	SMØJEM	IT6ØD	57A	53A
1343	SM6JDO	GQØ2C	54A	43A
1419	SM6NQE	GR1ØJ	54A	57A

2.3.

1416	SMØFOB	JT62A	55A	54A
1422	SM6NEY	GRØ4C	56A	56A
1438	SMØIGU	JT61A	53A	53A
1444	SM6KKX	GR72J	57A	55A
1456	SM6NQE	GR1ØJ	57A	57A
1519	SM4LXZ	GT48F	58A	59A
1523	G6NWF	YN78B	56A	55A
1535	SM6MNS	GR11G	56A	53A
1544	LA3FY	FT63G	54A	53A
1656	LA7AJ	FT71E	53A	52A
1700	LA4LR	CT56D	54A	51A

12.3.

1548	SM4KJN	GT48D	57A	57A
1552	SM6BCD	FR3ØJ	56A	54A

YU7AZ-AURORA 06.09.1982 - JF8Øf

Work

13.16	G 4 IJE	57A/52A	AL12g	ODX 1642 km
29	PA Ø FTF	55A/41A	CK1Øe	
59	DL 6 BF	57A/54A	DM57c	
14.o1	DK 2 PH	55A/53A	ELØ3	
16	G 4 ISM	59A/54A	AL56h	
17	PA 3 BRS	57A/57A	CM7Øc	
27	DF 7 DJ	59A/55A	DL39a	
29	DL 6 DAR	57A/52A	EL22j	
32	PA Ø ERV	57A/54A	CL48b	
35	PA Ø RDY	57A/55A	CM45c	
41	DL 9 GS	59A/55A	DL47g	
51	PA 3 AAN	55A/52A	CL48b	
15.o1	PA 3 AIZ	55A/52A	CM72g	
48	PA 2 VST	57A/52A	CM24j	

HRD

14.25 DF7DJ-OK2WEE 59A/59A
DL39a JJ51g
DK Ø TU - GM37e
DK 1 PZ - EL59g
DK 2 ZF - DN37g
DJ 4 AX
PA 3 BSK- DLØ4a
PE 1 AGJ- DKØ1f
PA Ø OOM -DN54g
DK 4 TG - DL63h
15.1o DK 6 AS - FM44d
PA 3 BBV- CM66g
G 4 IYA - AL
G 4 FUF - AL22j
DG 1 BP - SSB -

tnx for info, dr Zlatko !

UQ2GEK(MR2Ød) wkd via Aurora on 144 mhz in CW :

o9o183

171o	SM3GXM	59a	59a	HX63h
25	LA6QBA	54a	55a	FTØ5c
35	OH3XI	59a	59a	LU19g
36	OH3RW	59a	59a	MU24b
1942	LA9UX	59a	59a	FU76f
45	LA1K	53a	53a	FX42c
47	OH1LA	59a	59a	KV49f
5o	OH7IQ	55a	55a	NX29j
53	OH4EA	55a	55a	NW49j
2o22	SM4GVF	56a	56a	HT76a
36	SM3COL	59a	59a	ITØ6f
41	OH1BJ	57a	59a	KV49g
57	OH6CY	57a	57a	MW7Øh
2112	SM3KJO	59a	59a	JWØ2a
19	LA5MK	55a	55a	FX43g
21	SM2CPF	57a	57a	KX11a
3o	SM3AKW	59a	59a	JW31h
35	SM4LMV	54a	54a	HT76g
38	OH6PA	56a	55a	KW47a
44	SM3IZB	57a	55a	JX54e
47	SMØDCX	59a	59a	IT7Øb
49	SM2ILF	55a	55a	KY26e
52	SM3ICU	59a	57a	JX54j
54	OH2BX	55a	55a	MU46h

16o183

13o5	SK2KW	57a	57a	KY65c

o4o283

2o2o	OZ4EM	57a	59a	HP64e
25	SM1MUT	59a	59a	JR42d
35	OH1BS	57a	57a	LU42e
4o	UA3MBJ	59a	59a	SS78e
45	OZ3GW	55a	56a	FQ21a
5o	OZ1EYX	59a	59a	GQ73h
21o2	SM4NEL	55a	56a	HS94g
15	UA3LBO	55a	55a	QO21
2o	SM5CAK	57a	57a	HS36h

o5o283

o935	SM3AKW	59a	59a	JW31h
4o	OH1ZAA	57a	58a	KV39h
42	OH4UC	59a	59a	NV17a

o5o283

o943	OH7UK	55a	59a	OW39d
45	OH7QA	57a	57a	NW19g
5o	SM5CFS	57a	57a	IT24j
1415	PA3BXH	55a	55a	CM19j
21	OK1KKH	57a	57a	HJØ6c
5o	LA3su	57a	59a	FT12g
55	LA8SJ	57a	57a	FTØ5j
15o5	PA2VST	55a	55a	CM24j
1o	SK7JD	55a	59a	IR14f
2o	SM5ARQ	57a	59a	HT79f
21	SM6LWS	57a	57a	GR72h
55	RQ2GAG	57a	59a	MQØ1g
57	SMØKHE	57a	54a	JT51f
22o2	LA1K	55a	55a	FX42c
o8	OH6AD	59a	59a	MW69g
3o	OH7TN	57a	59a	OV15h
35	SM4MI	59a	59a	GT39e
37	SM5MIX	55a	55a	HS66g
47	SM3JAW	59a	59a	JX56f
5o	SM3IZD	55a	57a	JX54e
53	SM2CPF	55a	56a	KX11a
57	SM2BLD	57a	59a	JXØ9d
231o	LA7KK	53a	53a	FU62j
12	SM3IZD	59a	59a	JX54e

o7o283

1432	OH1OU	59a	59a	LV54e
41	OH2BGD	59a	59a	MU55f
43	SM5MI	59a	59a	HS76b
47	SM7GWU	55a	55a	HS75c
55	LA8SJ	57a	57a	FTØ5j
59	OH6KJ	55a	59a	MW59e
15oo	OH2BYA	55a	59a	MU46f
o3	OZ1EYE	55a	59a	FQ41h
o5	UA1AP	55a	55a	PT23h
15	SM3AZV	59a	59a	IX79e
2o	OZ4VV	55a	57a	EQ17a
25	SK7JD	57a	59a	IR14f

tnx fer info. dr NiCKOLAY

Continued from page **200** :

PA2CHR (CLØ9b) wkd > 600 km:

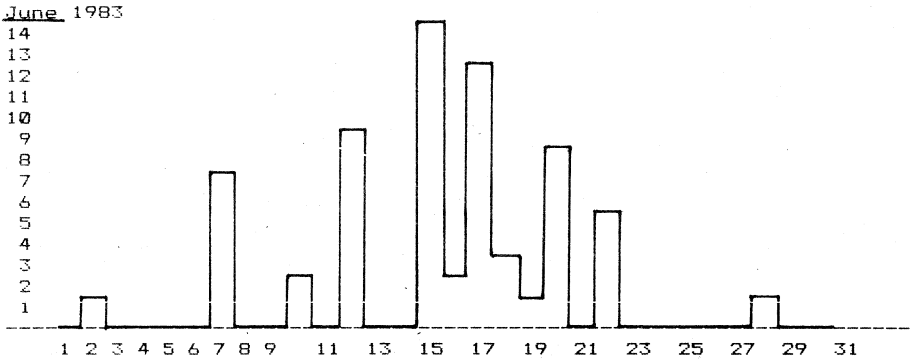
8.5.		19.6.		31.7.		SM6GWA	FS	LA6LCA FT
HB9BA/p	DH	SM6FYU	GQ	G4DDL/p	YK	SM4FXR	HT	11.8.
HB9MIN/p	DH	30.7.		7.8.		SM6HCO	GR	G4SWT ZP
18.6.		OZ1IVW	FQ	GM3YGF/p	YQ	SK6AB	FR	G6UPZ ZP
SM6CWM	GR	OZ1ABE	GP	10.8.				
SM6CEN	FR			OZ1CFO	ER			tnx fer info

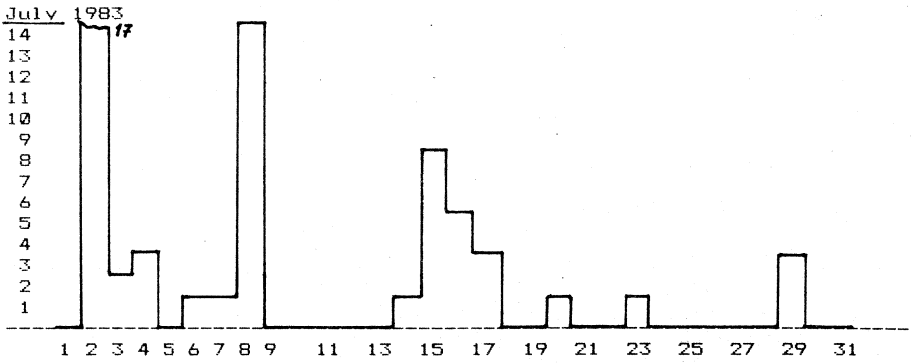
E_S INFORMATIONS

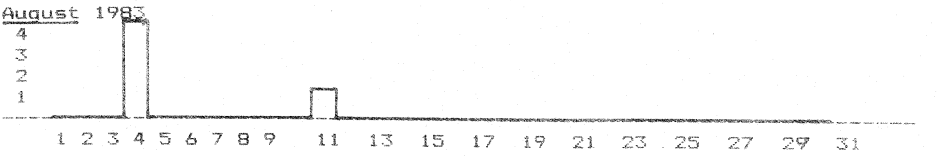
by DL7QY

Summary Es Report Season 1983

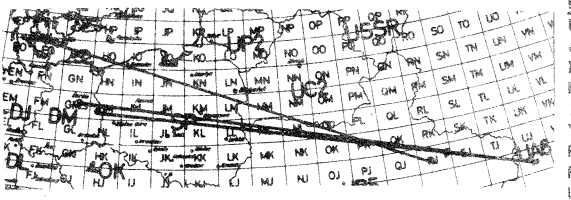
First of all many thanks to all amateurs who sent their Es activity report from the 1983 season. For every day, when Es appeart we will show a map indrawn the contacts with a comment below when something strange happened or when rare stations could be worked. Now, the histogram below this text shows the Es activity in respect of the sent activity reports. Vertically scaled is the number of received reports from different stations. As you can see three significant maxima of Es activity in 1983. The first from June 15th to 20th, the second from July 2nd to the 8th and the third from 14th to 17th.





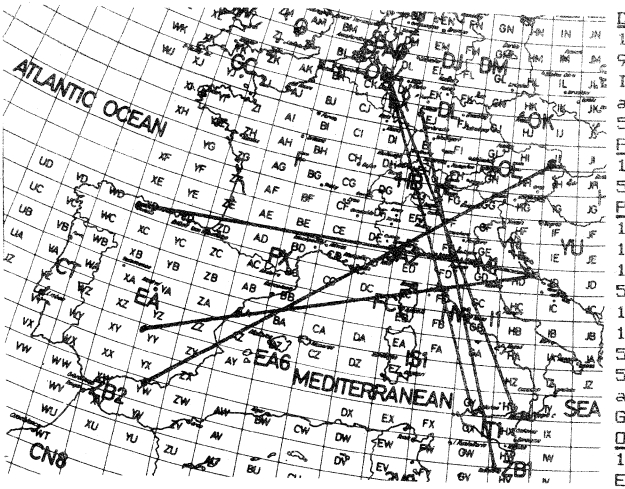


June 2nd



OZ3ZW (FO18e) wkd at 1720 UB5HCU in RJ 599 599 and at 1721 RB5IJR ?? 599 559. DL7YS (GM46b) wkdat 1657 RB5LGX RK 559 579 and at 1706 UB5LNR RJ20f 59 59. Y22ME (HM53b) wkd 1653 RB5LGX RK50g 599 599. 1654 RB5LAA SJ01h 599 599. 1656 UK5IEC TI32f 559 599. 1659 UB5EDS RI56a 549 599. 1701 UB5LNR RJ20j 59 59. 1702 RB5EHB RI56a 57 59. 1704 RA6LRR UI03g 599 599. 1708 RB5LFB SJ12h 559 599 and 1718 UB5IEI SJ 569 599. Unfortunately there are no reports from Northern or Southern Europe, so we can't say were the reflection center was located, but it seemed to be somewhere above the border between SP and UC2 land.

June 7th



DK2LM (EJ21f) wkd at 1335 IW9ANS 59 59. 1336 9H1BT HV12b 59 59. 1340 IT9VKL GY73d 59 59 and at 1342 IT9GSF GY77c 59 59.

PA3BIY (CM72c) wkd at 1412 IW9A0S in GX13g 59 59 SSB.

PA0HWM (CK10e) wkd at 1322 9H4P HW72f 59 59. 1324 9H1BT HV16b 59 59. 1330 IW9ANS GX25a 59 59. 1337 IT9VHS GX24j, 1335 9H1CG HV13b 59 59. 1338 IT9VKL GY73d 59 59, 1334 IT9GSF GY77c 59 59, hrd IT9LFR HW13f and at 1400 hrd IW9A0S GX13g.

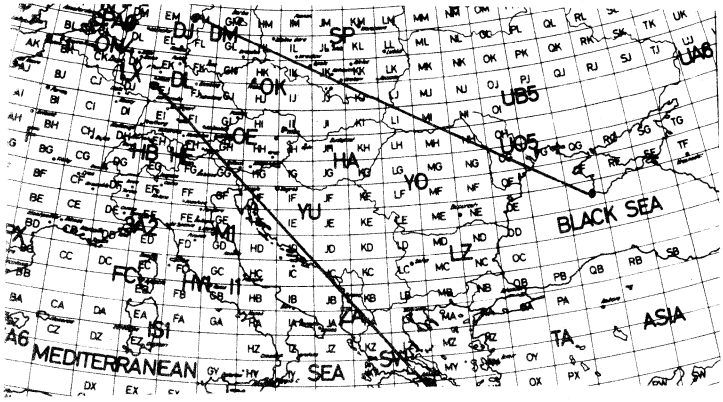
OE1RKU (II63) wkd at 1430 EA6FB AY07j, 1455 EA5CET ZX07f, 1503 EA5YS ZZ68j, 1513 EA5BPC ZY46c, 1518 EA5EB ZY28b, 1523 EA5YE ZZ79j and 1524 EA5BAX ZZ79j.

OE1APS (II63g) wkd at 1450 EA5CET ZX07f, 1455 EA5DFY AY11j, 1458 EB7NK YW28a, 1459 EA5YS ZZ68j, 1501 EA6FB AY07j, 1505 EB5BOD ZY57g, 1506 EA5BPC ZY46c, 1508 EA5DGC ZX04h, 1515 EB5AZT ZY10h, 1520 EA5EB ZY28e, 1525 EB5YE ZZ79j, 1525 EB5BEX ZZ79j and 1527 EA5YS ZZ68j.

YU2JL (HD30a) wkd at 1345 EB5AKT ZY10h 55 55, 1349 EA6FB AY07j 59 59,

1406 EB7NK YW28g 59 59, 1409 EA6AU BZ55d 599 599, 1414 EA5DGC ZX 59 59, 1415 EB5YE ZZ79j 59 59, 1416 EB5BAX ZZ79j 59 59, 1421 EB3AJG AB34h 59 59, 1422 EA3DVI ZY10h 59, 1423 EA7AG YW 59, 1429 EA5DFY AY11j 59 59, 1430 EA5BPC ZY47c 59, 1436 EA5YS ZZ68j 59 59, 1439 EB5BAE ?? 57, 1444 EA1TH YC48c 59 59, 1451 CT1AOW WA34e 59 59, 1452 EA1OD XD32d 59 59, 1452 EA1KC XD32d 59 59, 1453 EB1WV XD32d 59 59, 1456 EA1ED VD59h 59 59, 1503 EA2TL ZC12b 59 59, 1509 EA3AXV BB51a 59 59, 1511 EA3BBU ?? 59, 1511 EA4APX YZ45j 59, 1513 EA2TL ZC12b 59 59, 1521 EA4APX YZ45j 59 59, 1522 EA4APW YY01a 59 59, 1526 EA3BTZ BB41e 59 59, 1526 EA3IH AB 59 59 and 1527 EB5BSY AA71f 59 59.

June 10th



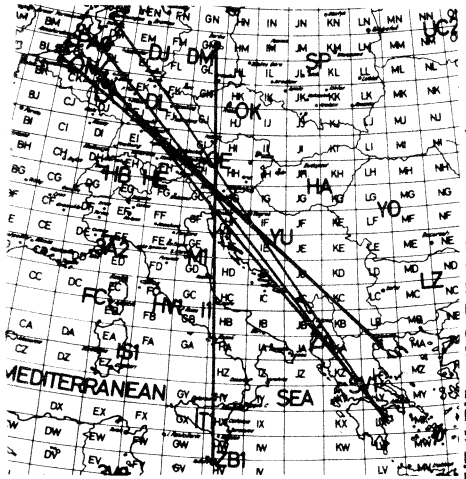
reflection areas.

DK2LM (EJ21f) wkd at 1636 SV1DH MX01g 59 59 and 1637 SV1EX LX09a 59 56.

DK6AS (FM44d) wkd at 1745 RB5JAX QE38j 59 59.

Very few contacts took place at this afternoon, limited in a time of two hours but at least two different

June 12th



DF9PY/p (DK65g) wkd at 1234 SV1EX LX09a 55 hrd, 1235 SV2LJ LA35c 59 59 and 1236 SV2JT LA25d 59 59.

DG7FZ (QTH??) wkd at 1247 SV1DO LX19c.

DK2LM (EJ21f) wkd at 1234 SV2JL LA35h 59 59 and 1236 SV2JT LA25d 59 58.

DL7YS (GM46b) wkd at 1504 9H4P HW72e 57 55, 1513 9h1CG HV13b 59 59, 1513 9H1ED HV03b 59 58, 1523 9H1FL HV13a 59 57, 1224 9H1ES HV13a 59 58, 1533 9H1CD HV03e 59 59, 1533 9H1GB hrd HV 599, 1602 SV3QD hrd LY43f 59, 1610 EA6AU BZ55d 599 599, 1645 EA3LL AB65j 599 599, 1648 EA3AIR BB41e 599 559, 1655 I7OGB hrd IB65d 59 and 1642 EA1BCB hrd WD64a 59.

ON5OW (BL80f) wkd at 1240 SV2JL LA35c 57 59 and 1247 SV2JT LA25j 58 58.

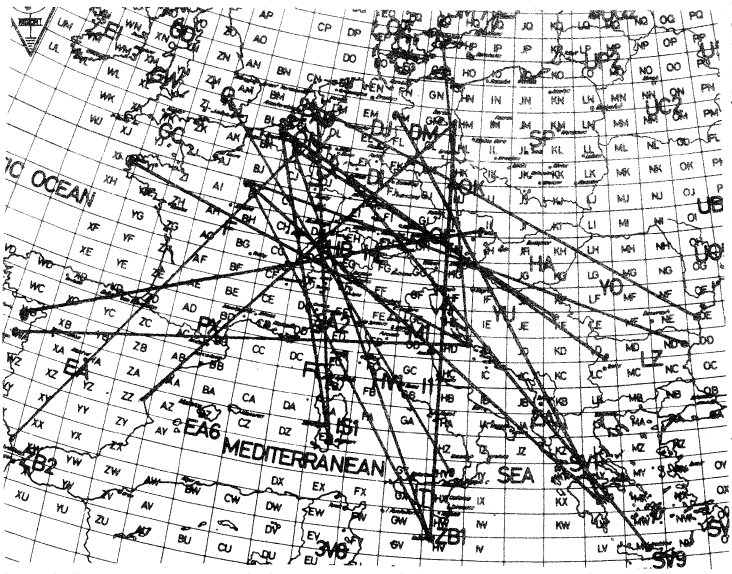
PA0KDV (DN71f) wkd at 1343 SV1EX in LX.

PA0HWM (CK10e) wkd at 1236 SV1EX LX09a 59 59, 1238 SV2JL LA26c 59 59 and 1240 SV2JT LA25d 59 59.

PA3BIY (CM72c) wkd at 1310 SV1OE LX10a 55 57 with 10W.
PE1BNK (CM76e) wkd at 1235 SV1EX LX09a 59 59 2127 km and at 1317 SV1OE LX10a 59 59 2137 km.
On the picture above you will see that the reflection centre on the June 12th was above OE and Northern YU land. QSO's between UC/HA and Spain must have been possible, but no reports came in.

June 15th

DK2LM (EJ21f) wkd at 1331 SV1DH (LX09a) 58 57, 1342 SV1LY (LX09e) 55 55, 1351 SV1JZ LY79a 56 56, 1357 SV9LM MV46d 59 53 Crete! and 1416 SV30D LY 59 59.
DK6AS (FM44d) wkd at 1505 IW9AOR HY58j 59 59, 1524 IT9AJH HY68c 57 58, 1526 IT9MRJ HY68b 59 59, 1554 SV30D LY43f 57 59, 1603 9H4P HW72f 59 59, 1623 SV1EX LX09a 59 59, 1644 hrd YU4BMN 59, 1645 SV4LD LZ11a 55 57, 1653 SV8JE KY53f 59 57, 1656 SV80H KY53e 59 55 and 1708 hrd SV4LD LZ11a 56.
F1DQK (BI23a) wkd at 1249 SV1DH LX09a 59 59, 1520 SV1EX LX09a 59 59, 1546 SV30D LY43f (used vertical polarization) 54 54, 1606 SV1JE KY53e 52 52, 1608 IT9X?? hrd, 1612 IW9AIG GY 59 hrd, 1615 IT9ADN 51 hrd, 1616 9H1BT hrd, 1624 hrd IW8PCW, 1634 hrd YO7DFC and YO7CGI, 1700 LZ2FR LD05a 52 hrd, 1701 LZ2FA ND40g 52 57, 1713 YO4AUL OE 53 hrd, 2005 YU7NTU KF42d 52 55 and 2007 YU1ONS KE13e 55 55.



G3LTF (AL21g) wkd at 1650 IT9VMT/m HX55a 58 59, 1656 IW8PCW HY79a 58 59, 1708 I0XPS GB13a 58 59, 1709 I0UCM GB30 58 59, 1710 I8YZO HY40a 59 59, 1712 IC8EGO HA32g 58 59, 1725 I8MSY HA22d 599 599 and 1730 UO5?? 539 hrd.
PA0HWM (CK10e) wkd at 1600 I8TUS IZ52f 59 59, 1610 I8JKI IZ52g 59 59, 1630 IS0DKU EZ66a 59 59, 1635 YU1PRV KD16j hrd. 1635 IS0AGY EZ66e hrd. 1635 YU1AOP hrd and 1710 YU1EXY KE13j 55 59.
PA0KDV (DN71f) wkd at 1645 IS0SCB EZ, 1650 YU1IW KE, 1657 SV1EX LX, 1701 SV4LD LZ and 1734 YO6AFP MG.
PA3BIY (CM72c) wkd at 1616 IS0AGY EZ66b 59 59, 1628 IS0DKU EZ66a 59 59, 1652 YO2FP KF27e 59 59, 1648 LZ2XU MD44e 599 559 and 1658 YO7DL LE60g 599 599.
PE1AAP (CM67d) wkd at 1717 YU100 KC10b 59 59 1603 km, 1723 LZ2VR LD05a 59 59 1581 km and 1748 YO4AUL OE54g 55 57 1919 km.
PE1BNK (CM76e) wkd at 1351 EA7DBP WW39e 59 59 1942 km, 1355 EB7AYQ

WW30j 59 59 1918 km, 1628 IS0AGY EZ66a 59 59 1455 km, 1634 IS0RHF EZ67h 59 59 1457 km, 1636 YU1OO KC10b 59 59 1611 km, 1638 IS0DKU EZ66a 59 59 1455 km, 1641 YU1PRV KD16d 59 59 1503 km, 1649 YU7KMN JF16e 59 59 1234 km, 1710 YU1OHW KD60c 59 59 1585 km, 1716 IW1AKP/IF9 GX02j 59 59 1663 km and 1743 UB5JIN RE01f 59 59 2257 km.
OE1APS (II63g) wkd at 1706 EA4JR YA44h, 1709 EA2AX ZB26e, 1717 EA2EG YC17a hrd and 1719 CT1WW WB63b hrd.
ON4YZ (CK53e) wkd at 1324 SV1EX LX09a 57 59, 1327 SV1DH LX09a 59 52, 1347 EB7AYQ WW30j 59 59, 1348 EA7NT/mm (m/m Marocco coast) 58 59, 1407 SV1SO LY 54 55, 1417 SV1IW LX09b 57 57, 1434 YU1SOM ?? 59 59, 1438 7X2AP 52 hrd, 1550 IS0YH EZ66a 59 hrd, 1622 IT9LOM ?? 59 hrd, 1632 YU7AU KE14h 59 59, 1633 YU1OAM KE13j 59 59, 1634 YU1PPF KE42a 59 59, 1636 YU1BKL KE13j 56 59, 1706 9H1CD HV03e 56 59, 1658 YU1OHV KD06c 59 59, 1711 LZ2VR LD05d 59 59 and 1712 IW9AIG GX02j 59 59.
ON5QW (BL80f) wkd at 1609 IS0SCB EZ66a 55 59, 1612 IS0RHF EZ67h 59 59, 1641 LZ2AR LD58c 58 59, 1653 IW1AKP/IF9 GX02j 59 59, 1658 9H1GB HV13a 59 59 and 1704 IW9AIG GY67d 59 59.
Y22ME (HM53a) wkd at 1523 9H4P HW72j 57 58, 1532 9H1FL HV13a 58 59, 1544 IT90AA GY67c 57 59, 1607 IW0AKP/IF9 GX02j 57 55, 1647 EB3AJG AB34h 57 59, 1648 EA5YF ZZ 58 59, 1654 I8TUS IZ52f 59 59, 1657 IK8BGG IZ51c 59 59 and 1716 EA6AU BZ55d 59 59.
YU2JL (HD30a) wkd at 1511 CT1AUW WA34e 59 55, 1516 CT1WW WB64b 59 59, 1621 G3?EV 59 hrd, 1631 F1GHP ZG65c 59 59, 1635 OZ1DOO GP23h 59 59, 1639 F1FHI ZH63f 59, 1646 F6ETZ ZH63q 59 59, 1653 F6CCH ZG11a 59, 1655 F1EAN AG22f 59, 1657 F1DPU/m ?? 59 59, 1702 F6HPP YI35d 59 59, 1702 F6EOQ YI13d 59 59, 1708 F1FHI ZH63f 59 59, 1710 F1GXB XI48e 59 59, 1711 F6ETI YH34a 59 59 and 1825 GW4LXO YL 59.
June 15th was one of the best Es days in 1983 as you can see in the picture: a lot of contacts across whole Europe took place.

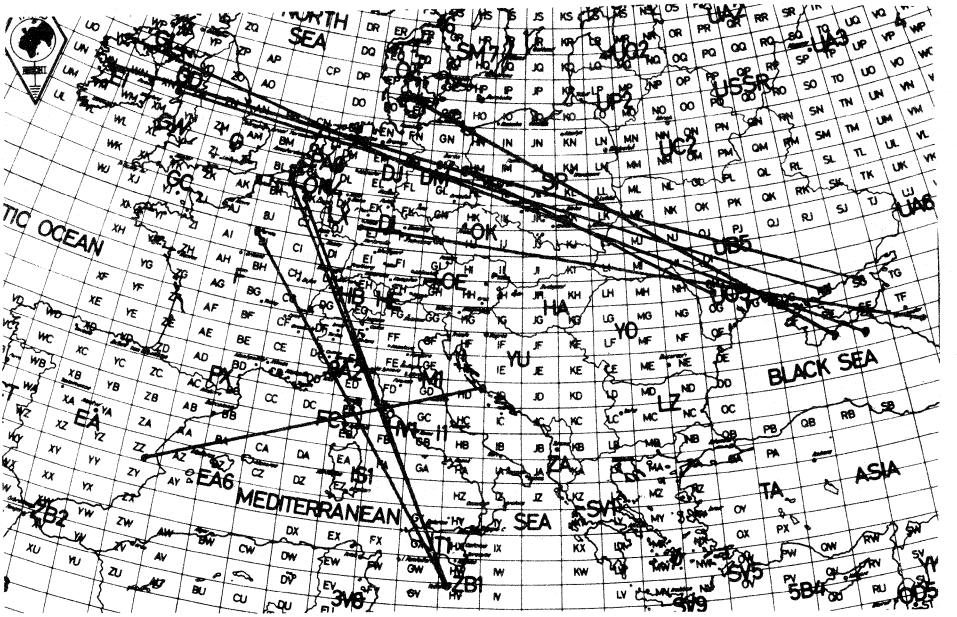
June 16th

Two contacts were reported only between YU2JL (HD30a) who hrd at 1855 F1JG in CD 33 and DK6AS (FM44d) who hrd at 1729 IW9AJO (??) 559. There must have been a small reflection area above the "GD" square in the late afternoon.

June 17th

DF6OB (FM44c) wkd at 1604 UB5GFS RG, 1616 UA6YAF TE, 1625 EI4CL WN, 1627 EJ0WCY VN, 1629 GW8FKB XN, 1630 EI5BLB VN, 1635 EI4CL WN, 1638 EI5DD VN, 1640 called by mni GW stns, 1642 UB5JIN RE, 1643 UY5HF QG, 1643 GW6DDB XN, 1648 UB5JIZ QF, 1650 EI3BNB WN, 1651 UB5GFS RG, 1654 UA6BAC SE, 1658 RB5JAX QE, 1706 UA6ACG TE, 1708 UB5JMZ RE, 1710 UY5HF QG, 1713 RB5GRP RG and 1738 EI8EF VO.
DG7FZ (QTH??) wkd at 1654 UA6LJV TH69d, 1708 GM6UNJ WR44h and 1717 RB50GL SG15f.
DK2LM (EJ21f) wkd at 1634 UA6YAF TE30h 559 579, 1636 UB5ICR SH39h 599 599, 1643 UK6LDZ TH65c 599 599, 1644 UB5IOB TH23b 599 599, 1650 UA6LJV TH 59 59, 1652 UA6LGH TH65a 599 589, 1655 UW6MA TH69c 59 59, 1711 UB5EFN RH22j 559 559, 1713 UB5IMM SH37b 599 599 and 1731 UB5EFO QH08d 599 599.

DK6AS (FM44d) wkd at 1603 UB5GFS RG 53 57, 1616 UA6AEF UE 55 57, 1625 EJ0WCY VN62d 59 59, 1628 UB5JIZ QF18j 59 59, 1629 GW8FKB XN 57 hrd, 1630 UB5JMZ RE01f 59 59, 1645 UK6YAG TE30h 599 599, 1646 UA6BAC SE29e 559 579, 1650 EI4KUI WN60g 599 599, 1657 UA6BAC SE29e 559 599, 1701 UY5HF QG 599 599, 1708 UA6ACG TE 559 599, 1710 RB5GIY ?? 579 599, 1712 UB5GAN QG 599 599, 1718 UB5GFS RG 59 59 and 1719 RB5GRP RG73f 55 59.

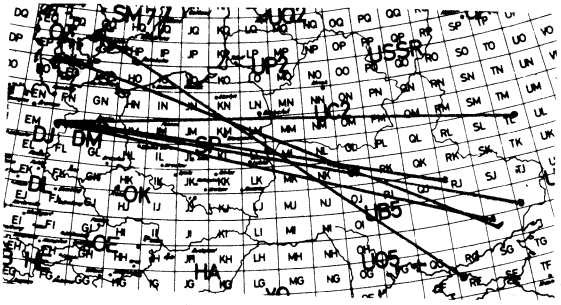


F1DQK (BI23a) wkd at 1542 9H1BT HV 53 53, 1543 9H1FL HV13j 59 53, 1543 9H1ED HV13e 59 59, 1545 9H4HP ?? 53, 1550 IT9JLU HX36e, 1553 IW9AB ?? 53 hrd, 1557 IT9LFR HV53e 53 57 and 1604 IT9YLU HX36e hrd.
ON4YZ (CK53e) wkd at 1547 9H1BT HV12b 59 59, 1553 9H1GB HV13a 57 59, 1604 IT9 hrd and 1926 PA3BWY/mm in QQ 59 59.
ON5QW (BL80f) wkd at 1548 9H1BT HV12b 59 59, 1551 9H1CD HV 59 59 and 1552 9H1GB HV 59 59.
OZ3ZW (FO18e) wkd at 1638 UB5JIN RE 59 59 and 1729 UB5FDF OF55d 59 59.
PA0HWM (CK10e) heard at 1700 RB5LGX.
YU2JL (HD30a) wkd at 1735 EA5YS ZZ68j 59 59, 1738 EA5WD ZZ 59 hrd, 1750 EB5BAX ZZ79j 59 59, 1750 EB5YE ZZ79j 59 59, 1759 EA5DHF ZZ 59 59, 1802 EA5WD ZZ 59 hrd and 1804 EA5CBN ?? 55 hrd.
Y22ME (HM53a) wkd at 1630 EJ0WCY VN62d 59 59, 1623 UK6YAG TH30h 579 599, 1625 UB5JIN RO01h 59 59, 1628 EI4CL WN60d 559 569, 1636 UB5JMZ RE01f 57 59, 1638 UB5JIZ QF18j 57 59, 1643 UY5HF QG 57 59, 1646 RB5JAX QE38j 59 59, 1653 UO50GX OH74d 59 59, 1653 UY5HF QG 59 59, 1700 RB5QGI SG15f 57 59 and 1732 GI4SXV WO43d 57 59.

At least three separated reflection areas over Europe on the June 17th. One above the southern part of North Sea, the second over FC land and a third above southeastern Poland. On this day there was a really good chance to work via a double hop from the UA6 area into G or eI land, as you can see on the map several contacts were made from Berlin into southeastern as well as into northwestern direction.

June 18th

DK6AS (FM44d) wkd at 1820 UA3QHS TL27b 559 599, 1830 RB5LGX RK50g 599 599, 1831 RB5IOJ SH10a 599 hrd, 1834 RB5LAK SK 559 559, 1638 UK5IHE TI71d 599 599, 1841 UB5LNR RJ20f 59 59, 1842 UB5AAM RL 599 599 and 1847 UA6LJV TH 59 59.

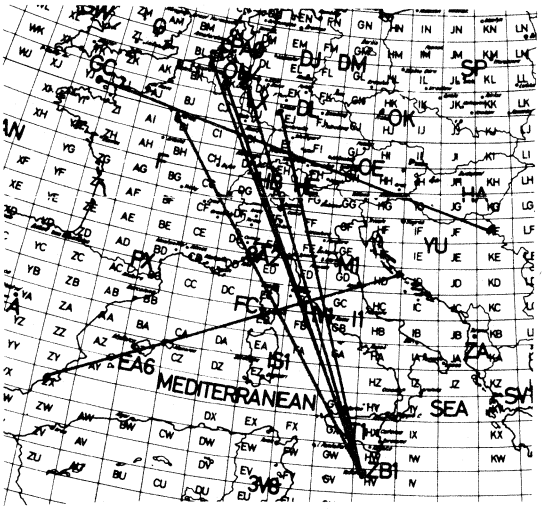


OZ1EYX (GQ73h) wkd at 1828 RB5JAX QE38j 59 55, 1829 UB5JIN RE01f 59 59, 1832 UB5GFS RG51c 59 59, 1840 RB5JAX QE38j 59 59, 1841 UY5HF QG24f 59 55, 1842 UB5JMZ RE01f 55 55, 1843 UB5GFS RG51c 59 59, 1844 UB5GCF QG 59 59 and 1845 UB5JIZ QF18j 55 59.
OZ3ZW (FO18e) wkd at 1816 RB5IOJ SH10a 599 599, 1817 UB5HCU RJ 559 ?, 1825 UB5GCF QG 59 59, 1830 UA6LOV TH5?? 599 599, 1833 UK5?NN ?? 599 599, 1834 UB50DM RH44h 599 599, 1842 UB50CD RH07c 599 579 and 1845 UB5VEP QI26b 57 57.

June 19th

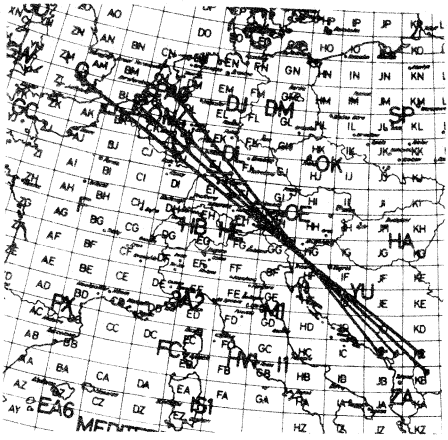
One single report arrived for the June 19th when DF60B in FM44c heard at 0935z F1JG in CD square.

June 20th



DG7FZ wkd at 1838 until 1841 6 times 9H1HV.
DK2LM (EJ21f) wkd at 1840 9H1CG in HV13b 55 55.
F1DQK (BI23a) wkd at 1711 9H1BT HV 52 54. 1712 9H1FL HV13j 52 55. 1714 9H1ED HV03e 59 hrd, 1716 9H1FN HV03e 53 57, 1718 9H1GB HV13a 55 57, 1722 I1AKP ?? 52 hrd, 1724 9H1CG HV13b 59 59, 1726 IW9ANS GX29a 52 59, 1729 9H1GK HV13h 59 59, 1730 9H1B HV03e 59 59, 1732 IT9GSF GY77b 59 59, 1734 9H1BW HV03e 55 59, 1735 IT9JLU HX34e 53 59, 1749 IT9UBA GX59a 59 55 and 1757 9H1MT ?? 51 ??.
GU4/PA3BHQ (YJ48h) wkd at 1700 YO2BB KF27h 59 59, 1705 YU7AJH JF70a 59 59, 1710 YU7NTU KF42d 59 59, 1712 YU7GMN KF52c 59 59, 1714 YU7OQC KF42d 59 59 and 1715 YU7QDM KF42d 59 59.
ON4YZ (CK53e) wkd at 1733 IW1AKP/p/IF9 GX02j 59 59, 1734 9H1BT HV12b 59 59, 1736 9H1CD HV03e 59 59, 1744 9H1ED ?? 59 57, 1751 IO2CJ GX02j 59 57 and 1838 9H1CD HV03e 59 59.
ON5QW (BL80f) wkd at 1742 9H1GK HV 59 59.
PA0HWM (CK10e) hrd at 1825 9H1CD, wkd at 1828 9H1GB HV13a 59 59 and hrd at 1838 9H1BT HV16b.
YU2JL (HD30a) wkd at 1942 EA6FS BZ35g 59 and 1952 EA5DGC ZX 59.

June 22nd



F1DQK (BI23a) wkd at 1648 YO2FP KF27h 59, 1649 HG3NX JG44d 59, 1651 YO7CJI LF77f 58, 1653 YU7EW KF24f 59, 1655 YO2BB KF27h 59, 1700 YO7QEC KF76f 59, 1702 YO2IS KF17e 59, 1704 HG8CJ KG63a 55, 1706 YU7JUV JF80f 55, 1711 YU7QDS JF28f 52, 1714 YU7KMN JF16e 53 and 1737 YK8VS ??51.

G3LTF (AL21g) wkd at 1711 YU5CXY KC79a 59 59 and 1732 YU6ZAH JC47h 59 59.

ON5QW (BL80f) wkd at 1640 YU1PRV KD13d 55 59, 1642 YU2CB JF53g 59 59, 1657 YU4WFM JE35 57 59, 1704 YU5YR KB08a 57 59 and 1708 YU100 KC10b 59 59.

PA0HWM (CK10e) wkd at 1637 YU1NDL JF hrd and 1705 YU6ZAH JC47h 59 59.

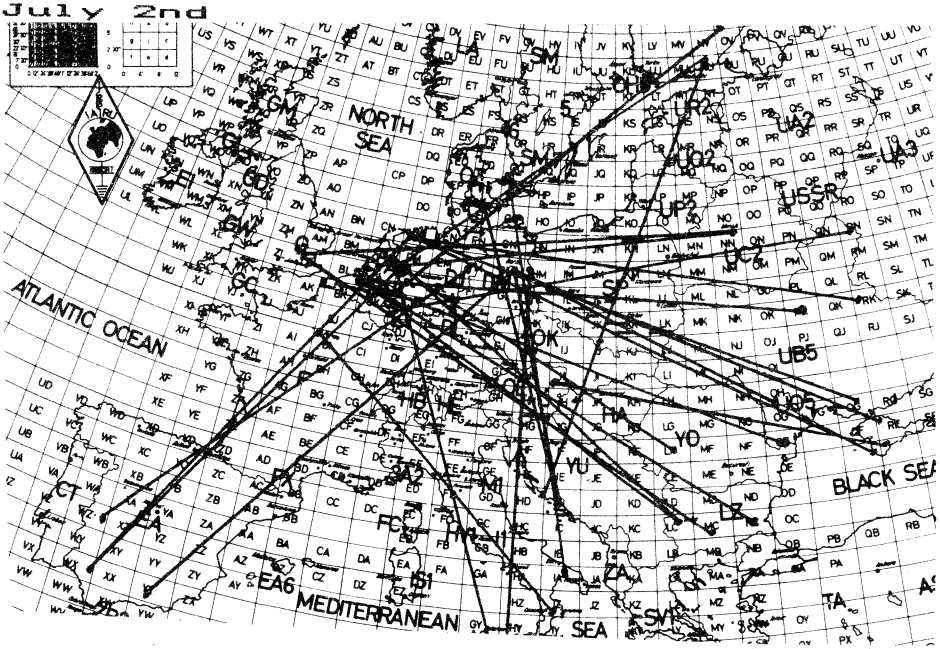
PE1BNK (CM76e) wkd at 1656 YU6ZAH JC47h 59 59 1499 km.

The reflectioncentre on the June 22nd was a very sharp point as the map beside shows. above the southwestern part from the "HG" qth square in YU land.

June 28th

The only station who reported Es activity on the June 28th was PA0HWM in CK10e. He heard at 1510 LZ2KBI in LD Square.

July 2nd



DF9PY/p (DK64b) wkd at 1721 RA3YCR RN52f 599 599 and 1753 LZ1? ?? 599 599 QRM.
DG7FZ wkd at 1052 9H1ED HV03e, 1145 ED7YDG YX74g and 1227 EA4AAW WZ49g.
DL7YS (GM46b) wkd at 1234 ED7YDG YX74g 57 hrd, 1941 RB5JAX QE38j 59 59, 1942 UB5JLG QE38j 59 59, 1944 UB5JMZ RE01f 59 58, 1948 UO5APD OG05h 599 599, 1949 UB5JIN RE01f 59 59, 1951 UO5TA OH75f 59 59 and 2117 YU2CBM ID33f 55 59.
DK6AS (FM44d) wkd at 1241 EA4AAW WZ49g 59 59, 1310 CT1BZT VY 57 56, 1311 CT1AUW WA34e 59 59, 1312 CT4PI VZ38j 59 59, 1616 LZ2AR/p LD44a 599 599, 1714 UC2AAB NN 599 599 and 1818 UB5GBY ?? 59 59.
F1DQK (BI23a) wkd at 0956 I8TUS IZ52f 59.
G3LTF (AL21g) wkd at 1658 UC2ABN NN18e 599 599, 1659 UC2ABH NN?? 599 599, 1738 LZ1AG MC64e 599 599, 1740 UC2AAB NN18e 559 ???, 1711 - 1729 hrd UC2AA, 1746 LZ2VAB/p LD 59 599, 1747 LZ1AG MC64e 59 59 and 1750 LZ1UB MC49g 559 599.
OE1RKU (II63f) wkd at 1843 UB5JIN RE01f, 1847 UB5JD RE01f, 1850 RB5JAX QE38j, 1855 UB5JMZ RE01f and 1905 UB5JLG QE38j.
ON5QW (BL80f) wkd at 1053 SV8JE KY53e 52 52, 1131 9H1BT HV12b 59 59, 1300 EB7KU WX 59 57, 1740 UT5BN PK43e 599 599, 1741 LZ1LW/p LC47h 559 589, 1742 LZ1TJ/p LC37j 559 599, 1804 LZ2KDZ LC 559 599, 1812 LZ1XS NC48a 559 599 and 2125 YO9AFE/p MF36j 559 599.
OZ1EYX (GQ73h) wkd at 2120 I7TBF in IA64a 59 59 and at 2122 YU2CBM ID33f 57 59.
OZ3ZW (FO18e) wkd at 2036 YU7KWX JF80f 559 599 and 2104 YU4EBL/4 ID38b 599 599.
PA0HWM (CK10e) wkd at 1048 IT9SAS HY68d 59 59, 1105 9H1CG HV13h 55 55, 1810 OH3MF MU23j 559 579, 1815 OH4YA OW43e 599 599 and 1950 UB5GBY QG24b hrd.
PA0KDV (DN71f) wkd at 1300 EA7PZ WX, 1302 EB7KU WX, 1608 LZ1DX MC, 1700 RB5LIO ??, 1724 RA3YCR RN, 1725 UC2ABT NN, 1726 UC2AAB NN, 1729 RB5LGX RK, 1734 UK5ABN RK, 1748 RB5JAX QE, 1805 UB5GBY QG, 1921 UB5LNR RJ, 2055 LZ2FA ND, 2104 LZ1AG MC, 2105 LZ2AR/p LD, 2108 LZ2FR/p LD, 2112 YO7DLB LE, 2114 LZ2QS/p LD, 2117 YU1IW KE, 2120 LZ2KBI/p LE, 2121 YU2OB JF and 2133 YU1OHK.
PA2REH (CM54h) wkd at 1748 LZ1LW LC27h CW and 1753 LZ1KSC LC67b CW.
PA3BIY (CM72c) wkd with 2W! at 1650 UC2AAB NN18e 599 599 and then with 10W at 1733 RB5LGX RK50g 599 599, 1735 YU5QG/5 LB13j 599 599, 2120 YO7KAJ LF35a 599 599 and 2123 YO3JJ NE41c 599 599.
PE1AAP (CM67d) wkd at 1026 9H1BT HV12b 59 59 1649 km.
PE1BNK (CM76e) wkd at 0959 9H1CG HV13b 59 59, 1301 EA7PZ WX50e 59 59 1846 km, 1707 UC2ABT NN 59 59, 1710 UC2AAB NN18c 59 59 1513 km, 1742 OH5TS NU47b 59 59 1653 km, 1754 OH5IY NU03d 59 59 1634 km, 2104 YO2FP KF27h 59 59 1367 km, 2114 YO2BUG KG66f 59 59 1327 km and 2121 YO2AMU LF47c 59 59 1521 km.
YU2JL (HD30a) wkd at 1732 OH5IY NU03a 599 599 and 2122 SM7DKF GF 59 59.
Y22ME (HM53a) wkd at 1143 EB4AEM YZ 57 59, 1227 EA5SE ZY45e 57 59, 1233 ED7YDG YX74d 55 59 2197 km, 1252 CT1AUW VA50c 57 59 ?, 1952 RB5JAX QE38j 57 59, 1953 UB5JIN RE01h 59 59 and 1956 UB5JLG QE38j 59 59.
As the map shows, a lot of Es activity took place on the July 2nd. The whole E layer was strong ionized over a wide range. Remarkable was that QSO's were made until the late evening up to 2133 GMT! Such rare constellation took place only on this July 2nd in 1983.

July 3rd

Two reports were received only for the July 3rd from ON5QW (BL80f) when he wkd at 0949 LZ1AG MC64e 59 59 and from G3LTF when he wkd at 1044 LZ2NV/p in MC08d 559 599, 1048 LZ2FR LD14a 559 559 and at 1140 YU7BCD/p

KD35g 559 ?.

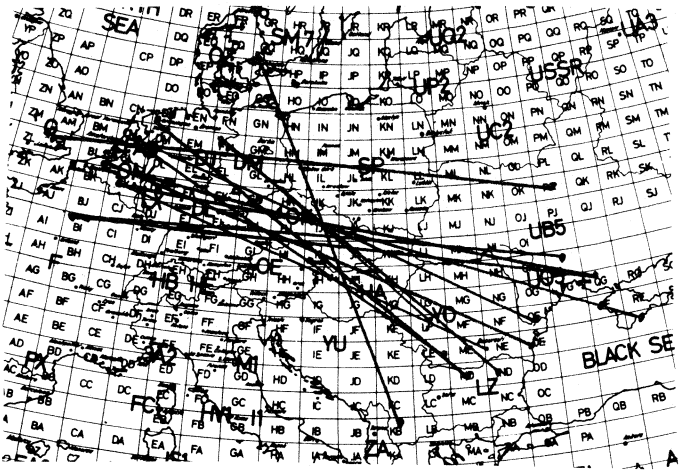
July 6th

One station reports Es activity only for the July 6th. YU2JL (HD30a) managed to work F1JG in CD 53 51.

July 7th

Also one station only reports Es activity for the July 7th. DL7YS in Berlin wkd at 1850 EA1TA VD58b 59 59.

July 8th



DF6OB (FM44c) hrd at 1536 YO2BUG and 1542 LZ2FA ND.
DG7FZ wkd at 1456 LZ2FA ND40g, 1520 UB5JIN RE01f, 1529 UB5EFS RI59 and 1544 UB5ZBQ PH27d.
DK6AS (FM44d) wkd at 1507 LZ2AX LD68a 599 599, 1508 LZ2AR LD68c 599 599, 1510 LZ1AG MC64e 599 599, 1547 LZ2FA ND 599 599, 1550 YO5BPE/p LF25f 599 599 and 1608 YO4?? ?F75b 55 59.
F1DQK (BI23a) wkd at 1515 UB5GCF QG 52, 1536 UB5GBY QG 52, 1538 UB5ZBQ PH27d 58.
G3LTF (AL21g) wkd at 1613 UT5BN PK43e 559 559 and 1631 UB5PAZ ML 559 599.
PA0HWM (CK10e) wkd at 1457 LZ2FA ND40g 59 59, 1537 UB5FDF OF55d 59 59, 1545 UB5JIN RE01f 59 59, 1545 YO4AOL OE64g hrd. 1545 UB5GBY QG24d hrd.
PA0KDV (DN71f) wkd at 1534 LZ1ZH MD, 1538 LZ2FA ND and 1542 YO4AUL OE.
PA2REH (CM54h) wkd at 1548 UB5FDF OF55d SSB.
PA3BIY (CM72c) wkd at 1520 YO6CBN/6 MG64a 59 59 (not complete, lost in qsb) and 1634 UT5BN PK43e 599 599.
PE1AAP wkd at 1545 UB5FDF in OF55d 59 59 1882 km.
PE1BNK (CM76e) wkd at 1459 YO7DL in LE60g 59 59 1625 km.
ON4YZ (CK53e) wkd at 1500 LZ2FA ND30g 559 579, 1506 YO3JJ NE41c 599 599, 1519 UB5JIW RF71g 599 599, 1543 UB5JIN RE01f 54 56, 1545 UB5GBY QG?? 52 59, 1546 UY5HF QG24f 57 56 and 1547 UB5GCF QG?? 59 59. Hrd CT stations and CN8 in WT square.
ON5QW (BL80f) wkd at 1520 YO4AUL OE64g 59 59 and 1533 UB5FDF OF55d 539 599.
OZ1EYX (GQ73h) wkd at 1508 YU5NR KB08a 59 59, 1509 YU5XPJ KB08g 55 59, 1604 YU1OYA ?? 59 59 and 1608 YO2IS KF17e 59 59.

July 14th

Only one report arrived for the July 14th from OE1APS (II63g). Alfred wkd at 1545 IW9AJZ/IH9 GW11g, 1558 9H1BT HV12b, 1605 IT9MRJ HY68b hrd, 1609 IT9DTU/9 HY68h, 1612 9H5I HV13a hrd, 1615 IT9UBA GX59a, 1618

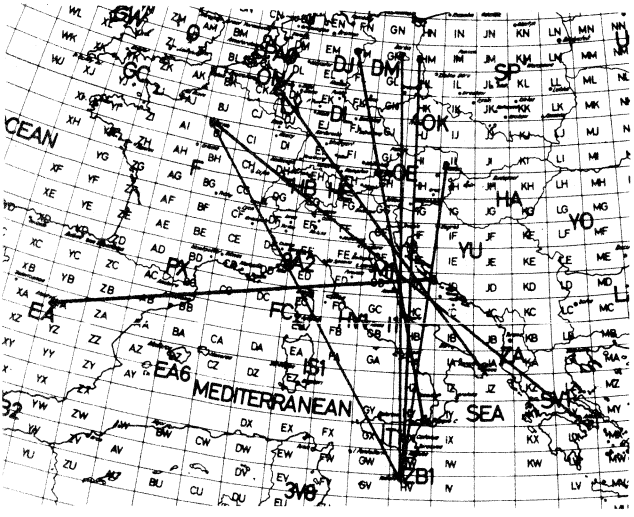
IW9AIG/9 GY67c, 1620 IT9AJH HY68c hrd, 1623 IT9SAS/9 HY68h, 1627 9H1I HV03e, 1629 IT9XIX HX36j, 1631 9H1GB HV13a, 1633 9H1GP HV03f, 1636 9H1FL HV13j, 1638 9H1FN HV03e, 1641 9H1GK HV13h, 1647 IW9ANR GX25h, 1700 IT9JLG GY73e and 1710 9H1ED HV73e.

July 15th

DF6OB (FM44c) reports: 1633 First stations hrd. Wkd at 1645 I2KSX/p HY, 1651 IT9SAS HY, 1653 IT9XIX HX, 1655 I8TUS IZ, 1656 I0XPS/8 HY, 1657 IT9AJH HY, 1702 IT9DTU/9 HY, 1715 I8NKA IY, 1719 I8QAF IY and 1721 9H1GB HV.

DG7FZ wkt at 1543 IT9ICS HX36g.

DL7YS (GM46b) hrd at 1604 9H1BT HV 59, at 1620 IT9AJH HY68c 59, 1624 IT9UBA GX59a 59, wkd at 1629 IT9XIX HX36j 59 59, 1632 9H1GP HV03f 59 59, 1641 IT9DTU/9 HY68h 59 59, 1658 I0XPS/8 HY50j 59 59, 1700 9H1FL HV13j 59 59, 1700 9H1ED HV03e 59 59, 1702 9H1I HV03e 59 59, 1704 9H1GK HV13h 59 59, 1706 9H1CG HV12b 59 59, 1717 IT9SAS/9 HY68h 59 59, 1725 9H5I HV13a 58 56 and 1727 9H1BW HV03e 55 55.



DK6AS (FM44d) wkd at 1708 I8NKA IY11a 55 57, 1720 IT9JLU/9 HY66e 59 59, 1721 I8TUS IZ 59 hrd and 1722 I8QAF ?? 56 hrd.

F1DQK (BI23a) wkd at 1526 9H1GB HV13a 53, 1527 9H1BK HV12b 52, 1534 9H1BT HV12b 53, 1547 IW9AJZ/IH9 GW11g 55 59, 1600 9H1FL HV13j 59 59, 1607 IT9XIX HV36j 59 59, 1610 IT9WPO HV36a 55 59, 1613 IW9ABZ GY67d 55 59, 1616 SV1EN LY40 52, 1626 SV1DS LY52 55, 1628 SV1RC ?? 52, 1638 IW9ANS ?? 55 59, 1641 9H5I HV13a 55 53, 1643 SV8QS JZ40b, 1645 SV1EX LX09a 59 59, 1653 SV1OE LX10a 53 53, 1700 SV1RC LY09a 54 53, 1703 SV1AN LY40a 55 57 and 1706 SV1DS LY 59 59.

OE1RKU (II63f) wkd at 1625 IT9MRJ HY68b, 1627 9H1BT HV12b, 1631 9H1GB HV13a, 1633 IT9UBA GX59a, 1634 IT9XIX HX36j, 1636 9H1GK HV13h, 1637 9H1FN HV03e, 1638 9H1GP HV03f, 1643 IT9JLG GY73e, 1645 9H1I HV03e, 1647 IW9AJZ/IH9 GW11g, 1649 9H1FL HV13g and 1653 IW9ANS GX25a.

PA0HWM (CK10e) wkd at 1617 I2KSX/p HY40h 59 59, 1627 9H1I HV03e 59 59, hrd: I7IWN JA62a, IW9AJZ/IH9 GW11g, 9H1GB HV13a, I8QAF IY11c, I8AZQ IY03c, I7KOE JA, I8TUS IZ52f, 9H1BT HV16b and at 1705 SV8QH KY53e.

YU2JL (HD30a) wkd at: 1544 EA4BVE YA42c 59, 1545 EA4QV YA42f 59 59, 1546 EA4BVE YA42c 59 59, 1548 EA4QR YA44h 59 59, 1551 EB4AUA YA51c 59 59, 1555 EB4AUM ?Z73g 59 59, 1557 EA4QV YA42f 59 59, 1609 EA3AIR BB41c 599 599, 1612 EB3AJG AB34h 59 59, 1613 EA1MO XB27e 59 59, 1614 EA3DLV BB 59 59, 1615 F6GEX/m BC41f 59 59, 1617 EA3CBA AB30h 59 59, 1618 EA2AN? ?? 59 59, 1620 EA4QR YA44h 59 59, 1820 EA5CWN ?? 59 59, 1825 EA5DFY AY11j 59 59, 1849 EA7AJX YX12f 59 59 and 1849 EB5BOD ZY 59 59.

Y22ME (HM53a) wkd at 1615 9H1GK HV13h 59 59, 1617 IT9XIX HX36j 59 59, 1620 9H1BT HV12b 59 59, 1621 9H1GP HV03f 59 59, 1622 9H1CW HV13b 59 59,

1624 IT9UBA GX59a, 59 59, 1625 IT9WPO HX36e 57 59, 1629 9H5I HV13a 59 59, 1633 IT9MRJ HY 57 59, 1644 IT9WPO HX36e 59 59, 1645 IT9DTU/9 HY68h 47 52, 1654 IØSXP/8 HY50j 46 59, 1657 IW9ACT GY57g 53 59, 1705 IT9SAS/9 HY68h 59 59, 1707 I2XPS/8 HY50j 58 59 and 1718 IW9AJZ/IH9 GW11g 56 59.

July 16th

DF6OB (FM44c) hrd at 1654 EA stns and 1700 EB4IM in YA.
G3LTF (AL21g) wkd at 0705 9H1B HV03e 57 57 and hrd the beacon IT9GIT in GY67 at 0650 until 0656.
PA0HWM (CK10e) hrd at 1700 EA5HM.
YU2JL (HD30a) wkd at 1635 EA1BLA VD39e 59 59, 1713 EA1KC XD32d 59 59, 1714 EA1OD XD32d 59 59 and 1718 EA1TA 59 59.

July 17th

DF6OB (FM44c) hrd at 1639 UB5LHJ in SJ.
DK6AS (FM44d) wkd at 1634 UB5LHJ SJ 599 589, 1635 RA6LRR UI03h 579 579 and 1655 LZ2GAR ?? 559 599.
OZ1EYX (GQ73h) wkd at 1551 RB5EHT? RI33j 29 59.

July 20th

On July 20th just one report from PA0HWM (CK10e) came in when he heard at 1835 9H1GB in HV13a and wkd at 1845 9H1CG HV13h 55 55.

July 23rd

Also only one report arrived from F1DQK (BI23a): wkd at 1257 9H1GB HV 59 59.

July 29th

DF9PY/p (DK64b) hrd at 1142 LZ2FA ND40g 55, 1212 YO4AUL OE64g 529 and 1215 YO4AUL OE64g 52.
PA3BIY (CM72c) wkd at 1603 9H1BT HV12b 59 59. (4 minutes opening!)
OZ1EYX (GQ73h) wkd at 1914 UA6YAF TE30h 559 569 and at 1943 UK6YAG TE30h 559 599.

August 4th

DF9PY/p (DK64b) hrd at 1730 EA1HVA 58.
PA0HWM (CK10e) hrd at 1645 EA1BLA VD39e, 1725 EA1ED VD59h and wkd at 1747 EA1BLA VD39e 59 59.
PA0KDV (DN71f) wkd at 1746 EA1ACD VD and 1750 EA1AST VC.
PA3BIY (CM72c) wkd with 10W at 1547 EA1KV in VC 59+ 59+ and at 1638 EA1BLA VD39e 59+ 59+.

August 11th

On August 11th there was the last possibility to work on the 2m band via sporadic E this year. The latest report came from F1DQK (BI23a): He worked at 1728 YT5IL in LB13j 59 59.

For the 1984 Es season, please send YOUR Es report in time. The dead-line for the summary Es report in DUBUS will be the 1st September 1984!

MOON BOUNCE

conducted by D F 7 V X

This will be a short Column for the Month from May to September because of low activity,poor conditions and only some Reports received by the Editor.
For the future ,please keep your "Reports" and "Fotos" coming.

Stations activities:

144 -MHz-

DL2OM : A new member within the Group of those Amateurs wich achieved in establishing 2-way EME-contacts !
Roland reports us: The Ant. consists of 4-times 16 El.Longyagis. They are on top of a 18m-Westower. His Rig: 750 w output,Preamp (0,6db,3SK97) mounted at the Antennas,100Hz Filter.
22.May83 Roland hrd.: VE7BQH 4,2,9 wkd: W5UN 539/329
His comment: This is the result of the very first trial on this special field of Propagation.

OE3XUA: (OE1WWA,OE3LI) Chris sends a short Letter. He wkds:
15.May 83 18.24-18.38 W5UN o/o; 20.46-20.54 WA1JXN o/o
" 08.00-08.34 hrd KG6DX o/ (sked qso) but no reports! Also Sked with YV5ZZ NIL.
At the weekend (14. to 16.May) they heard: VE7BQH,SM5FRH, es OH7PI
On 144MHz the Group is using 4-times 16-El.yagis and aMasthead Preamp. thanks for INFO Chris.

DJ6CA : is also a new callsign on the german VHF-EME-Scene.
In the meantime JÖRG worked a lot of stations and will bring up more Antennas in the future.

432 -MHz-

OE3XUA: He reports a contact with K8HUH 339/449 at the 15.May83 time was 14.50 . Ant.: 4 times 21-El. yagi .

OE3OBC: He also get a SSB-contact with K8HUH .Signal report was 55/55!!! His Ant.: 16 times 21-El. yagi az./el. mount.

OE9XXI: Now there is a very long List from PETER.
14.May 83: K8HUH 569/449 initial54; DL9KR 559/559; I5MSH 559/449; K8HUH 55/54 SSB!!; KD6R 559/449;
YU1AW 559/449; K9HMB 449/449; W7FU 559/ ? NC;
Hrd: WA7RXG , K5JL
15.May : DK1PZ 439/439; F9FT 449/M; KL7WE 339/M; F2TU 559/519; W7FU 549/339; K5FF 549/0 initial 55;
Hrd: K8HUH,G3SEK? , W5FF, G4EZN, K5JL;
20.May : DL7QY 449/339; DJ6MB 449/349; DK5AI 449/549; SMØDJW 449/0; Z25JJ 449/M ; K5JL 559/549; SM6CKU 549/339 ;
Missed our skeds with DL2CJ,G3SEK, and DF9CY (20.00-21.30) because of PA DEFECT !
Hrd: HB9G, DJ9DL, DK1PZ, DF3RU, K3NSS, K5AZU, W5FF, OH6NU, OK1KIR, W1JR, W6ABN, and DF7VX
16.April: PETER and his group Wkd: W1JR 339/349; W6ABN 449/339 WA4ZTK M/M init.48; 17.April: KL7WE 0/M FIRST KL7-QE !!! K9HMB 0/0 init.50; 22.April: I5MSH 559/449; G3LTF 0/0; ON4DY T/0 sked Nc; DL6WU 0/M init.51; YU1AW 559/449; HB9SV 449/439; HB9G 0/0 init.52; K4PKV M/- Nc; DL7ZL 0/M init.53;SM6CKU

OE9XXI ,Peter and the other Boys hrd: 16.April to 23.April
DJ9DL, VE4MA, K5JL, OKØWCY, WØRAP, WB3ESS, N9AB, VE7BBG, K8WW, SMØDJW, YU2RGC;

OK1KIR: Tonda had the following contacts: 14.May wkd:K8HUH 569/559; init.Nr.73 and a NEW State!!(WV)

OKØWCY: First "SSB" QSO with K8HUH 569/559 then 33/34 on SSB wkd. also on 14.May : I5MSH 449/439; Hrd.: DL9KR, OH6NM, F9FT;

On the " MAY " EME sked weekend he wkd.: Z25JJ 449/M , DF7VX M/O K2UYH 449/449, VE4MA O/- lost because of Moonset, OH6NU O/M, K3NSS 459/339, N9AB 449/449, NIL in the skeds with YV5ZZ and VK6ZT .

OK1KIR: Tonda was successful also on the May-sked-weekend! Wkd.: G3SEK M/M,init.74; DF3RU M/O,init.75; K4PKV M/O, init.76; JA7BMB,init.77; W7JF M/M,init.78; and MT+DN field; W7fU O/O,init.79 and WA;
NIL in the skeds with W1UHE,JA8QQ,N2CB,WØHHE, K9KFR;
Hrd: DJ9DL, DK1PZ, HB9G, I5MSH;

In September 1983 OK1KIR Wkd: N2CB O/O,init.81; and NY!
NIL was hrd in the skeds with LA1K, DF9CY, DJ8QL, W5FF, K9KFR,W4WD;

OKØWCY got some more: OE9XXI O/O, VK5MC O/O, OH6NM O/O, K5AZU O/O
Hrd were from both calls: HB9G, UA3LBO, DF3RU, DK1PZ, OH6NU, I5MSH, WA4ZTK,W1JR,W8WA, W7GBI, WØRAP, N9AB;
Negativ skeds: VK6ZT, DK5AI, YV5ZZ;

Our EME score : 432MHz - 81 Qso, 23DXCC , 23! U.S. states

YU1AW : Drago Wkd on 432 MHz: 14.05.83 F6HLD M/O, K8HUH 57/57 SSB, G4EZN 54/53 SSB, DL9KR 53/55 SSB, W3IWI 57/57 SSB, OH6NU 449/449, I5MSH 55/55 SSB, LA1K O/O, K8HUH 57/57 SSB OE9XXI 449/559, DF7VX 449/529, W7FU 559/559, K5JL 559/559
Next Day,15.05. : JA4BLC 449/559, JA4BLC 33/44 SSB, JA9BOH 449/459, DF9CY O/O, DL9KR 559/559;
20.May : OH6NU 44/44 SSB, DJ9DL 439/Ø , DL6NAA M/M, SM3AKW 449/549, DJ6MB 559/459, K4QIF 449/559, SM6CKU 44/44 on SSB!
Drago hrd on 432: N4GJV, SMØDJW ;

YU2RGC: This is Dragans report. 14.of May he wkd. K8HUH 559/559 and K2UYH 559/449; 15,05.83 : K2UYH 559/559, W3IWI 559/559 and on SSB K8HUH 55/55 !!

1296 -MHz-

OE9XXI: 23.April we got contacts with: GW3XYW O/O init.17 IS THAT THE FIRST "GW" to "OE" ???? G3LTF 559/449, OKØWCY 449/439, VE7BBG 44/549 COR was on SSB !!! OK1KIR 439/339; Hrd : W7GBI
On 21.May we found poor condx --- but some activity.
Wkd. SP5cic/SMØ M/O init.18; OK1KIR 439/449, GW3XYW 439/339, DL1WCY O/? (DJ8QL called also at this time) but later DL1WCY O/O init.19 ; Hrd : WB5LUA , DJ8QL, K4QIF, YU1AW;

OK1KIR: In May Tonda made some initial contacts on 1296 MHz. YU1AW M/M init.23; DXCC19+KN field; SP5CIC/SMØ M/O, init.24; OE9XXI 449/439; NIL in the skeds with I2COR and YU2RGC .
In September 83 we wkd RANDOM: WA8NLC M/M init.25,State MI and new field (DN); K2UYH 549/349; K5JL 0/449 init.26 and agn new state; VE7BBG 549/539; NIL with I2COR and Yu2RGC. HRD: LX1DB and Z25JJ . Condx on 1296 = very good.

Our EME score : 1296MHz -25 Qso, 12DXCC , 7! U.S. states

OKØWCY: 1296MHz only in August 83. We wkd: K2UYH 439/339; Hrd: DJ8QL and OE9XXI. NIL in the skeds with ZL3AAD and HB9VI. many thanks to OE9PMJ for the skeds!

YU1AW: Drago wkd on 21.May OK1KIR M/M; DL1WCY ,but NC; Hrd : OE9XXI, WB5LUA, SP5CIC/SMØ and G31TF;

Some short Netnews: DF9CY and DK5AI making some improvment on the antenna systems to get better results. DK1PZ wkd among others KL7WE ! 4 yagis to 6yagis! For a short time G3YGF put "GM" back on EME.They worked DL9KR and Z25JJ. Z25JJ will be dismanteling his DISH in September. Peter plans to remain active on OSCAR 10 until he is operational again on EME from S.A.
CONTEST: EME-Contest on OCT 29/30 and NOV 26/27 ! Apparently the rules will be pretty much the same as last year.

73, Hellmuth DF7VX

EME

Call	144 MHz QSO	STN	DXC	CON	432 MHz QSO	STN	DXC	CON	1296 MHz QSO	STN	DXC	CON	ACT	ANT
YU1AW	156	79	20	3	458	121	26	WAC	14	9	8	3	++	12mDISH
YU1EU	2	2	2	1	-	-	-	-	-	-	-	-	--	4xYUØB
YU1EV	1	1	1	1	26	11	6	3	-	-	-	-	-	16xFR2Ø
YU1OFQ	-	-	-	-	1	1	1	1	-	-	-	-	swl	128 el.
YU1OYK	2	2	1	1	-	-	-	-	-	-	-	-	++	8xYUØB
YU1PKW	-	-	-	-	7	7	7	4	-	-	-	-	-	YU1AW
YU2CNZ	2	2	2	2	7	7	6	4	-	-	-	-	--	4x16/16x23
YU2RGC	-	-	-	-	273	94	23	WAC	5	4	4	2	++	32xFR2Ø
YU2RGO	11	3	3	2	-	-	-	-	-	-	-	-	+	4x16Tonna
YT3A	2	2	1	1	-	-	-	-	-	-	-	-	-	16x4 Loop
YU3BA	11	3	2	2	-	-	-	-	-	-	-	-	++	4x4 Loop
YU3CAB	5	5	3	2	-	-	-	-	-	-	-	-	+	4xFR12'
YU3UAB	1	1	1	1	-	-	-	-	-	-	-	-	-	4x16Tonna
YU3ULM	33	23	7	3	-	-	-	-	-	-	-	-	++	4x2Ø el.
YU3USB	289	128	25	WAC	-	-	-	-	-	-	-	-	++	24x2Øalot
YU3ZV	45	32	13	3	-	-	-	-	-	-	-	-	++	8xYUØB
YU7AR	52	25	8	2	-	-	-	-	-	-	-	-	++	4xYUØB

MICROCOMPUTER NEWS

BY DL 7 QY

Microstrip Impedance Calculation
for HP41

The program calculates the impedance Z from stripwith w, thickness of dielectric material h, copper layer thickness t and rel. dielectric constant Er.

$$Z = 1{,}0237 \frac{120\,\pi\,h}{\sqrt{\varepsilon_r}\left[\frac{w}{h}+\frac{t}{\pi h}\left(1+\log\frac{2h}{t}\right)\right]h\,1+1{,}735\,\varepsilon_r^{-0{,}0724}\left(\left[\frac{w}{h}+\frac{t}{\pi h}\left(1+\log\frac{2h}{t}\right)\right]\right)^{-0{,}836}}$$

```
01♦LBL "ZLINEZ"   25 RCL 01    49 RCL 01    73 *
   02 FIX 2       26 *         50 /         74 "Z="
   03 "H?"        27 STO 06    51 -.836     75 ARCL X
   04 PROMPT      28 RCL 04    52 Y↑X       76 AVIEW
   05 STO 01      29 RCL 06    53 RCL 06    77 END
   06 "W?"        30 /         54 *
   07 PROMPT      31 RCL 05    55 1
   08 STO 02      32 *         56 +
   09 "ER?"       33 STO 05    57 RCL 05
   10 PROMPT      34 RCL 02    58 *
   11 STO 03      35 RCL 01    59 STO 05
   12 "T?"        36 /         60 RCL 03
   13 PROMPT      37 RCL 05    61 SQRT
   14 STO 04      38 +         62 RCL 05
   15 2           39 RCL 01    63 *
   16 RCL 01      40 *         64 STO 05
   17 *           41 STO 05    65 120
   18 RCL 04      42 RCL 03    66 PI
   19 /           43 -.0724    67 *
   20 LN          44 Y↑X       68 RCL 01
   21 1           45 1.735     69 *
   22 +           46 *         70 RCL 05
   23 STO 05      47 STO 06    71 /
   24 PI          48 RCL 05    72 1.0237
```

```
                          XEQ "ZLINEZ"
H? (mm)                   .79      RUN
W? (mm)                   2.40     RUN
ER?                       2.35     RUN
T? (mm)                   .016     RUN
Z=50.00 Ohm
```

Das Programm berechnet die Impedanz Z einer Microstripleitung aus: Der Breite der Leiterbahn w, der Staerke vom Basismaterial h, der Kupferschichtstaerke t und der rel. Dielektrizitaetskonstante Er.

For coming issues of DUBUS following programs are announced to be published for HP41: Constant gain and noise circles-stability factor K calculation for microwave transistors. Attenuator calculation for PI and T networks. Calculation from impedance to normalized reflection coefficient, side lobe rejection over "cold sky" for antenna systems. Parabolantennas gain in respect of their diameter and operatingfrequency and beamwith. Coaxial line calculation. QTH locator calculation (distance and beamheading). Microstripline inductance calculation. Free space attenuation. Moon tracking program and many others. If you have an interesting program for VHF UHF use, please send a listing and a short discription for publication in DUBUS to DL7QY. For the future "we will NOT be a Microcomputermagazine", but if microcomputers can give any help to realize our VHF UHF work, then we will use it anyway!

+VHF+NEWS+SKEDS+COMMENTS+SUPPLEMENTS+

by DL7QY

BELGIUM QRT on 70 cm up to 10GHz in the future ????

Considerable changes in the existing radio amateur regulations have been announced here in ON. Amongst them:
ABOLITION ON 430 TO 434 MHz FOR AMATEUR RADIO USE ! ABOLITION OF ALL AMATEUR ALLOCATIONS BETWEEN 440 MHz AND 10 GHz !
We are of course opposed to these significant reductions and feel that amateur radio and experimenting on UHF/SHF should be stimulated instead of restrained!
Obviously, a lot of help will be needed to save our bands. You can assist:
(1) by raising your protest on a QSL, returned to: ON6AT-RTT, P.O.Box 71, B-9218 GENT.
An appropriate clause could read like this:
" Sir,
We would like to state hereby our disagreement with any intention by your services to reduce ANY RADIO AMATEUR FREQUENCY ALLOCATIONS in Belgium.
This would not only isolate our Belgian fellow-amateurs from the international radio amateur community, but also seriously strike at the roots of experimenting and achieving technical skills.
Yours faithfully, "
(2) by giving this matter as much publicity as possible and asking your fellow-OM to return their "action QSL".
With best 73 and many thanks, ON6AT, ON4ASL, ON5EX and many others.....

Top List

EA3ADW mentioned: Strong controversies appear in EA land regarding the situation of the rules of European TOP LIST of worked QTH locators. Many hams realized that: 1) They can work from a various portable qth's if all them are located in the same square (ex. BB). 2) Stations with more than one operator are alowed, too. 3). Maritime Movile stations from rare squares like CX, DX etc are also valid for credit squares.

Now, to point 1). Under portable conditions a single /p location counts only. To 2) More than one Operator is allowed (club stations etc), but the location must be fixed. To 3) MM stations are valid.
For the future we will spend one more page also for the microwave Top List as we have done for 2m now. Please send your score even if you are not inclosed in the list now. 73 de DL7QY.

DUBUS affairs

PA0RLS writes:
1) I agree with your conclusion drawn from the comments on p. 79 DUBUS 1-83 and my opinion equals that of DL7YS.
With respect to ON5GF's remark I suggest the following for the technical part: Publish this part in the english language only; that will double the available space. May be there are some "national feelings" involved with the German text, but I think that for an interested ham it does not matter if publication is in English only.

2)"Fair-play" is an important thing to me and I have been very much annoyed last year that a station (p/ on TF) worked according the shortened procedure (MS).
If we carry on doing so, we only need to receive one letter of either call and report to "complete" a QSO.
Even missing one letter makes a QSO unvalid and rogers are often sooner given than allowed according to the rules. The fact that many OP's send 5 or more times the report between the call-signs makes me strong to believe that the report is by most OP's considered as the most important: No gentlemen, both calls and the reports on both sides have to be complete!
I recently had the experience of being asked on 20m by a staion I had MS sked with, wether I had received his rogers. If I tell you that I did send only both call-signs (I did not receive any ping) you may imagine how "reliable" some OP's are!
3)The idea for an alternative VHF net on 80 m during night-hours is excellent, but I think NOT ONLY during good showers.
4)The proposal of DK2ZF (p.87) for a second CW section will mean "war" in certain parts of Europe; in PA0 it is even difficult to keep 144.400 - 144.500 free from FM-mode stations who state when you ask them why they do not adhere to thr bandplane: We have a license for the whole 2m band. We as DX-ers must realize that (too) many stations are not interested in DX and I think the part 400-500 and the beacon part should not become spoiled by this kind of "hams". Vy 73 de Rudi PA0RLS

PE1AAP schreibt: Zu den DUBUS info kann ich noch sagen, dass sie mir sehr gut gefallen. Vielleicht sollten einige QSO Listen etwas gekuerzt werden, im Grossen Ganzen soll DUBUS info aber bleiben wie es ist. Fuer Tropo news sende ich selber nur noch Berichte ueber >700km entfernt gearbeitete Stationen ein. Es freut mich immer besonders, wenn mal wieder ein neues DUBUS info gekommen ist, denn ich lese diese Zeitschrift sehr gern!

PE1BNK writes: I fully agree with the comments from G3PBV (p.157) about the unbalanced Top List (144 MHz 179 entries only). For a C-licend amateur (not to much power and for some countries no CW) it is difficult to stay in the list (see myself: no CW, no MS). About the QSO reports in DUBUS my opinion: I enjoy reading what others worked during a certain opening and I get a lot of information from these lists. I always write down the calls from stations who are in a attractive square (for me hi), so CONTINUE PSE!

F6DRO's opinion: I think that the whole magazine its actual size and presentation is perfect. About the QTH mup shown in DUBUS 1/83, I think its too little, why not put EA8-CT2-CT3 which are making a lot of effect to be active on tropo and Es. One thing is not very fine in the competition of Top List....Some competitors do not want to take skeds with squares worked before; destroy my completely ham spirit I propose to substract one place at every refused sked...I think that some stations could be out of Top List very quickly. About Maidenhead Locator, I think we'd better still use the actual system for tropo and Es; one more character to transmit in noise or qrm is not necessary. Let's use Maidenhead system on EME and satellite.

Neue Spalte "Microcomputer" in DUBUS
Von Zeit zu Zeit werden wir in DUBUS eine Seite fuer interessante "Klein"- Programme, welche die Belange des Amateurfunks betreffen, veroeffentlichen. Die Leser werden aufgerufen, falls derartige Programme vorhanden, diese mit einer kleinen Beschreibung an DL7QY zu senden. Es ist dabei an Systeme wie HP41, TI59 oder

kleine Basic oder Assembler Programme gedacht,welche in Bezug auf technische oder betriebliche Amateurfunk- Anwendungen speziell im VHF- und UHF Bereich Verwendung finden koennen.

New Column "Microcomputer" in DUBUS

From time to time we will publish a new column for interesting, small programms, concerning amateurradio. The readers are asked to send such programms, if available, to DL7QY. Recommended systems are HP41, TI59 or small programms written in common BASIC or ASSEMBLER, in respect of their technical or operational use especially in the VHF and UHF range.

Contest results

Result from MARCONI MEMORIAL CONTEST REG 1. RADIOTELEGRAPHY November 1982 144 MHz Single Op.

1.	SM7FJE	GQ56b	177	84.845	points	2.	YU3ES/3	GF40d	240	73.935	points
3.	DK3UZ	EN20c	193	69.371	points	4.	DK1BM	DM67a	235	67.104	points
5.	I4AUM/4	FE55c	165	64.385	points	6.	PA0OOS/A	DN63c	197	62.811	points
7.	OK1AR/p	GJ04b	225	60.838	points	8.	OE5KE	HI42j	216	60.484	points
9.	F6DWG	BJ41j	170	60.312	points	10.	OK2BDS	HJ67b	232	59.084	points

AGCW-DL UHF CONTEST 830319

Class A											
1.	DL5ADV	DL57e	19	8	2	2466	2.	DL6FAW/p	EK63h	18	10	2	2240
3.	DF3TT/p	EI38j	12	10	2	2240	4.	DJ6OP/p	EI26c	6	2	1	322
Class B													
1.	DL8QS	EN55j	25	13	2	2415	2.	DF5DD	EL43d	22	11	2	1806
3.	PA3CII	CL29f	15	10	2	1260	4.	DJ7ST/p	FL13e	14	9	3	1248
Class C													
1.	DL2OM	DK49j	18	11	2	1113	2.	DL0OI/p	DJ46j	18	11	1	944
3.	PA0WWM	CM63g	11	8	2	630	4.	PA0XMA	DM44h	11	8	2	612

Columns from left to right: call, qthl, qsos, squares, WAE countries, points

AGCW-DL VHF CONTEST 830625

Class A												
1.	DJ9IE/p	EL13e	43	20	5	13005	2.	DF5ZP/p	EK61g	41	19	5	12540
3.	DF6DU/p	EL54h	38	19	6	1244	4.	DL6NAK/p	FK80h	39	20	4	10600
Class B													
1.	DL9GS	DL47g	78	28	7	10280	2.	DF8IK	EJ23f	46	21	5	9522
3.	DK8XC	FN31j	40	18	8	8990	4.	DJ1WG	EM04b	41	19	7	8802

AGCW HNYC 1983

Class A												
1.	DF7ST/p	FL13e	43	17	7	2664	2.	DF6LN	FO51j	40	14	5	1919
3.	DF7DC/p	DL59g	59	12	3	1575	4.	DH2FAW	EK39h	36	16	3	1501
Class B													
1.	J9MH/p	DK43a	79	25	6	5797	2.	OK1KPL	GJ28h	56	21	5	4160
3.	DL9GS	DL47g	76	18	5	4025	4.	Y24XN	GK33f	42	23	5	3696
Class C													
1.	DK5AI	FL33b	110	35	8	14221	2.	DL1BU	EJ45a	106	32	7	11505
3.	DL2OM	DK49j	90	30	8	8854	4.	PA0NIE/A	CM64d	70	22	7	6467

OSCAR TEN

from Norman Fitch G3FPK

At the end of July marathon edition, it was stated by AMSAT's Oscar 10 satellite had been placed into a new orbit, a second firing of the on-board rocket motor being planned for later. The attempt was made at 0031 on July 26 but turned out to be the "damp squib" phenomenon as there was no ignition at all. It seems that there was no fuel left, it either having all been spent during the first, longer-than-planned firing, or, if there was any left, it must have leaked away due to possible damage. This damage occured when A-O-10 was ejected from the third stage of the ARIANE launch vehicle and was entirely the fault of the European Space Agency, which has apologised to AMSAT for this mishap.

The net result is that the orbit is inclined at only 26.12' to the equator which is less than half that planned. The period is just under 11h. 40m. and the satellite will be in range from the U.K. for up to ten hours for orbits at the maximum elevation of about 55'. The perigee of nearly 4000 kms is more than twice the desired distance and means that the satellite will spend much more time in the intense Van Allen radiation belt. The long term effects of this could affect the working life of the electronics, but only time will tell.

The U-transponder was switched on at 1430 on Aug. 6th to start a new era of amateur satellite communiction. The maximum theoratical range is somewhat over 18000kms which means that at some times, it will be possible to contact Australian stations from the U.K. and probably many exotic, Pacific areas. During the 2m AMSAT net run by Ron Isaacs, G8CSI, in the London area on Aug. 7th, it was stated that, since the satellite was not in the correct attitude, the lower gain, omni-directional antennas were in use. Even so, Trevor Stockill, G4GPQ, using about 800 W E.R.P., heard his signal at S2 and worked JY9CF, DJ9PC, OE3EFS and F1ANY. No doubt, by the time this is read, many real DX contacts will have been made.

The current satellite calendar was received at the beginning of Aug. and includes A-O-10 predictions in the form of AOS and LOS times with respective azimuths, and the time, azimuth and maximum elevation figures for each available orbit. It also contains the band plan which suggests communication uplink from 435.035 to 435.155 MHz, the inverted downlink QRG's being from 145.965 to 145.845 MHz. AMSAT- UKCW and RTTY bulletins are one 145.975 and 145.970 MHz. The General beacon is on 145.810 MHz and the Engineering one on 145.987 MHz. The current issue of OSCAR NEWS contains a comprehensive supplement on the new "bird".

A long while ago in this feature, your scribe mentioned the possible problem in monitoring one's own signal from a very distant satellite. G4GPQ found this to be a very real problem, so much so that Trevor's solution was turn down the receiver AF gain control while talking. With a delay of up to 300 ms, the effect is quite disorientating and it is just as bad when sending CW and hearing it coming back slightly delayed, particularly if you have sidetone!

Readers are urged to send in reports of O-10 activities- and s.w.l. reports are just as interesting as those from licensed amateurs- so that a detailed assessment can be made of the problems and advantages of this new type of satellite orbit. A discription of the TX and RX, plus antennas used for the experiments, will be of much help.

Studies of an extensive anticyclonic propagation event and of some short-term enhancements observed at VHF and UHF

R.G.Flavell
Radio Society of Great Britain

Presented at the Third International conference on Antennas and Propagation,University of East Anglia, Norwich, UK, 12-15 april 1983. IEE Conference Publication 219, Part 2,14-18

Studie an ausgedehnten Hochdruckgebieten und damit verbundenen kurzzeitigen Ausbreitungsverbesserungen im VHF und UHF Bereich

Introduction

The paper begins by presenting a geographical analysis of 102 long-range 144 MHz amateur contacts, all verified, along distances of between 1100 km and 2944 km,made during a 24 hour period, 5/6 September 1981. Then follow examples of techniques which may be used to provide refractive index analyses of short-term enhancements of signal associated with weather fronts, structures of narrow horizontal extent which cannot be studied in detail using conventional cross sectional methods.The examples described reveal interesting details of the form of the features concerned.

Einfuehrung

Der Artikel beginnt mit der Vorstellung einer geographischen Analyse von 102 Amateurweitverbindungen im 144 MHz-Band, die, alle bestaetigt, Entfernungen von 1100 km bis 2944 km erreichten, hergestellt waehrend einer 24-stuendigen Periode, am 5./6. September 1981. Dann folgen Beispiele von Techniken, die gebraucht werden koennen, um Brechungsindexanalysen von kurzzeitigen Erhoehungen von Signalen, bedingt durch Wetterfronten, Strukturen von schmalen horizontalen Ausdehnungen, herzustellen, die in Einzelheiten mit konventionellen Mittelwertermittlungen nicht exakt gemacht werden koennen. Die beschriebenen Beispiele enthuellen interessante Einzelheiten von der Form der betreffenden Merkmale.

The active region within an anticyclone

In a previous contribution (Flavell (1)) it was shown how random networks of amateur stations could be used to disclose the active region within an anticyclone, meaning, in this context, the region within which abnormally-long signal paths were possible at VHF and UHF. A series of maps outlined the day-to-day changes over an eight-day period in relation to movements of the centre of the high pressure system and it was shown that the size of the active areas at both 144 MHz and 432 MHz were very similar, but that the length of individual signal paths within those areas tended to about half as far again at 144 MHz as compared to paths at 432 MHz.
At that time only the long-range signal reports had been studied and it might be argued that there was no evidence to show that the edge of the active area had been reached. To counter this criticism a more extensive study has been carried out, using information gained as a result of an analysis of some 1300 signal logs returned to the Deutscher Amateur-Radio-Club in connection with the International Amateur Radio Union Region I VHF Contest, held between 1200 UT on 5 September and 1200 UT 6 September, 1980.

During this 144 MHz event 102 contacts in excess of 1100 km occured, and their geographical distribution was as shown in Fig 1. For the purpose of this analysis the participating stations have been grouped within "squares" of dimensions 1 degree Latitude by 2 degree of Longitude, the centres of which are marked by circles when they contain terminals of any of the qualifying long-range paths.

It will be seen that paths tend to separate into two clusters, each associated with a centre of high pressure, marked "H" on the map. The alignment of the two long-paths axes with respect to their associated system vcentres bears out the findings of the earlier paper, namely that they stretch chordally across the encircling isobars (not shown on the map in the interests of clarity) to one side only of the anticyclone.

If this pattern of paths is compared with a similiar map showing the positions of all the stations participating in the contest (Fig 2) it will be seen that in all directions relative to the active area over Europe there were stations that had been unable to achieve ranges of greater than 1100 km although, by the nature of the aims of the contest, their operators will have been trying very hard to do so. It is also of interest to note that Fig 1 shows that several squares in NW Germany failed to break the 1100 km barrier, although, as Fig 2 shows, they contained some high numbers of participting amateurs. The lack of activity from Scotland is puzzling at first, but it was found that a cold front lay across Great Britain along the border country for the whole duration of the contest and this would have effectively isolated Scotland from the rest of Europe.

Two further points are worthy of mention; first, the extremely long path, entirely over sea, linking Anglesey and Canary Islands, 2944 km, which has clearly received benefit from both anticyclones, and, second, the long overland path from Brittany to Yugoslavia, 1530 km, passing over what must surely have been very difficult terrain.

Fig1:Signal paths exceeding 1100 km worked by amateurs during 24 hours, 5/6 Sep 1981. H,H indicate centres of anticyclones

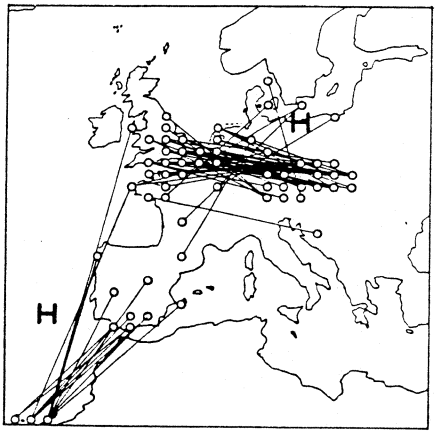
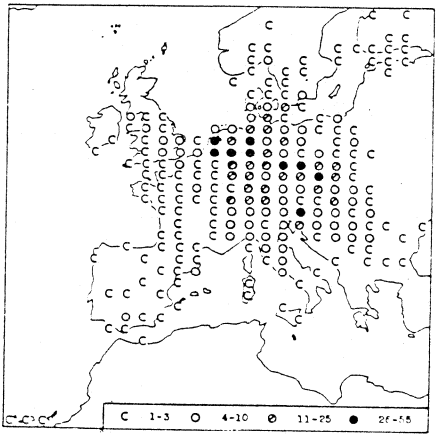


Fig2:Distribution of participating amateurs per "square" of 1 degree Lat by 2 degree Long. About 1300 stations submitted logs



An enormous benefit to this study has been the knowledge that all the log sheets have been very carefully scrutinised by the contest organisers, who have verified in each case that stations in contact have correctly recorded an exchange of sequence numbers, which must fall correctly into place at the time recorded in the two logs concerned.

Die aktive Region inmitten eines Hochdruckgebietes

In einem vorhergehenden Beitrag (Flavell(1)) wurde gezeigt, wie ein zufaelliges Netz von Amateurfunkstationen dazu benutzt werden kann, die aktive Region in einem Hochdruckgebiet zu erschliessen; gemeint ist in diesem Zusammenhang die aktive Region in derem Inneren abnorm lange Signalwege im VHF- und UHF-Bereich moeglich sind.
Eine Kartenserie umreisst die taeglichen Wechsel waehrend einer Dauer von 8 Tagen im Verhaeltnis zu den Bewegungen im Zentrum eines Hochdruckgebietes, und man kann erkennen, dass die Groesse der aktiven Gebiete auf den beiden Frequenzbereichen, 144 MHz und 432 MHz, fast gleich ist, dass aber die Laenge der verschiedenen Signalwege innerhalb dieser Gebiete dazu tendierte, auf dem 2m-Band nur halb so lang zu sein wie auf dem 70cm-Band.
Zu dieser Zeit sind nur Berichte von den weitreichenden Signalen naeher betrachtet worden, und man koennte einwenden, dass es keinen Beweis dafuer gibt, dass der Rand des aktiven Gebietes erreicht worden war. Um diesem Kriterium zu begegnen, wurden ausfuehrlich Beobachtungen durchgefuehrt, bei denen Informationsmatrial verwendet wurde, welches das Ergebnis einer Analyse von nahezu 1300 Logauszuegen war, die nach einem Contest ueber den DARC an die IARU eingesandt wurden (5./6. September 1980 1200-1200 GMT).
Waehrend diesem Ereignis im 144 MHz-Band kamen 102 Verbindungen mit Reichweiten bis zu 1100 km zustande, und die geographische Verteilung der Ausbreitung wird in Abb.1 dargestellt. Fuer den Zweck dieser Analyse wurden die teilnehmenden Stationen innerhalb von Quadraten mit den Abmessungen von einem Grad geographischer Breite und zwei Grad geographischer Laenge in Gruppen aufgeteilt, deren Zentren durch Kreise gekennzeichnet sind, wenn die Standorte in genuegend weiter Entfernung voneinander lagen.
Es wird sichtbar, dass die Verbindungswege dazu neigen, sich in zwei Gruppen aufzuteilen, jede verbunden mit einem Hochdruckzentrum, auf der Karte mit H gekennzeichnet.
Die Ausrichtung der beiden Weitverbindungsachsen unter Beachtung ihrer Verbindung mit den Systemzentren bestaetigt den Befund des frueheren Artikels, dass sie sich naemlich schlauchartig ueber die einkreisenden Isobaren nur zu einer Seite des Hochdruckgebietes hinwegstrecken (der Uebersichtlichkeit wegen nicht auf der Karte gezeigt).
Vergleicht man dieses Muster von Verbindungswegen mit einer aehnlichen Karte, welche die Standorte der am Contest teilgenommenen Stationen zeigt (Abb.2), sieht man, dass es, relativ zum aktiven Gebiet ueber Europa, in allen Richtungen Stationen gab, denen es nicht moeglich war, groessere Entfernungen als 1100 km zu ueberbruecken, obwohl, contestbedingt, die Teilnehmer es versuchten. Es ist ebenfalls von Interesse zu erwaehnen, dass Abb.1 mehrere Quadrate in NW-Deutschland zeigt, welche die 1100 km-Grenze nicht erreichten, obwohl, wie Abb.2 zeigt, sie eine grosse Anzahl teilnehmender Amateure aufzeigen. Der Mangel an Aktivitaet aus Schottland waehrend der ganzen Zeit des Contests schafft zuerst Verwirrung, aber dann fand man heraus, dass eine Kaltfront ueber Grossbritannien entlang der Nordgrenze zwischen England und Schottland lag, die Schottland waehrend der ganzen Contestzeit vom restlichen Europa isolierte.
Zwei weiter Punkte sind erwaehnenswert: erstens die aussergewoehnlich

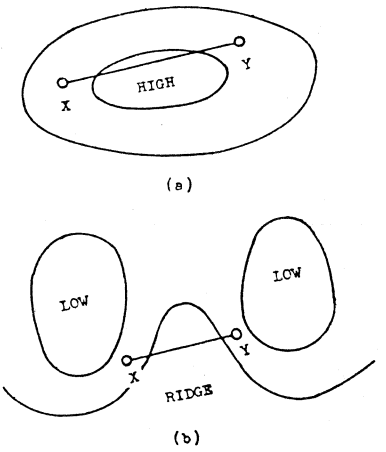
weite Verbindung, die, ausschliesslich ueber dem Meer, Anglesey mit den Kanarischen Inseln verband (2944 km), die sicherlich von den beiden Hochdruckgebieten profitierte, und, zweitens, die weite Ueberlandverbindung, schlechte Ausbreitung durch bergiges Gelaende, von England nach Jugoslawien(1530 km).
Von enormen Vorteil war es zu wissen, dass alle Log-Blaetter sehr genau von den Contest-Organisatoren geprueft wurden; durch Logauszugvergleich wurden die Verbindungen der Stationen bestaetigt.

Ridge enhancements

Studies of anomalous propagation associated with persistent anticyclones, such as the one just described, generally reveal that the longest signal paths lie to one side of the centre of the high pressure system, such that there is a more or less symmetrical rise and fall of pressure along the line of the transmission path, as in Fig 3(a).
Short-term enhancements often follow a similiar pattern brought about by the passage of ridges of high pressure seperating successive depressions.
If a pen recording is made of signals received from an over-the-horizon tansmitter as a ridge approaches the line of the path, signal strength will be found to rise and fading rate decrease until a position of symmetry with respect to the isobars is reached, Fig 3(b), after wich the normal signal characteristics gradually return .Similar effects may be seen on fixed SHF paths as well as at UHF and VHF.

Flache Erhoehungen

Beobachtungen von ungewoehnlichen Ausbreitungen, die mit standfesten Hochdruckgebieten verbunden sind, wie das oben gerade beschriebene, geben meist Aufschluss darueber, dass der laengste Signalweg auf einer Seite des Zentrums des Hochdruckgegbietes liegt, so dass es ein mehr oder weniger symmetrisches Auf und Ab des Drucks laengs der Linie des Ausbreitungsweges gibt, siehe Abb.3(a).
Kurzzeiterhoehungen folgen oft aehnlichen Strukturen, die durch das Wandern des Kerns des Hochdruckgebietes bewirkt werden, und das eine erfolgreiche Trennung zu Tiefdruckgebieten erzeugt.



Wenn eine Aufzeichnung mit dem Schreiber von den Signalen gemacht wird, die man von einem Sender, der hinter dem Horizont liegt, erhalten hat, als ein zentrales Hochdruckgebiet sich der Linie des Verbreitungsweges naeherte, sieht man, dass die Signalstaerke ansteigt und die Anzahl der Schwankungen abnimmt, bis eine symmetrische Position, in Abhaengigkeit von den Isobaren, erreicht wird, nachdem die normale Signalcharakteristik zurueckkehrt. Vergleichbare Effekte wurden bei festen SHF-Funkstrecken, wie auch im VHF- und UHF-Bereich beobachtet

Fig3: The longest ranges tend to lie symmetrically across one side of a high.
Ridges are most effective at the path centre.

Frontal enhancements

A number of amateurs have reported the existence of short-lived long-range signal paths connected in some way with approaching weather fronts. One operator in the Isle of Man has come to recognise certain warm fronts which enable him to work consistently into Northern France for a very limited time.
It is very difficult to study such frontal ehancements in terms of refractive index because the fronts themselves are of such limited horizontal extent that they often fail to appear at all on conventional cross sections, on account of not being sufficiently close to a radiosonde station at ascent time. When a front is suitably placed, however, it is possible to overcome the difficulties produced by the wide spacing of the upper-air stations - to a certain extent, at least - by adopting one or other of the two techniques to be described.

Frontale Erhoehungen

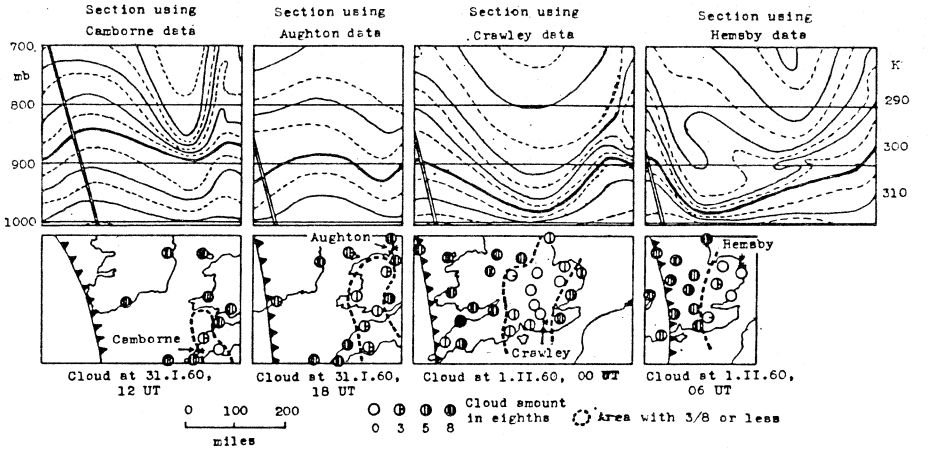
Eine Anzahl von Amateuren hat von der Existenz kurzlebiger Weitverbindungswege berichtet, die in irgendeiner Weise mit sich naehernden Wetterfronten zusammenhingen. Ein Funkamateur in GD kam zu der Erkenntnis, dass die staendige Verbindungsmoeglichkeit mit Nordfrankreich, durch das Auftreten von bestimmten Warmfronten, auf kurze Zeit begrenzt wurde.
Es ist sehr schwer den Brechungsindex solcher frontalen Erhoehungen in Messwerten festzuhalten, weil die Fronten selbst von solch begrenzter horizontaler Ausbreitung sind, erscheinen sie oft gar nicht bei konventionellen Messmethoden, da sie nicht nahe genug an einer Radiosonde waehrend der Aufsteigungszeit sind. Wenn so eine Front am geeigneten Ort ist, ist es irgendwie moeglich die Schwierigkeiten, die durch den weiten Abstand der sendenden Stationen hervorgerufen werden, -in gewissen Umfang wenigstens- zu ueberwinden, wenn man sich die eine oder andere der zwei Techniken, die noch beschrieben werden, aneignet.

The cold front of 31 Jan./1 Febr. 1960

A 144 MHz CW contest was held on 31 Jan 1960, when several long-distance paths opened for short periods, among them Moretonhampstead, Devon, to the Channel Islands and, late evening after a poor afternoon, Hythe, Kent, to well into France.
The value of sectional studies in terms of potentionel refractive index, K, in radio-meteorological analyses has been described elsewhere (Flavell (2)). In the present instance a series of sections (Fig 4) has revealed, by the downward "flow" of the isopleths (potential refractive index values remain constant during adiabatic changes in the atmosphere), that a volume of descending air had preceded the front in its passage across Southern England, widening as it progressed slowly eastward. This was borne out in three of the maps, which have been drawn to the same horizontal scale as the sections immediately above, and show the amounts of low cloud in various parts of the country. Subsiding air warms and dries and these qualities have led to the disappearance of low cloud over an area which clearly expands in concert with the broadening mass of descending air. The low cloud amounts have been plotted from tabulated observations in the Daily Weather Report (3) and potential refractive index values have been calculated from upper-air data published in the Daily Aerological Record (4).
The map for 31 Jan at 18 UT shows that the cloud clearance did not reach Aughton, supported by the section immediately above, which shows no more than a hint of the growing feature capable of dissolving

clouds, which is crossing the country further south.
The comparison of the Crawly refractive index profile with the 7-year mean curve for the corresponding time of year (obtained from tables in Flavell (2)) confirms that large downward displacements of air have taken place (Fig 5).
The potential refractive index, K, plots are not true cross sections but simulated ones, based on successive ascents made at times t1 to t4 from a single radisonde station, C, (Fig 6a), while the front is distant d1 to d4. The respective vertical distribution of K are plotted on the section at correspondingly scaled distances from the base of a sloping line representing the position of the front, as in Fig 6b.

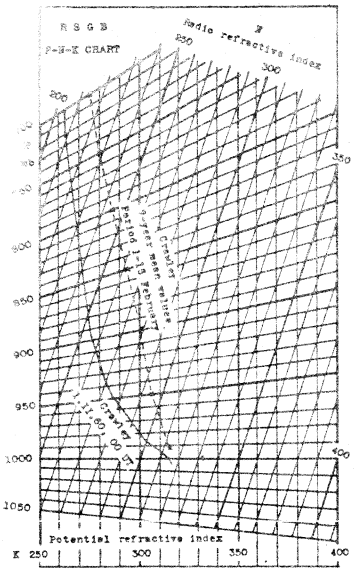
Fig4:Potential refractive index sections and corresponding low cloud amounts related to a cold frontal enhancement.



Die Kaltfront vom 31. Jan./1. Feb. 1960

Am 31. Januar 1960 wurde ein 144 MHz cW Kontest abgehalten, als sich einige weite Verbindungswege von kurzer Dauer oeffneten, unter ihnen Moretonhampstead, Devon, zu den Channel Islands und, spaetabends, nach einem ereignisarmen Nachmittag, Hythe, Kent, gut nach Frankreich hinein.
Der Wert von einzelnen Studien in Punkten potentiellem Brechungsindexes, K, in radiometeorologischen Analysen ist woanders beschrieben worden (Flavell(2)). Im vorliegenden Beispiel hat eine Reihe von Abschnitten enthuellt, dass, bei einem abwaerts gerichteten "Fluss" der Isoplethen (der Wert des potentiellen Brechungsindexes bleibt konstant, waehrend adiabatischer Wechsel in der Atmosphaere),eine Masse absteigender Luft der Front in ihrer Ueberquerung Suedenglands vorangegangen war, die sich, waehrend sie langsam ostwaerts fortschritt, erweiterte. Dies wurde in drei der Karten bestaetigt, die nach dem gleichen Masstab, wie die Sektionen direkt darueber, gezeichnet wurden und die Bedeutung von niedriger Bewoelkung in verschiedenen Teilen ueber dem Land zeigen. Sinkende Luft waermt und trocknet, und diese Eigenschaften haben zum Aufloesen der niedrigen Bewoelkung gefuehrt, welches sich im Einklang mit der ausbreitenden Masse von herabsinkender Luft ausdehnt. Die Bedeutung der

niedrigen Bewoelkung wurde anhand tabulierter Beobachtungen im taeglichen Wetterbericht gemacht (3) und potentielle Brechungsindexwerte wurden errechnet aus Sendedaten, veroeffentlicht im Daily Aerological Record (4).
Die Karte vom 31. Januar um 1800 GMT zeigt, dass die Wolkenaufklaerung, unterstuetzt von der direkt darueberliegenden Schicht, Aughton nicht erreicht hat. Diese Schicht gibt nur einen Hinweis auf ein immer gewichtiger werdendes Merkmal, das faehig ist Bewoelkung aufzuloesen. Die Wolkenaufloesung ueberquerte das Land in suedlicher Richtung.



Der Vergleich des Crawly-Brechunsindexprofil mit dem 7-jaehrigem Maximum fuer die entsprechende Zeit des Jahres (erhalten aus Tabellen in Flavell(2)) bestaetigt, dass grosse abwaertsgerichtete Verschiebungen von Luft stattgefunden haben (Abb.5). Die Aufzeichnungen vom potentiellen Brechungsindex sind keine echten Wirkungsquerschnitte, sondern simulierte, die auf aufeinanderfolgenden Steigungen basieren, die von einer einzelnen Radiosonde in den Zeiten t1 bis t4 gemacht wurden (Abb.6a), waehrend die Entfernung der Front in d1 bis d4 dargestellt wird. Die jeweiligen vertikalen Ausbreitungen von K sind in dem Teil der Abbildung in entsprechender masstabsgetreuer Entfernung aus der Grundlage einer schraeg verlaufenden Linie aufgezeichnet, die den Standort der Front darstellt (Abb.6b).

Fig5: Comparison between the refrative index profile for Crawly, 1 February 1960, 00 UT, and the mean vertical distribution, 1-15 February.

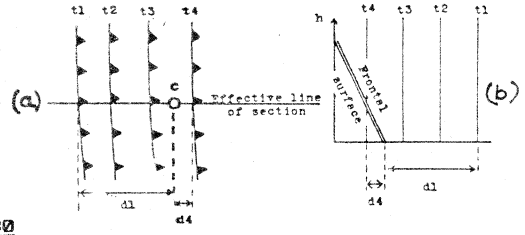
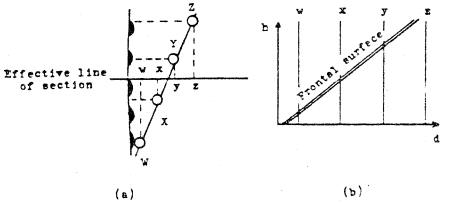


Fig6: Showing, at (a), how the movement of the cold front past the station, C, is related to one of the vertical sections, (b).

The warm front of 4 October 1980

This was an occasion on which some very long paths from southern England to Scandinavia had opened up during the final hours of a ridge of high pressure, which, earlier, had produced some interesting contacts with the near Continent across the North Sea.
The technique adopted in this potential refractive index study was to select a series of upper-air stations (W, X, Y, Z, in Fig 7a) such that they lay along a line which began very close to the front in the south and then diverged until it was about 500 km distant in the north. If it could be assumed that the refractive index structure across the front remained fairly constant along the length of the section - and the results suggest that that was a reasonable assumption on this occasion - then the effect is as though the wide spacing of the stations had

been reduced to their projected equivalents along a line normal to the advancing front (w, x, y, z, in Fig 7a and 7b).
The outcome is particularly rewarding (Fig 8). Ascending air, to the left of the section between 900 and 800 mb is clearly revealed as it rises over the boundary separating it from the large volume of warm, dry air of low refractive index, which has been brought down from aloft by the processes which act within a ridge of high pressure. The layering in the lower part of the section is the feature which has been responsible for the anomalous propagation conditions which had been the subject of the investigation.
These potential refractive index values were calculated from temperature and dewpoint values read from graphical data which appeared in the appropriate issue of the European Meteorological Bulletin, published daily by the Deutscher Wetterdienst, Offenbach am Main, Germany. The methods by which the basic data are turned into potential refractive index values and then into sections such as this one are described in detail in Flavell (2). Because the basic met data are readily available the validity of Fig 5 is easy to check, so it may be confirmed that all the detail has been obtained by a process of strict linear interpolation between the calculated values.
Finally, in Fig 9, the comparison has been made between the Crawly refractive index profile used in the section and the 7-year mean curve for the corresponding time of the year. It should be noted that the use of this form of diagram allows the profile, once plotted, to be read off in terms of either potential refractive index, K, or conventional radio refractive index, N, a remark which applies equally well to Fig 5.
This comparison supports the contention that the relative vertical motions within the section is as suggested by the direction of "flow" of the isopleths, namely, ascending air at 700-760 mb and 795-835 mb, descending air at 760-795 mb and 835-960 mb.
The consistency of potential refractive index values within the lower steep-lapse layer through four radiosonde stations, two of them Norwegian and two British, seems to suggest that present-day radiosondes are adequate for radiometeorological studies such as these, despite the fact that many workers regard the humidity measurements as being totally inadequate for the purpose.



Other examples of a similar nature may be seen in works already cited (Flavell (1) and (2)) and in other papers to which reference is made therein.

Fig7: Showing, at (a), how data from met stations diverging from a warm front relate to a vertical section (b), as seen in Fig 8.

Die Warmfront vom 4. Oktober 1980

Dies war eine Gelegenheit, durch die einige sehr weite Verbindungen von Suedengland nach Skandinavien, waehrend der letzten Stunden des Bestehens eines Hochdruckkernes, zustande kamen, welches vorher einige interessante Verbindungen mit dem nahen Kontinent ueber die Nordsee ermoeglicht hatte. Die Technik derer man sich in dieser Studie des potentiellen Brechungsindexes bediente, war, eine Reihe von sendenden Stationen (W,X,Y,Z in Abb.7a) so zu selektieren, dass sie entlang einer Linie lagen, die sehr nahe der Front im Sueden begann und bis in etwa

500 km Entfernung noerdlich auseinanderlief. Wenn man annehmen kann, dass die Struktur des Brechungsindexes ueber der Front, entlang der Laenge des Abschnitts ziemlich konstant bleibt -und die Ergnisse nahelegen, dass das eine einleuchtende Annahme dieser Gegebenheit war- dann ist der Effekt so, als ob das weite Auseinanderziehen der Stationen reduziert wurde auf ihre projizierten Aequivalenten entlang einer Linie, senkrecht zur vorrueckenden Front stehend (w,x,y,z in Abb.7a und 7b).
Das Ergebnis war besonders lohnend (Abb.8). Aufsteigende Luft zur Linken des Abschnitts zwischen 900 und 800 mb wird beim deutlich sichtbaren Ansteigen ueber die Druckgrenze von der grossen Masse warmer, trockener Luft und niedrigem Brechungsindex abgetrennt, die durch bestimmte Vorgaenge im Inneren des Hochdruckkernes heruntergebracht wurde. Die Schicht im unteren Teil des Abschnitts ist das Merkmal, welches fuer die unregelmaessigen Ausbreitungsbedingungen verantwortlich ist, welche die Hauptsache der Untersuchung waren.

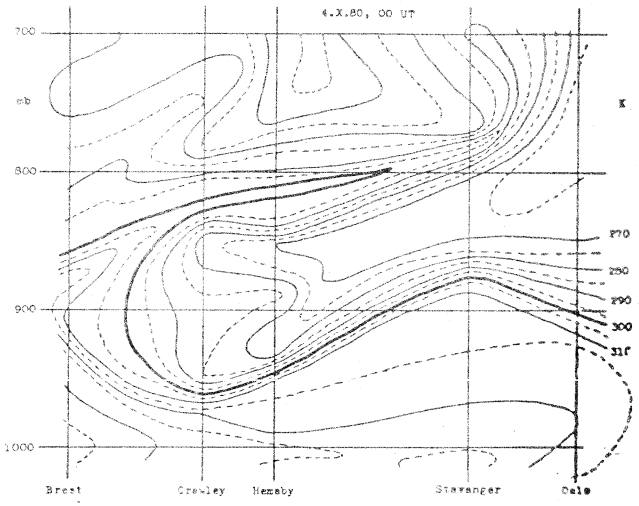


Fig8: Potential refractive index cross section, Brest- Oslo, 4 Oct 80 00 UT, showing the low-level layer leading to the appearance of long-range signal paths and, effectively, details of the frontal surface.

Diese potentiellen Brechungsindexwerte wurden errechnet aus Temperatur- und Taupunktdaten, entnommen aus graphischen Daten der Ausgabe des Europaeischen Meteorologischen Bulletin, das taeglich vom Deutschen Wetterdienst, Offenbach am Main, herausgegeben wird. Die Methoden mit denen die zugrunde liegenden Daten in potentielle Brechungsindexwerte und dann in Abschnitte wie diesem gewandelt werden, ist ausfuehrlich bei Flavell(2) beschrieben. Da die zugrundeliegenden meteorologischen Daten fertig verfuegbar sind, ist die Gueltigkeit von Abb.5 leicht zu ueberpruefen, so dass es bestaetigt werden kann, dass jede Einzelheit erhalten wurde durch einen Prozess strikt linearer Interpolationsrechnung zwischen den berechneten Werten. Schliesslich wurde der Vergleich zwischen dem Crawly-Brechngsindexprofil und dem 7-jaehrigen Maximum der entsprechenden Zeit des Jahres gemacht (Abb.9). Es muss bemerkt werden, dass der Gebrauch dieser Diagrammform es ermoeglicht, das Profil, einmal aufgezeichnet, entweder als potentiellen Brechungsindex, K, oder als konventionellen Radiobrechungsindex, N, abzulesen, eine Bemerkung, die genauso gut auf Abb.5 zutrifft.
Dieser Vergleich unterstuetzt die Ansicht, dass die entsprechenden vertikalen Bewegungen innerhalb des Abschnitts, wie die Anordnung des "Flusses" der Isoplethen denken laesst, stattfinden, naemlich: bei steigendem Druck bei 700-760 mb und795-835 mb, bei fallendem Druck bei

760-795 mb und bei 835-960 mb.
Die Uebereinstimmung von potentiellen Brechungsindexwerten innerhalb der unteren steillappigeh Schicht durch vier Radiosonden, zwei in Norwegen und zwei britische, scheint nahezulegen, dass heutige Radiosonden fuer radiometeorologische Untersuchungen adequat sind, trotz der Tatsache, dass viele Fachleute Feuchtigkeitsmessverfahren, als unangebracht fuer derartige Auswertungen halten. Andere Beispiele aehnlicher Natur koennen in schon zitierten Abhandlungen (Flavell(1)und(2)) und in anderen Artikeln eingesehen werden, auf die hiermit Bezug genommen wird.

Acknowledgements

About 1300 radio amateurs from all parts of Europe have provided the basic material for the signal path study. The assistance of DARC, the German national amateur radio society, in collecting and making available the basic material is gratefully acknowledged. The sources of meteorological data have been noted in the main text. The Daily Weather Report and the Daily Aerological Record (sadly now defunct) were publications covered by Crown Copyright and the data have been used with the permission of the Controller, Her Majesty's Stationery Office.

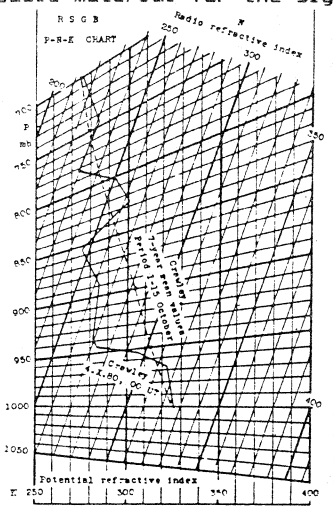


Fig9: Comparison between the refractive index profile for Crawley, 4 Oct 80, 00 UT, and the mean vertical distribution 1-15 Oct.

Anerkennung

Rund 1300 Funkamateure aus allen Teilen Europas haben das Grundmaterial fuer die Signalausbreitungsstudie geliefert. Die Unterstuetzung von DARC, des Deutschen Amateur Radio Clubs, bestehend aus Zusammentragen und Zugaenglichmachen des grundlegenden Materials wird dankend anerkannt. Die Quellen meteorologischer Daten sind im Text erwaehnt worden. Der Daily Weather Report und der Daily Aerological Record (jetzt leider eingestellt) waren Veroeffentlichungen zusammengestellt von Crown Copy.

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2. Flavell, R.G., 1983 VHF-UHF Manual (4th edition), Chap. 2 (Propagation)

3. Meteorological Office, 1960, Daily Weather Report, 1 Feb, (HMSO)

4. Meteorological Office, 1960, Daily Aerological Record, 31 Jan, 1 Feb, (HMSO)

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*                                                                           *
*          EUROPEAN - VHF - UHF - SHF - AMATEUR - BEACON - LIST             *
*                                                                           *
*                    BY : D L 7 R U - DEADLINE : 19.9.1983                  *
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CALL	QRG	QTH	POWER	ANTENNA	QTF	ASL	KEY
DL0UB	144.850	GM47b	5W	4xDIPOLE	OMNI	80m	F1
DL0PR	144.910	EO54c	150W	6el.YAGI	N/S	100m	A1
DK0OE	144.915	DK12f	1W	10el.YAGI	NNE	165m	F1
DL0UH	144.940	EL68f	1ERP	V-DIPOLE	OMNI	385m	A1
DF0ANN	144.966	FJ47e	20mW	DIPOLE	OMNI	630m	F1
DL0SG	144.975	GI22c	15W	4x4el.YAGI	OMNI	500m	A1
DL0RW/A	431.996	GJ12d	1W	2xDOUBLE QUAD	NW/SW	825m	A1
DB0AC	432.015	DJ55j	15W	4x11el.YAGI	OMNI	380m	F2
DL0BQ	432.050	EJ23d	0.2W	DISCONE	OMNI	?	A1
DK0OE	432.087	DK12f	1.5W	19el.YAGI	NNE	165m	F1
DK1WY	432.095	EM56f	50mW	BIG WHEEL	OMNI	90m	A1
DJ4WG	432.455	FJ21g	5mW	11el.YAGI	NE	265m	A1
DB0QO	432.540	EM71e	2W	ROHRSCHLITZ	OMNI	?	A1
DK0WZ	432.585	EJ20j	5W	12el.YAGI	NW	?	?
DB0KI	432.840	FK68b	2W	4x4el.YAGI	OMNI	690m	F1
DL0UB	432.850	GM47b	5W	4xDOUBL. QUAD	OMNI	80m	F1
DB0TW	432.860	EM73e	20mW	?	OMNI	433m	F1
DB0YI	432.900	EM80b	1W	BIG WHEEL	OMNI	480m	A1
DB0AD	432.913	DK20d	1W	11el.YAGI	W	290m	F1
DL0UH	432.940	EL68f	0.3ERP	V-DIPOLE	OMNI	385m	A1
DB0LB	432.945	EI06d	0.2W	CORNER DIPOLE	N/S	367m	F1
DB0AH	432.950	FN65j	3W	DIPOLE	OMNI	118m	A1
DF0ANN	432.966	FJ47e	1W	CLOVER LEAF	OMNI	630m	F1
DL0SG	432.974	GI22c	7W	4x11el.YAGI	OMNI	500m	A1
DF0AAD	432.990	FO64a	10ERP	BIG WHEEL	OMNI	250m	F1
DL1XV	433.143	GH25c	10W	11el.YAGI	?	?	?
DB0FB	1295.990	EH11h	4W	DIPOLE	N/S	?	A1
DB0FT	1296.010	EK63h	2W	4 SLOT. AERIAL	OMNI	880m	F1
DJ2LF/A	1296.024	DL38j	?	?	?	?	?
DF5EO/A	1296.025	DL02e	0.8W	DOUBL. HELICAL	OMNI	170m	F1
DK0OE	1296.100	DK12f	300mW	15el.YAGI	NNE	165m	F1
DB0AJ	1296.180	FH19a	10W	6el.GROUP	N/W	?	A1
DK1WY	1296.285	EM56f	25mW	BIG WHEEL	OMNI	90m	A1
DB0GP	1296.805	EI30g	1ERP	?	?	?	?
DB0KI	1296.840	FK68b	0.15ERP	4xDOUBL.QUAD	OMNI	690m	F1
DB0JO	1296.854	DL48a	350ERP	4x15+15 el.YAGI	W	218m	F1
DB0JC	1296.895	EK08f	1.5W	4el.SLOT.WAVG.	OMNI	620m	F1
DB0AN	1296.900	DL08b	1W	BIG WHEEL	OMNI	100m	F2
DB0MP	1296.900	GH22h	0.2W	CORNER REF.	NNW	1560m	?
DB0JB	1296.919	EI03a	1W	BIG WHEEL	OMNI	?	?
DB0VC	1296.920	FO51?	10W	2xBIG WHEEL	OMNI	230m	F1
DB0AD	1296.925	DK20d	1W	DIPOLE	W/E	290m	F1
DF0ANN	1296.966	FJ47e	2W	4xDOUBL.QUAD	OMNI	630m	F1
DB0LB	1297.040	EI06d	0.2W	?	?	367m	F1

CALL	QRG	QTH	POWER	ANTENNA	QTF	ASL	KEY
DB0FT	2304.016	EK63h	2ERP	8el.COLINEAR	N(S)	880m	F1
DB0VC	2304.035	FO51	5W	BIG WHEEL	OMNI	230m	F1
DC8EC/A	2304.136	FI79g	4W	6el.GROUP	NW	580m	F3
DL7QY/A	2304.139	EJ80b	0.2W	2el.YAGI	NE	450m	A1
DB0MP	2304.920	GH22h	0.5W	28el.YAGI	NW	1560m	A1
DC6MR	2320.900	DL48a	0.5W	DIPOLE	N	315m	F1
DF0ANN	2320.965	FJ47e	0.5W	4xDOUBL.QUAD	OMNI	630m	F1
DB0MP	3456.115	GH22h	80mW	12el.GROUP	NW	1560m	A1
DL7QY/A	3456.209	EJ80b	50mW	2el.YAGI	NE	450m	A1
DC0DA	3456.360	DL38e	120ERP	DISH 0.7m	N	220m	F1
DB0MP	5760.192	GH22h	50mW	6dB HORN	NW	1560m	A1
DL7QY/A	5760.348	EJ80b	10mW	HORN	N/E	450m	A1
DC0DA	5760.600	DL38e	8.5ERP	DISH 0.7m	N	220m	F1
DB0MP	10000.345	GH22h	20mW	10 dB HORN	NW	1560m	A1
DB0JX	10000.350	DL63a	10mW	GAIN 10dB	OMNI	115m	F2
DL7QY/A	10000.628	EJ80b	10mW	HORN	N/E	450m	A1
DB0MP	24192.805	GH22h	0.5mW	15 dB HORN	NW	1560m	A1
EA3XS	144.151	BB22e	NOT IN USE AT THE PRESENT TIME				
EA1VHF	144.867	VD59e	25W	5 el.YAGI	N	?	A1
EA3VHF	144.892	BB26h	1W	HALO	OMNI	155m	A1
EA6VHF	144.918	AY07j	25W	4 el.YAGI	N	470m	A1
FX0THF	144.895	AI46h	30W	2xTURNSTILE	OMNI	246m	F1
FX3THF	144.905	YI13d	30W	2x9el.YAGI	E	80m	F1
FX8VHF	144.955	AF79h	20W	BIG WHEEL	OMNI	450m	A1
FX1UHF	432.830	BI21b	10W	4xBIG WHEEL	OMNI	160m	F1
FX4UHF	432.870	ZD52c	10W	2x6el.YAGI	NNE	900m	F1
FX1SHF	1296.870	BI14b	10W	ALFORD SLOT	OMNI	160m	F1
GB3SIX	50.020	XN49f	100ERP	3 el.YAGI	W	58m	F1a
GB3CTC	70.030	XK46d	40ERP	2 el.YAGI	NE	320m	F1a
GB3WHA	70.040	AL71d	16ERP	2 el.YAGI	NW	168m	F1a
GB3BUX	70.050	ZN61a	20ERP	2xTURNSTILE	OMNI	460mA+	F1a
GB3ANG	70.060	YQ35c	100ERP	3 el.YAGI	SSE	370m	A1a
GB3CTC	144.915	XK46d	40ERP	3 el.YAGI	NE	320m	A1a
GB3VHF	144.925	AL52j	50ERP	2x3el.YAGI	WNW/NNW	275mF	1a/b
GB3LER	144.965	ZU65f	50ERP	4 el.YAGI	NNE	107m	F1a
GB3ANG	144.975	YQ35c	20ERP	4 el.YAGI	SSE	370m	F1a
GB3WHA	432.810	AL71d	25ERP	2x8+8el.YAGI	NW/E	165m	F1a
GB3SUT	432.890	ZM31b	60ERP	2x8+8el.YAGI	N/SE	270m	F1a
GB3MLY	432.910	ZN32b	50ERP	8+8el.YAGI	SE	600m	F1a
GB3CTC	432.970	XK46d	5ERP	4 el.YAGI	NE	320m	F1a
GB3ANG	432.990	YQ35c	100ERP	9 el.YAGI	SSE	370m	F1a

CALL	QRG	QTH	POWER	ANTENNA	QTF	ASL	KEY
GB3BPO	1296.830	AM77j	700ERP	2x32SLOT.WAVEG.	W/E	85m	F1a
GB3AND	1296.870	ZL63b	50ERP	STACK.SLOTS	OMNI	85m	F1a
GB3DUN	1296.890	ZL08e	2ERP	HB9CV	N	263m	F1a
GB3IOW	1296.900	ZK34a	100ERP	ALFORD SLOT	OMNI	250m	F1a
GB3CLE	1296.910	YM48h	10ERP	2x15+15el.YAGI	N/SE	573m	F1a
GB3MLE	1296.930	ZN32b	50ERP	CORNER REFLECT.	SSE	600m	F1a
GB3EDN	1296.990	YP04g	25ERP	2xCORN.REFLECT.	NW/SE	117m	F1a
GB3NEW	2304.010	ZL63b	5ERP	?	E	85m	F1a
GB3LDN	2304.050	AL41a	25ERP	?	NW/NE	?	F1a
GB3UOS	3456.000	ZN42c	4ERP	SLOT.WAVEGUIDE	N/S	400m	F2
GB3IOW	10100.000	ZK34a	0.15ERP	SLOT.WAVEGUIDE	OMNI	250m	F2
GB3LBH	10100.000	AL31c	1.5ERP	WAVEGUIDE	OMNI	45m	F2/F3
GB3ALD	10120.000	YJ30h	1ERP	SECT.HORN	NNE	90m	F2
GB3MHX	10368.830	AM77j	1ERP	1.2 m DISH	E	60m	F1
GB3LEX	10500.000	ZM24d	?	SLOT.WAVEGUIDE	?	?	F2
GB3XGH	10400.000	YN67b	1ERP	?	OMNI	?	F2
HB9HB	144.865	DH66c	10W	10 el.YAGI	NNW	1300m	F1
HB9W	144.875	EH43d	36mWERP	HALO	OMNI	490m	A1
HB9F	432.984	DG40c	15ERP	CORN.REFLECT.	N/S	3573m	F1
HB9F	1296.945	DG08c	15ERP	2xCORN.REFLECT.	NE/SW	937m	F1
I7A	144.820	HB29a	2ERP	BIG WHEEL	OMNI	1012m	A1
I0A	144.825	GB12d	28ERP	2xBIG WHEEL	OMNI	30m	A1
I1G	144.830	DF58c	20ERP	BIG WHEEL	OMNI	625m	A1
IT9G	144.840	GY67c	35ERP	5el.YAGI	N	150m	A1
IX1A	144.845	DF15b	12ERP	6el.YAGI	NW	3350m	A1
I5A	144.850	FD23h	4ERP	BIG WHEEL	OMNI	918m	A1
I8A	144.890	HY70f	28ERP	2xTURNSTILE	OMNI	1958m	A1
IT9B	432.805	GX05b	12ERP	2xMINI WHEEL	OMNI	825m	A1
I0B	432.825	GB12d	40ERP	4xMINI WHEEL	OMNI	30m	A1
I1H	432.830	DF38c	12ERP	3el.YAGI	S	650m	A1
I5B	432.850	FD25h	35ERP	20el.YAGI	NW	56m	A1
I2B	432.860	EF16j	35ERP	2x10el.YAGI	SW/SE	490m	A1
I2N	432.865	EF14b	50ERP	10el.YAGI	SE	1050m	A1
I2H	432.870	FF32j	2ERP	TURNSTILE	OMNI	990m	A1
IV3B	432.880	GF30h	4ERP	TURNSTILE	OMNI	418m	A1
I6B	432.885	HC31g	12ERP	2xTURNSTILE	OMNI	444m	A1
I8B	432.890	HY70f	12ERP	2xMINI WHEEL	OMNI	1958m	A1
I0H	432.900	GB14e	4ERP	2xMINI WHEEL	OMNI	373m	A1
LA5VHF	144.855	JD25e	60W	4x10el.YAGI	SSW	?	A1
LA1VHF	144.860	ET13e	25W	?	OMNI	1820m	A1
LA2VHF	144.870	FX43g	20W	9 el.YAGI	NNE	?	A1
LA4VHF	144.890	CU47a	300W	?	N	100m	A1
LA1UHF	432.860	FT05g	10ERP	BIG WHEEL	OMNI	380m	F1
LA2UHF	432.870	FX43g	15W	19 el.YAGI	NNE	?	A1

CALL	QRG	QTH	POWER	ANTENNA	QTF	ASL	KEY
LA3UHF	432.880	ES71a	7W	15 el.YAGI	S	10m	A1
LA4UHF	432.892	CT57d	5W	DIPOLE	OMNI	50m	A1/F1
LA2SHF	1295.985	FX43g	0.2W	?	OMNI	?	A1
LA1UHG	1295.995	FT63g	3W	BIG WHEEL	OMNI	75m	F1
LX0VHF	144.902		PLANED				
LX0UHF	432.902		PLANED				
LX0SHF	1296.902		PLANED				
LZ2F	145.980	ND40f	25ERP	?	OMNI	295m	?
OE3XXA	144.126	II71d	0.5W	?	OMNI	?	?
OE3FO	144.955	GI77a	15W	5+5 el.YAGI	NW	700m	F1
OE3XAA	432.378	II71d	1ERP	4 el.YAGI	NNE	?	?
OE3XMB	432.400	HI08b	100mW	9 el.YAGI	NW	1246m	A1
OE3XMB	1296.350	HI08b	100mW	10 el.GROUP	NW	1246m	A1
OH2NUA	144.300	MU52j	0.5W	TURNSTILE	OMNI	?	A1
OH8VHF	144.800	MZ79h	40W	16 el.COLINEAR	N/S	240m	A1
OH6VHF	144.900	KW59f	50/100W	2x6 el.YAGI	N/SW	220m	A1
OH2NRA	432.300	MU65g	5W	TURNSTILE	OMNI	20m	A1
OK0EA	144.952	HK18d	4mW	2xDIPOLE	N/S	1450m	F1
OK0EB	144.963	HI12a	1W	BIG WHEEL	OMNI	1083m	F1
OK0EC	144.980	GK62h	80mW	3 el.YAGI	E	758m	?
OK0ET	144.992	KI18a	1W	3 el.YAGI	W	981m	F1
OK0EA	432.960	HK18d	4mW	2xDIPOLE	NW/SW	1450m	F1
OK0EA	1295.975	HK18d	1W	2x10el.YAGI	NW/SW	1450m	F1
ON4VHF	144.985	CK23e	2.5W	BIG WHEEL	OMNI	?	F1
OY6VHF	144.885	WW76d	60ERP	4 el.YAGI	SE	350m	A1
OY6UHF	432.885	WW76d	30ERP	5 el.YAGI	SE	350m	A1
OZ7IGY	144.930	FP39b	50ERP	BIG WHEEL	OMNI	96m	A1
OZ2UHF	432.450	EP03c	6W	BIG WHEEL	OMNI	?	F1
OZ4UHF	432.895	HP66f	?	?	?	?	?
OZ7IGY	432.930	FP39b	50ERP	BIG WHEEL	OMNI	94m	A1
OZ2ALS	432.982	EP79c	5W	2xMALT.CROSS	OMNI	?	A1
OZ3UHF	1296.060	FR43j	0.25W	HB9CV	SE	95m	A1
OZ7IGY	1296.950	GP23c	5ERP	BIG WHEEL	OMNI	95m	A1
PA0DSW	432.897	CM35e	0.5W	MALT.CROSS	OMNI	10m	A1
PA0EHG/A	1296.875	CL48	4W	GAIN 6dB	OMNI	61m	F1

CALL	QRG	QTH	POWER	ANTENNA	QTF	ASL	KEY
PA0QHN	1296.920	CM53j	4W	GAIN 6dB	OMNI	20m	F1
PA0ZM/A	1296.975	DM65h	5W	GAIN 20dB	NE	34m	F1
PA0QHN	2320.920	CM53j	2W	GAIN 6dB	OMNI	20m	F1
PA0TGA	2320.900	CL20	1W	GAIN 10dB	NW/W	?	?
PA0MS/A	10368.045	CL48	50mW	GAIN 21dBi	NW	56m	F1
PA0DBQ	10368.100	CM72	40mW	GAIN 20dB	W	75m	F1
PE1BLE	10368.200	CM55	10mW	GAIN 14dB	SSW	35m	F1
SK2VHF	144.875	JY69h	30W	2xCLOVER LEAF	OMNI	300m	A1
SK2VHG	144.890	?	60W	16el. YAGI	S	480m	?
SK7VHF	144.920	GP38c	30W	2xCLOVER LEAF	OMNI	190m	A1
SK1VHF	144.950	JR51d	10W	2xCLOVER LEAF	OMNI	60m	A1
SK4MPI	144.960	HU46d	100W	4x6el. YAGI	N	510m	A1
SK3UHF	432.855	IW40b	10W	4xDOUB.QUAD	OMNI	180m	A1
SK6UHF	432.925	GR41d	10W	CLOVER LEAF	OMNI	75m	A1
SK7UHH	432.940	IQ23j	25ERP	17YAGI+CL.LEAF	NNE+OMNI	?	A1
SK5UHF	432.975	IU79g	25ERP	BIG WHEEL	OMNI	90m	A1
SK6UHI	1296.800	GQ45d	10ERP	CLOVER LEAF	OMNI	220m	A1
SK0UHG	1296.835	IT60h	15ERP	2xHELICAL	OMNI	30m	F1
SK7UHG	1296.920	HR21j	2ERP	BIG WHEEL	OMNI	350m	A1
SK6UHG	1296.925	FR29g	10W	4xBIG WHEEL	OMNI	35m	A1
SK4UHG	1296.960	GU79d	4W	2x15el.YAGI	S	450m	?
SK6UHJ	2304.800	FS58f	1W	2x? el.YAGI	S/SW	80m	A1
SK6SHG	10368.800	FS58f	10ERP	20dB HORN	?	80m	A1
SP8VHA	144.430	LL53d	1W	DIPOLE	OMNI	?	A1
SP9VHI	144.935	JK80c	50mW	CROSS DIPOLE	OMNI	200m	A1
SP3VHG	144.945	HL08j	6W	2xDIPOLE	OMNI	240m	A1
SP6VHF	144.966	HK29d	0.15W	2 el.YAGI	NE	602m	A1
SP2VHC	144.980	JD51b	28W	CLOVER LEAF	OMNI	?	A1
SP6VHF	431.998	HK29b	60mW	2 el.YAGI	NE	602m	A1
SP9VHB	432.093	JJ19f	5W	DIPOLE	N	944m	A1
SP8VHA	432.290	LL53d	1W	?	?	?	A1
SP9VHB	1296.280	JJ19f	5W	6 el.REFLECT.	N	944m	A1
UB5SAY	144.007	MJ72d	5W	V-DIPOLE	OMNI	300m	A1
UK5EAS	144.050	RI56	0.2W	GROUNDPLANE	OMNI	?	A1
UK0FAI	144.090	LO144LA46	.5W	V-DIPOLE	OMNI	?	A1
UP2WN	144.136	MP72j	3W	?	?	?	A1
UK3MBQ	144.156	SR08e	3W	2xDIPOLE	OMNI	130m	A1
UK5UDX	144.177	PK52f	5W	DIPOLE	N/S	169m	A1
UK4NAU	144.185	YS60g	3W	DIPOLE	NNE/WSW	120m	F1
UK4NBY	144.199	YT45f	5W	9el.YAGI 12dB	NNW	?	A1
UK3TAA	144.250	VQ60g	0.5W	V-DIPOLE	OMNI	?	A1
UK5JAA	144.250	RE13a	1W	TURNSTILE	OMNI	1000m	A1
UK5GAA	144.270	QG	5W	DIPOLE	N/S	?	A1

CALL	QRG	QTH	POWER	ANTENNA	QTF	ASL	KEY
UK5YAB	144.500	MI60e	5W	DIPOLE	?	?	A1
UK2CAU	144.942	NO55a	0.2W	DIPOLE	N/S	?	A1
UK5UBZ	145.002	PK52c	2.5W	V-DIPOLE	OMNI	187m	A1
YO2KHP	144.957	KF17f	2.5W	TURNSTILE	OMNI	80m	A1
YO3KAA	145.900	NE41j	0.2W	DIPOLE	OMNI	80m	A1
YU3VHF	144.506	HG76a	2W	CROSS DIPOLE	OMNI	1219m	A1
YU7VHF	144.940	JF69	1W	?	?	?	?
YU3UHF	432.507	HG76a	?	LOG.PERIODIC	?	1219m	A1
Y41M	144.932	GL53g	0.2ERP	2xDIPOLE	OMNI	232m	A1
Y41B	144.984	FN28f	10W	2xBIG WHEEL	OMNI	?	F1
Y41N	432.030	GK05g	0.1W	DOUB.QUAD	NW/SE	360m	A1
ZB2VHF	50.035	XW64g	20W	5el.YAGI	WNW	117m	F1a
ZB2VHF	70.120	XW64g	10W	4el.QUAD	N	117m	F1a
ZB2VHF	144.145	XW64g	15/35W	8el.YAGI	N	117m	F1a
5B4CY	50.500	QU14g	35W	5el.YAGI	WNW	2000m	F1a
5B4CY	70.112	QN15b	10W	4 el. YAGI	WNW	?	F1a
5B4CY	144.139	QU14g	40W	6+6el.YAGI	NW	2000m	F1a
9H1VHF	144.830	HV03f	1.5W	TURNSTILE	OMNI	?	A1

SUPPLEMENTS SEND TO : CLAUS NEIE
DL7QY
D-7181 RUDOLFSBERG 24

OR DIRECT TO : ANDY GROSSMANN
DL7RU
FREDERICIASTR.16
D-1000 BERLIN 19

PRINT:DL7RU

EUROPEAN VHF TOP LIST 144 MHZ 14.SEP.1983

NR	CALL	QTH	WKD	TROPO	AURO	MS	ES
1	Y22ME	HM	450	1577	1579	2293	2197
2	SM7AED	GQ	450	1522	1562	2326	2274
3	DK6AS	FM	418	1460	1885	2510	2260*
4	SM7FJE	GQ	407	1642	1600	2241	1761
5	PA0RDY	CM	403	1578	1959	2262	2295
6	SM4GVF	HT	374	1796	1796	2099	2310
7	DK5AI	FL	369	1565	1510	2275	2282
8	F6CJG/P	BF	357	1748	1892	2510	2836
9	SM6EOC	GQ	351	1600	1800	2330	1970
10	SM5CHK	HS	350	1262	1753	1991	2060
11	SM6AEK	GQ	349	1500	1800	2330	1900
12	DL1MF	GH	348	1530	1512	2085	3255
13	UA3LBO	QO	347	1807	1939	2273	2467*
14	OZ1EYX	GQ	342	1832	1602	1839	2382
15	OK1KKH/P	HJ	338	1370	1518	2379	2146
16	OZ1FDH	GP	337	1581	1762	2271	2287
17	ON5QW	BL	335	1510	1927	2080	3285
18	DF3XU	FN	332	1643	1808	2106	2222
19	SM5BEI	JU	331	1525	1777	2702	2455
20	PA0OOM	DN	328	1405	1986	2310	2215
21	SM0FFS	JT	327	1820	1580	2030	2190
22	SM6AFH	GQ	326	1500	1554	2330	1900
23	DK3UZ	EN	324	2131	1910	2021	3100
24	DJ5MS	GI	323	1260	1509	2102	1930
25	SM4IVE	HT	322	950	1940	2026	2122
26	OH7PI	NW	316	1902	1715	2151	2272*
27	I6WJB	HC	315	2224	1500	2214	2374
28	DK1KO	FN	315	1625	1745	2124	2194
29	F6DWG	BJ	314	1756	1880	2143	2448
30	HB1YA	IH	314	1612	1534	2183	2885
31	SP2DX	JO	313	1464	1730	2337	----
32	PA2VBT	CM	313	1459	1803	2572	2221
33	OZ9FW	GP	305	1328	1616	1954	1963
34	UB5JIN	RE	303	1709	1497	2500	2826*
35	SM0HAX	JT	303	1700	1640	1830	2240
36	PA3BIY	CM	302	1480	1850	2000	2296
37	UR2RQT	MS	302	1210	1840	2172	1900
38	OZ1EKI	EP	301	1450	1777	2088	2273
39	DK4TG	DL	301	1410	1730	2440	2000
40	DL4EA	DL	300	1468	1723	2078	2247
41	OK3AU	KI	296	1608	1637	2065	2236
42	G3NSM	ZL	295	1489	2003	1872	2481
43	EA3LL	AB	293	1995	----	2300	3215
44	DL7QY	GM	293	1402	1751	2353	1845
45	PA0KDV	DN	291	1475	1610	2051	2352
46	SM4AXY	HT	289	1714	1760	1880	2143
47	UR2EQ	NT	288	1541	1840	2240	2245
48	SM7GWU	HS	287	1585	1770	2099	2007
49	PA0FTF	CK	281	1500	1800	----	2900
50	I4BXN	FE	279	1600	1520	1916	2670
51	G3PDI	AL	278	1500	1566	2113	2000
52	Y23FG	FM	277	1560	1375	2010	2082
53	F6BSJ	CG	277	1510	1220	2105	2705
54	DF6NA	EJ	276	1156	1120	2080	1709
55	I3LGP	GF	275	1000	1387	2020	3150
56	I3TJQ	GF	275	1000	1250	1950	3120
57	LA2PT	FT	272	1438	1660	2020	2427
58	OZ1DQQ	GP	272	1353	1590	1879	2260
59	SM5CUI	IT	271	1590	1600	2190	----
60	DF1OH	EM	271	1564	1671	2242	2379
61	YO2IS	KF	269	1380	1775	2040	2360
62	Y23ZI	FL	268	1785	1280	1925	2075
63	SM3BIU	HX	268	1460	1890	2260	2250
64	YU2IQ	HE	268	1210	----	1955	3462
65	Y21PL	GL	266	1760	1360	2110	1960
66	SP5JC	KM	266	1740	1740	1980	1861
67	OH3TH	LV	265	1355	1669	2217	2069+
68	UQ2GFZ	NR	265	1154	1855	1884	2159
69	DK2PR	EN	264	1445	1515	1940	2425
70	F1FHI	ZH	262	1739	1292	2125	2467
71	SM4COK	HT	261	1440	1570	2080	1940
72	SM7WT	GP	260	1590	1680	1938	2180
73	I4EAT	FE	260	1550	1420	2240	2500
74	PA0WWM	CM	260	1303	1839	1997	2212
75	G4DSC	ZO	259	1485	1485	1942	2285
76	DK1PZ	FL	257	1567	1364	1867	1866
77	OH2BBF	LT	257	1388	2000	2125	2144
78	OZ1FTU	FP	257	1282	1558	1903	2315
79	DJ9CI	DL	256	1650	1862	1925	2015
80	SM2CKR	KX	256	1630	1660	2310	1810
81	SM3AKW	JW	256	1598	2078	2142	2504
82	UR2GZ	MS	253	1577	1794	2141	2174
83	OZ1ASL	FQ	251	1763	1675	2061	2323
84	YU3ES	GF	251	1167	1004	2074	2483
85	YU1EU	KE	250	1680	----	2200	2380
86	DF1JC	DL	249	1270	1830	2348	2007
87	LX1GR	DJ	249	868	1104	2206	1409
88	OE3XUA	HH	248	1610	1240	2160	1785
89	SM5DRV	HR	248	1330	1410	1810	----
90	ON4YZ	CK	247	1530	1510	----	2360
91	YU7EW	KF	246	1868	1172	1930	2425
92	SM0DJW	IS	246	1340	1810	1840	2160
93	PA0HWM	CK	246	1268	1508	1845	3103
94	HB8ET	KG	245	1445	1845	2000	2279
95	F8OP	CG	242	1228	1196	2028	2720
96	ON4YZ	CK	241	1530	1510	----	2110
97	PA3AQU	DM	241	1392	1673	1763	2193
98	ON6UB	BL	241	1089	1013	2640	3296
99	OZ6OL	FP	239	1800	1700	----	1800
100	G4IGO	YL	239	1358	1770	1956	2198
101	OZ8SL	GP	238	1476	1305	----	2188
102	SM7GEP	HR	238	1467	1768	1695	2043
103	OH0JN	JU	238	1451	1856	2108	2198
104	PA0RLS	CL	238	1350	1890	1890	2204
105	YU7BCX	KF	237	1868	1172	1956	2425
106	SM3DCX	IV	237	1300	1850	1990	----
107	RQ2GAG	MQ	236	1432	1714	----	1973
108	PA3BBA	CM	236	1300	1436	1987	2311
109	UA3TCF	WQ	236	1131	1974	2498	2332
110	UA3MBJ	SS	235	1560	2006	2373	2390
111	DF6OB	FM	234	1421	1349	1877	2013
112	SM5BSZ	JT	233	1830	1720	1890	2080
113	DL7ZL	BM	232	1401	1254	3200	3800
114	SM5FRH	HT	231	1580	1690	1650	----
115	SM4BBC	GT	231	1286	1815	1856	1670
116	OZ3IW	FO	230	1763	1863	1415	1958
117	OZ1CLL	GP	230	1369	1969	1448	2208
118	SM5CNQ	HB	228	1698	1751	1909	1843
119	OK1FM	GJ	226	1843	1438	2200	1827
120	SM3COL	IW	226	1784	1693	2122	2367
121	F6CTW	BI	226	1677	1714	2230	2420
122	SM6CKU	GR	225	1530	1560	1470	1790
123	YU3CAB	HB	225	1463	1530	2165	3356
124	SM3UL	IV	225	1275	1521	2110	2363
125	G3LTF	AL	224	1824	1846	2021	2174
126	G8FUF	AL	224	1810	1410	2466	1800
127	GJ4ICD	YJ	223	1620	1100	2050	2090
128	UQ2GLO	KQ	223	1447	1802	1992	1576
129	DK8VS	DJ	223	1350	1080	2240	3230
130	G3CHN	YK	222	2656	2138	----	2358
131	Y24QO	BM	222	1250	960	1846	1840
132	PA3BRS	CM	219	1312	1738	1613	2112
133	SM0IOT	JT	218	1300	1700	1820	2100
134	DF2IC	DK	218	1090	1686	2004	2009
135	UC2AAB	NN	217	1350	1850	1980	2280
136	DK2LM	EJ	215	1014	1098	1956	2444
137	DL7YW	BM	213	1299	1106	1895	2170
138	Y22HA	GO	213	1250	1071	2058	2041
139	SM5EJN	IT	212	1770	1630	2240	1920
140	SM5AQJ	JT	212	1380	1580	1930	----
141	PA2CHR	CL	211	1370	1108	1695	2300
142	DK3XT	FN	211	1350	1430	1800	1990
143	YU2KDE	JF	209	1731	1097	2074	2196
144	SM5CNF	HS	208	1660	1730	1850	----
145	DF5DL	EL	208	1389	1596	2003	2020
146	PA0XMA	DM	208	1285	1338	2300	1930
147	I1DMP	DF	208	1001	930	1864	2718
148	LA9BM	EU	207	1612	1670	1892	2165
149	SM0BYC	IT	207	1380	1710	1890	2390
150	OZ3BW	FQ	207	1340	1580	----	2338
151	YU1EV	KE	206	1650	----	2165	2200
152	F6CER	BI	206	1500	1350	1700	2300
153	PA3BSK	DL	206	1387	1698	1290	2148
154	I4XCC	BD	205	1070	1782	2275	2270
155	YT9UN	GK	204	1790	1220	1920	1630
156	OK1MBS	HK	204	1465	1470	1371	2133
157	SM4ARQ	HT	202	1750	1590	1950	1930
158	UQ2BCG	LR	202	1676	1769	1990	1769
159	LA8AK	DS	202	1325	1722	1797	2303
160	Y23PA	BD	202	1168	1150	1710	----
161	PA3GER	CL	201	1327	1249	2100	2118
162	SM3F8L	IV	200	1563	1680	1955	----
163	Y24TN	BK	195	1790	1310	1920	1630
164	OE5JFL	BI	193	1503	1155	1964	1823
165	IW5AVM	FC	192	1466	----	2016	2891
166	HB5KDQ	JH	192	1307	----	1849	2195
167	EA3AIR	BB	192	1241	----	1850	2588
168	SM5AGM	JT	191	1930	1740	----	2000

EUROPEAN VHF TOP LIST 144 MHZ 14.SEP.1983

NR	CALL	QTH	WKD	TROPO	AURO	MS	ES
169	OK1KHI/P	HK	191	1635	1156	----	----
170	PA0BAT	DL	191	1078	1377	2498	2042
171	PE1BNK	CM	189	1328	1341	----	2257
172	UR2RDR	MS	189	1200	1750	1600	2100
173	DL7AN	GM	188	1310	1140	1936	1845
174	PA3AHD	CM	188	1279	1586	1940	1879
175	UQ2NX	MR	187	1712	1745	1707	1870
176	DK3LL	FO	187	1525	1187	1875	1812
177	DL1JF	FO	185	1325	1775	----	2062
178	G3LQR	AM	184	1776	1772	2150	2077
179	SM4FXR	HT	184	1280	1430	1760	----
180	LA8AE	FT	182	2041	1573	----	1932
181	UQ2OW	MQ	182	1092	1514	1845	1963
182	SM5FND	HT	181	1445	1601	1616	2060
183	G3SEK	ZL	179	1560	1681	1872	2154
184	SM0DFP	IT	178	1830	1590	2030	----
185	SM5LE	JT	178	1440	1470	2190	----
186	UB5WN	PK	178	1376	1270	2410	1457
187	DL2OM	DK	178	1270	1712	2104	2039
188	PA0CSL	CM	176	1528	1610	1750	1960
189	RR2TEJ	NT	176	1422	1760	----	2070
190	OH2BWL	MU	176	1056	1586	1901	2221
191	UR2RGM	MT	175	1131	1768	1429	2157
192	DG1BP	DN	174	1201	1609	2005	1352
193	DC7OH	GM	173	1349	1289	1680	2260
194	DL7YS	GM	173	1208	1052	1550	1891
195	F6FHP	AE	172	1752	----	2243	2105
196	G8KBQ	YL	172	1501	1775	1865	2235
197	DB6BX	DM	172	1398	1094	----	2059
198	OE3CEW	II	171	1464	1344	1744	2000
199	DL7WC	GM	171	1360	1240	1550	1800
200	PA0SGL	CM	171	1258	1513	1848	1772
201	UA1MC	PU	170	1500	1540	2145	----
202	F9FT	CJ	170	1440	1440	2017	----
203	OZ1CFO	ER	170	1262	865	1939	2105
204	SM5CPD	IT	169	1820	1210	1370	1960
205	UR2AO	MT	169	1162	1176	1792	2136
206	PA0JOZ	CM	169	1159	1420	1666	1980
207	G3COJ	ZL	168	1630	1650	----	1852
208	OH0NC	JU	167	1533	1265	1647	2097
209	SM7JUQ	GP	167	1400	1650	1700	1600
210	PE1AAP	CM	167	1326	1086	----	2052
211	UR2NW	LT	166	1380	1570	1797	----
212	DF5DE	EK	166	1186	1670	1845	1752
213	SP8AOV	LL	165	1224	1723	1821	1851
214	DL7ACG	GM	164	1592	850	1997	----
215	G3PBV	YK	164	1540	1466	1563	2315
216	UA3LAW	PO	164	1372	1675	2208	----
217	PA3CAP	CM	164	1305	977	1687	2008
218	SM0CPA	IT	163	1856	----	----	----
219	UQ2AO	MQ	163	1647	1679	1472	----
220	PA0LSC	CM	163	1528	1590	1750	1960
221	OZ1DPR	EP	163	1373	1215	1327	2015
222	HB9QQ	EH	163	1330	1250	1685	1520
223	G4MCU	AL	163	1287	1630	1627	2000
224	UP2BBC	LP	163	1260	1904	1989	----
225	UR2HD	LS	163	1050	1918	----	----
226	SM0AGP	IT	162	1820	1710	1560	----
227	G3WSN	AL	162	1522	1821	2076	2077
228	OE5XPL	HI	159	1434	836	1929	1680
229	Y25QL	GL	158	1825	950	----	----
230	DK2RY	FJ	158	1300	1400	1800	----
231	Y24BO	GM	157	1380	1440	----	1854
232	OK1IDK	GJ	156	1843	1438	1983	1776
233	OK1AGE/P	HK	156	1481	1136	----	----
234	PE1BZD	CM	155	1359	1547	1889	1990
235	DF5JJ	DL	155	1272	1256	1620	2074
236	G8MFJ	ZL	155	1209	1210	1329	2168
237	G3FPK	ZL	154	1406	1480	----	2069
238	PA0VV	CM	154	1372	1635	1845	1952
239	9H1CD	HV	151	1960	----	----	2400
240	DK2NH	FN	151	1607	1432	----	1996
241	OE1RKU	II	151	1497	1493	1658	2364
242	SM4DHN	GU	151	1390	1300	1770	----
243	OK1CA/P	HK	147	1481	1065	950	----
244	DG7FZ	EK	146	1123	1190	----	----
245	9H1BT	HV	144	1950	----	2031	2506
246	SM0DRV	IT	144	1820	1400	1530	2070
247	F1BBI	BI	142	1543	----	----	2115
248	SM5CJF	IT	142	1440	1280	----	----
249	SM7FMD	HR	142	1276	1031	----	1780
250	PA0JMV	CL	141	1220	1590	1790	----
251	OK1AIB/P	HK	139	1481	1065	950	----
252	G3KEQ	ZL	138	1335	1275	----	1800
253	UR2DZ	MT	138	1300	1810	1855	----
254	DF5BL	DM	138	1091	1659	----	2051
255	SP9AFI	JJ	136	1540	980	----	----
256	SM6BFQ	GS	136	1200	1830	----	----
257	SP9FG	JJ	134	1647	1283	----	1630
258	SM0FOB	JT	133	1830	1490	1390	1860
259	OH0AA	JU	133	1526	1461	----	----
260	F6EAB	ZI	133	1380	----	2230	2020
261	SM6CYZ/7	GQ	132	1120	1200	----	1590
262	SM6PF	GS	131	1470	1200	----	----
263	DF3BL	DM	131	1091	1350	----	2051
264	F1AUQ	CH	129	1600	----	2025	1604
265	DJ6XV	DL	127	1010	991	----	2125
266	OE1APS	II	125	1343	1765	1674	2005
267	LA9FY	EU	119	778	1242	1128	----
268	DG1NZ	FJ	113	1180	1230	----	1728
269	OK1KTL/P	GK	105	907	----	----	----
270	DL7QY	FJ	102	1368	1628	1345	1689
271	HB9MIO/P	DH	99	1316	----	----	2183
272	HB9AOF	DG	95	1116	----	----	1981
273	OZ7IS	GP	93	1020	880	1294	1842
274	GM4CXM	XP	91	1428	1583	1709	2023
275	OE3PQU	HI	82	1556	944	----	1930
276	PE1HWO	CL	79	1070	875	----	----
277	HB9AJF	EH	76	1013	----	----	1621

EUROPEAN UHF TOP LIST 432 MHZ 14.SEP.1983

NR	CALL	QTH	WKD	TROPO	AURO
1	DL7QY	FJ	179	1368	1618*
2	DL7YC	GM	169	1225	----*
3	DK5AI	FL	166	1506	798*
4	DF3XU	FN	165	1607	1057
5	DL7ZL	GM	155	1305	1249*
6	OZ7IS	GP	152	1387	1000
7	SM3AKW	JW	151	1190	919*
8	UA3LBO	QO	138	1426	1612*
9	PA0EZ	CM	138	1310	1028
10	F1FHI	ZH	137	1892	----
11	SM6CKU	GR	129	1293	660
12	G3LTF	AL	127	1520	890
13	DK6AS	FM	127	1360	620*
14	DJ9DL	DL	126	1274	615*
15	SM6HYG	FS	125	1540	617
16	G3LQR	AM	125	1471	873*
17	Y22ME	HM	125	1364	874
18	OZ9FW	GP	125	1348	1026
19	PA0FRE	CL	122	1400	815
20	PA0WWM	CM	120	1342	726
21	OK1CA/P	HK	120	1267	----
22	DB6BX	DM	119	1398	----
23	PE1ALA	CM	118	1336	788
24	SM0FZH	JT	116	1900	957
25	DB6NT	FK	116	1505	----
26	PE0AGO	DM	116	1382	----
27	Y23FG	FM	115	1560	680
28	DL3UZ	FN	114	1270	----
29	OZ2OE	EP	113	1404	750
30	OK1AIB/P	HK	113	1267	----
31	SM7BAE	GP	113	1220	850*
32	OH3TH	LV	113	1199	943+
33	SM6FYU	GQ	112	1441	706
34	DK0NA	FK	112	1096	----
35	PE1CQQ	DM	111	1356	490
36	SM5BEI	JU	110	1325	1016
37	DF3EE	DL	110	1267	1019
38	SM5CPD	IT	110	1230	640
39	ON5FF	BL	110	1170	736
40	OH0NC	KU	109	1545	920
41	SM5DWC	IT	109	1400	810
42	SM0FFS	JT	109	1380	740
43	PA0RDY	CM	109	1330	----
44	F6GNR	ZH	105	1894	----
45	SM4AXY	HT	105	1714	1100
46	DL4EA	DL	105	1265	1009
47	SM0CPA	IT	104	1856	797
48	PA3AOH	DL	104	1116	530
49	DJ6MB	DK	103	1253	921
50	OK1KHI/P	HK	102	1424	----
51	GJ4ICD	YJ	102	1340	803
52	DK2NH	FN	101	1607	805
53	SM0DFP	IT	101	1410	830
54	DB2VY	DJ	101	1335	----
55	OK1KIR/P	GK	101	1331	----*
56	PA0JOZ	CM	101	1156	----
57	DL7APV	GM	100	1308	850*
58	DC7QH	GM	100	1231	509
59	DL7AN	GM	99	1240	----
60	DC9CSA	GM	96	1171	----+
61	G3COJ	ZL	95	1465	812
62	DL7ACG	GM	95	1279	----
63	OZ7LX	FP	93	1315	720
64	PA3BSK	DL	93	1129	----
65	DK1PZ	FL	93	1018	----
66	OK1AIY/P	HK	92	1351	----
67	PA2DOL	CL	92	1088	----
68	G8KBQ	YL	91	1327	----
69	SM0DYE	JT	91	1205	845
70	F9FT	CJ	90	960	----
71	DF1OH	EM	89	1261	1038
72	LA8AE	FT	88	1585	843
73	ON5QW	BL	88	1395	----
74	F6DWG	BJ	88	1350	----
75	DD2EK	DL	88	1284	----
76	Y22HA	GO	87	1414	----
77	ON4YZ	CK	86	1460	----
78	G3UBX	YM	86	1101	----
79	G3PBV	YK	85	1572	----
80	PE1HQO	DN	85	1273	460
81	G4FRE	AL	85	1225	----
82	Y23PA	GO	85	1102	----
83	OZ3GW	FQ	85	1090	620
84	F1BUU	ZE	84	1250	----
85	OZ3ZW	FQ	84	1237	613
86	F6CER	BI	83	1350	500
87	DF3CK	FH	83	1283	867
88	DL6NAQ	EK	83	1253	----
89	ON5GF	CK	83	1115	----
90	ON5GF	CK	83	1115	----
91	ON7HP	??	83	799	----
92	OZ1CFO	ER	82	1330	----
93	OZ1HDA	ER	79	1370	----
94	PA3BGL	CN	79	1250	----
95	DJ6XV	DL	79	968	508
96	DF5JJ	DL	79	880	----
97	ON4YZ	CK	78	1460	----
98	DF1JC	DL	78	1270	----
99	DK2ZF	FN	78	1223	----
100	PE1GVK	CL	78	1208	----
101	LA8AK	DS	78	1188	776
102	HB9MIN/P	DH	78	1100	----
103	DB5AQ	FL	78	1050	----
104	PA0VV	CM	77	1180	----
105	DC9XO	EM	77	1169	----
106	DG1NZ	FJ	77	1146	----
107	DJ7YP	EM	77	971	----
108	PA2CHR	CL	76	1265	----
109	DL5FAU	EK	76	1120	----
110	DF7VX	EL	76	1105	658
111	Y22EN	GK	75	1395	----
112	PA2DRV	CL	75	1147	----
113	OZ1EKI	EP	75	1044	527
114	DL6WU	EJ	74	1305	740*
115	DL7HR	FI	74	1256	980
116	DC9BU/A	EK	74	1253	----
117	OE3XUA	HH	74	1215	----
118	OH2BBF	LT	74	1164	773
119	SM4IAZ	HT	73	1055	1134
120	SM7GEP	HR	72	1428	533
121	G4LRT	ZM	72	1394	----
122	Y23BD	GM	72	1150	----
123	DF2YQ	DL	72	1077	475
124	G8HVY	YK	71	1500	----
125	G4BEL	AM	71	1175	----
126	UR2EQ	NT	71	1160	907
127	SM5CUI	IT	71	1150	1260
128	Y24BO	GM	71	1066	838
129	SM7CFE	HG	70	1420	----
130	OZ1HDB	ER	70	1418	----
131	SM5CUL	IT	68	1150	1260
132	Y24QO	GM	68	1100	----
133	PA3BRS	CM	67	1292	----
134	PE1AAP	CM	67	1132	----
135	DG4GAN	EI	66	1504	----
136	SM7GWU	HS	66	1192	628
137	OZ9SW	EQ	65	1050	----
138	SM7FMD	HR	64	1594	----
139	DG4BB	EN	64	1194	----
140	G3WSN	AL	63	1385	----
141	DL0SP/P	GM	63	1150	----
142	DF6NA	EJ	63	1102	----
143	PE1HWO	CL	63	1050	----
144	RQ2GAG	MQ	62	1317	709
145	UP2BBC	LP	62	1125	807
146	SP9FG	JJ	61	1327	----
147	F6CJG/P	BF	61	1170	----
148	DK3OL	DL	61	909	----
149	SM5DSN	IT	60	1470	670
150	OK1KTL/P	GK	60	993	----
151	ON6UG	BL	60	970	420
152	DK8VS	DJ	60	920	----
153	SM5LE	JT	59	1560	710
154	G8SFM	YL	59	1255	----
155	DL7RU	GM	59	1231	----
156	DC4XH	EN	59	1037	----
157	HB9AOF	DG	59	820	----
158	DK0IK	EN	59	752	----
159	F6HLD/P	CG	58	1545	----
160	F6BSJ	CG	58	1525	----
161	PE0DDL	CL	58	1033	----
162	DB7FZ	EK	57	1147	----
163	DL4OL	FM	57	1018	----
164	DF1EQ	DL	57	811	----
165	I6GQA	GD	56	813	----
166	DK3UC	FN	55	1380	600
167	DG1BP	DN	55	952	----
168	G4MUT	ZL	54	1197	----
169	PA0JME	CL	54	1046	----
170	PA0XMA	DM	54	980	485
171	PA2HJS	CK	54	832	----
172	PA0KDV	DN	53	920	----
173	DK1KQ	FN	53	920	----
174	IW5AFB	FC	53	738	----
175	OE1RKU	II	52	1354	----
176	PA0JTA	CL	52	920	----
177	DL0SO/A	DL	52	888	----
178	OE1APS	II	51	1341	----
179	DF7YU	EL	50	1147	----
180	G4MCU	AL	50	1071	----
181	SM6FHZ	GQ	50	1010	800
182	SM3IVE	HT	50	938	703
183	HB9QQ	EH	49	1080	----
184	PA3BBA	CM	49	1028	----
185	Y21PL	GL	49	828	----
186	YU3CAB	HG	49	684	----
187	SP1DSU	HN	48	1340	730
188	UR2NW	LT	48	1060	675
189	DD3KF	DK	47	862	----
190	SP5JC	KM	46	1120	866
191	UR2RQT	MS	46	853	853
192	UQ2NX	MR	45	1355	----
193	OH2BWL	MU	45	1223	1005
194	DL2QM	DK	45	780	639
195	SM3COL	IW	45	621	455
196	IW5AVM	FC	44	1458	----
197	OE3PQU	HI	44	1120	----
198	OZ1FDH	GP	44	1033	822
199	F6ECI	BI	44	880	----
200	I2FUM/2	EE	44	875	----
201	DL2HAD	EN	44	798	----
202	SM2CKR	KX	43	1215	820
203	DF3XZ	FN	43	956	----
204	DC8LG	FH	43	934	----
205	DC9VA	DJ	43	920	----
206	DC7OH	GM	42	1079	----
207	SM0AGP	IT	42	740	410
208	SM4DHN	GU	41	1240	1030
209	UQ2OW	MQ	40	934	833
210	DL7WC	GM	40	795	----
211	G8ROU	ZN	39	1255	----
212	DL9HN	FN	39	1093	----
213	GM3ZSS	YR	38	1400	----
214	UQ2GFZ	NR	38	1328	590
215	HB9MIO/P	DH	38	1010	----
216	DK0IK/P	DO	38	800	----
217	DL0UL/P	EI	38	676	----
218	HG1YA	IH	38	631	----
219	OE5XPL	HI	37	1176	----
220	DL8DAU	DL	37	737	----
221	UA3MBJ	SS	36	1200	800
222	OE1ERC/9	FH	36	709	----
223	HG2KML	JH	36	600	----
224	UR2AO	MT	35	1131	----
225	UR2GZ	MS	35	1035	----
226	DL9DAK	DL	35	824	----
227	UR2RGM	MT	35	820	----
228	DG5BQ	EN	35	739	----
229	DL7YW	GM	35	724	----
230	YU3USB/3	GG	35	632	----
231	I3ZVN	FF	34	866	----
232	F6EAS	ZI	34	630	----
233	SM3UL	IV	34	585	674
234	OK1VAM	GK	34	511	----
235	DK2PR	EN	33	1200	----
236	SM3BIU	HX	33	920	720
237	DF1EO	DL	33	767	----
238	EA3LL	AB	32	1315	----
239	UR2RIW	LS	32	1100	----
240	DJ3LZ	FI	32	931	----
241	DB9SB	EJ	32	853	----
242	SM5EVK	IS	32	740	----
243	UR2RIC	LS	31	673	----
244	UQ2GCG	LR	30	1275	396
245	I2FHW	EE	30	700	----
246	OK3AU	KI	29	1172	----
247	DC7HF/A	EN	29	1001	----
248	OE1KTC	II	29	808	----
249	DB7NW/A	FK	29	649	----
250	YO2IS	KF	28	1020	----
251	G8MFJ	ZL	28	941	----
252	DF5BL	DM	28	616	----

EUROPEAN SHF TOP LIST 1296 MHZ 14.SEP.1983

1	PE1CHQ	DM	88	1200	32	G4LRT	ZM	45	1152	63	DL0BO/A	DL	33	642
2	PA0EZ	CM	84	1261	33	SM0DFP	IT	45	1057	64	F6DWG	BJ	32	1196
3	DF3XU	FN	74	1277	34	PE1ALA	CM	44	1315	65	LX1DU	CJ	32	600
4	G3LQR	AM	72	1232	35	SM6CKU	GR	44	820	66	G4BEL	AM	31	1025
5	PA0WWM	CM	71	1298	36	OH0NC	KU	43	1537	67	G3COJ	ZL	31	963
6	HB9AMH/P	DH	71	1264	37	F6CER	BI	43	1350	68	PA2HJS	CK	31	690
7	G3LTF	AL	71	1078	38	DL7YC	GM	42	1040	69	DK0IK	EN	31	672
8	PA0FRE	CL	70	1337	39	HB9RG	EH	42	820	70	LA8AK	DS	30	1117
9	DL7QY	FJ	70	1261	40	DK2NH	FN	42	805	71	OZ1HDA	ER	29	888
10	PE0AGO	DM	70	1196	41	LA8AE	FT	41	1271	72	PA0JOZ	CM	29	846
11	F1FHI	ZH	66	1538	42	PA3AOH	DL	41	940	73	DC0DA	DL	29	738
12	G4BYV	AM	63	1028	43	DK5AI	FL	41	868	74	DL3NQ	EJ	29	730
13	PA2DOL	CL	62	1027	44	DL3NI	DL	41	798	75	DL7APV	GM	28	1023
14	DB6NT	FK	61	1105	45	DF1EQ	DL	41	762	76	OK1CA/P	HK	28	656
15	DK3UC	FN	60	1223	46	PA2DRV	CL	40	1314	77	DF3CK	FH	27	1240
16	DK0NA	FK	59	1096	47	SM0FZH	JT	39	1254	78	DJ6MB	DK	27	879
17	OZ7IS	GP	58	1205	48	DC7QH	GM	38	1216	79	DG4BB	EN	27	741
18	PE1CQQ	DM	58	1167	49	DL5FAU	EK	38	740	80	DL7ZL	GM	25	1112
19	SM6HYG	FS	56	1283	50	SM5DWC	IT	37	1060	81	F6BSJ	CG	25	720
20	OZ2OE	EP	56	1075	51	PA3BSK	DL	37	821	82	UR2EQ	NT	25	588
21	OK1AIY/P	HK	55	1351	52	DL9GU	EJ	37	678	83	SM4AXY	HT	24	1000
22	OK1KIR/P	GK	55	1208	53	SM0CPA	IT	36	1141	84	PA0VV	CM	24	622
23	ON5GF	CK	55	1010	54	SM6ESG	GR	36	980	85	SM5CPD	IT	24	610
24	DL4EA	DL	55	906	55	DD2EK	DL	36	845	86	G4FRE	AL	23	641
25	ON5GF	CK	54	1010	56	DF3EE	DL	36	752	87	I2FUM/2	EE	22	972
26	DC9XO	EM	52	963	57	SM0FFS	JT	35	1040	88	PA0JME	CL	22	867
27	DK6AS	FM	51	990	58	SM5BEI	JU	35	877	89	DF1EO	DL	22	756
28	DL6NAQ	EK	50	1253	59	PA3BGL	CN	34	1155	90	I3ZVN	FF	20	972
29	DB6BX	DM	50	845	60	DK1PZ	FL	34	865	91	PA0KDV	DN	20	724
30	DB2VY	DJ	46	783	61	OZ3ZW	FO	34	798	92	OE1ERC/9	FH	20	657
31	DC9BU/A	EK	45	1253	62	DF5JJ	DL	34	790	93	OK1AIB/P	HK	20	656

EUROPEAN SHF TOP LIST 2320 MHZ 14.SEP.1983

1	PA0EZ	CM	38	827	15	DL9GU	EJ	18	374	29	OZ2OE	EP	11	679
2	DL7QY	FJ	27	1018	16	SM6HYG	FS	17	1022	30	PA0JGF	DM	11	444
3	PE0AGO	DM	27	730	17	OK1AIY/P	HK	16	1027	31	G3LTF	AL	9	1017
4	G4BYV	AM	25	1028	18	DL3NQ	EJ	16	595	32	LA8AE	FT	9	829
5	DB6NT	FK	24	529	19	PA2DOL	CL	15	781	33	DF3CK	FH	9	418
6	PE1CQQ	DM	22	605	20	DK3UC	FN	15	661	34	PA2HJS	CK	9	388
7	DK0NA	FK	22	527	21	DF1EQ	DL	13	461	35	PA0JME	CL	9	262
8	G3LQR	AM	21	924	22	DC0DA	DL	13	429	36	SM6ESG	GR	8	880
9	OK1KIR/P	GK	21	866	23	DC3QS	DM	13	419	37	G4FRE	AL	8	641
10	DL5FAU	EK	20	582	24	OE1ERC/9	FH	12	657	38	DJ8QL	EJ	8	463
11	PA0FRE	CL	19	864	25	DL7YC	GM	12	634	39	ON5GF	CK	8	320
12	DL3NI	DL	19	788	26	G4LRT	ZM	11	1022	40	DB2VY	DJ	7	339
13	DC9XO	EM	19	668	27	OZ7IS	GP	11	860	41	LX1DU	CJ	7	300
14	PA0WWM	CM	18	542	28	PA2DRV	CL	11	776	42	DF5QZ	DL	6	468

EUROPEAN SHF TOP LIST 3456 MHZ 14.SEP.1983

1	DC0DA	DL	10	429	9	DC3QS	DM	7	419	17	DF5QZ	DL	3	68
2	DB6NT	FK	9	529	10	PE1CQQ	DM	5	303	18	PE0AGO	DM	2	134
3	PA2DOL	CL	9	528	11	G4FRE/P	AL	5	251	19	PA2DRV	CL	2	123
4	DL3NQ	EJ	9	398	12	PA0JME	CL	5	220	20	DF5JJ/P	DK	2	80
5	DL7QY	FJ	8	565	13	PA2HJS	CK	4	388	21	DL3NI	DL	2	74
6	DK0NA	FK	8	528	14	PA0JGF	DM	4	376	22	DK3UC	FN	2	63
7	G4BYV	AM	7	623	15	DF1EQ	DL	4	118	23	DB8NC	FK	2	60
8	G3LQR	AM	7	427	16	G4AGN/P	ZN	4	115	24	DJ6TA	DK	2	42

EUROPEAN SHF TOP LIST 5760 MHZ 14.SEP.1983

1	DB6NT	FK	6	528	5	DK0NA	FK	4	528	9	OK1VAM/P	HK	2	303
2	SM6HYG	FS	6	165	6	HB9AJF	EH	3	217	10	G3LQR	AM	2	241
3	DL7QY	FJ	5	171	7	DB8NC	FK	3	59	11	HB9MIN/P	DH	2	178
4	PA2DOL	CL	4	529	8	OK1WFE	IK	2	303	12	F0GOH/P	DH	2	109

EUROPEAN SHF TOP LIST 10368 MHZ 14.SEP.1983

1	I6ZAU	GD	17	832	15	I4AOR	FE	7	320	29	PA0JME	CL	4	220
2	I3CLZ/3	FF	13	571	16	I4ZTO/4	FE	7	290	30	DB6NT	FK	4	171
3	YU3JN/3	GF	13	563	17	PA0EZ	CM	7	262	31	DK7GN/P	EI	4	166
4	I4XCC/6	GD	12	563	18	DJ7FJ/P	DH	7	243	32	OE3XUA	HH	4	77
5	I4CHY/4	FE	11	633	19	PA2DOL	CL	7	217	33	SM0DFP	IT	4	60
6	I3ZJL/3	FF	11	572	20	HB9AJF	EH	7	204	34	OH2BWL	MU	4	57
7	IW4AKY	FE	11	570	21	DL7QY	FJ	7	171	35	ON6UG	BL	3	174
8	I4QIG/4	FE	11	440	22	I4FKD/4	FE	6	260	36	DG4BB	EN	3	132
9	YU3URI	HG	10	344	23	HB9MDP/P	EH	6	205	37	YU3CAB	HG	3	107
10	DJ4YJ/P	EH	9	358	24	F0GOH/P	DH	6	184	38	DF1EQ	DL	2	74
11	I4BER	FE	9	340	25	IW3QCV	GF	5	290	39	DL0SO/A	DL	2	65
12	YU3TAL	GF	9	322	26	G3LQR	AM	5	258	40	DF1EO/P	DL	2	63
13	I2BBH/2	EE	9	237	27	HB9MIO/P	DH	5	217	41	DJ6TA	DK	2	51
14	HB9MIN/P	DH	8	310	28	DL3NQ	EJ	5	113	42	OE1WEB	II	2	50

EUROPEAN SHF TOP LIST 24192 MHZ 14.SEP.1983

1	DJ7FJ/P	EH	5	170	3	DJ4YJ/P	FH	2	243	5	DK0NA	FK	1	34
2	HB9MIN/P	DH	3	178	4	F0GOH/P	DH	2	89	6	DL7QY	FJ	1	13