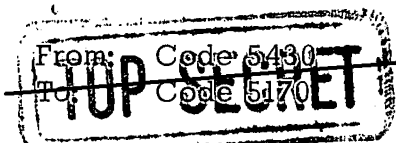


DRAFT

17 April 1963



Subj: 7102-C changes in and 7103-A, B, and C Details

Ref: (a) Memorandum from 5430 dated 1 Nov 1962  
(b) Memorandum from 5430 dated 8 Feb 1963  
(c) Memorandum from 5170 dated 15 Feb 1963 Ser 5170-24

Additional changes in 7102C, for the record.

Now that measurements have been made on the final Flight Hardware for 7102C-2 it has been determined there is insufficient attenuation to the signal from the data link transmitter. It is therefore suggested that the two filters and two detector mounts which were to be connected to the polar antennas for use with the 7102C-2 (Band "B" of Payload #112) be exchanged for four additional filters to be cabled in between the four equatorial antennas and the filters already destined for use with these equatorial antennas. This arrangement will occupy about the same amount of space and will fit adequately so that cabling can be facilitated.

The Antenna system for use on 7102C-3 (C-Band) originally described for use on this Payload has been found to present unacceptable system VSWR characteristics and is now being replaced by a new antenna and Nylon cover. No changes in the Mounting holes will be necessary.

*Handle via  
Talent Keyhole  
Control System Only*



~~TOP SECRET~~

Review and Restatement of the Details of 7103A, 7103B and 7103C

~~TOP SECRET~~  
follows:

7103A will contain four Collection Bands described individually as

7103A-1, 105 to 125 mc coverage, utilizing two polar mounted dipole antennas measuring 34 inches in length.

Four Filters, tubular 1/2" dia. x 7 1/4" long \*\*

Two Detectors, Tubular 3-1/2" long X <sup>5/8"</sup>1-1/2" dia.

One video amplifier with internal bias facility.\*

7103A-2, 665 to 855 mc coverage, utilizing four equatorial mounted monopole antennas measuring 5 inches in length.

Six Filters \*\* 6 inches long ~~4 3/4"~~

Six Detector Mounts\*\*\*

One Video Amplifier\*

7103A-3, 1080 to 1350 mc coverage, utilizing six monopole antennas 2 inches long, mounted in a symmetrical system of six located at the 36° Latitude.

Six Filters\*\* each 3-1/2" long.

Six Detector Mounts\*\*\* 1 1/2" dia. x 3 1/2" Long

One video amplifier\*

7103A-4, 3800 to 4700 mc coverage, utilizing a symmetrical system of six monopole antennas located at the 36° latitude, and measuring 3/4 inch in length.

Six combined Filter-Mounts, rectangular, 1-1/2" x 1/2" x 3-1/2"

Six Video Amplifiers\* and Trigger Amplifiers

NOTE. In 7103A-3 there is a plan to prepare an R and D experiment which will define [redacted] to demonstrate the ability to intercept [redacted] type radar emitters in this band. Several schemes are under investigation now and additional details will follow. Additional hardware in the form of antennas, filters, amplifiers and telemetry channels will be necessary.

~~TOP SECRET~~

2 Handle via  
Talent-Keyhole  
Control System Only

~~7103B-1, 155 to 180 mc coverage, utilizing two polar mounted monopoles each measuring 18 inches in length.~~

~~TOP SECRET~~

~~Four Filters\*\* each 6 inches in length.~~

~~Two Detector Mounts\*\*\*~~

~~One Video Amplifier\*~~

7103B-2, 550 to 660 mc coverage, utilizing four equatorial mounted monopole antennas, each 5 inches in length.

Six Filters\*\*, each 6 inches in length

Six Detector Mounts\*\*\*

One Video Amplifier\*

7103B-3, 820 to 1080 mc coverage, utilizing six monopole antennas in a symmetrical system located at the  $36^{\circ}$  latitude and measuring about 3" long.

Six Filters\*\*, each 5" long.

Six Detector Mounts\*\*\*

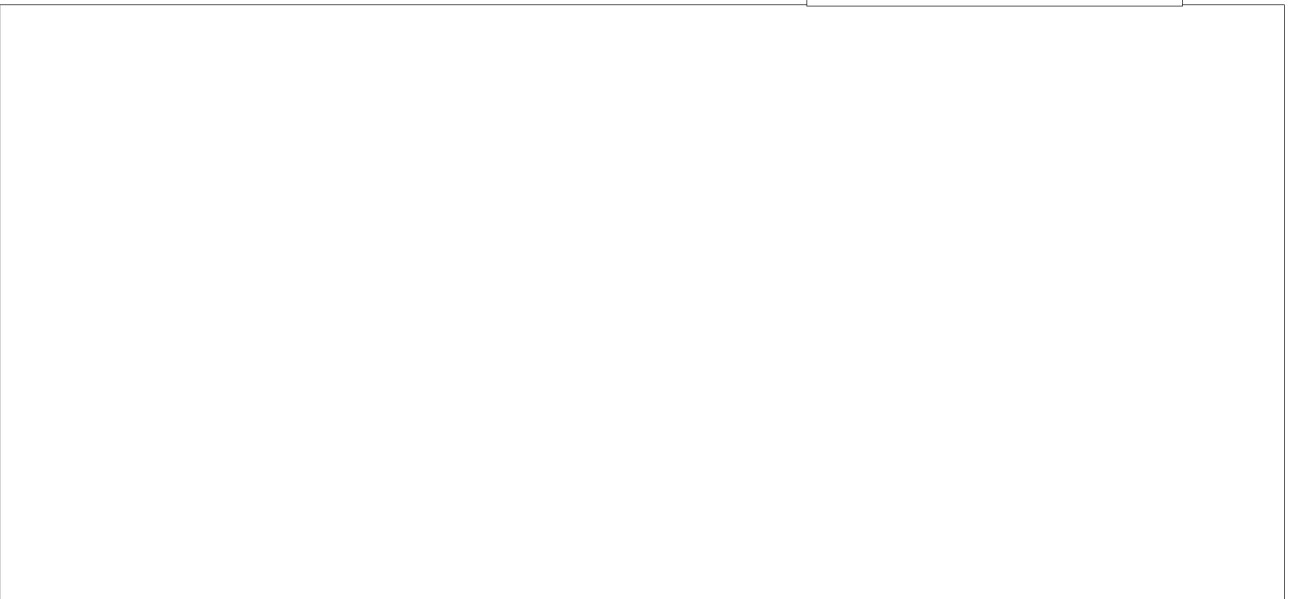
One Video Amplifier\*

7103B-4, 4700 to 5100 mc coverage utilizing six monopole antennas in a symmetrical system of 6, located at the  $36^{\circ}$  latitude, and  $3/4$ " in length.

Six rectangular Filter-Mounts  $1-1/2" \times 1/2" \times 3-1/2"$

Six Video Amplifiers\*

NOTE. In 7103B-1 there are plans to incorporate a



7103C-1, -170 to 205 mc coverage utilizing two polar mounted monopoles each 16 inches in length.

~~TOP SECRET~~

Four Filters\*\* 6 inches in length

Two Detector Mounts\*\*\*

One Video Amplifier\*

7103C-2, -320 to 390 mc coverage utilizing four equatorially mounted monopoles each about 8 inches long.

Six Filters\*\*

Six Detector Mounts\*\*\*

One Amplifier\*

7103C-3, -590 to 720 mc coverage utilizing six monopole antennas in common with 7103C-4, each antenna is about 5 inches long and mounted on 36° Latitude.

Six Filters\*\*, 6 inches in length

Six Detector Mounts\*\*\*

One Video Amplifier

7103C-4, -1600 to 2000 mc coverage utilizing antenna system described above.

Six Filters\*\* *5 inches in length.*

Six Detector Mounts cylindrical 1-1/2" dia. x 2-1/2" long

One Video Amplifier\*

NOTE:

- \*\* Indicates a Tubular Filter which measures 1/2" diameter and if the length is not given it is 5" long.
- \*\*\* Indicates a Cylindrical Detector Mount 5/8" in diameter and 3-1/2" long.
- \* Indicates a Video Amplifier whose dimensions are 2-3/8" H X 3-1/2" X 15/16 wide. All amplifiers have integral bias distribution facility.

7103A is NRL Payload #126 as determined on occasion of Meeting of 10 Apr 1963.

7103B is NRL Payload #125

7103C is NRL Payload #124 - (SR-VII)

~~TOP SECRET~~

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*Handle via  
Talent-Keyhole  
Control System Only*

Apr 63

**TOP SECRET**

Major Contractual Services:

A/R/M/V/Time	1 <sup>st</sup> 1/2 FY 64	2 <sup>nd</sup> 1/2 FY 64	FY 65
<u>Site Help - Ratings</u>			
Timing System (100K)	50K	50K	50K
Receiving System (50K)	50K	50K	50K
Command System (25K)	-50K	10K	20K
Recording System (40K)	50K	25K	50K
<u>Analysis System</u>			
Spinning Head 35K	25	20K	20K
Digital Logic 65K	-50K	50K	20K
Presentation Equip	20K	30	25K
Recording "	-25K	25	-
<u>Flight Equipment</u> (75K) 10K	50K	50K	150K
<u>R &amp; D</u>			
(25K)	75	75K	75K
(20)	75	75K	75K
	25	50	100
<u>Test Equip</u> (35K) 10K	50	75	75
<del>H.V. Equip</del> (21.8)	<del>50</del>	<del>50</del>	
35/1.8 360		485K	560K
	525K	100	150
	125	50	(710)
	(650)	(635)	
Grand Total 7.11.8			

**TOP SECRET**

HANDLE VIA BYEMAN CONTROL SYSTEM ONLY

PL# 126  
7103A-X

Band -1-  
4 Filters  $7\frac{1}{4}$ "  
2 Mounts  $\frac{5}{8} \times 3\frac{1}{2}$ "

105 - 125

#1

~~TOP SECRET~~

-2-  
6 Filters  $6\frac{1}{2}$ "  
6 Mounts  $\frac{5}{8} \times 3\frac{1}{2}$ "

665 - 855

Narrow #1

-3-  
6 Filters  $3\frac{1}{2}$ "  
6 Mounts  $\frac{1}{2} \times 3\frac{1}{2}$ "

1080-1350

Narrow #2

-4- 4/15/63  
6 Filter-Mounts  
6 Amplifiers & Trig Amps.  $\frac{1}{2} \times \frac{1}{2} \times 3\frac{1}{2}$ "

3800-4700

Wide #2.

PL #125  
7103B

4 Filters  $6\frac{1}{2}$ "  
2 Mounts  $\frac{5}{8} \times 3\frac{1}{2}$ "

155 - 180

Narrow #1

6 Filters  $6\frac{1}{2}$ "  
6 Mounts  $\frac{5}{8} \times 3\frac{1}{2}$ "

550 - 660

Narrow #2

6 Filters  $5\frac{1}{2}$ "  
6 Mounts  $\frac{5}{8} \times 3\frac{1}{2}$ "

820 - 1080

Wide #2

6 Filter-Mounts  $\frac{1}{2} \times \frac{1}{2} \times 3\frac{1}{2}$ "  
6 Amps & Trig Amps.

4700 - 5100

Wide #1.

PL 124  
7103C

SR-VII

4 Filters  $6\frac{1}{2}$ "  
2 Mounts  $\frac{5}{8} \times 3\frac{1}{2}$ "

170 - 205

Narrow #1

6 Filters  $5\frac{1}{2} \times \frac{1}{2}$ "  
6 Mounts  $\frac{5}{8} \times 3\frac{1}{2}$ "

320 - 390

Wide #2

6 Filters  $6\frac{1}{2}$ "  
6 Mounts  $\frac{5}{8} \times 3\frac{1}{2}$ "

590 - 720

Narrow #2

6 Filters  $5\frac{1}{2}$ "  
6 Mounts  $\frac{1}{2} \times 2\frac{1}{2}$  long

1600 - 2000

Wide #1.

Common Ant

HANDLE VIA  
BYEMAN-TALENT-CONTROL-  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

48  
(43)

same File

2354

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TENTATIVE SPECS.

PAYLOAD #	TYPE	WT.	VEL.	SEPARATION TIME	DIRECTION
124	24" SR 7	95 #	1 FT/SEC.	3612 SEC.	
125	20"	70 #	1.3 FT/SEC.	3612 SEC.	
126	20" GRAVITY GRADIENT EXP.	70 #	0.1 FT/SEC	+ 1 DAY	NOSG DOWN OVER HAWAII
136	CUBE SURCAL	13 #	7 FT/SEC		NOSE DOWN HORIZONTAL AFT & RIGHT.
137	CAL SPHERE	6 #	5 FT/SEC.		NOSE DOWN HORIZONTAL FORWARD

