

25 April 1957 Arrive 10:15 am.

Chart paper had jammed as roll too tight on spindle & clock stopped, about 11:10 am 23/4/57, also, after this time, the cattle had again broken the horizontal part of down lead on #2 antenna. Apparently the calves bite off the labelite spreaders, and pull on wires until they break. Fixed it.

R.F. noise 0.2 divisions with attenuator at 6 DB.
Sensitivity 1.2 μ v for 10 divisions.

Check batteries	A cells	1.98V	1.97	1.98
	Gravities	1160	1150	1170
	Number	1	3	2

B batts	24 1/2	24	23 1/2	22 1/2	23	20 1/2	138 1/2 V
Number	1	2	4	5	6	9	total.

#2 cell from negative end 1.53V gravity 1110, #5 cell 0.8 volts < 1200 gravities, low water

Replaced #9 battery with #3 battery (25V). Now 143 1/2 V total.
R.F. noise and sensitivity the same. Thus receiver not affected much by changes in B batts but more so by changes in A batts.

Put attenuator to 0 DB. Now R.F. noise 0.8 divisions
Sensitivity 0.63 μ v for 10 divisions.

Set clock correct at noon. Wound clock 33 turns to tight
Relay battery 12.5V closed 12.8V open

Ins down to 7/32". Filled to 9/32"

Put antenna to #1=128, #2=R334, #3=RO #4=256

Three yute pairs will group wax 23.6° N of zenith.

Set attenuator to 0 DB.

Put a bit of vaseline on each end of chart paper roll to make it turn easier. Paper tube in center too short.

27 April 1957 Arrived 9:55 am. Everything going,
 R.F. noise 0.15 divisions with attenuator at 30 DB.
 Sensitivity 1.52 μ v for 10 divisions

Check batteries
 A cells 1.90V 1.89 1.90
 Gravity 1105 1090 1105
 Number 1 3 2

B batts 24 22 1/2 22 1/2 20 22 1/2 24 1/2 137 1/2 V
 Gravity 1210 1110 1120 1068 1100 1215 total
 1175 1110 1115 1150 1125 1250
 Number 1 2 4 5 6 3
 all #5 from neg. end -0.2 volts 1060 gravity

Change all batts now A cells 2.11 2.11 2.11
 Gravity 1280 1285 1280
 Number 6 5 4

B batts 25V 25 25 25 25 25 154 volts total
 Gravity 1295 1300 1280 1305 1300 1285
 1300 1295 1280 1305 1305 1295
 Number 7 12 11 10 8 13
 all #6 from neg. end 2.12 volts 1270 gravity

Now R.F. noise 2.5 divisions with attenuator at 30 DB

" " " 0.8 " " " " 9 DB

Sensitivity 0.6 μ v for 10 divisions.

Built small pipe around horizontal part of #2 down lead to keep cattle off.

Straightened up #9 antenna down lead by moving antenna 35 feet to east. Tension now 1000 lbs.

Put antennas to #1=256, #2=0, #3=384, #4=128

Pair + Group Nulls both 36.9° N of Z

Checked clock at noon, 3 min fast, corrected it.

Wound clock 16 turns to tight.

Only 2 ft chart paper left. Put on new roll. Took chart to tower, 2 1/2 down to 13/16", Filled to 5/16".

Dug out ditch + fixed more rocks about top culvert

30 April 1957 Arrive 1030am. Everything going.
R.F. noise 0.25 divisions with attenuator at 9dB,
Sensitivity 1.05 μv for 10 divisions.

Check batteries A, all 2.05v 2.05 2.05

Number 6 5 4
B batts 25 25 29 1/2 29 1/2 25 25 15 1/2 total
Number 7 12 11 10 8 13

Some kind of an electrical disturbance went off at 1055A.
However a faint noise like a pump remaining with rough
pulses every 2 seconds still could be heard very weak.

Check time at noon. Clock 7 min fast. Corrected it.
Changed attenuator to 6DB. Now R.F. noise 0.5 division
Sensitivity 0.79 μv for 10 divisions.

Lot of noise coming in from north on #4 antenna.

Made antenna measurements most of afternoon.

920-925 PM. A code station right on 36.0 on dial.
Very unusual. Very loud, probably a local.

Took "C" tuner box to town for change in secondary
of impedance transformer.

Went down to 3/16". Filled to 5/16"

Left about 540pm.

3 May 56. Arrive 1015 am. Ink plugged in pen
about 10 am on lat. No data since then.

R.F. noise 0.15 divisions with attenuator at 6 DB.
Sensitivity 1.2 μ v for 10 divisions.

Check batteries	A cells	1.99V	1.99	1.99			
	Grainy	1160	1155	1160			
	Number	6	5	4			
B batts	25	24 1/2	24 1/2	25	25	24 1/2	157 volts
Number	7	12	11	10	8	13	Total

Replace A cells. now. A cells 2.11V 2.11 2.11
These didn't get fully
charged. Grainy 1235 1230 1220
Number 2 1 3
Now R.F. noise 0.8 divisions with attenuator at 9 DB.
Sensitivity 0.57 μ v for 10 divisions

Checked clock at noon. 5 min fast; corrected it
Set regulator back a bit. This seems necessary as the
weather is getting cooler. Wound 48 turns to tight.
Ink down to 3/16". Filled to 3/8".

Old pen worn out. End worn short & chipped. This makes
it rub irregularly on paper and plug easily. Has run since
August 1956 thru April 1957, nine months for a total of about
6500 hours, not counting use early in 1955 or use in Sydney.
Replaced it with new pen having point over twice as long.
Now 0.45 volts on vibrator are ample. The vibrator oscillator
beats in amplitude a bit with a period of about 20 seconds. It
seems to be a weak kind of relaxation oscillation. New pen has
much finer point as old one worn short to big end.
Changed over time because of low 26 A to 37 A on high as this

3 May Continued.

745-755

Weak listening tests. Weak carrier at 41.0 on dial.
Strong carrier at 45.0 on dial. No carriers whatever
below 41.0 Occasional code at 39

805 P More listening.

Carrier at 41 gotten stronger. Now can hear music and
man singing. Quite rapid flutter fading by 810P.

Weak carrier came on 33.0 on dial. Fades badly. Cannot
identify any modulation. Station at 41.0 in foreign language.

803-807 exceedingly weak carrier at 37.0 on dial.

Faded out soon. Carrier at 33.0 gone by 818pm.

Back again by 822. This one is at 510 KC. It seems
to persist from just audible to fair. The one at 37.0

only held there for a few minutes and stayed out.

Couldnt find even a trace of one at 29 (500 KC). The
code becoming less frequent by 830pm.

The background sounds in force are typical hiss
sounds of thermal origin. Very smooth.

905 P some modulation splatter from sta at 45.0.

in Queenstowe at 540 KC.

By offsetting the BFO to 43.5 on dial the beat pitch
rises across dial ascending with increase of frequency.

This was so adjusted on sta at 45.0. By
comparison the stas at 41.0 + 33.0 do exactly the same,

so they are true signals and not images. The one at
37 cannot be detected.

When now tuned to region 0-10 which is far away from
antennas and gain opened up the background sounds are
just residual atmospherics and rough scratching noises.
The smooth stuff comes in on tuned part of antenna response.

1015-20 Listened. Carriers at 33 + 41 very faint and gone part
of time. 37.0 channel clear. Code nearly finished even at 28 on dial

5 May 57 Arrive 11:55 am, Everything going
 Check time at noon. Clock two min fast. Corrected it.
 R.F. noise 0.1 divisions with attenuator at 12 DB.
 Sensitivity 1.6 μ v for 10 divisions
 Changed attenuator to 6 DB. Now R.F. noise 0.5 divisions
 Sensitivity 0.82 μ v for 10 divisions
 500 KC = 28.5 + 520 KC = 36.5 on ^{approx.} horizontal dial.
 Left 12:15 pm & Return 3:10 pm.

Checked batteries

A cells	1225	1220	1220
Granites	2.06	2.06	2.05
Number	2	1	3

B Batts. 25 24 1/2 24 24 24 1/2 24 TOTAL 147 1/2

Number 7 12 11 10 8 13

2nd down to 5/16", left it that way
 Antenna connections remain the same.

Left 5 pm. Return 9:15 pm.

9:20 - 10:15 p Listening test. Weak carrier at 41.0, Both
 37+33 clean tonight. Cobb at 29+ below.

Carriers as follows on every 10 KC channel.

Dial	Strength	600	69	Strong
530 41.0	Weak	73	"	
45	Very Strong	77	"	
550 49	Strong	80.5	Medium	
53	"	84.5	"	
57.0	Weak	650 88.5	Strong	
61	Medium	92.0	Weak	
65	"	670 98	Strong	

10:05 P Momentary moderate at 38+ then at 39. Again 10:50 P
 Carrier at 41 fades in + out with considerable wobble.

10:40 P changed antennas to #1=320, #2=0, #3=R320, #4=R0

This puts pair null + group max 30° N of Z

11:03 P changed antennas to #1=256 #2=0 #3=R256 #4=R0

5 May Continued

1145P Changed antennas to #1=128, #2=0, #3=R128, #4=RO

This puts pair null 53.2° N and Group max 30° N

MN. Changed antennas back to #1=0, #2=320, #3=RO, #4=R320

This puts Pair + Group max at 30 N of Z.

Most of the roughness coming in from sky between 30° + 36.9°

Left about 1210a on 6/5/57

W of Z.

8 May 1957. Arrive 1145am. Everything going.

Considerable local atmospheric present as very rough impulsive noise in force.

Checked time at noon. Clock 2 min fast. Corrected it.

Check batteries

A cells 1.99v 1.98 1.98

Gravities 1175 1165 1160

Number 2 1 3

B bat's	29 1/2	23 1/2	23 1/2	23 1/2	24	23 1/2	143 1/2v
Number	7	12	11	10	8	13	total

Listening on #4 antenna shows a rough spattering. No background. This antenna may be unbalanced to ground due to east end being near a hill. Most of the objectionable noise seems to feed in on #4 antenna.

R.F. noise 0.2 division with attenuator at 6 DB

Sensitivity 1.4 μ v for 10 divisions

Change attenuator to 0 DB. Now R.F. noise 0.7 division

Sensitivity 0.63 μ v for 10 divisions

2k down to 3/32" inch. Filled to 5/16"

Put antennas at #1=0, #2=128, #3=256

550y listened. Carrier at 41.0 u well & steady

May Continued. Returned 9:15 pm. Listened
 Dial 33 very weak carrier fades out after
 37 clear channel
 41 weak to medium. Can hear orchestra and
 organ music on the rises.
 Some code at 31 & below. None very strong.
 1003 Group + pair nulls 30° N of Z. #1=320, #2=0, #3=320, #4=0
 Reset attenuator from 0 to 6DB
 022 Group + pair nulls 36.9° N of Z. #1=256, #2=0, #3=384, #4=128
 048 Group + pair nulls 44.9° N of Z. #1=192, #2=0, #3=498, #4=256
 The trouble with these tests is large amount of spurious
 noise fed in on #4 antenna which reports whole system.
 102 #2 + #3 Nov Reset attenuator from 6DB back to 0DB
 21 #2=320, #3=0
 35 #2=256, #3=0

100-1225a 9 May, listened
 33 weak but steadier + little fading.
 35 weak intermittent code.
 36 very weak carrier fades in and out. Gone at 1220a
 41 very weak " " out + in at times
 45 Q understood off now. Only weak carrier
 41 code on this channel at 1223a
 More code 28.5 and below.
 35 Carrier at 3.6 up to medium strength at times
 39 New carrier on at times weak.
 41.5 Very faint carrier in from time to time
 33.5 ICW weak

Changed dial setting to 38.5
 Sounds quite a smooth hiss in background.
 Put antennas to #1=0, #2=128, #3=256

9/5/5
 R.F.
 Series
 2nd
 Check
 B but
 Number
 Now
 Change
 Series
 Work
 540-
 41
 Some
 cyclic
 Left
 750p
 41
 37
 35
 33
 31-
 23-
 Series
 Can
 828 a
 849 c
 929 l

9/5/57 Arrive 345 PM. Everything going.
R.F. noise 0.5 divisions with attenuator 0 DB.

Sensitivity 0.85 μ v for 10 divisions

Tub down to 9/32". Filled to 3/8"

Check batteries	A cells.	1.95V	1.94	1.94
	Spacity	1150	1140	1135
	total, Number	2	1	3

Replace A cells.	Now.	2.12V	2.12V	2.12V
	Sensitivity	1225	1220	1230
	Number.	4	5	6

B batteries	24 1/2	23	22 1/2	22 1/2	23	23	14 1/2 Volts
Number	7	12	11	10	8	13	total.

Now R.F. noise 3.2 divisions with attenuator at 0 DB

Change attenuator to 6 DB. R.F. noise 1.0 divisions

Sensitivity 0.4 μ v for 10 divisions

Wound clock, ten turns

540-550 pm listened. Cods below 31. 31-40 clear

41 very weak carrier fades in and out

Some distinct 50v sparking noise remaining. More or less cyclic like a machine running. Pres dial to 37.0

Left 6 pm. Returned 7:30 pm.

750p - 803p listened. Sparking noise gone.

41 Both weak code 300 ppm & very weak fluttering carrier

37 Clear

35 Strong code (local) at times

33 Weak code

31 - 25 several code stations various strengths

23 Weak carrier.

Seems like daytime level persists. Cold & clear tonight.

Can see ones breathe easily. Relative humidity is high.

828 a weak carrier came on at 37.0. Pres dial to 38.5

849 carrier gone, 852 set dial back to 37.0, 913 carrier still gone.

929 back weak. dial at 39.5 main.

12 May 57 Arrive 1030 am. Pen beginning to clog.
 Washed tip with alcohol + blew ink down it. Fixed.
 Turned up attenuator from 6DB to 0DB. Lot of 50v
 sparking noise in background. Quite rough. Began
 phasing tests

1041a #1=320, #2=0, #3=320, #4=0, Pair + Group nulls 30° N of Z

1102a #1=0, #2=320, #3=0, #4=320, " + " " 30° S of Z

1120a all Four antennas normal.

By putting pair + group nulls both on horizon there is a
 marked reduction of noise and smoother trace. This combination
 is #1=0, #2=0, #3=RO, #4=RO. It also puts Pair max + group
 null at Z with and Group max 30° N of Z.

R.F. noise 0.2 divisions with attenuator at 6DB.

Sensitivity 1.35 μ v for 10 divisions.

Check batteries

A cells	2.00V	1.99V	2.00V
Gravities	1190	1190	1190
Number	4	5	6

B cells	24	22	2 1/2	2 1/2	22	22	137 1/2 V
Gravities	1225	1115	1095	1090	1115	1110	
Number	7	12	11	10	8	13	total

This is a good group of batteries. No lead cells after 15 days. #11 & #10 batts
 all cells 1.8-1.9V. #7 batt #6 cell 2.02V, 1210 gravity

Replace all batteries, Now A cells

A cells	2.12	2.12	2.12
Gravities	1275	1275	1275
Number	3	2	1

B cells	1290	1300	1300	1300	1295	1275
Gravities	1245	1305	1300	1310	1310	1290
Number	1	2	4	6	5	9

all #5, 2.10V, 1260 gravity
 cell #5, 2.13V, 1390 gravity

Now R.F. noise 0.6 divisions with attenuator at 6DB

" " 0.3 " " " " 9DB

Sensitivity 0.98 μ v for 10 divisions.

Just missed time at noon. Arrived in clock a bit slow

12 May Continued.

Returned 9:10pm.

725-947p listened + 1024-1034p

41.0 Medium carrier with great flutter. Music.

33.0 Very weak carrier most of time

30 + below various code stations

37.0 weak carrier for less than a minute about 940pm,
Came on suddenly and faded gradually. Airtel?

33.5 Code medium at 1029-1032p.

37.5 " " 1033-1033 1/2

Drizzle showers of rain. Phase tests impossible.

Put attenuator to 9DB + dial to 37.0.

Left about 1040pm. Raining

or Heavy frost. Still white in shadows at 11AM, at 240F & 8AM

15 May 1957 Arrive 1015am. Pen plugged on 13th.

R.F. noise 0.1 divisions with attenuator at 9DB

Sensitivity 1.6 μ v for 10 divisions.

Checked time at noon. Clock. Inimfort. Corrected it.
Spent about 2 hrs trying to clean pen and ink well.
The latter cleaned up OK but pen impossible to
clean with certainty. A lot of milky slime kept coming
out of point even after washing repeatedly with water.
It seems as if some kind of glue inside is gradually
dissolving. Also point was clipped on one side. This
made it ink poorly. Put two old pens away in
alcohol. Got out third + final new pen. It
tests & clean and made very fine bubbles in water.
This pen ink well and has small friction as vibrates
nicely with only 0.32 vibrator watts. Filled ink to 3/8"
In afternoon made test at #4 antenna tuner box with
various condenser + resistor combinations. All bad. This sparking
noise on #4 is definitely being picked up and is not due to
some unbalance of antenna system.

406-410pm. Listened with BFO. Weak carrier fades in and
out at 37mhz. 33 + 41 clear. Channel dial to 38.5.

Red filter, 1/25 sec, f 56, 2 ft apart, 100 ft focus top 50 ft focus at bottom.

15 May; continued.

checked batteries	A cells.	2.03V	2.03	2.03
	Gravity	1220	1220	1220
	Number.	3	2	1

3 batts	24 1/2	24 1/2	24 1/2	24 1/2	24 1/2	24 1/2	15 1/4 total.
number	1	2	4	6	5	9	

Vibrator 0.50 volts.

Left 450pm Clear + cool. Return 740pm.

795-800 listened.

41.0 weak carrier

38.5 clear

37 very weak carrier fading in a intervals. Mostly out.

33 clear of carrier

33.5 strong code. + at 35.0

30 to 25 much code.

16.2 medium carrier.

3.0 strong code.

802p-1010p physics tests. The energy comes from north, both the background + the roughness. Probably about 35° or 40° north of zenith. This background got progressively higher + rougher from 8-10p.

1015p-1037p listened.

41 medium carrier

37 clear

38.5 clear

35.5 strong code

33.5 weak code

33 very weak carrier

16.2 no carrier but weak code

0 very weak carrier.

25-32 lots of code.

{ This carrier is in some way associated with Gunnstoun sta at 590 KC at 45.0 on dial. They carry same program and go off air at same time.

Set attenuator to 0 DB, antennas #1=0, #2=128, #3=256, #4 not used.

Left 1040pm.

Thick clouds, slight drizzle

17 May 57 Arrive 1040am. Everything going.
New pen beginning to plug starting about 910am.
Not much noise present today but a rather high background.
Weak atmosphere.

R.F. noise 0.6 divisions with attenuator at 0.08.

Sensitivity 0.67 μv for 10 divisions

Sub down to $2/32$ " Filled to $3/3$ " at 10 pm.

Checked batteries	A cells	1.99V	1.99	1.99
	Gravity	1180	1185	1180
	Number	3	2	1

Batts	24 1/2	24 1/2	24 1/2	24 1/2	24 1/2	24 1/2	149 1/2 water
Number	1	2	4	6	5	9	total.
							R #5 cell 2.04V
							R #5 cell 2.07V

Clock at room $1/2$ min fast. Corrected it.

Spent an hour cleaning the pen. It was plugged tightly. Impossible to blow thru. However by mixing alcohol & water into pen and up tube finally got it cleared. Some milky sludge came out. This is worked up into hose and well. Pen is taken off and sludge blown out. Hose & well cleaned in water and process repeated several times until no more sludge appears. It is impossible to blow sludge thru the fine point of pen. It seems there is something in ink causing trouble. Discontinued use of bottles marked 30 March 55 and started bottles marked 27 Sept 55.

Changed 1N5 in mixer to a better tube.

Cleared by 1PM

Considerable local rain storms around island make the record very rough. This starts about 10 am and gets worse. As usual #4 antenna has a lot of sparking noise on it.

Put attenuator to 6DB, R.F. noise division

Antennas #1=0, #2=128, #3=256, Dial 38.5

Cell 520 um. Return 930 pm.

17 May continued. Fog coming up the valley.
 R.F. noise 0.7 division with attenuator at 6DB.
 Sensitivity 0.60 μ v for 10 divisions.
 Rest dial to 37.0
 Left 1010 pm.

19 May 1957. Arrive 11:50 am Everything going.
 Still drizzling from steady rain last night.
 R.F. noise 0.35 division with attenuator at 6DB.
 Sensitivity 1.1 μ v for 10 divisions.

Check batteries	A cells	1.94V	1.93	1.94	
	Quantity	1140	1140	1140	
	Number	3	2	1	
B batteries	24 1/2	24	24	24	24 1/2
Number	1	2	4	6	5
					9
					total 148 volts

#5 cell 1.99V, 1185 quantity
 " " 2.01V, 1205 "

Replace A cells.	Now	2.14V	2.14	2.14
	Quantity	1290	1290	1290
	Number	6	4	5

Now R.F. noise 0.5 division with attenuator at 15 DB.
 Sensitivity 0.60 μ v for 10 divisions.

Checked time at noon, clock 3 min slow. Corrected it.
 Wound clock 55 turns to tight.
 Drizzle rain all day from north to north west.
 Power line noise very bad today, particularly on #4 antenna.
 Today the interference is definitely coming in at a small angle
 above northern horizon. Probably the Bothwell-Deniche line.

Tub down to 5/16". Left it this level.
 Cut off chart & took to town.

Put attenuator to 15 DB. Antenna #1, 2, 3 all normal. Dial 37.0

21 May 57 Arrive 1105 am. Everything going
 Gain set too low. Error due to rain static ^{background} causing higher
 R.F. noise .053 division with attenuator at 1505
 Sensitivity 2.56 μ v for 10 divisions.

Check batteries	A cells	2,08V	2,07	2,07			
Volts	Grainy	1250	1250	1255			
	Number	6	5	4			
B cells	24	24	24	24	23 1/2	145 1/2 volts	
Number	1	2	4	6	5	29	total
							* \$5 cell 1.96V, 1160 grains
							" 2.00V, 1180 "

Checked time at noon. Clock 1 min fast. Corrected it.
 Changed attenuator to 200, R.F. noise 0.4 division
 Sensitivity 0.91 μ v for 10 divisions.
 Sub pump to 1/32". Filled to 5/16"
 Took off pump & cleaned it out. Still a little sline
 came out but apparently this trouble is about over.

* 4 antennas still high but sparking wires not had taken.
 Apparently most of the electrical faults have dried out since
 the rain on the 19th. Using #1, 2, 3 alone the
 background is quite a nice smooth line practically
 free from 50 cycle sparking. Only occasional atmospheric.
 The steady background today comes in at a low angle from
 north. See very low at #1=256, #2=128, #3=0. About 2:50 pm
 black clouds gathered in south. This made a rough
 background to south. Rain began about 3:30P-3:45p and again
 4:35p-. This started sparking noise going.

Opened up signal generator to adjust dial calibration
 against 500 KC crystal. This OK on band #2. The 500 KC
 point adjusted by trimmer and 250 KC point adjusted by core.
 However band #1 has no trimmer, merely a 2pf fixed
 condenser. Took band #1 to trim to get on a trimmer.

21 May Continued.

During day a minimum exists when antennas are
#1=256, #2=128, #3=0 and a maximum when #1=0,
#2=64, #3=128. By 4 pm this minimum has become
less distinct and becomes lost in evening noise. During
day a good smooth record is secured either by #1=256,
#2=128, #3=0 and by #1=0, #2=256, #3=512. This is
probably because a null on these combinations points in
direction of interference to north.

Put antennas to #1=0, #2=256, #3=512, Vibrator 0.45 volts
Attenuator 3DB R.F. noise 0.8 divisions
Sensitivity 0.60 μ v for 10 divisions. Trial 3710

Left 7:50 pm. Return 7:50 pm. Clear + bright stars
802p-840 listened.

41 very weak carrier fades in and out. 828 Medium ^{830 weak} _{again}

37 clear 820-823 came thru very weakly at short times

33 clear 834 came thru momentarily

28.6 medium code.

16.2 weak carrier Not an image, by offset BFO check. Has about 30%
500 cycle modulation. Rather rough.

23.5 " " for a few minutes only.

Not much activity tonight. Very little code. However
the spaces between atmospheric noise are very noisy sound.
Tonight the hole seems to be closed. Merely weak auroral
radiation making rough trace. Left 8:50 pm

24 May. Arrive 10:05 am. Set dead.

R.F. tube burned out morning of 22nd.

Replaced it with new 3E6, Now.

R.F. noise 1.3 divisions with attenuator at 3DB.

Sensitivity 0.4 μ v for 10 divisions.

Changed attenuator to 6DB. R.F. noise 0.8 division

Sensitivity .55 μ v for 10 divisions.

Antenna tests and + ...

24 May continued

Checked batteries

Vibrator 0.47 watts.

Acalk, 2100V 1.98 7.99

Gravity 1205 1185 1190

Number 6 4 5

B batts 24 23 23 22 1/2 23 20 1/2 139 1/2 V total

Number 1 2 4 6 5 #9

#5 cell - 0.2V, 1125 gravity
" 1.94V, < 1160 "

Check time at noon, 10 sec slow. Corrected it.

It is evident that power line noise is coming in from both north & south, particularly the north, at a low angle. Antennas #1 & #4 act as shields for antennas #2 & #3.

Signal Generator #1 band. Replaced 5pf fixed capacity with 1 1/2 pf trimmer. Now 166 2/3 kc dial reads exactly over 500 kc and checks 500 kc crystal. 250 kc and 71.43 kc points aligned with cores directly on dial calibration. Now dial reads a bit high at 83 1/2 kc and a bit low at 100 + 125 kc.

Cells #8 & #10 in #3 battery only 1.5V each. Took #3 & #9

batteries to town to have cells #5 interchanged.

2nd down to 1/4". Filled to 1 1/2".

Replaced #9 battery by #7 just off charge. Now

#9 = 25.5V and total = 146.5V. Vibrator 0.50 watts.

R.F. noise 1.0 divisions with attenuator at 6 DB

Sensitivity 0.50 uv for 10 divisions

Dial at 37.0

Antennas #2 & #3 normal; #1 & #4 unused.

Left 235 pm

of black clouds today, but rain will
 makes trace rough

26 May - Arrive 1250 pm Everything going
 R.F. noise 0.4 division with attenuator on 6DB
 Sensitivity 0.87 μ v for 10 divisions
 Clock probably 5 min slow by a watch at 1 pm

Checked batteries	A cells. 1.94V 1.91 1.92						
Vibrator 0.45 volts	Gravities 1145 1120 1130						
	Number 6 4 5						
B batts	24	22 1/2	23	22	20 1/2	24 1/2	140V total
Gravities	1220	1140	1140	<1170	1150	1275	
	1180	1125	1140	1115	<1180	1280	
Number	1	2	4	6	5	7	

Cell #5 = -0.2V < 1160 gravities
 all other cells 1.92-1.93V

Replaced all batteries	New A cells 2.12 2.12 2.13					
Vibrator 0.60 volts	Gravities 1260 1255 1255					
	Number 1 3 2					

B batts	24 1/2	25	25	25	25	25	157 volts
Gravities	1275	1290	1310	1295	1305	1300	total
	1280	1300	1305	1295	1310	1300	
Number	7	13	12	11	10	8	

New R.F. noise 12 division with attenuator 9 DB
 Sensitivity 0.38 μ v for 10 divisions

Clock wound 58 turns to tight.
 Ink down to 7/32". Filled to 3/8".
 Advanced clock three minutes arbitrarily at 450p.
 Cut off chart roll + took to town.

Listened 540-550 pm Sounds in phones very smooth.
 41 Carrier medium with 400 cycle tone
 37 Very weak + fading } These carriers so weak
 31 Weak carrier fairly steady } not able to see their
 apparently can hear whistles to faint to measure } effort with dial
 things of 33, 35, 37, 38 1/2

Put attenuator at 12 DB, R.F. noise 0.7 division
 Sensitivity 0.52 μ v for 10 divisions
 Rev dial 35.0, Antenna dial 78.5
 Antennas #2 + #3 normal, #1 + #4 unused

26 May Continued, Return 925 pm,

Listened 935 p - 1010 P

41 weak carrier fades at times

37 clear

33 carrier medium to weak, Fades badly. Out by 10P

38 strong code at times for a minute or so

28.5 weak code & medium code.

6 weak carrier, steady

16 very weak carrier, steady

18 Very strong code at times

Rechecked set

R.F. noise 0.6 division with attenuator at 12DB

Sensitivity 0.55 μ v for 10 divisions.

Put neon dial at 37 + Antenna dial 78.0

Left 1015 pm Atmospheric getting worse; but sounds in spaces still a smooth hiss.

29 May. Arrive 1130 am. Pen clogged evening of 27th.

R.F. noise 0.25 division with attenuator at 12DB.

Sensitivity 0.94 μ v for 10 divisions

Checked time at noon. Clock 2 min slow, corrected it.

Advanced regulator a bit, about $\frac{1}{6}$ division.

Lot of fog in valley this morning. Took pictures from road along south cliff. One single from far SE and two stereo pairs from S + SW with 6 ft base line.

Changed attenuator to 6 DB. Now R.F. noise 0.9 division

Sensitivity 0.47 μ v for 10 divisions.

Checked batteries - A cells. 2.02v 2.01v 2.02v

Vibrator 0.6 volts - Grawits

Number 1 3 2

8 1/2 to 25 24 1/2 25 25 24 1/2 24 1/2 151v total

26/5/57

HEC tests.

1240pm. Took out fuses on main line north of Kempton to Apsley. Fuses near Gregg place, "Oakmore". Check at down lead on pole near Mobil station about 1/4 mile south of fuses.

Reading before taking out fuse 2.7
" after " " " 1.2

Before a rough sparking sound, after a buzz more like a machine running, also no significant change in level or sound at cosmic static receiver in valley

31/5/57

Listened near Bagdad sign at north end of Bagdad. Level about 2.0 divisions with power on line to north. Opened three fuses which are 100 yds north of sign. First the east fuse. Noise dropped out and only faint buzz left. Then center fuse and finally west fuse. No perceptible difference when these are opened. It seems that there is a bad insulator on east wire somewhere north of these fuses. The fuses were out from 130 to 132pm. No effect on cosmic static receiver.

29 May Continued.

Put in four new 1C5 tubes in driver and reduced driver filament voltage back from 1.53v to 1.47v.

The pen was plugged with sludge and small solid particles of ink. Cleaned thoroughly and put in new ink which was strained thru cloth. Also touched up tip of pen on fine stone a bit to make it flat against surface of paper. It seems perhaps the ink became frozen somewhere and caused a precipitate to form. Filled to $7/16$ "

Quite a lot of power line sputter + grinding on all antennas. Also considerable black storm clouds about

515 p - 530 p listened Power line noise bad tonight.

41 carrier, weak but steady

37+33 clear

33.5 weak + fading code

19 weak carrier with wobble.

10 medium carrier

36 weak + fading code with 400 rev mod.

Left 530 p. Attenuator at 6DB, Dial 37

Return 9:20 pm. Cloudy with lights of lights to south.

930 - 942 listened

41 medium carrier. Fades to weak at times

37+33 clear of carriers

33.5 weak to medium code CW at times.

16 Medium code, CW.

9 Weak carrier, steady

27 Weak code

Increased spring pressure at base of pen pushing pen holder down onto paper. Raised vibrator to 0.8 volts.

Added $1/4$ water to ink, making ink $9/16$ " deep, a near full well.

9:45 - 10:00 make minor antenna tests. Parallel antenna

Calum, Local Fog in valley, Blue sky above, Very clear.

31 May Arrive 1005 am. Everything going.

R.F. noise 0.50 divisions with attenuator at 6DB.

Sensitivity 0.77 μ v for 10 divisions.

Check batteries	A cells	1.99v	1.99v	1.99v
Vibrator 0.76 in/s.	Gravity	1190	1180	1185
	Number	1	3	2

B cells	25	24 1/2	24 1/2	24 1/2	24 1/2	24 1/2	150V
Number	7	13	12	11	10	8	total

Ink down to 7/16". Took pen system apart + cleaned.

Still a small amount of sludge and a few bits of dried ink came out. Reassembled and put in 5/16" of steamed ink plus 3/16" water for a total of 1/2" deep.

Checked time at noon. Clock correct to a few seconds. ^{Let it} 11 am. Stereo fotos #2 down lead from north. 6ft base, XX616, 125, 5.6, ^{and} ^{picture}

Quite a lot of irregular spitting noise on today. ^{Particularly on #4 antenna as usual.}

Vibrator works better now that pen system cleaned.

The sludge seems to be formed in the ink.

Left 103 μ m for H.F.C. tests. Returned 210 pm. No Effect.

231-245 μ m ran on #3 antenna with #4 down leads off tuner box.

This for detuned #4 antenna and removed its shielding effect from #3. Thus the noise from north should come in stronger during this period. No effect.

300-375 Interchanged tuner boxes on #3 + #4 antennas

Tuner box Con #4; tuner box Don #3. No effect. In both cases much more fuzzy noise on #4 antenna irrespective of which tuner box used. The evidence seems to point to #4 antenna being unbalanced to ground by east end being too close to edge of hill.

345-400 p Put tuner boxes back in original positions.

410-420 p listening. Some kind of a wailing, rumbling which makes a cubic scratching noise. Period about 1/2 seconds.

420 Other grinding + sparking noises came on.

535-544 history.

28/5/57

#5 all taken from #3 battery and placed in #9 battery
 #5 " " " #9 " " " " #3 "
 #2 " " " #3 " " " " #5 "
 #5 " " " #5 " " " " #3 "

Now #5 + #9 batteries should have all good cells.
 #3 battery should have weak cells #2, #5, #8, #10 from neg. end.
 all three batteries charged up by Masse Battery Co.

31/5/57 Return 1105pm. Very clean + bright stars.

1115p - 1220a listened

- 41 weak carrier with warble. Fade up to medium at times
- 37 + 33 clear of carriers all night
- 35 medium mod. code, also 33 1/2 + 33 at times
- 28 strong code, several stations
- 38 Strong code ZLD for a minute or so

1130 pm No program on strong carrier 79N at 540 kc.
 The carrier at 41 (530 kc) fades up and now has
 400 cycle modulation on it. About 1155 pm the strong
 carrier at 540 went off and faint one at 530 kc also
 disappeared. They are same station. Only a weak
 carrier left at 540 kc.

R.F. noise 1.2 divisions with attenuator at 0DB.

Sensitivity 0.39 μ v for 10 divisions.

R.F. noise 0.8 division with attenuator 3DB.

Sensitivity 0.54 μ v for 10 divisions.

June 1st. BC carriers as follows. MN-1220a

- 41 clear 69 medium
- 45 weak + fading 73 very strong
- 48 medium to strong 76.5 medium
- 51 nearly clear. Only
mopray chatter from
adjacent channels 80.3 strong
- 84 medium to weak
- 88 strong + warble
- 91.7 medium

Thick overcast, calm.

3/6/57 Arrive 1115am. Everything going.
R.F. noise 0.1 divisions with attenuator at 3DB.
Sensitivity 1.80uv for 10 divisions.

Check batteries	A cells	1.90V	1.88V	1.89V
Vibrator 0.82 vts	Grants	1100	1085	1095
	Number	1	3	2

B Cells	29 1/2	24	24	23 1/2	24	24 1/2	147V total
Number	7	13	12	11	10	8	

Replaced A cells. Now	2.08V	2.08	2.08	
	Grants	1285	1295	1290
	Number	6	4	5

These need water next change
Now R.F. noise 1.4 divisions with attenuator at 6DB
Sensitivity 0.40uv for 10 divisions.

Checked time at noon. Clock 5 min slow. Corrected it.
Advanced regulator 1/2 division. Wound 63 turns to tight.
By 138p sounds of precip static beginning. Some weak screeches.

Relay batteries 12.2V open, 11.6V closed circuit.

One bad cell. Replaced it. now
Relay batteries 12.8 open, 12.6V closed.

Dye down to 5/16". Took whole inking system apart and
cleaned. Still some slime and dried ink came out. Put together
and filled to 13/32" with strained ink. Also reduced pressure of
spring holding pen down. Now vibrates well with 0.55 volt.

Considerable scratching noises most of day; but at 230p got
very quiet. Only a smooth hiss with faint snaps. This is true
with beam tipped both north & south of zenith. The smooth
background is from north today. Best results on #2 & #3 now.
Some of the scratching has a more or less cyclic character like
a grinder or mill operation.

307p. Very quiet. Only smooth hiss
Set attenuator to 6DB. #125 +

Thick overcast, Calm

6/6/57. Arrive 1102 am. Everything going
R.F. noise 0.5 division with attenuator at 6 DB
Sensitivity 0.76 uv for 10 divisions.

Check batteries
A cells 2.04V 2.03V 2.04V
Vibrator 0.52 watts
Grainy 1225 1225 1230
Number 6 4 5

B cells 28 1/2 29 29 22 1/2 23 1/2 29 194 1/2 volts
Number 7 13 12 11 10 8 total.
Interchange position #7 & #11 cells; all cells 1.90-1.96V

1130 V1H on 512 kc could be heard working stations.
Today quite a lot of scratching & drizzling noise.
On #4 is the usual large amount of 50w power line noise.
Tup down to 1/4". Filled to 3/8".
Checked time at noon. Clock 7 min fast. Corrected it.
Put regulator back 1/3 division.

132p Shut down 520 KC receiver.
342p Started recording at 186.5 KC. Dial 56 & 70
Attenuator 33 DB. Antennas #1 & #4 normal
Listening showed only weak & intermittent atmospherics
No carrier at 186.5 kc. Only signal which could be
heard is very strong carrier at 200 KC with about
500 cps of frequency modulation over a second.

402p-408 ran on 50.2 dummy to check stability of
receiver. The small roughness in trace seems to be
caused by fluctuation volt age in receiver. Tried
tapping at various places, no effect.

530p Atmospherics becoming more frequent.

Left 535pm Return 935p

- 935- listend
- 25 Medium carrier with fast wobble or flutter, some fading
- 42 Very weak carrier fades out frequently.
- 69 Weak carrier with fading, up to strong at times.
- 92-98 Very strong carrier with 2 cps modulation at 500 cps

6/6/57 Continued. BFO at 30

The stations at 25, 42, 69 with all reactance limiting straight at times. However, between 42 & 69 seems to be clean. Also clean below 20 and above 74 up to 90

Put attenuator to 30DB, Antennas #1 & #4 normal, Antenna dial 39, Receiver dial 55.

Only 4 ft of old chart paper left. Put on new roll. Took old roll to town.

1107 found carrier coming in at 53 (173 KC)

Changed dial to 6 on antenna, 12 revs (about 145 KC)

Attenuator to 27DB. (Antennas pretty far out of tune)

Left 11 15 pm

7/6/57 Arrive 1140am Everything going.

Thin high overcast. Weak sun.

Receiver sound merely a smooth hiss with out atmospheric at 6 & 12 on dial. This is because antennas far mistuned.

At 56 & 70 on dial the atmospheric begins to appear weakly and very intermittent.

Frequency check using signal generator.

Dial	KC	Dial	KC	Grid Dip Meter Main dial 10 Auxiliary dial 6
12	146	12	145 1/2	
25	155	26 1/2	155	
42	165 1/2	39	164	
53	174 1/2	53 1/2	173	
69	186	67 1/2	182	
BFO at 30		82	191	
		93 1/2	200	
		BFO at 25		

Returned #1 & #4 antennas to 145 KC. Grid Dip Meter 4.5, Antenna dial 4.5, Receiver dial 10.0, Put Attenuator 27DB. Listening gave smooth hiss background with weak atmospheric as some occasional sparking or spitting noise.

Stage R.F. Mix I.F. I.F. B + 1430

Scattered clouds + sunny

8/6/57 Arrive 1000 am. Everything going
sounds in focus a weak smooth hiss plus occasional weak
atmospherics.

1030a - 300p ran on #1 antenna alone while moved
center #4 antenna 400 ft westward.

125p - 128 Substantial drop in background hiss.
The sound before & after both a smooth continuum. I
happened to be listening at the time from 120p - 130p
Occasional atmospherics at all times. Gradually recovered
to 140 pm. Same smooth hiss as before 125pm.

Check batteries

Cells 2.01v 1.98v 1.99v

Vibrator 0.54v

Gravity 1210 1180 1180

Number 6 4 5

Batts 22 1/2 23 23 24 23 1/2 23 141v total

Number 11 13 12 7 10 8

Stage R.F. Mix I.F. I.F. Bias 605V

Control 1.95v 1.55v 2.55v 2.70v

Filament 2.11v 2.12v 2.11v 2.04v

at 200pm time there was no audible change in hiss
when relay changed to dummy and vice versa. While
on dummy the atmospherics were absent. Thus the hiss
is in receiver and variation noted 125-128p is merely
receiver instability. There seems to be some temperature
effects.

Tub down to 5/32". Filled to 1/32"

415 pm. Hiss noise feebler. More atmospherics

Left 420pm

#4 antenna in old position had east end only 25 ft above
slope of hill and 175 ft from post. The antenna wire
came within about 8 ft from a tree limb at about
100 ft from end of antenna.

Thick overcast, No sun. Few tropospheric

11/6/57 Arrive 11:15 am. Everything going. Very quiet.
Only occasional weak atmospheric once a second or less.
Smooth hiss in focus. Mostly receiver noise.

R.F. noise 5.0 divisions attenuator 27DB

Sensitivity 2.5 μ v for 10 divisions.

Examination of day records shows set stability has improved with use.

Time checked time. Clock about 2 min slow. Corrected it.

Wound clock 65 turns to tight.

Check batteries A cells 1.98V 1.89V 1.90V

Vibrator 0.49V Gravity 1175 1095 1100

Number 6 4 5

B batts 22 1/2 V 22 22 23 22 1/2 22V 138V total

Gravity <1125 <1135 <1135 1165 <1160 <1210
<1135 <1125 1100 1170 1140 <1135 Three run since

Number 11 13 12 7 10 8 26 May, 16 days.

All these batteries need water

Replaced all batteries New A cells 2.10V 2.10 2.10

Vibrator 0.61V Gravity 1260 1265 1265

Number 1 3 2

C batts 24 1/2 24 1/2 24 1/2 24 1/2 24 1/2 24 1/2 15 1/2 V total

Gravity 1270 1275 1280 1250 1275 1265
1230 1280 1285 1280 1285 1290

Number 1 2 4 6 5 9

Shut 145 KC receiver down, 1140 am

Started 520 KC receiver up, 202 pm

R.F. noise 0.8 division with attenuator at 6DB

Sensitivity 0.57 μ v for 10 divisions.

Antennas #2 & #3 used normal. Antennas #1 & #4 unused and
tuned to 145 KC.

Antenna dial 78, Receiver dial 37.

Very quiet. Smooth hiss from antenna. Few atmospheric

No detectable man made noises. Occasional snap.

Cleaning + sunning by 2 pm.

2nd down to 3/16". Filled to 7/16". Pen still inking well. Last
cleared on 3rd June.

Took 145 KC set to town.

Cold + windy. Occasional sun with misty clouds.

14 June 57 Arrive 1145am Everything going
R.F. noise 0.3 divisions with attenuator at 80DB.
Sensitivity 0.76uv for 10 divisions.
Clock 3 1/2 min fast at noon. Corrected it.

Check batteries									
Vibrator 0160 watts									
B batts	24 1/2	24 1/2	24 1/2	24	24	24	199 1/2 total		
Number	1	2	4	6	5	9			
A cells	2.01V	2.01V	2.01V						
Gravity	1215	1210	1215						
Number	1	3	2						

Made variety of tests with different antennas. Each of
the four alone gives substantially the same result.
Thus each is reasonably balanced to ground. Obviously
the trouble with #4 was that east end was much too
close to hill. When center wire moved 400 ft west
on 8/6/57 this balanced it up. However, now the
center is 400 ft out of line with others. Consequently 384 ft
must be added to each of others to make delay equal.
When this is done repeatable results are secured.

Considerable scratchy atmospherics today, but a good smooth
steady hiss below the atmospherics. Some machine noise
153-209pm, Very quiet 209-213p. It seems that the
outside antennas (#1 + #4) now both pickup slightly
less than inside antennas (#2 + #3). However in pairs
#2 + #3 give a lower level than #1 + #2 or #3 + #4. This
is probably due to shielding effect of outside wires
upon the inside pair.

4:12 pm Shut 520 kc set down.

5:01 pm Started 195 kc set up.

Antenna dial 10, Set dial 12, Attenuator 18DB.

Stage R.F., Mix, 1st I.F., 2nd I.F. B+ = 199 1/2

Controls 3.1V 1.8 2.7 3.0 Bias = +6

14 June Continued.

935pm Returned. Found pen hard over at full scale. Changed attenuator from 18 to 24DB to bring pen on scale.

947-1002pm listened. Heard various of previous carriers plus a very strong one at 24. Carrier at 100 also very strong now. Weaker ones at 72 and 81. Carrier at 0 is gone however. Apparently the variable carrier at 100 comes from a medium distance as it is weaker during the day. There is no carrier near 12 where I'm recording however. The sounds between atmospherics are bursts of hiss like "pish-pish".

1002p put attenuator to 27DB and let run.

Ink down to $7/32$ ". Filled to $7/16$ "

By the large, atmospherics seem to be worse at 145 KC than 520 KC. However the envelope of burst of activity seems to be a series of swells and ripples.

With attenuator at 24DB, R.F. noise 0.3 division
Sensitivity 0.57 μ v for 10 divisions. Antenna 7, Rcvr 12.
Freq. about 146 KC.

Carrier at 0 back by 1103pm, B by 1107 it was running dots and had risen to strong at times. DLQ near 95 could still be heard. However region from 6 to 18 on dial seems clear.

Put attenuator to 24DB.

Left 1245 am 15 June 57

16/6/57 Arrive 3pm. Everything going
Clear & sunny, quite warm. People here since 230p.

R.F. noise 0.3 divisions with attenuator at 24 DB.

Sensitivity 0.58 μ v for 10 divisions

Change attenuator to 30DB. Now R.F. noise 0.1 division

Sensitivity 1.20 μ v for 10 divisions

Check batteries	A cells	2.00	1.98	1.98
Vibrator 0.60 watts	Gnaints	1190	1170	1175
	Number	1	3	2

B cells	24 1/2	24	24	24	24	24	147 1/2 total
Number	1	2	4	6	5	9	

Stage	R.F.	Max	I.F.	I.F.
Cathode	3.05v	1.65v	2.55v	2.90v
A batt	2.04v	2.08v	2.08v	2.00v
Gnaints	1260	1265	1260	1225

2k down to "1/32". Left it that way.
Daytime sounds at 145 KC the same as 520. A smooth hiss background with rattle atmospheric and some feeble power line noises.

12 on receiver dial is same as 5.0 on auxiliary dial of grid dip meter. Thus both antennas are properly tuned to working frequency.

Left about 445pm

17/6/57. Arrive 11 am. Everything going.
 R.F. noise 0.1 divisions with attenuator at 30DB
 Sensitivity 1.3 μ v for 10 divisions

Check batteries		Acella	2.00	1.96	1.97
Vibrator	0.58	Gravity	1185	1150	1165
		Number	1	3	2

Change Acella		New Acella	1.97	2.00	2.15
		Gravity	1165	1185	1225
		Number	2	1	6

Stage	R.F.	Mix	I.F.	I.F.
Cathode	3.0	1.6	2.5	2.9
A latt.	2.03	2.07	2.07	1.99.

Left 1145 am

Partly overcast, mostly sunny

19/6/57 Arrive 1130 am Everything going.
 R.F. noise 0.1 division with attenuator 30DB
 Sensitivity 1.5 μ v for 10 divisions.

Clock $2\frac{1}{2}$ min slow by good watch at noon. Corrected it. Wound 63 turns to tight.

Ink down to $\frac{1}{4}$ " Took inkling system apart & cleaned it (last time 3/6/57). Filled to $1\frac{3}{32}$ " with new ink.

Cut off chart & took to town.

Check batteries		Acella	1.95V	1.94V	2.04V
Vibrator	0.57V	Gravity	1140	1140	1215
		Number	2	1	6

B batts	24	24	23 $\frac{1}{2}$	23 $\frac{1}{2}$	23	23 $\frac{1}{2}$	145V total
Number	1	2	4	6	5	9	Bias +6.05

Stage	R.F.	Mix	I.F.	I.F.
Cathode	2.95V	1.55	2.45	2.75

19 June 1957 continued

Change A battery around.

Cells	2.04v	2.10v	2.11v
Gravities	1215	1265	1260
Number	6	5	4

Examination of past records shows that interference is being encountered in early evening, particularly the last couple of notes. When interference is off it seems like a gradual rise from late evening to a wax near 3am and then a gradual decline to past dawn. Perhaps a bit higher frequency would be better.

Calibration using signal Generator + BFO at 95

Freq	140	146	148	155	164	173	182	191	200
Dial	0	12	15	26	39	52	67	82	94

Ant 7, Rear 12, Atten 30, Δ 1 + #4 ant. 1.5u for 10 dia

Left 5pm

Detour 930pm. Thick overcast, few drops of rain. Very black. Atmosphere strong. Sounds are occasional "pish-pish" in force. Mostly quiet due to limiting. Frequently the pen may be seen to drop before any sound is heard. These small minimums occur at start of a low period. 945-1002 plectured. + 1015-1030p.

The carrier at 26 is strong enough to hold set at limit most of time. Carrier at 0 is present but intermittent.

A further carrier may be heard at times near 16 or 17.

It fades in & out and is usually quite weak.

This is probably the objectionable one heard last few nights prior to MN, $17 = 149 \text{ KC} + 10 = 140 \text{ KC}$. By experiment it is found the midway point on slope of filter curve is about 7 on dial = 143 KC.

Other noises strong tonight probably because of rain at

Thick clouds, very damp & rain last two days.

22 June 1957 arrive 1030 pm, Everything going.
R.F. noise .05 division with attenuator at 30DB.
Sensitivity 1.7 μ s for 10 divisions.

Check batteries	A cell	2.00V	2.02	2.03V			
Vibrator 0.48 volt	Grainths	1180	1210	1205			
	Number	6	5	4			
B batts	24	23 1/2	23	20 1/2	20	22 1/2	136V total
Number	1	2	7	6	5	9	6.05V bias
	* 6 cell 0.1V, 1070, * 8 cell 0.9V, 1050, * 9 cell 0.1V, 1050			* 5 cell - 0.6V, dry			

Stage	R.F.	Mix	I.F.	I.F.	changed B batts around.
Bias	2.55	1.25	2.15	2.45	
A cell	1.98	2.02	2.02	1.94	
Grainths	1220	1230	1215	<1230	low water
Number	1	2	3	4	

after changing B batteries

Bias	2.90	1.50	2.45	2.75
------	------	------	------	------

Ink down to 5/16". Left that way.

Check clock against good watch at 11 am, clock 3 1/2 min fast.
Corrected it by stopping clock 3 1/2 min.
Relay batteries 12.9V open, 12.5V closed.

Note! Volt meter was banged around in car a bit between changing the batteries. It now reads 134 in place of 136V. Perhaps other batteries running down further after all.

Revised B batts	24	23 1/2	23	24 1/2	24 1/2	22 1/2	144 V total
Number	1	2	4	3	8	9	Bias 6.05V

Now R.F. noise .05 division with attenuator 30DB

Sensitivity 1.33 μ s for 10 divisions

Vibrator 0.53 volts. Raised to 0.70V

Put #6 battery on charge & took #5 to town for filling

Put a total of 1230ft delay in north lead & reversed the

#1 turn box. This gives R1230N. Atmospheric getting

Pea soup fog. Visibility 50 yds.

24/6/57 arrives 9:30 am. Thick load sleet on all antennas. Feeders have about 3-4 feet slack in each. Ice melted by 1 pm & system back to normal. Set dead due to dead A cell on 2nd I.F. stage. Replaced with all new A cells. Now R.F. noise about 0.1 division with attenuator 30DB. Sensitivity 1.1 μ v for 10 divisions.

HOBART: TUESDAY, JUNE 25, 1957

Stage	R.F.	Mixer	I.F.	I.F.
Bias	2.60	1.25	2.25	2.55
A cell	2.12	2.11	2.09	2.13
Gravities	1300	1295	1300	1295
Number	5	6	7	8

Check clock against watch at 1 pm. Exact

COLDEST NIGHT FOR TWO YEARS

SUNDAY night was the coldest Hobart has known for two years. The ground temperature was 26.1 degrees—nearly six degrees of frost—the Weather Bureau said yesterday. Even yesterday's bright sunshine failed to push the thermometer in Hobart above 47.4 degrees, or 5.4 degrees below normal. The State's lowest reading was 22 degrees, the bureau said. Today is expected to be cloudy but mild, with some rain in the West.

Check batteries A cells
Gravities
Number

B batte	24	23 1/2	23	24 1/2	24
Number	1	2	4	3	3

cell #2 = 0.1V, 1080; #11 = -0.1, < 1100; #12 = +0.1V, 1100

Changed B batteries around. Now.

B batte	25 1/2	23 1/2	23	24 1/2	24	24	146v total
Number	6	2	4	3	8	1	Bias + 6.05V
Stage	R.F.	Mixer	I.F.	I.F.			
Bias	3.00	1.55	2.50	2.90			

Now R.F. noise 0.1 division with attenu at 30DB. Sensitivity 1.1 μ v for 10 divisions.

Apparently very small change with B+ but still some with filament voltage. Ink down to 7/32". Filled to 3/8"

Left 5:30 p.m.
Returned 8:45 p.m. More freezing fog. Ice on lower down leads.
Checked sensitivity & till 11 p.m.

Clear & sunny. Few scattered clouds on blue sky. Windy

27/6/57 arrive 9:45 am. Everything going.

R.F. noise 0.05 divisions with attenuator 30DB

Sensitivity 2.0 μ v for 10 divisions

Loss in gain mainly in B.C. amplifier.

Check clock against watch set by GPO. Clock 2 1/2 min slow at 1 PM. Corrected it. Wound clock 65 turns to tight. By 1 pm black clouds coming up in West. Light rain 1:40 P

Check batteries	A cells	1.92V	1.88V	1.89V
Vibrator 0.59V	Gravity	1125	1095	1095
	Number	6	5	4

B batts	24 1/2	22	18	17 1/2	23 1/2	23	131V total
Gravity	1220	1100	1100	1200	<1115	1190	Bias + 6.05V
Number	6	2	4	3	8	1	Ran 16 days since 11th

Cell #2 = -0.2V, <1125; #8 = -0.2V, 1180; #10 = -0.2V, 1200
 Cell #11 = 0.1V, 1050; #12 = 0.1V, <1050

Stage	R.F.	Mixer	I.F.	I.F.
Bias	2.45	1.10	2.10	2.45
A cell	2.08V	2.07	2.06	2.10
Gravity	1270	1265	1265	1280
Number	5	6	7	8
Bias	3.20	1.90	2.75	3.10

after changing B batts

Ink down to 1/4". Filled to 3/8".

Change all batteries	Now A cells	2.10V	2.10	2.10
Vibrator 0.80V	Gravity	1270	1270	1270
Reduced to 0.70V	Number	2	3	1

B batts	25V	25	25	25	25	25	154V total
Gravity	1280	1270	1290	1280	1300	1300	Bias + 6.05V
Number	7	11	12	13	25	9	

Sensitivity now 1.27 μ v for 10 divisions

Cut off chart paper & took to town.

4000-4150 listened. Frying noise bad. Still drizzle rain

22 on dial code VHR/3/5/6/7 & traffic Thick clouds

51 " " carrier

100 " " carrier with 500 cps modulation varying in a

Thick overcast & wet. Been raining last two nights

29/6/57 Arrive 11am Everything Going
R.F. noise 0.1 divisions Small showers & black
Sensitivity 1.27 μ v. clouds 2-3pm

Check batteries	A cells			2.07V	2.04V	2.04V
Vibrator 0.68V	Granites			1260	1245V	1245V
	Number			2	3	1
B batts 2.5V	24 1/2V	24 1/2V	24 1/2V	24 1/2V	25V	152V total
Number 7	11	12	13	5	9	6.05V Bias.

Stage	R.F.	Mix	I.F.	I.F.
Cascade	3.00V	1.85V	2.60V	3.05V
A cell	2.09V	2.06V	2.04V	2.09V
Granites	1265V	1260	1250	1260
Number	5	6	7	8

2nd down to 5/16". Filled to 7/16"
Check clock as 1/2 min fast at 1pm.
Put antennas to R1152N

Left about 450pm.

Rained last two nights, quite wet.

2 July 57 Arrive 1030 am Everything going.
Partly overcast. Sunny at times.

R.F. noise division, Sensitivity μ v. Attenu 30DB.
Clock 3 min fast at 11am. Corrected it by stopping 3min.

Check batteries	A cells			2.04V	1.98	1.98
Vibrator 0.63V	Granites			1230	1180	1170
	Number			2	3	1
B batts 24 1/2	24 1/2	24	24	24	24 1/2	150V total
Number 7	11	12	13	5	9	bias

Stage	R.F.	Mix	I.F.	I.F.
-------	------	-----	------	------

2 July 57 Continued.

Phase tests show sky evenly illuminated from R 768S to R 1536N. No significant variations for any change of delays. However when #1 antenna put to normal there was a marked drop and smoother trace, apparently quite a lot of low angle noise is coming in. No change when beam swung from 384N to Nov to 384S.

Ink down to $5\frac{1}{16}$ " Filled to $7\frac{1}{16}$ ".

According to Bryan Hall of PMG \backslash $144^{\circ}57'E, 35^{\circ}34'S$
DLQ is 204 KC at Deniliquin, N.S.W. 100 watts, ^{air} beacon
VHL is 150 KC at Conawara, North Territory, 1.2 KW
Marine Coast Station.

Left 240pm. Antennas normal

Returned 930pm. Everything going. Cold + clear
Bright milky way.

Sounds a near continuous hiss. Weak atmospheric rarely
Left 945pm. go to limiting.

Aurora first seen in south about 10pm from main road below Depot. An arc, green white about 5' above southern horizon on lower border. Top about 10° . Whole area from top to horizon filled with a glow. at times from 10-1020pm a few faint rays would rise from horizon to about 30° up or last for a minute or less.

Returned at 1045pm. Pen just at top of scale. Sounds the same as usual "Pish-Pish" but set at limiting much of time. After 11pm the set had more steady sound usual below limiting. The weather remained very clear & cloudless all evening.

2 July Continued.

1135p Arc reappeared & many rays going from arc up to 30° to 40° at times. Bottom of rays in small curtains with considerable motion showing change of $3-5^{\circ}$ in as many seconds or less. Curtains quite bright but not lasting more than $\frac{1}{2}$ minute at a time.

1145 Blood red patch 5° dip appears for 1 minute about 35° above horizon west of south below the southern cross.

1150-1153 Several ^{red} patches appear in a line about 10° above the green arc. Rather diffuse and do not join but go from SW horizon to SE horizon.

1155 Mod. bright rays up to 45° at times. Last $\frac{1}{2}$ min or less.

1157p Blood red patch above arc about 10° high to SE. 1 minute only.

1210a Aurora dimming out. Irregular diffuse glow with few patches or remains of ray bases.

1215a Contracted to two small patches 10° up in south and near SE horizon.

Left 1220a Aurora nearly dead.

See rest of aurora observations to 2am on separate sheet.

5 July 57 arrive 1120am Everything going. Bright & sunny with blue sky & few small wisps of cirrus cloud. Near calm. Fairly dry as no rain past couple days.

R.F. noise 0.1 division, sensitivity $1.43 \mu\text{v}$, attenu 30DB.

Clock $5\frac{1}{2}$ min slow at 2pm by check against watch. Corrected clock at 3pm & wound 64 turns to tight. Ink down to $\frac{1}{32}$ ". Left that way.

Made antenna test set of afternoon using large loading coils with iron cores in sliders.

5 July continued.

Checked Batteries	A cells.		2.00	1.88	1.87		
Vibrator .0.61V	Gravity		1195	1090	1090		
	Number		2	3	1		
B batts	24 1/2	24	24	23 1/2	23 1/2	24	146V Total.
Number	7	11	12	13	5	9	6.05 Bias
Stage	R.F.	Max	I.F.	I.F.			
Cathode	2.95	1.55	2.40	2.85			
A cell	2.02	1.98	1.97	2.04			
Gravity	1220	1200	1205	1225			
Number	5	6	7	8			

Replace A cells.	Now A cells	2.10	2.10	2.11
Vibrator 0.62V	Gravity	1270	1265	1265
	Number	4	5	6

also interchange position B batts #7 & #13
 Now. R.F. noise 0.1 div; Sensitivity 1.43 μ w, atten 30DB
 There is no change in performance when A cells changed on D.C. amplifier.

Put antennas to RT68N
 Left 7:15 pm. Clear & cold. Very few clouds. Half moon. No sign of aurora.

8 July 57 Arrive 11:40 am. Everything going clear & sunny. Few cirrus clouds to north. Blue sky. Calm. Checked clock at noon. 2 3/4 min. fast. Corrected by stopping for 2 3/4 min.

R.F. noise	0.05 division	Sensitivity	1.65 μ w	atten	30DB
Check batteries	A cells		2.07V	2.02	2.03V
Vibrator 0.59V	Gravity		1250	1220	1220
	Number		4	5	6

B batts	24	23 1/2	24	24 1/2	23	23	144V Total
Number	13	11	12	7	5	9	Bias

8 July Continued.

Stage	R.F.	Mix	1.F.	1.F.	These cells have
Cathode	2.75	1.45	2.20	2.65	run since 24/6/57
A cell	1.98	1.43	1.93	2.00	or 14 days. Maybe
Gravities	1210	1180	1185	1215	good for couple days more.
Number	5	6	7	8	

Zip down to $\frac{3}{32}$ ". Left that way
 Cathode 2.90 1.50 2.40 2.85 after charge #10 for 5¹³ batteries

Now R.F. noise 0.05 div. Sensitivity 1.65 μ v, atten 30 dB.

Phasing tests today showed sky to be evenly illuminated from R768S to R1152N. A very slight drop at R1536N. Put antennas to R768S

Left 3:45 pm

Returned 9:15 pm. Clear + cold. Few cirrus clouds
 Bright moon + stars.

Continuing tests 9:27p - 9:48P

0 code str of medium strength fades in + out

8 Perhaps very faint code at times.

24 Strong carrier

31 Weak carrier, fades badly.

43 Weak carrier

Phasing tests seem to indicate the energy is coming in from near zenith tonight, perhaps a bit N of E.

Put antennas to normal. Definite reduction in atmospheric noise.

Left 11:05 pm Freezing frost fog settling in valley.

10 July 57 Arrive 1:50 pm. Everything going
 Thick clouds over most of sky. Sunny comes thru weakly at times.

Check clock at 2 pm. $\frac{1}{4}$ min slow. Left that way.

R.F. noise 0.05 div, Sensitivity 1.75 μ v, atten 30 DB.

check batteries A cells 2.00 2.00 1.98V

Vibrator 0.60 Gravities 1190 1200 1170

Number 5 4 6

Batts 23 22 1/2 23 24 24 1/2 22 192 1/2 total

10 July continued.

Stage	R.F.	Mix	I.F.	I.F.	} These have run since 24/6/57 or 16 days.
Cathode	2.80	1.40	2.20	2.70	
A cell	1.96	1.91	1.92	2.00	
Gravities	1190	1160	1165	1200	
Number	5	6	7	8	

Phasing tests show maximum near 768N. There is slightly less at 1536N and markedly less at Nor, and slightly still less to 768S

Changed A batteries Now.

Stage	R.F.	Mix	I.F.	I.F.
Cathode	2.90	1.45	2.55	2.75
A cell	2.17	2.18	2.17	2.13
Gravities	1310	Low water	1305	1300
Number	1	2	3	4

Now R.F. noise 0.1 division, Sensitivity 1.25 μ v, atten 30DB. There is still some change of gain with filament voltage. Apparently the filaments should be regulated with a barretter. Put antennas to R 768S

Left 545 pm.

Retique 905 pm Solid but thin overcast. Position of moon barely visible. Quite bright as lot of diffuse light from clouds.

921-949p Listened

0 very weak carriers, also moderate code at times

7 clear channel

18-38 several very strong carriers

43, 46, 52, 57, 64, 71, 80, weak carriers

100 beacon with 1000 cps tone plus added 500 cps keying "LH"

91 "ANO" repeated every 7 sec, 500 cps code. Repeated once every 8 seconds.

Tonite a quite low level, only a bit above daylight.

At 922, 954. No carriers there.

Thick overcast, Probably been raining slightly earlier

13 July 57 Arrive 130 pm Everything going.
Zero has drifted quite a way due to weak B batteries.
R.F. noise 0.0 div., Sensitivity 2.85 μ v, Att'n 30DB.
Clock 6 min slow at 2pm.

Check batteries
Vibrator 0.45V

A cells	1.93V	1.94	1.92
Gravity	1120	1130	1110
Number	6	4	5

B batts	23	22	20	23	24	10 1/2	125 1/2	Total
Gravity	1135	1075	1110	1165	1220	<1170		
Number	13	11	12	7	10	9	6.05V bias	

all #11 = -0.3V, #12 = 1.75V
cells #2, 5, 9, 10, 11, 12 all show negative

Stage	R.F.	Mix	I.F.	I.F.
Cathode	2.30	0.90	1.95	2.25
A cell	2.14	2.15	2.14	2.10
Gravity	1300	1305	1300	1290
Number	1	2	3	4
Cathode	3.15	1.30	2.80	3.05

after replacing B battery

Replace A & B batts. Now.

A cells	2.10	2.10	2.10
Gravity	1265	1275	1270
Number	2	3	1

Vibrator 0.71V.
Reduced to 0.60V

B batts	24	25	24 1/2	25	25	25V	151 1/2 V total
Gravity	1220	1260	1290	1285	1300	1270	
Number	10	8	1	2	4	6	6.05V bias.

Now R.F. noise 0.05 div., Sensitivity 1.95 μ v, Att'n 30DB.
Apparently something else is weakening in the receiver.

It seems probably is mixer tube losing emission, judging by ^{voltage} cathode

3 pm Black rain clouds gathering in north.

Corrected clock at . . . Wound 64 turns to tight.
Tub down to 3/8". Left that way.

Phasing tests show energy is coming from north today.
Cut off chart paper & took to town. Only 4 left.

Put on new roll.

Thick Overcast. Been raining, especially in morn.

15 July 57. Arrive 230pm. Everything going but zero drifted up a bit

R.F., noise 0.1 div., Sensitivity 1.05 μ , other 27DB

Clock 2 min fast at 5pm. Corrected by stepping 2 mins.

Checked Batteries

A cells. 2.09 2.05 2.05

Vibrator 0.50V

Gravities

Increased to 0.60V

Number 2 3 1

Batts 24 25 24 $\frac{1}{2}$ 25 24 $\frac{1}{2}$ 24 $\frac{1}{2}$ 150 $\frac{1}{2}$ Total.

Number 10 8 1 2 4 6 6.05 bias

Interchanged position A cells #2 & #3

Stage R.F. Mix I.F. I.F.

Cathode 3.00 1.70 2.65 3.00

A cell 2.11 2.13 2.13 2.09

Gravities

Number. 1 2 3 4

Ink down to 5/16". Filled to 7/16". Pen system should be cleaned.

Very strong atmospheric at 5pm for this time of day.

Receiver trouble as too high zero. Shut down.

Left 530pm. Began to drizzle at 6PM. Continued at times

Return 910pm. for at least past 11PM.

Found that diodes on input of first I.F. had gone bad and were causing a lot of random noise voltage to appear at 1st I.F. grid. This caused the abnormal high zero. It seems to have started about 8pm on 13/7/57 in a swell way and become worse at 7pm on 14/7/57. Also there was a negative resistance effect which upset the response of band pass filter and caused a spurious peak near 150KC. It seems likely that this effect has been getting worse over past couple of weeks. Thus a lot of the high variable background which disappears at dawn may really be interference at 150 KC.

Disconnected the diode limiter from grid of 1st I.F.

Made some listening tests about 950pm. Heard carrier at 0

Thin overcast. Some sun leaking thru. Wet.

18 July 57 Arrive 1110am. No data as pen plugged on 16th. Cleaned pen system for first time since 19 June 57. Filled to $15\frac{1}{32}$ " with strained ink.

R.F. noise 0.2 div., Sensitivity 0.83 μ v, Atten 27DB
Changed Atten to 30DB, R.F. noise 0.1 div, Sensitivity 1.27 μ v
Interchange position of A cells #1 & #3 now.

Check batteries

A cells 1.99V 2.00 2.01

Vibrator 0.55V

Gravity 1175 1195 1200

Increased to 0.60V

Number 1 2 3

B cells 24 24 1/2 24 24 24 24 147 1/2 V total

Number 10 8 1 2 4 6 6.05 bias

Stage R.F. Mix I.F. I.F.

Cartade 2.95 1.55 2.55 2.90

A cell 2.07 2.10 2.10 2.06

Gravity 1270 1285 1260 1255

Number 1 2 3 4

Clock 2 1/2 min fast at 1pm. Stopped 2 1/2 min to correct it

Around 120pm the sky seemed remarkably bright to north. However by 140pm it was less bright and by 215 pm only slightly more bright. By 430 pm only very faint extra brightness between 768N + 1152N.

Left 435 pm still cloudy

Return 910 pm very clear. Bright stars down to horizon

Listened 922p - 940p.

0.0 weak to moderate carrier 79 moderate carrier plus 900 μ v mod.

16.5 moderate to strong carrier, faded by 935p.

27 very strong carrier

44 weak to moderate carrier

52 moderate carrier

Region 5-12 seems quiet

Reset dial to 8 1/2 on set

18 July continued

These fluctuations such as at 948P are real. There is no carrier present, also no aurora. Very clear down to southern horizon. During listening period a similar rise occurred about 930p when for 1/2 minute or so the background rose up to saturation. Definitely no carrier present, even feeble. Same result on examination of rise at 1012 + 1014p. The rises at 1017 + 1022p were sufficiently strong to drown out carrier at 0 and nearly swamp carrier at 16.5.

Left dial at 3, 8 1/2, atten 30DB, antennas normal.

Left 1035p. Still very clear + no aurora.

One seen on way back 1040-1050, very low in south.

20 July 57 arrive 1015am, Everything going bright + sunny with clear blue sky all over. Bit of thin cirrus far north near horizon. Fog to north in Jordan valley and beyond.

11am. Check clock. 1 min slow, corrected it

R.F. noise 0.1 div, Sensitivity 1.30 uv, atten 30DB

Check batteries A cells 1.97V 1.96 1.97

Vibrator 0.58V Gravity 1155 1150 1155

Number 1 2 3

B cells 24 24 24 24 23 1/2 23 1/2 145V total.

Number 10 8 1 2 4 6 6.05V bias

Stage R.F. Mix I.F. I.F.

Coils 2.90 1.50 2.95 2.80

A cell 2.09 2.09 2.09 2.04

Gravity 1250 1265 1255 1240

Number 1 2 3 4

Change A cells. Now Now 2.11 2.11 2.11

Vibrator 0.58V Gravity 1265 1270 1275

Vibrator Number 5 4 6

R.F. noise 0.1 div, Sensitivity 1.30 uv, atten 30DB

20th July.

Return 900pm. Still clear, no moon, No aurora checked cathode bias under present moderate atmospheric. The first three are steady as a rock. The last I.F. shows very faint upward movements or quivers slightly. Perhaps once a minute it may rise 0.1 volts maximum. Obviously this is the only stage which needs a limiter on the grid.

Start to make phasing tests. Less energy at 768S than normal. At 942P fluctuations begin, so phasing tests not possible. Fluctuations stop about 958p but begin again at 1012p. There is ^{markedly} more energy at 768N than normal. Listened from time to time with BFO and verified that no carrier is present on peaks of fluctuations. From difference in record during period 1010 to 1032p compared to before and after it is evident that the fluctuations come in from north also.

Fluctuations too bad for useful phasing tests. Put antennas to normal. Pile 3 + 8.5.

Left 1035pm Still clear, cold & no aurora.

23rd July, 1957 Arrive 950 am Everything going cloudy & cold & wet. Fog in valley & to north, No sun. Clock 5 min fast at 10 am. Corrected by stopping 5 min. R.F. noise 0.1 div, Sensitivity 1.25 uv. Att'n 30DB.

Check batteries	A cells	2,08	2,03	2,04
Vibrator 0.59V	Gravity	1240	1215	1220
	Number	5	4	6
B batts 24 24 23		23 1/2	23	23
Number 10 - 8 - 1		2	4	6
Inter change A batts #5 + #4				143V total bias

23rd July continued

Stage	R.F.	Mix	I.F.	I.F.
Cathode	2.75	1.40	2.40	2.60
A cell	2.07	2.07	2.06	2.01
Gravity	1240	<1245	1235	1225
Number	1	2	3	4

Phasing tests show energy coming in from north at about 768N.

Put antennas to R768N

Cut off chart and took to town.

Left 1120am

Fog cleared by 11am

27 July 57 Clear blue sky & calm. Fog in valley. Arrive 940am, everything going but batteries weak.

Clock about 3 min fast at 10am. Corrected at 740pm.

Wound clock 56 turns to tight.

R.F. noise 0.1 div. Sensitivity 1.32 μ v at 30DB.

Today took down antennas #2 & #3

Tension #2 = 600#, Tension #3 = 800#

Two rings of tape on west end. One ring of tape on east end.

Check batteries	A cells	1.99V	1.97V	1.91V
Vibrator .0.49V	Gravity	1180	1160	1100
	Number	4	5	6

B batte	24	22 1/2	21 1/2	20	17 1/2	22	130V Total.
Gravity	1170	<1070	1100	1070	1085	1050	
	1200	1120	1060	1080	1090	1095	
Number	10	8	19	2	4	6	6.05V bias
		cell #3 = 1.3V					cell #11 + #12 = -0.15V
		cell #2 = 0.1V					

Stage	R.F.	Mix	I.F.	I.F.
Cathode	2.35	0.95	2.45	2.25
A cell	2.00	2.00	2.00	1.97

PUBLIC NOTICES

PUBLIC NOTICES

AUSTRA

THE HYDRO-ELECTRIC COM-
MISSION, TASMANIA.
NOTICE TO CONSUMERS.
INTERRUPTION TO POWER
SUPPLY.

Consumers in the undermen-
tioned areas are notified that
the supply of electricity will be
interrupted on Sunday, 21st July,
1957, as follows:-

From 1.30 p.m. to 2.30 p.m.—
New Norfolk, Brighton, Green
Ponds, Hamilton, and Richmond
Municipalities.

From 1 p.m. to 4 p.m.—Water-
loo, Dover, Southport, and Luns
River.

W. R. SPINNER
Secretary.

25/7/57

According to man in Vic Shor's
office named Patmore?, the
high voltage was undisturbed and
Boyer continued to operate. However
the 11KV and 22KV distribution circuits
from Boyer substation were opened at
1.30 pm and closed again at 2.06 pm.

Examination of records show that
all sparking noise disappeared at this
time. Thus the man made electrical
disturbances at 143 KC are all of local
origin within 15 miles of Kempton.

27 July Continued.

Change Batteries	Now	A cells	2.10	2.09	2.09		
Vibrator 0.75		Gravity	1280	1275	1275		
Reduced to 0.160		Number	3	2	1		
B batts	25 1/2	25 1/2	25	25 1/2	25	25	156 Total.
Gravity	1290	1280	1300	1270	1300	1300	
Number	7	13	12	11	9	5	Bias 6.05

Now gain of D.C. amplifier up a bit.

Relay batteries 12.4v closed 12.7 v open

Turn down to 1/16". Left that way.

Sensitivity 1.25 μ v with attenuator at 30DB.

Changed 1st I.F. tube. Now sensitivity 1.27 μ v.

Put antennas to 768N

Left. 450pm.

30 July 57. Thin scattered clouds, part sunshine at times. Arrive 1005am. Wroughton of going.

Clock 2 1/2 min fast. Corrected by stopping 2 1/2 min at 1015a.

R.F. noise 0.2 dia, Sensitivity 0.88 μ v, atten 30DB.

It seems that new 1st I.F. tube has more gain in it. This is reason the last two nights went off scale so much of time.

Check batteries	A cells.	2.08v	2.02	2.02
Vibrator 0.54V	Gravity	1230	1210	1215
raised to 0.160v	Number	3	2	1

B batts	25	24 1/2	24 1/2	24	24 1/2	24 1/2	150 1/2 Total
Number	7	13	12	11	9	5	6.05 Bias

Stage	R.F.	Mix	I.F.	I.F.
Cathode	3.00	1.60	3.05	2.90
A cell	1.97	1.96	1.97	1.92
Gravity	1180	1190	1180	1180
Number	1	2	3	4

These have run since 10 July or 20 days.

Replaced A cells on R.F Mix + I.F.s. also intro channel

30 July continued.

Sensitivity 8.93 μ v with attenuator at 30DB
" 1.36 " " " " " 33DB

Tub down to $3/16$ ". Filled to $3/8$ "
Cut off chart & took to town.
Antennas normal.
Left 5:15 pm

2nd August 1957. Arrive 10:05 am Everything going.
Clear blue sky with few scattered cirrus clouds far to north.

Clock 2 1/2 min fast. Corrected by stopping 2 1/2 min at 11 am

Checked batteries A cells. 1.99V 1.98 1.93

Vibrator 0.58V Gravity 1200 1190 1160

Increased to 0.60V Number 2 3 1

B batts 25 1/2 24 24 23 1/2 24 24 1.99V total.

Number 7 13 12 11 9 5 6.05V bias

Interchanged position of A cells #1 & #3

Stage R.F. Mix I.F. I.F.

Cathode 3.00 1.70 3.05 2.90

A cell 2.06 2.08 2.09 2.10

Gravity 1260 1265 1260 1275

Number 7 6 8 5

Sensitivity 1.50 μ v, atten 33DB

Phasing tests show that sky is bright to north at
10 AM but this patch fades out to a near uniform
illumination by 3 pm.

Tub down to $3/16$ ". Filled to $5/16$ ".

Put antennas to 7685

Left 3:50 pm

August 4th, a Sunday. Pat Johnson said that there

30 July Continued,
 Sensitivity 8.93 μ v with attenuator at 30DB
 " 1.36 " " " " 33DB

Ink down to $3/16$ ". Filled to $3/8$ "
 Cut off chart & took to town.
 Antennas normal.
 Left 5:15 pm

2nd August 1957. Arrive 10:05 am Everything going
 clear blue sky with few scattered cirrus clouds far to north.
 Clock 2 1/2 min fast. Corrected by stopping 2 1/2 min at 11 am
 Checked batteries
 A cells: 1.99V 1.98 1.93
 Vibrator 0.58V Gravity 1200 1190 1160
 Increased to 0.60V Number 2 3 1
 B batts 25 1/2 24 24 23 1/2 24 24 1.99V total.
 Number 7 13 12 11 9 5 6.05V bias
 Interchanged position of A cells #1 & #2

Stage	R.F.	Mix	I.F.	I.F.
Control	3.00	1.70	3.05	2.90
A cell	2.06	2.08	2.09	2.10
Gravity	1260	1265	1260	1275
Number	7	6	8	5

Sensitivity 1.50 μ v, atten 33DB

Phasing tests show that sky is bright to north at
 10 AM but this patch fades out to a near uniform
 illumination by 3 pm.
 Ink down to $3/16$ ". Filled to $5/16$ "
 Put antennas to 7685
 Left 3:50 pm

August 4th, a Sunday. Pat Johnson said that there
 was a low level cirrus patching & becoming more

26/8/57

213-215 pm Opened power circuits at Elderslie P.O. Before & after opening the RCA field strength meter showed 1.8 or 1.9 with distinctly sparking sound in focus. During open period the meter dropped to 1.0 and the sparking sound disappeared. Only internal noise hiss in receiver left.

231-233 Opened transformer in paddock about 200 yds east of road & 1 mile north of Elderslie. The before & after reading was 2.2-2.3 at a place two poles north of transformer. During open period the reading dropped to 1.0 and sparking sound disappeared. Only noise was hiss of set plus an occasional snap or pop.

253-255 p Opened line at place where it turns east about 2 miles north of Elderslie. Reading varied somewhat between 1.4 & 1.6 but no significant difference between before & after and when circuit was open.

335 Listened at very end of stub near road just south of Jack Allens place "Mauriceton". No line noise whatever, merely smooth hiss with reading about 0.9

All for no effect

See other side for comment on August 4th.

3rd August 57 Arrive 9:55am Everything going

Changed A cells	Now	2.11	2.10	2.10
Vibrator 0.58v	Gravity	1275	1270	1270
Increased to 0.60v	Number	4	6	5

Sensitivity 1.30, no wire attenuator at 33 DB
 Wound clock 55 turns to tight.
 Corrected clock by stopping for 2 minutes.
 Ink down to 1/4". Filled to 3/8"

Took down #4 antenna. Slipped it eastward
 400 feet to make center in line with others.
 Put back up with wire over top of new pole.
 Tension about 1000 lbs. Gained approx 50ft
 in height at down lead.
 Put #1 + #4 antennas to R 1152N.
 Left 4:55 pm.

7 Aug 57 Arrive 11:45am Everything going.

Weather thickly overcast but fairly dry ^{considerable dust} ^{in atmosphere}
 Clock 2 1/2 min fast at noon. Corrected by stopping 2 1/2 min
 R.F. noise .05 div., Sensitivity 1.77, no atten 33 DB.
 Check batteries
 A cells 2.07 2.01 2.00
 Vibrator 0.49v
 Gravity 1240 1205 1190
 Number 4 6 5

B cells	25 1/2	23 1/2	24	22 1/2	16 1/2	22 1/2	138 1/2 total
Number	7	13	12	11	9	5	6.05 bias.
Gravity	1255	1155	1180	1160	<1220	<1185	
	1255	1165	1175	<1150	<1150	<1185	
Stage	R.F.	Mix	I.F.	I.F.	#9 B cell, cells		
Code	2.55	1.30	2.55	2.45	#2, #11 + #12 = -0.2v		
A cell	2.04	2.04	2.07	2.09	Interchanged position A		
Gravity	1225	1230	1240	1250	cells #4 + #6		

7 August Continued.

Change Batteries Now.

Batts	25	25	25	25	25	25	155V Total
Gravity	1280	1290	1285	1290	1275	1280	
Number	1300	1290	1290	1295	1230	1300	
	6	8	4	2	1	10	

Increased filaments on output stage from 1.60 to 1.75V.
 Lost boost from 1.5 to 1.6V was probably in April.
 See chart rolls for details.

Phase tests up 3pm show sky very slightly brighter to north of zenith. Perhaps R1152N is best.

Put antennas to Normal.

Sensitivity 1.68 μ with attenuator at 33DB.
 Cut off chart paper & took to town.

Left 515 pm. Still drizzle.

arrive 1130 am

10 August 1957 Thick overcast. Not raining, but has been.
 Paper ran out straight on floor in a column. It then piled up behind roller and jammed exactly on the hour at 2 pm on 9/8/57. Relay dead since then. Relay batteries now

12.1 volts cloudy ^{vapor}
 R.F. noise 0.05 division, Sensitivity 1.68 μ , atten 33DB

Got things going again just before noon.

Check batteries	A cells	1.98	1.98	1.91
Vibrator 0.60V	Gravity	1170	1180	1120
	Number	6	4	5

Batts	25	25	24 1/2	25	24	24 1/2	154V Total
Number	6	8	4	2	1	10	6.05 Bias

Stage R.F. Mix I.F. I.F.

Rain begins about 12:10p. Stops by 12:40p.

10 August continued.

Change A cells	Now	2.14v	2.13v	2.13v
Vibrator 0.61v	Quantity	1300	1300	1300
	Number	3	2	1

Tub down to $9/32$ ". Filled to $13/32$ "

Wound clock 48 turns to tight.

Changed tuning back to 2.0 on antenna + 7.0 on recv.

Left 4:35pm

13 Aug 57 Thick clouds, fine drizzle. Been Raining.

Arrive 10:10am. Pen plugged. No data last 24 hours.

Tub down to $5/16$ ". Cleaned tub system. Put in strained ink to $3/8$ ". Started again about 11am

Clock about 3 min. fast. Corrected at 11am

Sensitivity 1.42 μ v with attenuator at 33 DB,

" 1.40 " " " " 30 DB

Phasing tests show slight excess brightness in north before noon. However after 3pm the same phasing tests showed absolutely uniform illumination over the entire sky.

Interchanged position of A cells # 3 + 2

Put antennas to Normal. Dial still at 2+7

Set attenuator at 30 DB.

Bf = 150v, Bias 605V Filaments OK. Think 2nd I.F. tube gradually warming.

Left 5:45pm

15 Aug 57 Bright + sunny with clear blue sky.

Arrive 10:58am. Everything going. Clock 2 1/2 min fast at 11am. Corrected by stopping 2 1/2 min.

Continued bright + sunny all day.

15th continued

Check all batteries
Vibrator 0.59V

A cells 2.01V 2.01V 1.
Gravity 1220 1230 1.
Number 2 3

Batts 25 1/2 24 23 1/2 23 22 1/2 23 147 1/2
Number 6, 8 4 2 1 10 6.05V

Stage R.F. Mix I.F. I.F. interchanged posit
Cathode 2.90 1.50 2.90 2.50 of A cells #12 + #

A cell 1.92 1.92 1.98 2.01 also B batts #6 #
Gravity 1180 1175 1200 1230 to #1 + #10
Number 7 6 8 5

Sensitivity 1.33 μ v with attenuator at 30DB
Put antennas to R768N
Left 530pm

16th August 1957 Arrive 1105am. Everything going
Partly overcast with thin cirrus clouds high up. Sun
shines thru about 50% strength.

Quite rough today, so phasing tests inconclusive. Much
brighter to north as usual.

Check A cells Voltage 1.97 2.0 1.9
Vibrator Number 1 3 2

Tub down to 3/16". Filled to 1/32"
Batts 144 1/2 V total

Sensitivity 1.62 μ v with attenuator at 33DB,
Left 520pm Antennas R1152N.
Beginning to cloud up in west

18 August 57 Overcast with occasional faint sun
shining thru. Wind from north. Clear & sunny by 1230pm
Arrive 1020am. Set dead. A cell on mixer went dead about
check batteries A cells 1.93 1.95 1.9

18th continued.

Stage	R.F.	Mix	I.F.	I.F.
Cathode	2.50	-3.10	2.60	2.50
A cell	1.91	0.08	1.97	2.00
Gravity	1160	1160	1180	1220
Number	7	6	8	5

} These have run since 30 July or 19 days.

Changed all batteries, Now

Stage	R.F.	Mix	I.F.	I.F.
Vibrator	0.73V			
Rest to	0.61V			
A cells	2.10	2.10	2.09	
Gravity	1300	1300	1300	
Number	6	4	5	
B batts	25	25	25	25
Gravity	1315	1310	1305	1315
Number	12	7	13	9

25 25 25 25 25 25 158V total
1315 1315 1300 1315 1320 1290 1295
6.05V bias.

Stage	R.F.	Mix	I.F.	I.F.
Cathode	3.30	1.90	3.25	3.25
A cells	2.13	2.07	2.12	2.13
Gravity	1310	1275	1310	1310
Number	3	4	1	2

Sensitivity 1.27 μ v with attenuator at 33 DB.
Obviously gain is still affected by filament voltage on R.F., Mix & I.F. tubes.

Cut off chart roll & took to town.
Wound clock 65 turns to tight, after 8 days.
Dials still 2.0 + 7.0
Ink down to 1/4". Filled to 3/8".
Clock 1 min fast at 6 pm. Corrected by stopping 1 min
Put antennas to 11525. Sounds a steady roar with some atmospheric on top. Purely a natural phenomenon. Just a rough test.

2.1/1.7 R.F. 5.1 1.4 1.1

21 August 57 Thick overcast; no sun. Dry. Little rain last 48 hrs, if any. Arrive 1035 am. Everything going.

Sensitivity 1.20, w/ with attenuator at 33DB.

Check batteries									
Vibrator 0.53									
Increased to 0.60									
B lotta	25	25	24 1/2	24 1/2	24 1/2	24 1/2	155V	Total	
Number	12	7	13	9	5	11	6.05	Bias	

Stage	R.F.	Mix	I.F.	I.F.
Cathode	3.15	1.55	3.10	3.10
Accl	2.12	2.05	2.11	2.05
Gravity	1300	1255	1295	1300
Number	3	4	1	2

clock 3 min fast at 11 am, corrected by stopping 3 min.
 145KC Receiver finally
 Shut down at 1140 am to test #4 antenna at 520KC.
 Spent lot of time lining everything up very carefully at
 520KC. Began listening test at 245 pm. Clearly much
 more power line noise still on #4 antenna compared to #1
 antenna. Input dial 78, Receiver dial 37. See results
 of #4 antenna shifted 400 ft westward 8-19 June 57.
 Today there is much more (about 6DB) noise on #4 than
 #1 antenna. The noise doesn't sound exactly like power
 line noise. More like rain static. at 330-332 p
 became very quiet for a few a couple of minutes.
 End of roll. Only about 3 ft left. Put on new roll chart
 Put antenna to #1 above. Attenuator 6DB.
 left 615 pm.
 Put on 900 am

21 August Continued.

41.0 moderate carrier of BC str. Seem to be some modulation; but think this is really splatter from 7QN at 45.0 on dial (540KC). This is same old trouble of pilot at 9.5KC being mixed into program + modulated onto

45.0 7QN at 540KC.

49.0 Very strong BC str., same program as 7QN, namely a man talking.

R.F. noise 0.75 division, Sensitivity 0.70 μ v, atten 6DB.

Put dials back to 78 + 37.

Ink down to 1/4". Filled to 1/32".

Left 1020pm Quite clear with stars + Milkyway now. Haze still to south.

23/8/57 Arrive 1010am Everything going. Partly cloudy with about 50% sun.

R.F. noise 0.4 division, Sensitivity 0.91 μ v, atten 6DB.

Increased gain 6DB as batteries running down.

On #1 antenna the atmospheric dominate sound. Quite strong today. Sounds quite similar on #4 antenna except rather stronger. No significant power line noise.

Perhaps the solution of #4 antenna is to put in a small pad at output of tuner box or to insert some loss resistance in series with tuning condenser on a duplex tuning box. Trouble seems to be something about low hill at spot end compared to the same size hills on other three antennas.

Check batteries

Vibrator, 0.52

A cells 2.00 1.90 1.96

Grants 1220 1190 1170

Number 6 4 5

B batts 25 24 24 24 24 1.52V H.O

23/8/57 Continued.

Change A cells.

Vibrator 0.55

Increased to 0.60V

Now	2.10	2.10	2.10
Gravity	1280	1290	1290
Number	1	3	2

Attenuator 9DB, Sensitivity 0.66 μ v, R.F. noise 0.7 division

2nd down to $3/16$ ". Filled to $7/16$ ".

Wound clock 41 turns to tight

Put on #4 antenna alone

Lt 6:10 pm.

26 Aug 57 Arrive 11:05 am Everything going.

Thick dark clouds. Heavy overcast. No sun. Slight west wind.

R.F. noise 0.1 div, Sensitivity 1.40 μ v, Att 9DB,

" " 1.0 " " 0.52 " " 0DB.

Started tests with attenuator at 0DB.

Fairly quiet today. Smoother hiss with some atmospheric.

The last three nights records using #4 alone are quite good. There is a distinct bump near 11 pm or 2100 RA which agrees with last years records.

Checked time against VIM at noon. Clock 6 min fast. Corrected clock by stopping 6 min.

2-3p made tests with Hydro near Eldonlie. No effect.

4p Change attenuator to 3DB.

Now R.F. noise 0.6 div, Sensitivity 0.75 μ v, Attenuator 3DB.

Check batteries

Vibrator 0.56V

Increased to 0.60V

Accell. 2.01 2.01 2.01

Gravity 1225 1225 1220

Number 1 3 2

B cells 24 24 24 24 1/2 24 24 149V Total

Number 9 7 13 12 5 11

2nd down to $5/16$ ". Filled to $13/16$ ".

28 August 57 Arrive 10:15am Everything going.
Thick dark clouds all over sky. No sun, No wind.

R.F. noise 0.12 div, Sensitivity 1.05 μ v, atten 3DB
Check batteries A cells 1.99 1.99 1.98
Vibrator 0.56V Gravity 1190 1190 1180
Number 1 3 2

B cells 24 24 23 1/2 24 23 1/2 23 1/2 145V total
Number 9 7 13 12 5 11

Interchanged position of B cells #7 + #13, also #9 + #5
Replaced A cells. Now. 2.12 2.11 2.11
Vibrator 0.58V Gravity ^{low} water 1310 1305
Increased to 0.60V Number 6 4 5

Now R.F. noise 1.5 div. Sensitivity 0.91 μ v, attenuator 3DB
2up down to 3/8". Took whole per system apart +
cleaned it good. Filled to 7/16" with strained ink.
a lot of sludge + slime + clotted bits of ink came
out. I think the ink must deteriorate at freezing temperatures.
It seems the gain is still very acceptable to changes
in A battery voltage on this 520KC receiver.

Checked clock at noon by VIM. 1 1/2 min fast. Corrected by
stopping 1 1/2 minutes. Can hear V15 in background.
Changed attenuator to 6DB. Now R.F. noise 0.8 div, Sens. 0.58 μ v.
Put on #1 + #4 antennas parallel. Quite a lot of
scratchy squawks like distant atmospherics today.
also notice how rough it was prior to noon.
Changed time const from 10^{-2} to 10^{-3} at 550 pm for 3 min.
Attenuator 6DB, R.F. noise 0.8 div, Sensitivity 0.67 μ v.
Antennas #1 + #4 normal.
Left 555 pm. Still quite light. Clearing in SW.

30 August 57, Arrive 10:15am. Everything going.
Just as came in a sharp cold front came in from northwest
and slight rain began. From Barant 2 could see the sun thru B

clearing by 130 pm

30th continued,

checked clock at noon against VIM. Clock 3 sec fast.

Left that way.

R.F. noise 0.2 div., Sensitivity 1.1 μ v, atten 6 DB,

" " 0.9 " , " 0.51 " , " 0 DB,

Took two rolls of color pictures 2 p - 500 pm from along west ridge + along east ridge.

Put antenna to #14 #4 normal. Attenuator at 3 DB.

Left about 530 pm.

Returned 730 pm. Still cloudy. Crescent moon faint.

Everything going OK. Sounds a smooth hiss with some atmospheric on top. Occasional weak code interference.

Much too cloudy to see any aurora. Noted how the daytime level hangs on tonight. The sun set over two hours ago and ^{perhaps} possibly beginning to rise by 750 pm.

Left 755 pm.

31 Aug 57 Arrive 940 am Everything going. Bright + sunny with 50% scattered clouds to north on a blue sky.

Notice how smooth trace is most of night. Only a few large bumps 3a to 9a. This is probably due to solar activity of a few days ago.

Shut down permanently at 224 pm 520 KC.

R.F. noise 0.6 div., Sensitivity 0.71 μ v, atten 0 DB,

R.F. " 0.3 " , " 1.00 μ v, " 3 DB,

check batteries

Vibrator 0.51 V

Acells. 1.96 V 1.95 1.94

Gravity 1235 1240 1225

Number 6 4 5

B. l. etc. 22 1/2 21 1/2 22 22 1/2 16 22 135 1/2 total

31 Aug 57 Continued.

Took #1 & #4 antennas down. Put one tape marking band at east end and two tape marking bands at west end.

This ends all low-frequency observations for a year or more.

Ink down to $\frac{3}{16}$ "
Did not wind clock. Took chart paper to town.

Left about 5pm.