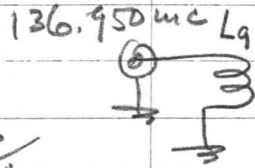


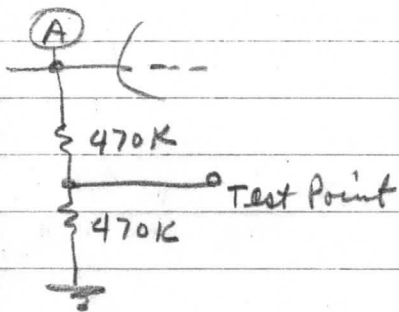
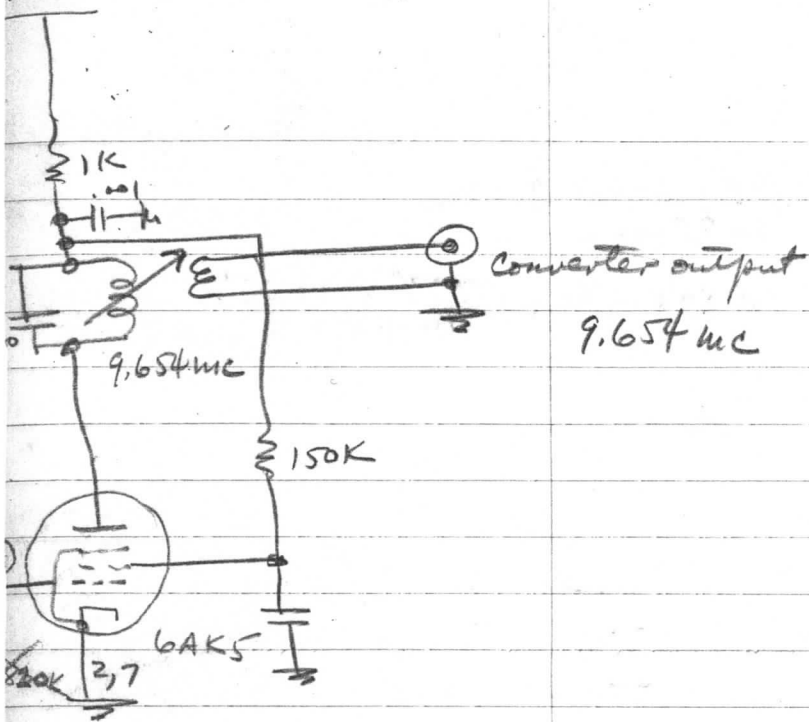
Input



$$\begin{array}{r} 14.144 \\ 3 \\ \hline 42.432 \\ 3 \\ \hline 127.296 \end{array}$$

$$\begin{array}{r} 136.950 \\ 127.296 \\ \hline 9.654 \end{array}$$

$$\frac{9.654}{2} = 4.827$$



- L<sub>1</sub> 10t 3/8" Diam  $\frac{13}{16}$ " length.
- L<sub>2</sub> same as L<sub>1</sub>.
- L<sub>3</sub> 3t 1/4" Diam 1/4" length
- L<sub>4</sub> 3t 3/8" Diam 3/8" length
- L<sub>5</sub> same as L<sub>4</sub>
- L<sub>6</sub>, L<sub>7</sub> 1 turn links connected by coax
- L<sub>8</sub> 2t 1/2" D 1/2" l
- L<sub>9</sub> 2t 1/2" D 1/2" l.

8/19/64

$$\lambda = \frac{300}{136.95 \text{ mc}} = 2.19 \text{ m}$$

$$\lambda/4 = 0.548 \text{ meters} \times \frac{39.37''}{\text{m}} = 21.55''$$

136.95

÷

30	4.565	15	9.14
29	4.72	14	9.79
28	4.89	13	10.53
27	5.07222	12	11.41
26	5.27	11	12.47
25	5.49	10	13.695
24	5.71	9	15.22
23	5.95	8	17.14
22	6.23	7	19.59
21	6.53	6	22.85
20	6.85	5	27.4
19	7.21	4	34.22
18	7.61	3	46.7
17	8.06	2	68.5
16	8.56	1	136.95

$$5.065 \times 27 = 136.755$$

$$4.885 \times 28 = 136.780$$

$$5.480 \times 25 = 137.000$$

$$4.565 \times 30 = 136.950$$

$$7.225 \times 19 = 137.275$$

$$4.700 \times 29 = 136.300$$

Calibrated with the 4.565 Mc Xtal

$$\begin{array}{r} 4565 \\ \hline 9130 \end{array}$$

But note  $14.144 - 4.565 = 9.579$  Mc

which is within 75 KC of the

1ST IF (SX-25 input) frequency (9.654 Mc)

A response does appear at 9130, 9579 (strong)

and (very weak) 9650. If 9650 were the

30th harmonic on 136.950 it would indicate

an error in the Xtal freq of  $\frac{4KC}{30} = 133$  cps.

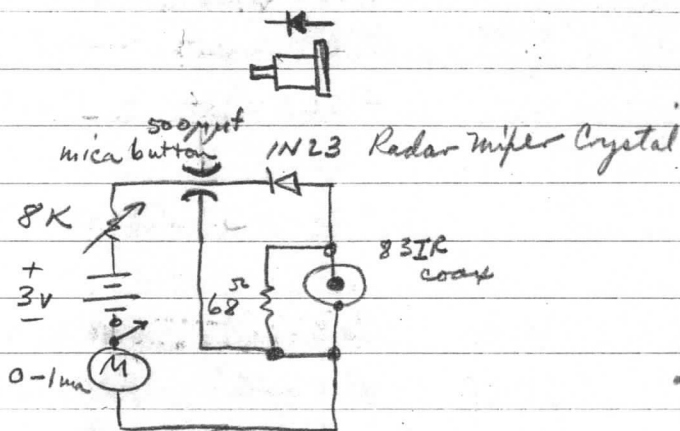
This uses Band 3B calibration charts (nomograph)

Set main dial to about "10.45" to zero beat

4520 KC Xtal (X2) at 9040 KC with bandspread  
set at "4.1"

9654 is then bandspread "4.8"

## Made noise generator



with current of 0.65 ma I get 1 "S" unit change with current on. "55" to "56"

SX-25 RF gain max; IF gain set for "55" w/ gen "OFF".  
For discussion - see MIT Rad Lab V.23 Microwave Receivers

The expected deviation is  $\pm 10$  Kc. Signal characteristic in Nimbus is:

Videos: Horizontal line rate 4 lines/sec  
Vertical. 1 frame / 208 sec.

Vertical sync 300 cps burst for 3 sec  
Horizontal sync Phasing pulses sent at line rate for 5 sec, each 12.5  $\mu$ s long.



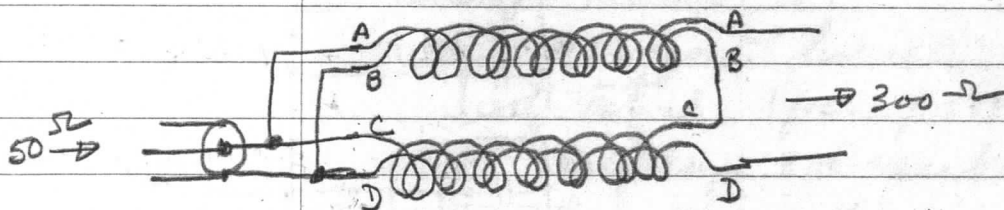
The mixer output and FM-IF input coils will have to provide the limiting bandwidth since the IF transformers are quite wide (260KC 6db down in spec sheet).

To get 30KC the Q will have to be

$$\frac{9.6 \text{ mc}}{30 \text{ KC}} = 320 \quad \text{impossible}$$

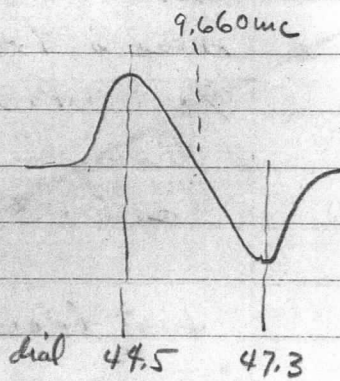
There will be a 10db penalty for too much IF bandwidth.

Connected to outside TV antenna using one of the baluns that were in the MI-6969 patch panels. They are shown on p 350 of the 1962 ARRL Handbook.



I hear occasional mobiles in the set. Too weak to read.

measuring with the grid dip oscillator



slope of dial is  $\frac{1 \text{ mc}}{18 \text{ div}}$        $\frac{2.8}{18} 1 \text{ mc} = 150 \text{ Kc}$

If I had a sweep generator I could probably work on it for further narrowing since it is most likely stagger tuned now.

August 23, 1964

The "mobile" is talking to the Flying W Unicom asking which runway is in use. Image is at:

$$136.950 - 2(9.654) = 117.654 \text{ mc}$$

Since discriminator reads zero for both

9.660 Xtal and mobile - actually on

$$136.950 - 2(9.660) = 117.630$$

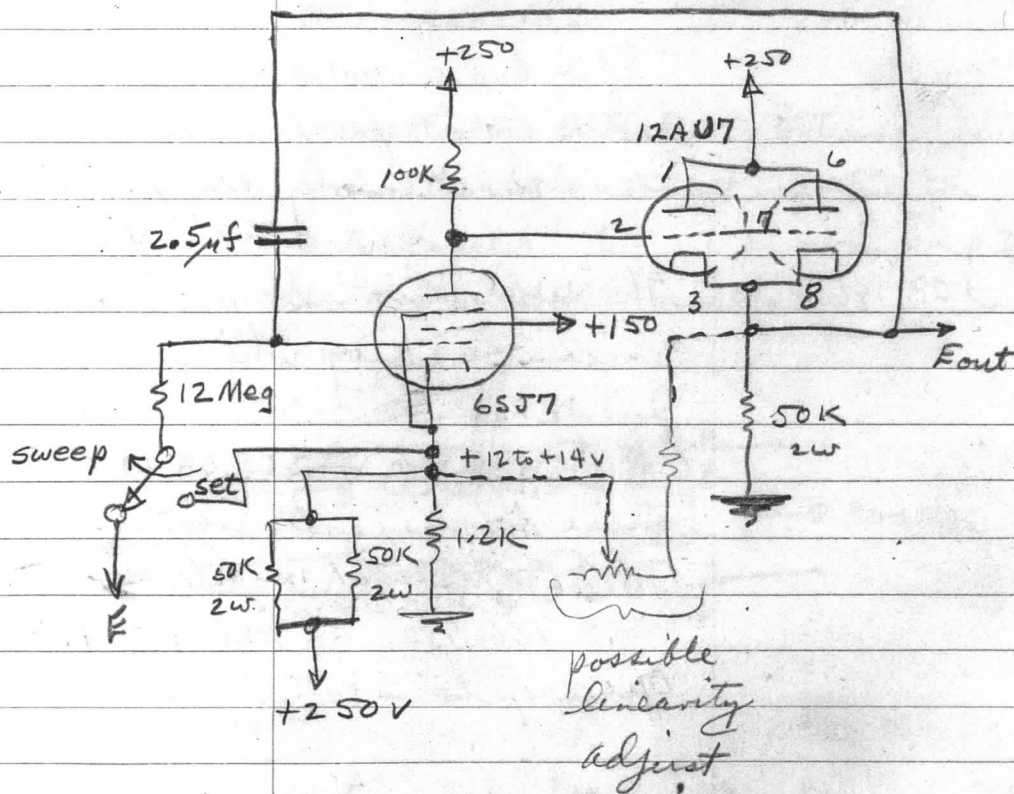
One says he is calling on 1229      Husketeer 36

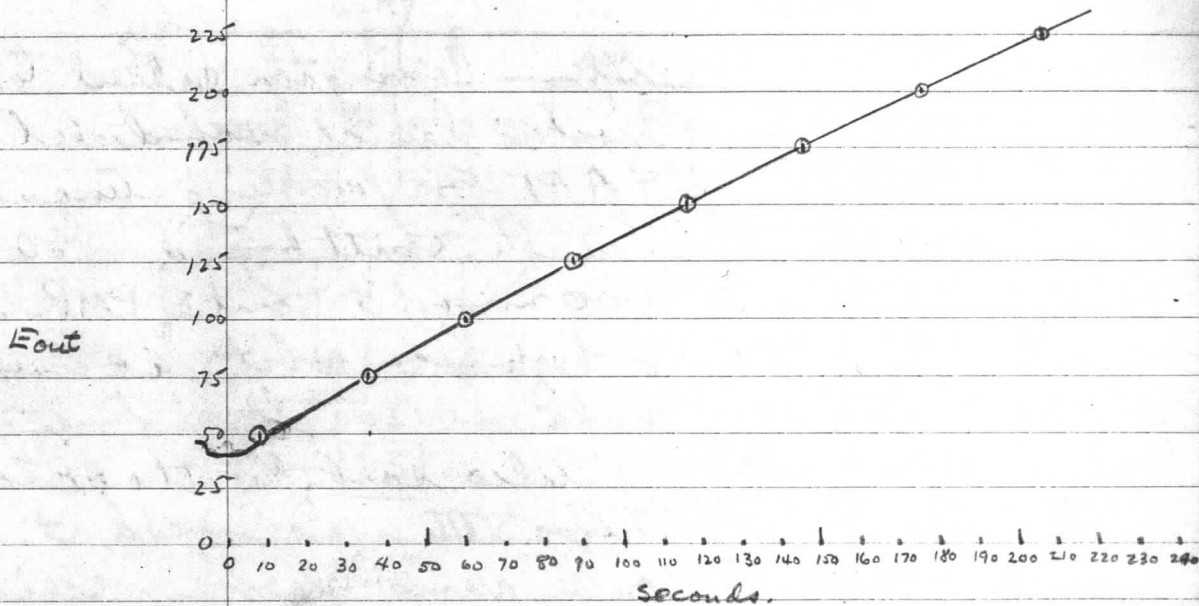


Measuring on Heathkit scope -  
 Arm on horizontal centering pot  
 runs from 60v (right side)  
 to 80v (left side) for equiv picture,  
 Arm on vertical 24.5 bottom (extreme  
 and 37v top (extreme of control)

8/26/64

First breadboard of 208 sec sweep -





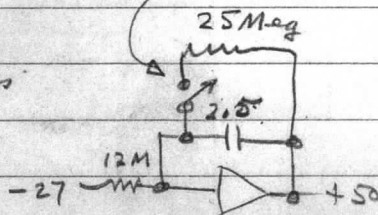
This appears to be adequately linear.

Through error, the point E was at  $-22.5V$  instead of the intended ground. The  $1.2K$  cathode resistor is raised to  $2.7K$ . New data is needed.

8/27/64

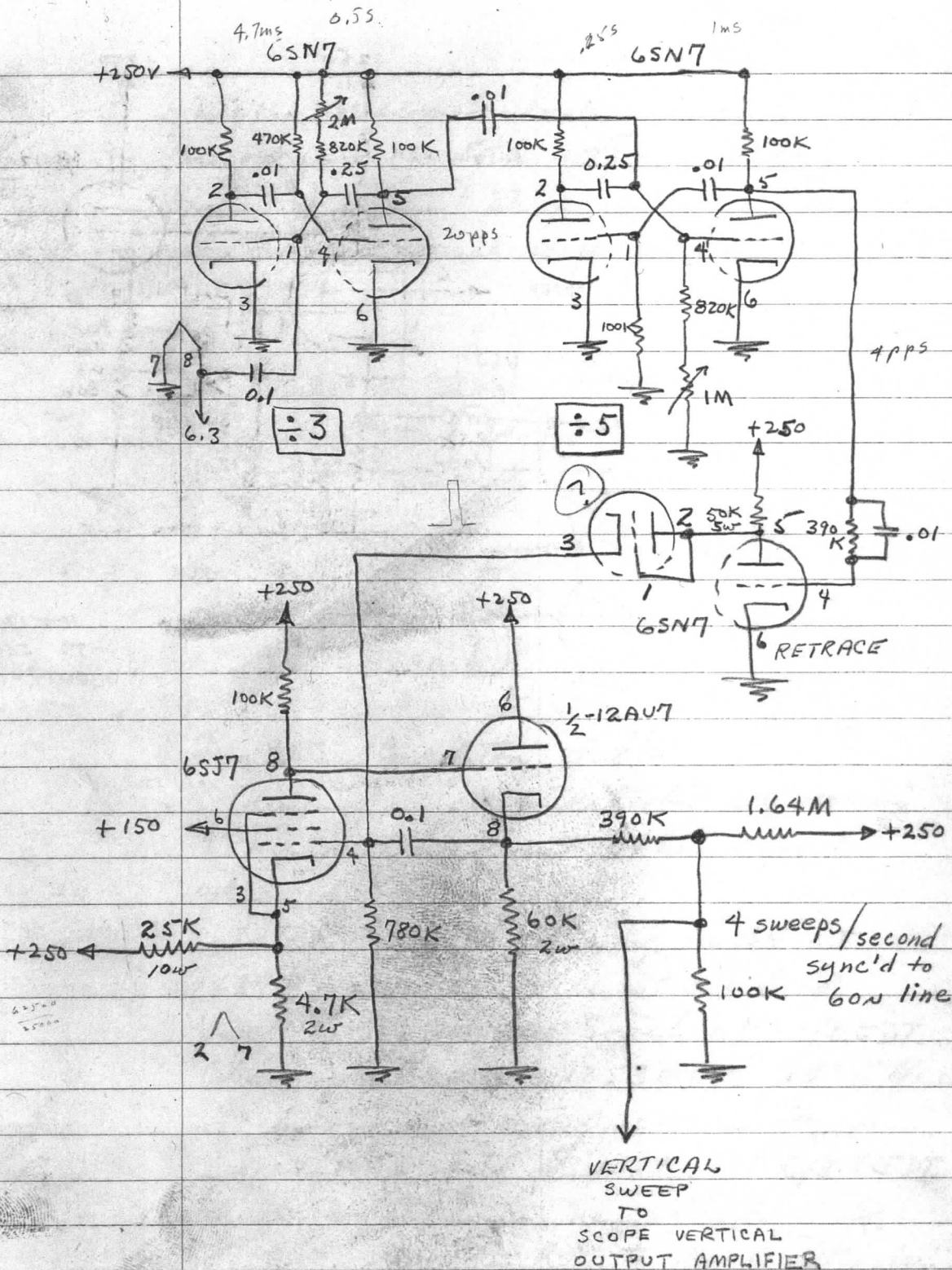
Also tried 2050 discharge tube across  $2.5\mu f$ . Screen probably draws excessive current during the zero bias condition. To stabilize bias point, output resistor should be returned to the bias point. <sup>(linearity adjust)</sup> Under present conditions this would add a variation of 1 to 5ma during sweep. A better set arrangement a la Korn & Korn might be

but T.C. is 50 seconds

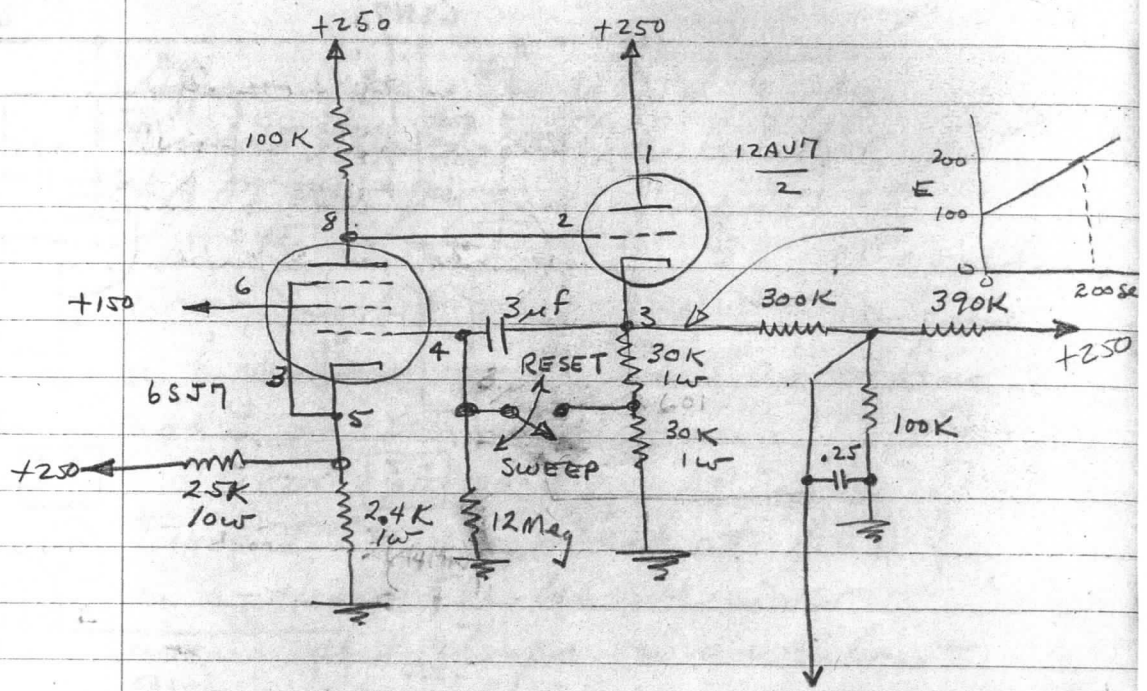


Glenn Corrington called to say  
Nimbus launch scheduled for  
4 AM Fri morning August 28  
Launch southbound  $80^\circ$  retrograde  
600 mi orbit out of PMR. To give  
a high noon orbit, i.e. ascending  
node is 1200 local time.

Also said that the APT pix of  
Teros VIII were rec'd at AFD  
on a News Clarke receiver  
using foil strips on a window  
for an antenna.

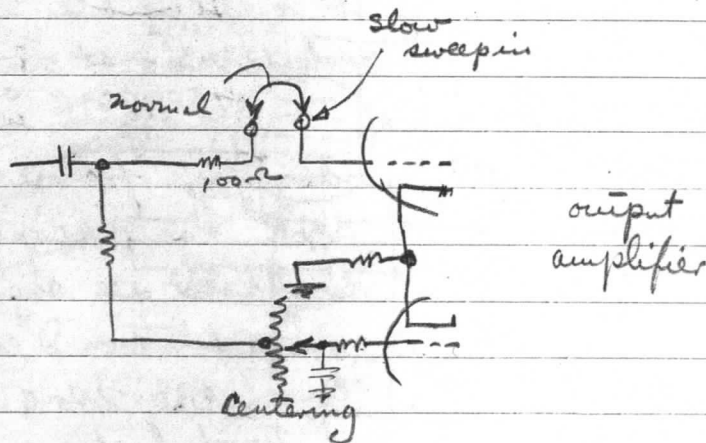


Pha.



HORIZONTAL SWEEP  
TO SCOPE HORIZONTAL  
OUTPUT AMPLIFIER

modified the scope by breaking lines to signal input grid to both output amplifiers, mounted terminal strip which is to be shorted for normal scope operation.



From Glenn Corrington 8/28/64

Nimbus in elliptical orbit 250-500 mi  
98 min period versus 104 min circular  
planned.

Later: Should come up in SE at  
1437Z, 1037 EDT. Almost overhead  
pass: comes up due South at 1212 EDT.

Come up in SW at 1353 EDT. 24° difference  
in horizon bearing. 10-12 min <sup>LOS</sup> on/H pass.

8/28 AED rec'd pit at 1715 Z, 1315 EDT.  
Signal very strong on Nemo Clark Revs.

Glenn has hot line to Goddard tracking  
center. Will call if significant changes  
occur.

12:12  
10:37  
1:35  
95 min