Itek

SECRET

OPERATIONAL FLIGHT NO. 9010

Vehicle No. 1107

Re-entry Capsule No. 510

Cassette No. _____

Camera No. #16

Date of Launch June 16, 1961

Time of Launch 1603 PDT

Date of Recovery June 18, 1961

Time of Recovery 2050 PDT

Location North of Hawaii

Additional Remarks Sea Recovery

Film Loaded:- Box No. 1052

J-22-7600 (SO 130) (Pan X)

5-1-2-4-1 (110 l/mm @ 2:1)

38.8 - 15 - 27

MC

Step 4 - Descending

Step 1 - Ascending

SECRET

CAMERA NO. 16

[redacted]

Supply Spool No. _____

Emulsion Type _____

Slit Width .028 inches

Nominal (Step 6) Exposure 1/500 seconds

IMC Step No. _____

Cycling Rate _____ seconds

Actual Exposure 1/60-1/500 seconds
variable w/ ramp.

Timing Pip Frequency - 160 CPS

OPTICS

HYAC II LENS SERIAL NO. HCL-B-16 Wratten No. 21 Filter (Schott OG5A)

Operational Focal Length 23.988 inches

Resolution - Figure of Merit*

FCIC Acceptance	100	lines/mm
Itek Previbration	_____	lines/mm
Itek Post-Vibration	107	lines/mm
Other	91.6	lines/mm

*See attached Resolution Data Sheets

HORIZON OPTICS - Wratten No. 25 Filter (Goertz Data)

	PORT (Left) (Take-up)	STARBOARD (Right) (Supply)
Exposure Time	1/200 sec	1/200 sec
Effective Aperture	6.8	6.8
Serial No.	299555	299554
Equivalent Focal Length (EFL)	89.2 mm	89.25 mm
Back Focal Length	81.35 mm	81.57 mm
Flange Focal Length	86.54 mm	86.81 mm

Angle Off Axis	0°	2-1/2°	15°	22-1/2°	0°	2-1/2°	15°	22-1/2°
Min. Resolution on Super XX	44	39	34	29 lines/mm	51	39	34	25 lines/mm

Radial Distortion (EFL)

10°	.000 mm	.008 mm
20°	.030 mm	.044 mm

Tangential Distortion (EFL) (Max. Vector)

.010 mm	.002 mm

[redacted]

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Lens No. HCL-B-16 Date

HYAC II PHOTOGRAPHIC RESOLUTION

(HIGH CONTRAST - SO 1213 EMULSION)

- RESOLUTION IN LINES/MM -

TANGENTIAL/RADIAL

FOCAL POSITION	LEFT				RIGHT		
	2½°	2°	1°	0°	1°	2°	2½°
Focus Increments - 0.0012 Inches Away From Lens ▼	86 / 107	86 / 107	86	86 / 76	86 / 95	95 / 86	86 / 107
	95 / 107	95 / 120	120 / 107	95	86 / 95	107	95 / 107
	95 / 107	95 / 120	107 / 120	107	95 / 107	107	107
	95 / 107	95 / 107	120	120	107	120	107
	107	107	95 / 107	134 / 120	107 / 120	107 / 95	120
	107 / 95	107 / 95	107	107	107 / 95	95	95
	107 / 86	107	95 / 107	95 / 107	95	95 / 107	95
	86 / 76	95 / 86	107	107 / 95	95	86 / 95	86
	76 / 67	95 / 76	95	95	86 / 85	86 / 76	67 / 76

Operational Flange Focal Distance _____ Inches

Operational E. F. L. 23,988 Inches

Distortion > .003 mm

Test Performed By _____ Date _____

Approved By _____ Date _____

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Camera Serial No. _____
Lens Serial No. _____

Date _____

POST SHAKE

HYAC II RESOLUTION DATA

SUMMARY TABLE		RESOLUTION IN LINES PER MILLIMETER																					
SIMULATOR IMC SETTING	CAMERA IMC STEP	AVERAGE OBSERVER 1 COLLIMATOR						AVERAGE OBSERVER 2 COLLIMATOR						AVERAGE 2 OBSERVERS COLLIMATOR						AVERAGE - OF IMC + SCAN COLLIMATORS					
		18°		0°		30°		18°		0°		30°		18°		0°		30°		18°		0°		30°	
		IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCA
LOW -40%	#1																								
NOMINAL	#6																								
HIGH +40%	#11																								
AVERAGE OF 1-6-11																									

FIGURE OF MERIT - (AVERAGE OF IMC AND SCAN FOR ALL 3 COLLIMATORS

Resolution Values At Focal Plane Of 24" Hyac II Lens

STATIC RESOLUTION ☐
DYNAMIC RESOLUTION ☐

	TARGET NO					
GROUP NO.	1	2	3	4	5	6
4	32	36	40	45	51	57
5	64	72	80	90	102	114
6	128	144	160	130	204	228

SIMULATOR IMC SETTING	CAMERA IMC STEP	OBSERVER 1 COLLIMATOR						OBSERVER 2 COLLIMATOR						AVERAGE - 2 OBSERVERS COLLIMATOR					
HIGH +40%	#1	18°		0°		30°		18°		0°		30		18°		0°		30°	
		IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN						
VARIAC	EXP. #1																		
SETTING V.	2																		
	3																		
	4																		
	5																		
	6																		
	7																		
	8																		
	9																		
	10																		
	TOTAL																		

SECRET

SIMULATOR IMC SETTING	CAMERA IMC STEP	RESOLUTION IN LINES PER MILLIMETER															
		OBSERVER 1 COLLIMATOR						OBSERVER 2 COLLIMATOR						AVERAGE 2 OBSERVERS COLLIMATORS			
		18°		0°		30°		18°		0°		30°		18°		0°	
NOMINAL	#6	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN
VARIAC	EXP #11																
SETTING_V	12																
	13																
	14																
	15																
	16																
	17																
	18																
	19																
	20																
	TOTAL																
	AVERAGE																

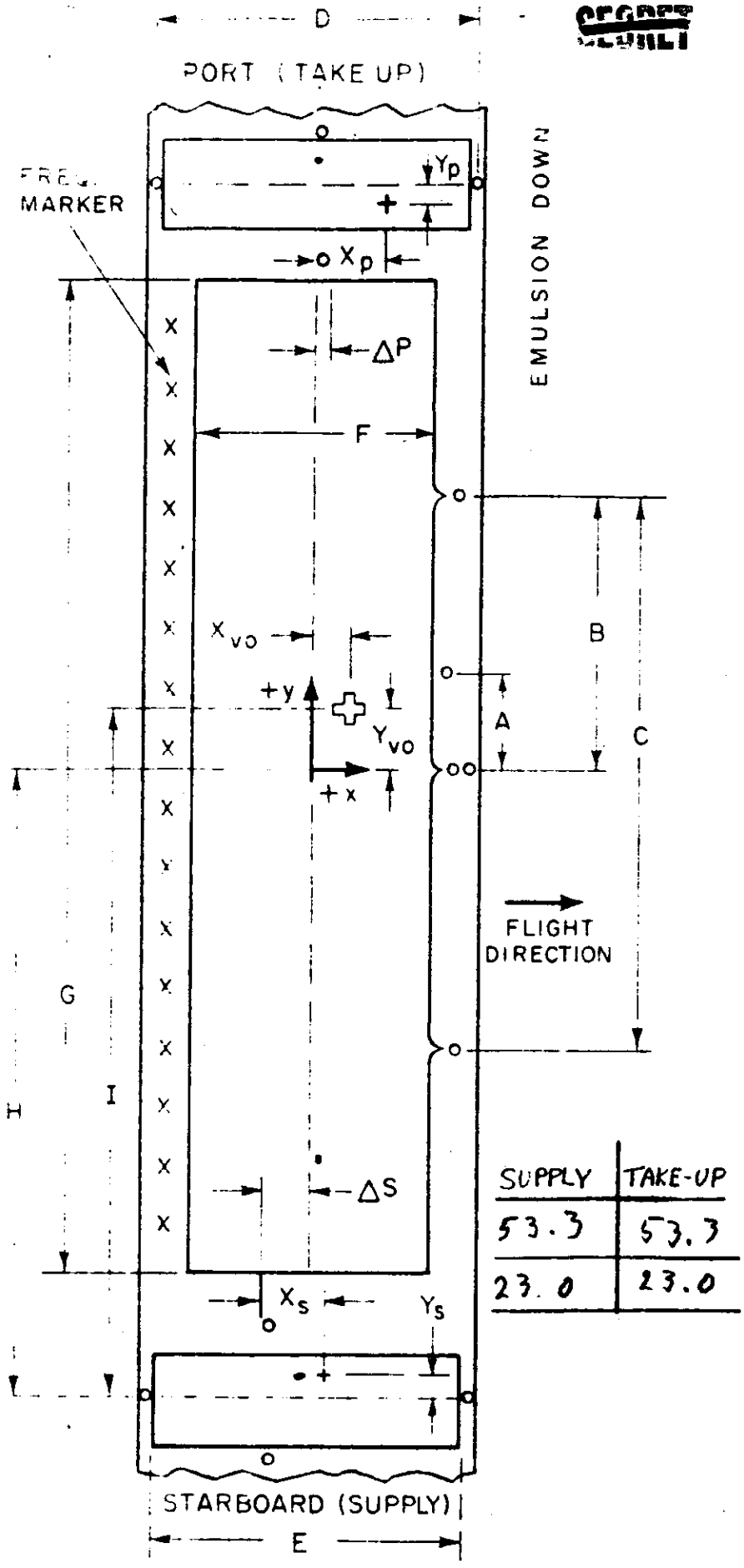
HIGH + 40°C	#11	18°		0°		30°		18°		0°		30°		18°		0°	
		IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN	IMC	SCAN
VARIAC	EXP #21																
SETTING_V	22																
	23																
	24																
	25																
	26																
	27																
	28																
	29																
	30																
	TOTAL																
	AVERAGE																

DATA

CONDUCTED BY

NAME

REPRESENTING



SUPPLY	TAKE-UP
53.3	53.3
23.0	23.0

TABULATION

Horizon Reading (mm)

x_p 323 y_p 326

x_s 212 y_s 390

Vertical Offset (mm)

x_{vo} 739 y_{vo} 469

Shrinkage Measurements*(mm)

A 76.281

B 355.628

C 711.303

D 56.491

E 56.485

Format Dimensions*

~~(Inches x 1/32)~~ mm

F 53.9

G 744.3

℄ of Format Locations (mm)

H ____

I ____

℄ Discrepancies (mm)

Δ P ____

Δ S ____

*Post Vibration Measurements at Itek

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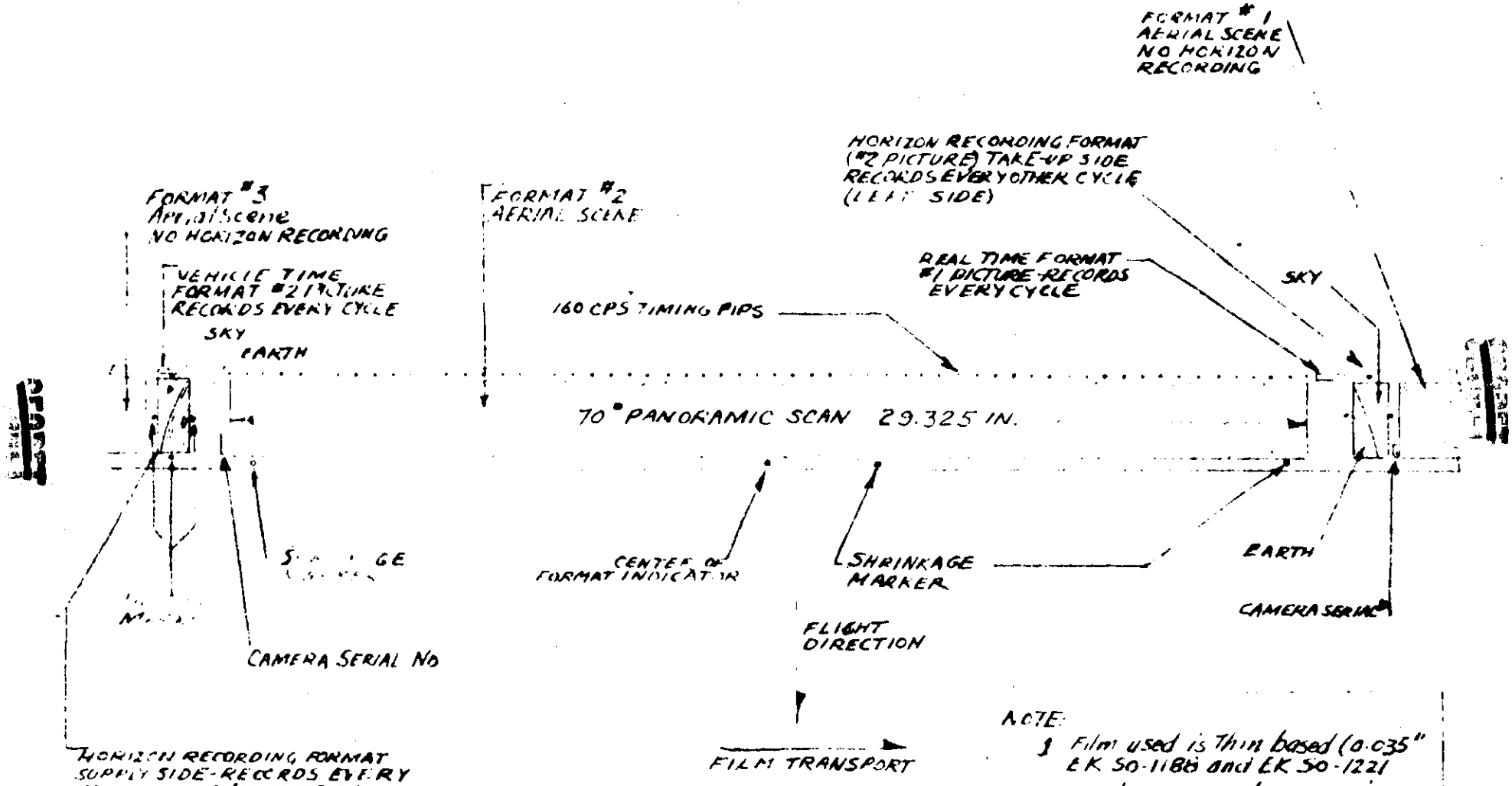

NOTE:

1. Film used is Thin based (0.035" EK SO-1186 and EK SO-1221
2. Each exposure has a minimum 10% overlap at Nadir along Flight direction

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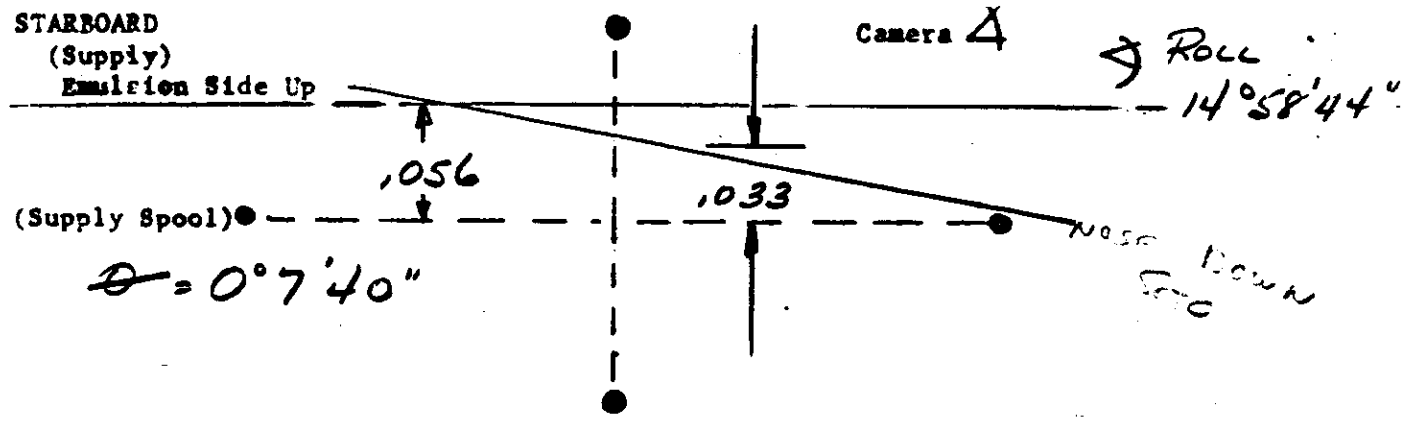
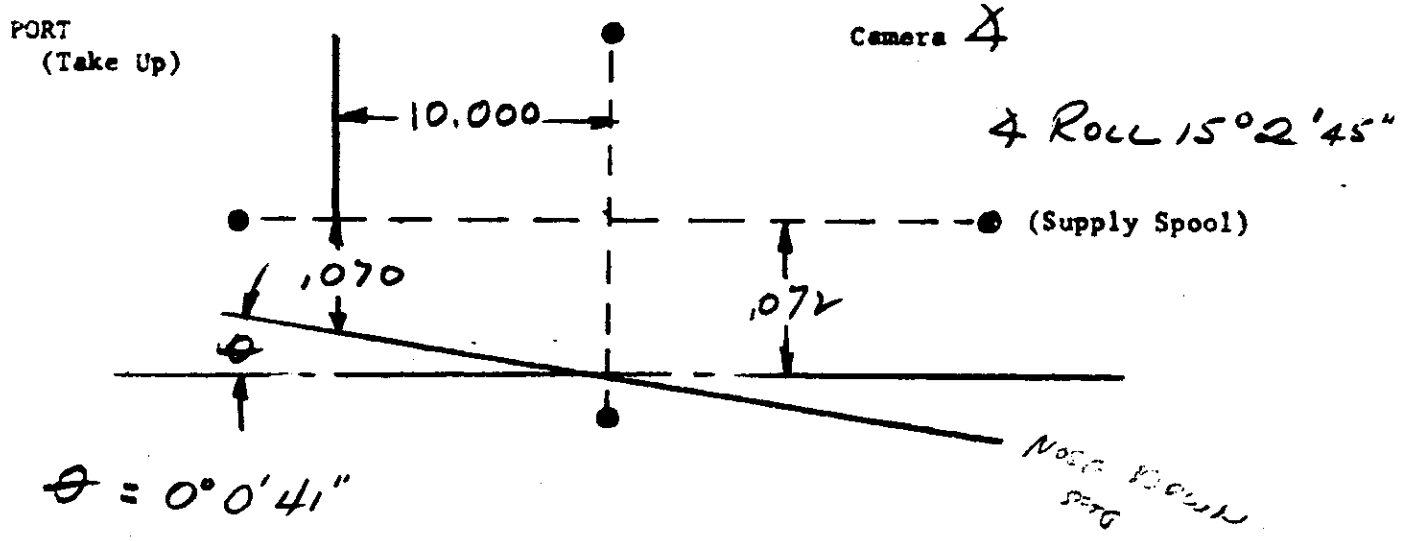
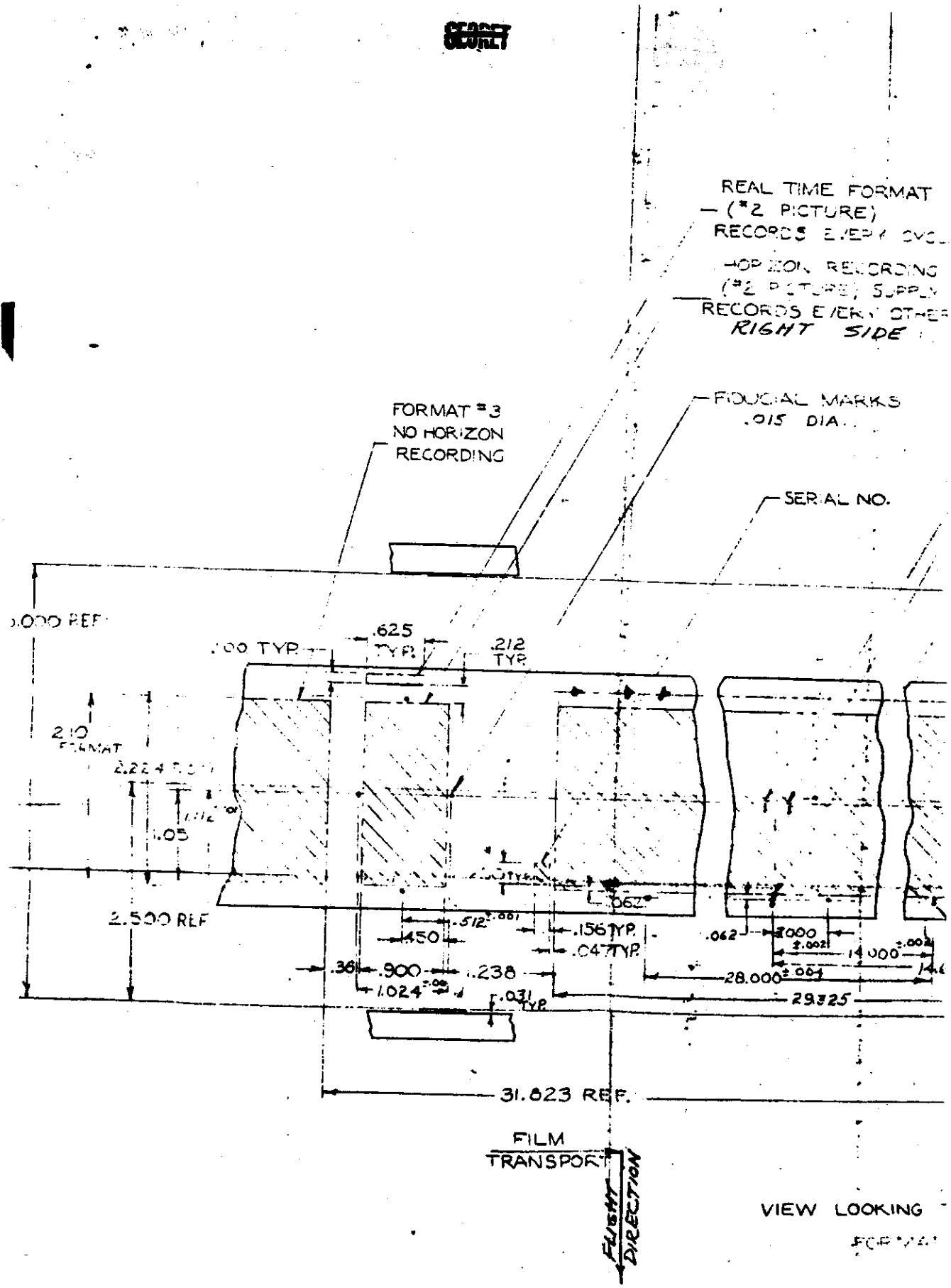
HORIZON ALIGNMENT DATA SHEET







RMAT

CYCLE

RDING FORMAT
UPPER SIDE
OTHER CYCLE
DE

.005 MAX DEVIATION OF MECHANICAL CENTER OF LENS

FORMAT #2
— WITH HORIZON RECORDING

REAL TIME FORMAT
(#1 PICTURE)
RECORDS EVERY CYCLE

CENTER OF FORMAT

.43

PLATE #2

NO.

HORIZON RECORDING FORMAT
(#2 PICTURE)
TAKE UP SIDE
RECORDS EVERY OTHER CYCLE
LEFT SIDE

FORMAT #1
NO HORIZON RECORDING

SYNC PULSE ℄

1.15

℄ FILM

℄ FORMAT AND ℄ HORIZONTAL FIDUCIAL

.062

70MM FILM
2.7559

4.000 +.002 −.000

14.662

2.138

1.238 .900 .36

SERIAL NO.

REVISION "A" - 12/2/58 GPW
SEE RECORD PRINT.

PLATE #2

SHRINKAGE MARKERS (2)
.015 DIA.

OOKING THRU BACK OF FILM

ITEK Corporation Boston, Mass.	
DWN. BY: [redacted]	10-31-58
CHD. BY: [redacted]	10-31-58