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24 Pages
(Including Cover Sheet)

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CORONA "M" FLIGHT DATA BOOK

SYSTEM NO. M6

VEHICLE NO. 1129

MISSION NO. 9037

Prepared by: [redacted]

Checked by: [redacted]

Approved by: [redacted]

Approved by: [redacted]
(Project Manager)

Approved by: [redacted]

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[redacted]

SYSTEM NO. M6
VEHICLE NO. 1129
MISSION NO. 9037
CAMERA NOS. 80 81

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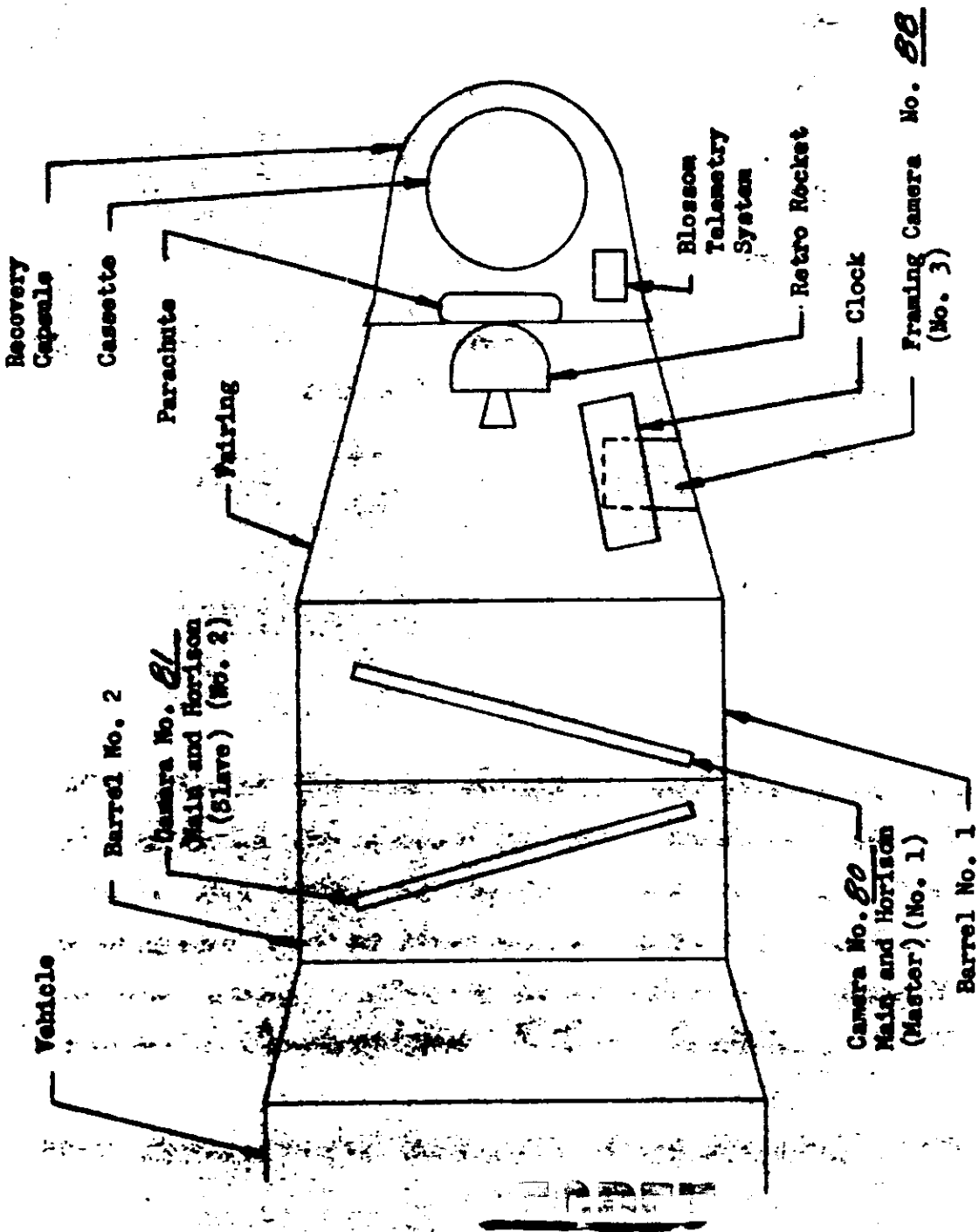
SYSTEM NO. M6
VEHICLE NO. 4129
MISSION NO. 9037
CAMERA NOS. 80 & 81

VEHICLE LAYOUT:



[redacted]

[illegible] No. 116
[illegible] No. 1129
[illegible] No. 9057
[illegible]

[illegible]
[illegible]

[illegible]
Discoverer No. 44

Main Camera No. 1 Serial No. 80

Main Camera No. 2 Serial No. 81

Framing Camera Serial No. 88

Launch Date 6/22/62

Orbital Parameters: (Rev. [illegible])

Period 89.64 Min. Eccentricity .00765

Perigee 113 NM Perigee Latitude 25.54 Deg. N

Apogee 168 NM Inclination Angle 75.09 Deg. N

Recovery Revolution No. 50

Recovery Date 6/25/62

REMARKS:

M? Format Calibration Definitions and Dimensions are included to establish the [illegible] for the additional Horizon Format calibrations made on systems 9047 and up. These dimensions will be transmitted in the operational TWX under items [illegible] (Angular relation between Camera/Horizon Systems.

[redacted]

[redacted]

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... NO. M6
... NO. 1129
... NO. ...
... NOS. ...

Framing Camera ...

Film:

	Camera No. 80	Camera No. 81	Framing Camera
Type	3404 (50)	3404 (60)	4J22 (50130)
Length	7800	7800	135 ft.
No. of Splices	2	2	None
Emulsion No.	21-4-52	21-12-1-53	15-2-4-2

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[redacted]

SYSTEM NO. M-6
VEHICLE NO. 1129
MISSION NO. 9037
CAMERA NOS. 80, 81
FRAMING CAMERA NO. 88

[redacted]

PERFORMANCE ESTIMATE

Pass No.	Frames Camera No.			Feet Camera No.			Latitude Degrees		Time On Hr. Min.	Dur Sec.	Solar Angle		Exp. Time Milliseconds		Ramp No.	Instr. On Sec Up Ramp
	80	81	88	80	81	88	On	Off			On	Off	On	Off		
P-L	107	109	15	282	287	3.0										
1DE	20	21	3	52	55	.6	55	52	23-0159	65	40	40	4.2	4.1	8	1256
3AX1	103	103	14	272	272	2.8	47	68	0440	380	19	32	5.3	4.6	5	78
3DX1	55	55	8	145	145	1.6	59	51	0457	155	40	39	3.8	3.6	5	1094
4AX1	53	53	8	140	140	1.6	72	75	0618	174	35	38	4.5	4.2	5	539
4DX1	43	43	6	113	113	1.2	54	47	0629	119	40	38	3.7	3.6	5	1196
5DX1	144	146	20	380	385	4.0	58	36	0757	389	40	34	3.7	3.4	5	1136
6DX1	31	31	5	82	82	1.0	73	71	0922	96	39	40	4.1	4.0	5	838
6DX2	67	68	9	177	179	1.8	59	49	0926	188	40	39	3.8	3.6	5	1125
6DX3	59	60	9	156	158	1.8	42	32	0931	155	36	32	3.5	3.4	5	1411
7DX1	184	186	26	485	490	5.1	68	39	1053	508	41	35	3.9	3.4	5	995
8DY1	108	110	15	285	290	3.0	67	50	1223	311	41	39	3.9	3.6	10	1023
9AE	11	11	2	29	29	.4	36	38	1335	48	11	13	5.5	5.5	5	—
9DX1	91	93	13	240	245	2.6	59	44	1355	253	40	37	3.8	3.5	5	1147
13AY1	55	55	8	145	145	1.6	50	61	1938	203	21	27	5.1	4.7	10	240
14AY1	61	62	9	161	163	1.8	43	56	2105	232	16	24	5.3	4.8	10	141
15AY1	41	41	6	108	108	1.2	50	58	2237	152	21	25	5.1	4.8	10	258
15DE	17	17	2	45	45	.4	36	34	2259	46	33	33	3.4	3.3	10	1596
16AY1	51	52	7	134	137	1.4	53	69	24-0007	187	23	29	5.0	4.7	10	295
17AY1	28	28	4	74	74	.8	46	51	0135	112	18	21	5.4	5.2	10	86
17AY2	39	40	6	103	105	1.2	56	62	0137	148	23	28	5.3	4.8	10	234

[redacted]

SYSTEM NO. M-6
VEHICLE NO. 1129
MISSION NO. 9037
CAMERA NOS. 80, 81
FRAMING CAMERA NO. 88

PERFORMANCE ESTIMATE

Pass No.	Frames Camera No. 80	81	88	Feet Camera No. 80	81	88	Latitude Degrees On	Off	Time On Hr. Min.	Dur Sec.	Solar Angle On	Off	Exp. Time Millisec. On	Off	Ramp No.	Instr. On Sec Up Ramp
17AY3	32	32	4	84	84	.8	68	72	01 42	111	32	36	4.6	4.5	10	485
18AX1	133	134	19	350	353	3.8	46	71	03 05	472	18	34	5.1	4.4	5	183
23DY1	55	56	8	145	148	1.6	62	54	10 50	156	41	40	3.8	3.6	10	1147
23DY2	44	45	7	116	119	1.4	51	44	10 53	120	39	37	3.6	3.5	10	1342
24DY1	109	110	15	287	290	3.0	63	47	12 19	300	41	38	3.8	3.5	10	1133
25AE	11	11	2	28	29	.4	35	37	13 30	48	11	12	5.5	5.5	5	—
25DX1	68	68	9	179	179	1.8	56	46	13 51	187	40	38	3.7	3.5	5	1192
29AX1	35	35	5	92	92	1.0	54	60	19 33	127	23	27	4.9	4.7	5	311
30AX1	84	85	12	220	224	2.4	38	56	20 59	312	13	24	5.2	4.7	5	139
31AY1	42	42	6	111	111	1.2	34	44	22 27	164	10	17	5.3	5.0	10	95
31AY2	32	32	5	84	84	1.0	48	55	22 31	118	20	24	4.9	4.7	10	320
31DE	17	18	3	44	47	.6	37	35	23-22-53	46	34	33	3.3	3.3	10	1655
32AY1	48	48	7	126	126	1.4	51	61	24-00-02	170	21	27	4.8	4.6	10	374
35AX1	58	59	9	153	156	1.8	49	61	04-30	206	20	27	4.8	4.5	5	330
35AX2	44	44	6	116	116	1.2	63	71	04-34	145	29	34	4.5	4.3	5	576
36DX1	98	99	14	258	261	2.8	58	[illegible]	06-16	241	40	36	3.6	3.4	5	1264
37DX1	29	30	4	76	79	.8	75	73	07-39	91	38	39	4.1	4.0	5	858
37DX2	69	70	10	182	185	2.0	60	48	07-45	189	40	39	3.7	3.5	5	1224
37DX3	79	81	11	208	213	2.2	45	32	07-49	204	37	32	3.5	3.3	5	[illegible]
[illegible]	52	53	8	137	140	1.6	72	65	[illegible]	153	39	41	3.9	3.8	5	995
[illegible]	110	[illegible]	16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.4	5	[illegible]

SYSTEM NO. M-6
VEHICLE NO. 1129
MISSION NO. 9037
CAMERA NOS. 80, 81
FRAMING CAMERA NO. 88

DRAFT

PERFORMANCE ESTIMATE

Pass No.	Frames Camera No.			Feet Camera No.			Latitude Degrees		Time On	Dur	Solar Angle		Exp. Time Milliseconds		Lamp	Instr. On Sec to Lamp
	80	81	88	80	81	88	On	Off	Hr. Min. Sec.	Sec.	On	Off	On	Off	No.	
41DX1	59	59	9	155	155	1.8	56	47	24-13-45	158	40	38	3.6	3.5	5	1288
47AY1	58	58	8	153	153	1.6	49	61	22-25	203	20	27	4.8	4.5	10	380
47DE	18	18	3	47	47	.6	38	36	2248	46	35	33	3.3	3.2	10	1698
48AY1	63	63	9	166	166	1.8	47	60	24-23-34	220	18	27	4.8	4.5	10	367
49AX1	72	73	10	190	192	2.0	47	62	25-01-24	257	18	28	4.9	4.5	5	289
49DX1	57	34	8	150	90	1.6	70	65	25-01-37	163	40	41	3.8	3.7	5	1092

DRAFT

[redacted]

SYSTEM NO. M6
VEHICLE NO. 1129
MISSION NO. 9037
CAMERA NOS. 80 84

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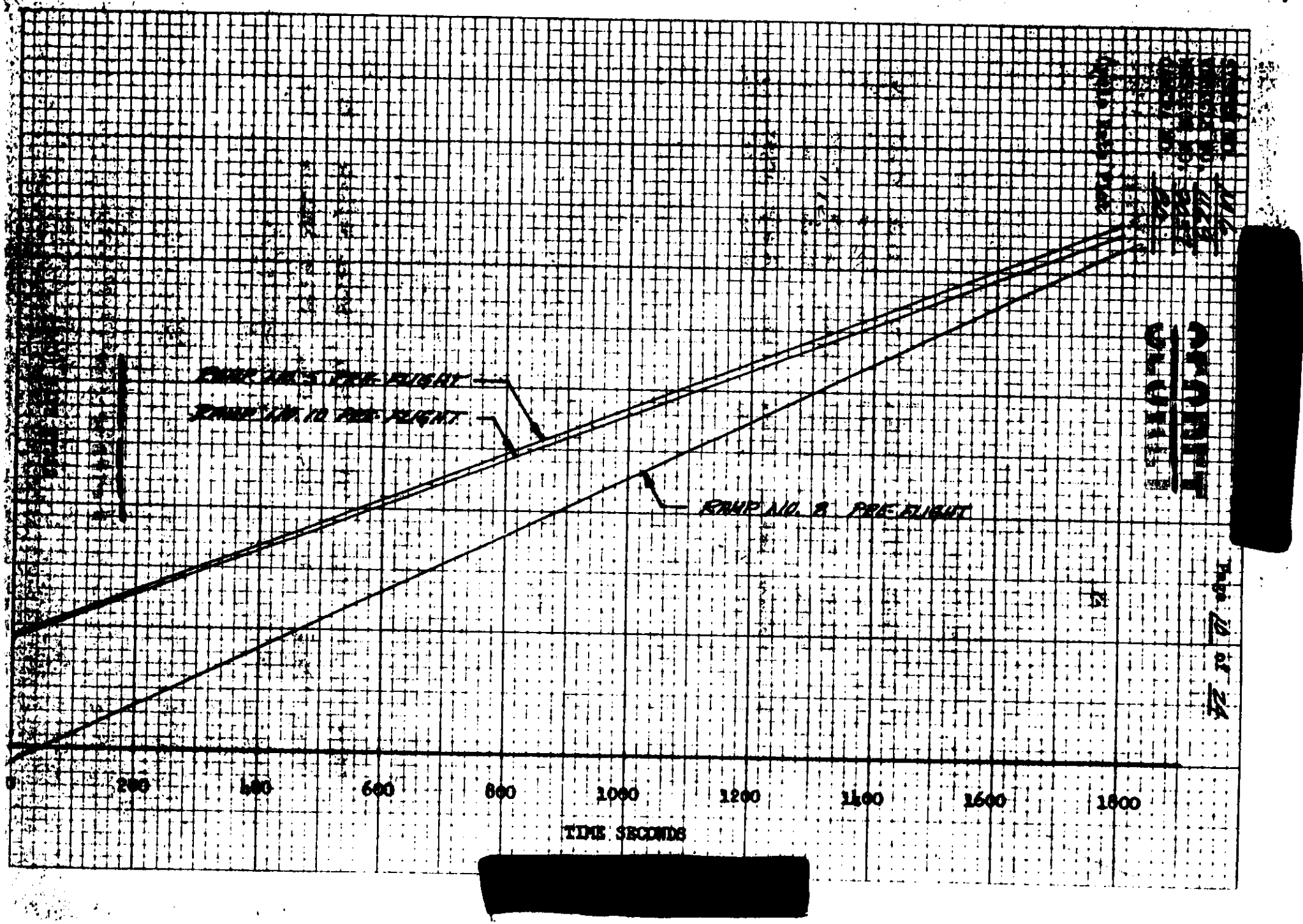
PRE-FLIGHT CYCLE PERIOD: (CAMERA NO. 80)

V/H Ramp	Cycle Period Seconds	FMC Rate		Scan Rate		
		Rad. Per Second	In. Per Second	Rad. Per Second	In. Per Second	Exposure Millisec
8 Start	5.13	.016	.395	1.225	29.3%	6.80
8 End	2.44	.035	.830	2.575	61.804	3.24
5 Start	4.06	.021	.498	1.547	37.143	5.38
5 End	2.38	.055	.851	2.640	63.362	3.15
10 Start	4.09	.021	.495	1.536	36.871	5.42
10 End	2.40	.055	.844	2.618	62.834	3.18

IN-FLIGHT CYCLE PERIOD: (CAMERA NO. 80)

Rev.No.	V/H Ramp	Cycle Period Seconds	FMC Rate		Scan Rate		
			Rad. Per Second	In. Per Second	Rad. Per Second	In. Per Second	Exposure Millisec
9	5 Start	4.05	.021	.500	1.551	37.234	5.37
25	5 Start	4.09	.021	.495	1.536	36.871	5.42

[redacted]


10 X 10 PER INCH
KEUFFEL & ESSER CO.
PUMP NO. 1 PRE-FLIGHT
PUMP NO. 2 PRE-FLIGHT
PUMP NO. 3 PRE-FLIGHT
0
200
400
600
800
1000
1200
1400
1600
1800
TIME SECONDS

[redacted]

SYSTEM NO. M6
VEHICLE NO. 1129
MISSION NO. 9037
CAMERA NOS. 80 & 81

[redacted]

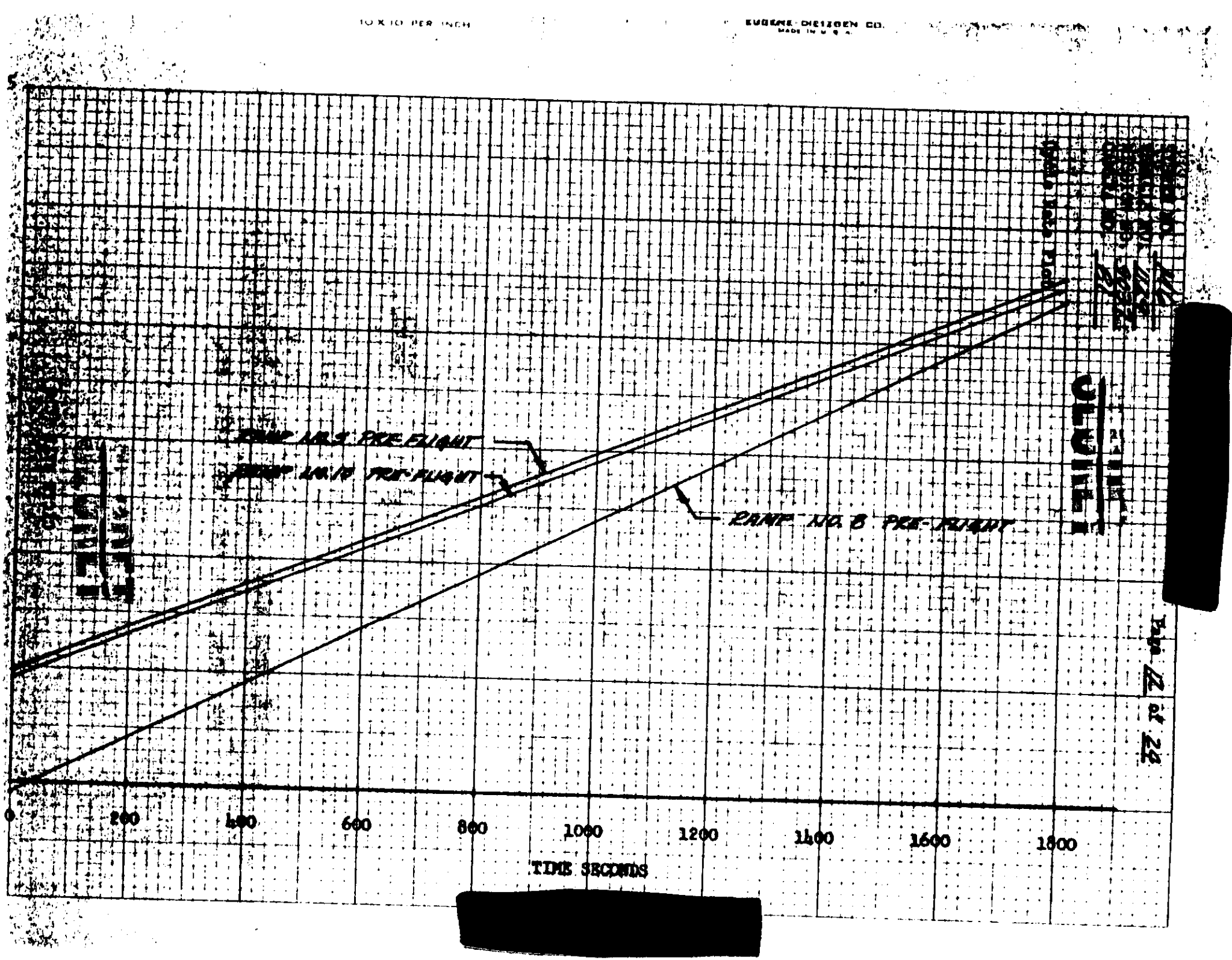
PRE-FLIGHT CYCLE PERIOD: (CAMERA NO. 81)

V/H Ramp	Cycle Period Seconds	FMC Rate		Scan Rate		
		Rad. Per Second	In. Per Second	Rad. Per Second	In. Per Second	Exposure Millisec
8 Start	6.10	.017	.397	1.232	29.569	6.76
8 End	2.39	.035	.847	2.629	63.097	3.17
5 Start	4.02	.021	.504	1.563	37.513	5.33
5 End	2.33	.036	.869	2.697	64.721	3.09
10 Start	4.05	.021	.500	1.551	37.235	5.37
10 End	2.35	.036	.862	2.674	64.171	3.117

IN-FLIGHT CYCLE PERIOD: (CAMERA NO. 81)

Rev. No.	V/H Ramp	Cycle Period Seconds	FMC Rate		Scan Rate		
			Rad. Per Second	In. Per Second	Rad. Per Second	In. Per Second	Exposure Millisec
9	5 Start	4.05	.021	.500	1.551	37.235	5.57
25	5 Start	4.09	.021	.495	1.536	36.871	5.42

[redacted]


10 X 10 PER INCH
EUGENE DIETZGEN CO.
MADE IN U.S.A.
PLANE NO. 2 PRE-FLIGHT
PLANE NO. 1 PRE-FLIGHT
PLANE NO. 3 PRE-FLIGHT
0
200
400
600
800
1000
1200
1400
1600
1800
TIME SECONDS

[redacted]

SYSTEM NO. M6
VEHICLE NO. 1129
MISSION NO. 9037
CAMERA POS. [illegible]

SECRET

LENS DATA SUMMARY: (Main Camera No. 80)

Lens Serial No. 0182435 (H4)

Filter Type WRATTEN 21

Equivalent Operational Focal Length 609.610 MM

Resolution:

Static:

	Lines/MM	Film Type	Target Contrast
Bench Test	218.4	SO 243	High
Other	None		

Dynamic:

	Lines/MM	Film Type	Target Contrast
Itek Pre-Vibration	172	SO132	High
Itek Post Vibration	172	SO132	High
AP Pre-HATS	178	SO132	High
AP Post-HATS	167.6	SO132	High
Other	None		

Note: Itek Post Vibration Resolution of 172 lines/MM Reported In Message No. [redacted] dated 6/22/62

Distortion - Positive (Pincushion)

Angle Off Axis [illegible]	[illegible]	[illegible]	[illegible]	10	359	358	357		
Distortion Millimeters	[illegible]	.004	.004	.006	.004	.005	.006		

SECRET

[redacted]

[redacted]

SECRET

LENS DATA SUMMARY: (Horizon Cameras For Main Camera No. 80)

	Take-Up	Supply
Lens Serial No.	[redacted]	806800
Exposure Time	1/50 Sec.	1/50 Sec.
Filter Type	WRATTEN 25	WRATTEN 25
Aperture	F8.0	F8.0
Operational Focal Length	89.5 MM	89.05 MM
Radial Distortion:		
10° off Axis	.005 MM	.012 MM
20° off Axis	.042 MM	.056 MM
[illegible]	.136	.171
Tangential Distortion (Maximum Value)	.005 MM	.003 MM

Resolution:

Angle off Axis Deg.	0	5	10	15	20	25	27.5
Radial Resolution	[illegible]	[illegible]	[illegible]	39	34	[illegible]	29
Tangential Resolution	[illegible]	[illegible]	[illegible]	37	[illegible]	25	20

[illegible] Lines/MM Avg.

0	5	10	15	20	25
51	44	44	42	32	32
51	49	44	40	34	31

41.6 Lines /MM Avg.

Note:

1. Distortion and resolution are read at equivalent operational focal length.

2. [redacted] contrast

[redacted]

[redacted]

SYSTEM NO. M6
VEHICLE NO. 1129
MISSION NO. 9037
CAMERA NOS. 80 & 81

SECRET

LENS DATA SUMMARY: (Main Camera No. 81)

Lens Serial No. 0162435 (N1)

Filter Type WRATTEN 21

Equivalent Operational Focal Length 609.602 MM

Resolution:

Static:

	Lines/MM	Film Type	Target Contrast
Bench Test	206.8	SO243	High
Other	None		

Dynamic:

	Lines/MM	Film Type	Target Contrast
Itek Pre-Vibration	184	SO132	High
Itek Post Vibration	176	SO132	High
AP Pre-HATS	192	SO132	High
AP Post-HATS	164.2	SO132	High
Other	None		

Note: Itek Post Vibration Resolution of 176 lines/MM Reported In Message No. [redacted] dated 6/22/62

Distortion - Positive (Pincushion)

Angle Off [illegible]	[illegible]	[illegible]	[illegible]	0	359	358	357		
Distortion Millimeters	.005	.003	.001	.000	.001	.005	.011		

SECRET

[redacted]

VEHICLE NO. [illegible]
MISSION NO. 9037
CAMERA NOS. 80 & 81

LENS DATA SUMMARY: (Horizon Cameras for Main Camera No. 81)

	Take-Up	Supply
Lens Serial No.	807547	807564
Exposure Time	1/25 Sec.	1/25 Sec.
Filter Type	None	None
Aperture	F6.8	F6.8
Operational Focal Length	89.25 MM	89.1 MM
Radial Distortion:		
10° off Axis	.001 MM	.015 MM
20° off Axis	.034 MM	.061 MM
30° off Axis	.233	.174
Tangential Distortion (Maximum Vector)	.008 MM	.003 MM

Resolution:

Angle off Axis Deg.	0	5	10	15	20	25	27.5	0	5	10	15	20	25	27.5
Radial Resolution	56	47	37	30	31	31	26	51	49	39	30	30	26	24
Tangential Resolution	51	44	29	31	31	27	19	51	47	38	32	31	23	19

35.0 Lines/MM Avg. 35.0 Lines /MM Avg.

Note:

1. Distortion and resolution are read at equivalent operational focal length.
2. Res[illegible] Super XX [illegible] and High contrast target[illegible]

SYSTEM NO. 46
VEHICLE NO. 1123
MISSION NO. 9021
CAMERA NOS. 02 & 01

[redacted]

DEFINITION OF MAIN CAMERA FORMAT CALIBRATIONS:

1.0 Measurements are made with respect to collimator targets fixed with respect to the mechanical interface between the total payload assembly and the Agena vehicle with the position of the total payload being changed for each instrument calibration.

2.0 Three targets are aligned to be coplanar within ± 5" of arc. The longitudinal axis of the vehicle (Z axis) is so positioned to form an angle of 105.00° ± 5" to the target plane for camera number one calibrations and an angle of 75.00° ± 5" to the target plane for camera number two calibrations.

2.1 One target, Target 1, is in the ZX plane (Nadir) imaging on the Terrain format.

2.2 The second and third targets are at angles of 75.00° ± 5" from target one and are imaged on the horizon formats.

3.0 The indicated center of format of the main cameras is given by the intersection of a line through the center of mass of the central shrinkage marker (Mark) normal to the edge of format containing the shrinkage marker and a line parallel to the same edge located at a position half-way between the format edges.

4.0 The indicated principal points of the horizon cameras are the points of intersection of lines joining opposite fiducials.

5.0 Xvo and Yvo are the offsets of Target 1 from the indicated center of format as defined in paragraph 3.

6.0 Xs, Ys and Xt, Yt are the offsets of Targets 2 and 3 from the indicated principal points of the supply and take-up horizon cameras respectively.

7.0 The indicated flight direction is the direction of vehicle travel during orbit. The forward edge of format is the edge opposite the shrinkage markers for camera number one and is the edge containing the shrinkage markers for camera number two.

8.0 Dimensions A, B, and C are the spacings of the shrinkage markers. Dimensions D and E are the spacings of the X Axis fiducials. Techniques for [redacted] of these dimensions have not been developed. The [redacted] measurements made on [redacted] processed film without control of [redacted].

9.0 The format dimensions are measured to the best estimate of format edge.

10.0 Measurement of any angle between the indicated axis of the horizon cameras and [redacted] of the lines defined in Para. 2 on the format [redacted]. It is assumed to be 90° zero, but is uncontrolled.

11.0 [redacted] the plane and the indicated axis on the main [redacted]

VEHICLE NO. 1129
MISSION NO. 9037
CAMERA NOS. 80 & 81

FORMAT DIMENSIONS: (MAIN CAMERAS)

[redacted]

Camera No. [illegible] Format Viewed with Negative Emulsion Down	Camera No. 81 Format Viewed with Negative Emulsion Down
Vehicle Motion ↓ Scan Direction ←	Vehicle Motion ↑ Scan Direction →
X_t +1.455 Y_t -.495 A 76.060	X_t +.388 Y_t +.080 A 76.060
X_s -.023 Y_s -.127 B 355.050	X_s +1.361 Y_s -.122 B 355.010
X_{vo} +.040 Y_{vo} +.003 C 710.050	X_{vo} +.378 Y_{vo} +2.283 C 709.940
D 56.445 E 56.473	D 56.479 E 56.535

Format Dimensions:

	Supply	Main	Take-Up
Height	53.5	55.7	53.3
Width	22.9	754.1	22.9

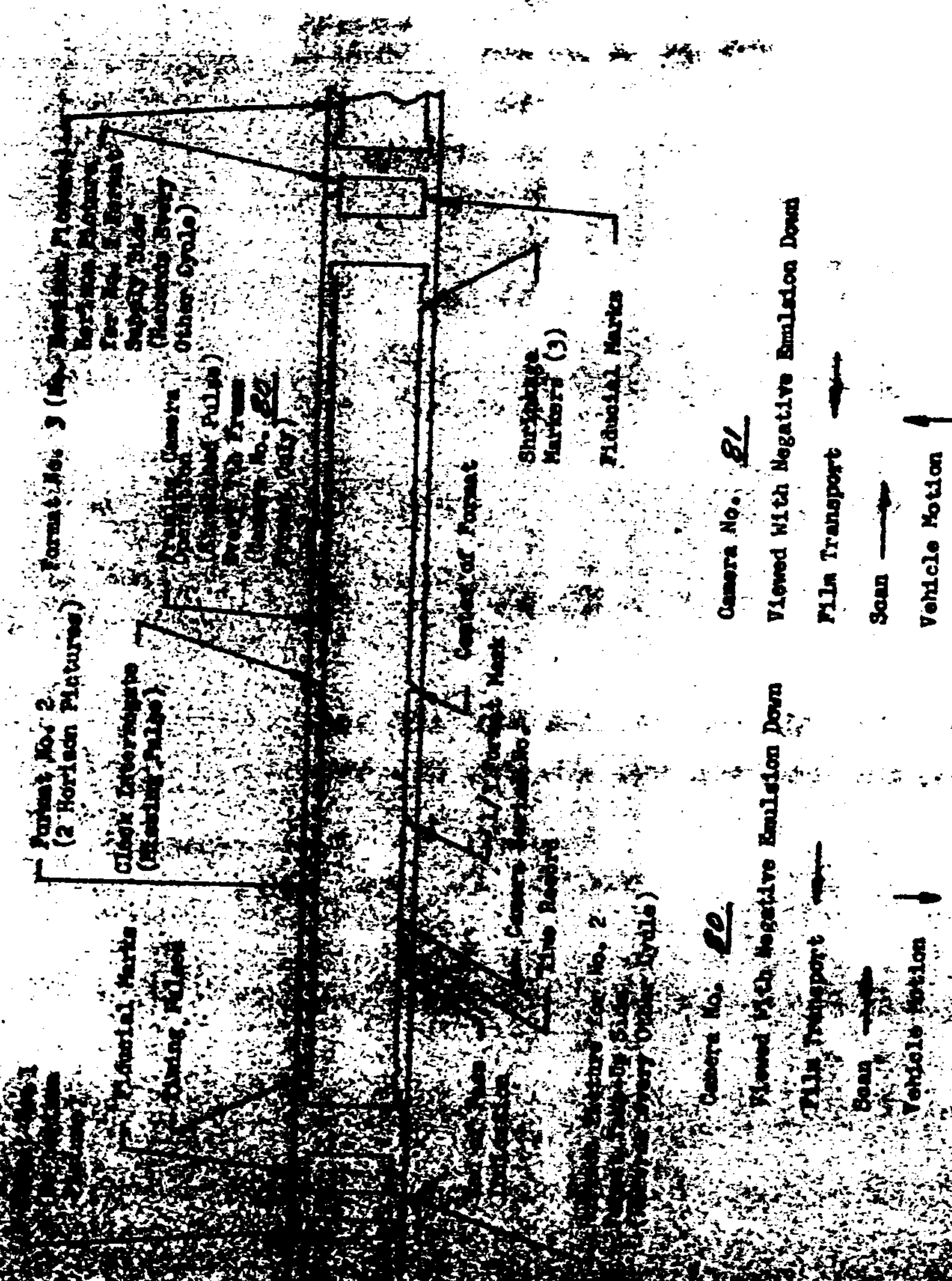
Format Dimensions:

	Supply	Main	Take-Up
Height	53.4	55.9	53.4
Width	22.9	752.5	22.9

Note: 1. All dimensions are in millimeters and are average dimensions of three formats.
2. Height of main format is taken at center of format.
3. Format sign convention

-X+Y	+X+Y
-X-Y	+X-Y

FORMAT LAYOUT: (MAIN CAMERAS)



[redacted]

SYSTEM NO. MGF
VEHICLE NO. 1123 [illegible]
MISSION NO. 903 [illegible]
CAMERA NOS. 80 [illegible]

[illegible]

LENS DATA SUMMARY: (Framing Camera No. 88)

Lens Serial No. 2828084 (2829084) Bow Nos. In Log Book

Reseau Serial No. 88

Filter Type WRATTEN 21

Aperture F6.3

Exposure Time 1/250 Sec.

Equivalent Focal Length 38.47 MM

Resolution: 80 Lines/MM AWAR

NOT AVAILABLE

Angle off axis					
[illegible]					
[illegible]					

Note: Resolution data read from SO 130 Film

Distortion:

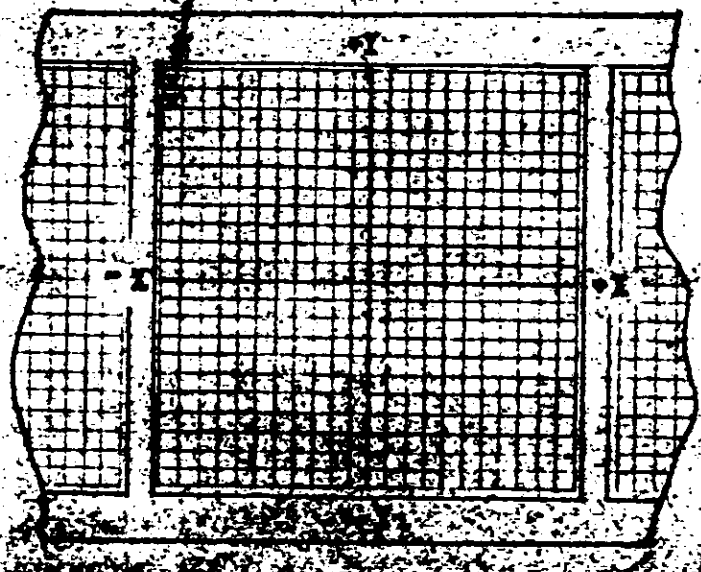
Angle off Axis Deg.	325	350	340	350	0	10	20	30	35
Distortion Millimeters	.139	.103	.046	.012	.000	.010	.045	.094	.117

Perpendicularity of Reseau:
.007 MM In 57 MM

CAMERA NOS: 66 & 68

FRAMING CAMERA FORMAT DIMENSIONS: FRAMING CAMERA NO. 68
(Format viewed with Emulsion side up)

Reseau Serial No. 68



Direction of Film Take Up

Flight Direction

Location of Principal Point:

X +.140 mm

Y -.130 mm

Note: No Regular calibration between Framing camera and Panoramic camera available for this system.

SYSTEM NO. MC
VEHICLE NO. 112
MISSION NO. 9037
CAMERA NOS. 80 & 81

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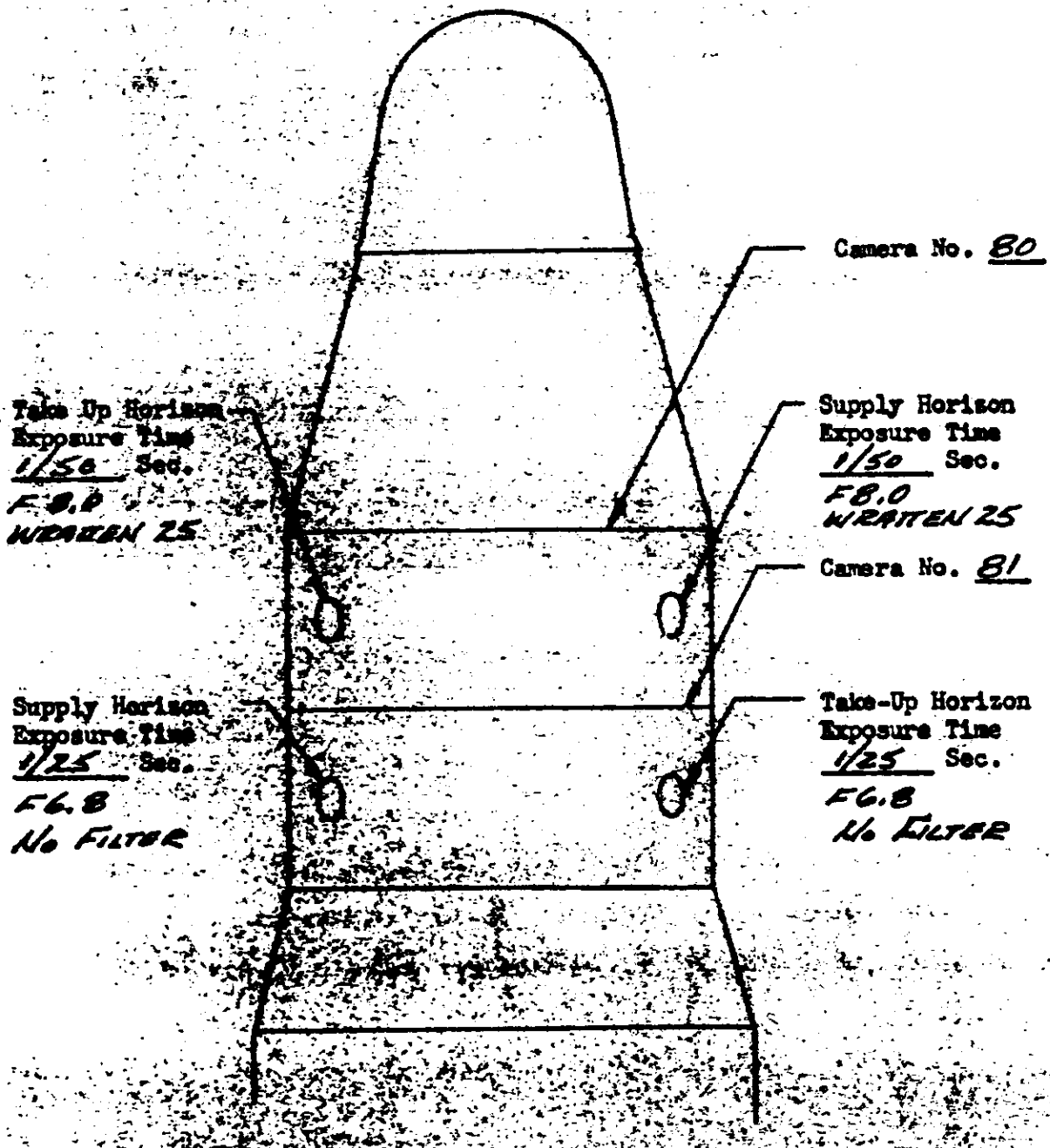
HORIZON LENS SETTINGS (Viewed from top of vehicle inflight)



SYSTEM NO. M7
VEHICLE NO. 1152
MISSION NO. 9036
CAMERA NOS. 84 & 85

SECRET

DEFINITION OF MAIN CAMERA FORMAT CALIBRATIONS:

1.0 Measurements are made with respect to collimator targets fixed with respect to the mechanical interface between the total payload assembly and the Agena vehicle with the position of the total payload being changed for each instrument calibration.

2.0 Three targets are aligned to be coplanar within ± 5" of arc. The longitudinal axis of the vehicle (Z axis) is so positioned to form an angle of 105.00° ± 5" to the target plane for camera number one calibrations and an angle of 75.00° ± 5" to the target plane for camera number two calibrations.

2.1 One target, Target 1, is in the ZX plane (Nadir) imaging on the Terrain format.

2.2 The second and third targets are at angles of 75.00° ± 5" from target one and are imaged on the horizon formats.

3.0 The indicated center of format of the main cameras is given by the intersection of a line through the center of mass of the central shrinkage marker drawn normal to the edge of format containing the shrinkage marker and a line parallel to the same edge located at a position half-way between the format edges.

4.0 The indicated principal points of the horizon cameras are the points of intersection of lines joining opposite fiducials.

5.0 Xvo and Yvo are the offsets of Target 1 from the indicated center of format as defined in paragraph 3.

6.0 Xs,Ys and Xt,Yt are the offsets of Targets 2 and 3 from the indicated principal points of the supply and take-up horizon cameras respectively.

7.0 The indicated flight direction is the direction of vehicle travel during orbit. The forward edge of format is the edge opposite the shrinkage markers for camera number one and is the edge containing the shrinkage markers for camera number two.

8.0 Dimensions A, B, and C are the spacings of the shrinkage markers. Dimensions D and E are the spacings of the X Axis fiducials. Techniques for exact measurement of these dimensions have not been developed. The figures quoted are measurements made on hand processed film without control of shrinkage.

9.0 The format dimensions are measured to the best estimate of format edge.

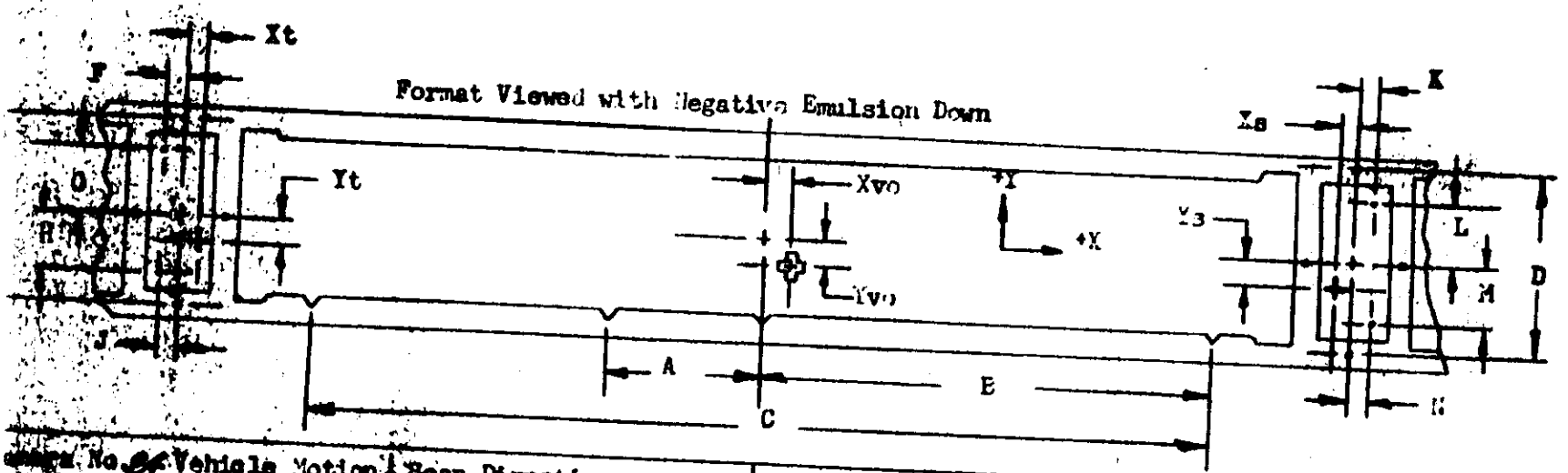
10.0 Measurement of the angle between the indicated axis of the main cameras and the line of intersection of the plane defined in Para. 2 on the format is not currently available. It is assumed to be zero, but is uncontrolled.

11.0 Measurement of the angle between the indicated axis of the horizon cameras and the line of intersection of the plane defined in Para. 2 on the format is made by positioning the targets for each horizon format normal ± 5" of arc [illegible] Dimensions F, G, H, J, K, L, M and N are [illegible]

SECRET

SYSTEM NO. M7
VEHICLE NO. 1151
MISSION NO. 2038
CAMERA NOS. 84 85

FORMAT DIMENSIONS: (ALL CAMERAS)



Camera No. 84 Vehicle Motion ↑ Scan Direction →

A	76.113	Xs	-1.939	H	-24.138
B	355.302	Ys	-.005	J	-4.540
C	710.550	Xvo	-1.110	K	+3.156
D	56.512	Yvo	-.532	L	+23.217
E	56.514	F	-4.517	M	-23.208
Xt	+.369	G	+23.538	N	+3.134
Yt	-.234				

Format Dimensions:

	Main	Take-Up	Supply
Height	55.7	53.4	53.4
Width	755.7	22.8	22.9

Camera No. 85 Vehicle Motion ↑ Scan Direction →

A	76.130	Xs	-1.822	H	-23.090
B	355.361	Ys	-.192	J	-4.384
C	710.617	Xvo	+.923	K	+2.977
D	56.576	Yvo	+1.390	L	+23.649
E	56.498	F	-4.422	M	-23.937
Xt	+.692	G	+23.303	N	+3.106
Yt	+.155				

Format Dimensions:

	Main	Take-Up	Supply
Height	56.1	53.4	53.4
Width	753.5	22.9	22.9

Notes:
1. All dimensions are in millimeters and are average dimensions of three formats.
2. Height of main format is taken at center of format.
3. Format sign convention

[redacted]