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PROCESSING AND DUPLICATION REPORT OF ORIGINAL CAMERA RECORDS MISSION 1115-2

HQ AIR FORCE SPECIAL PROJECTS PRODUCTION FACILITY

[redacted]

PROCESSING AND DUPLICATION REPORT

OF ORIGINAL CAMERA RECORDS

MISSION 1115-2

15 November 1971

[redacted]

This document consists of 20 pages.

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SPPF SPECIAL REPORT NO. [redacted]

ABSTRACT

The Panoramic Camera records received a single level dual gamma process. The Stellar and Terrain Camera records received a single level immersion development. All records were processed without incident.

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SECTION A - INTRODUCTION

This report follows completion of the original camera film processing and duplication requirements for the subject mission. It provides the reader with information in the following areas of interest:

(1) The processing history for each original film.

(2) Technical data relative to the mission.

(3) The physical condition of the original camera films when shipped.

(4) Production information.

Other information judged to be valuable is also included.

SECTION B - PROCEDURES

Standard procedures have been developed to insure that the photographic processing of the mission camera records will be uniformly high in quality. Some of the areas monitored are as follows:

(1) Sensitometry - Sensitometric exposures are used to establish and maintain process control. In the case of the original camera films, flight roll film samples are evaluated whenever available so that the process conditions can be adjusted, if necessary, to attain maximum photographic speed with reasonable fog for the particular flight film.

(2) Physical Properties - When the mission records are prepared for processing, they are inspected for physical damage, adequacy of manufacturing splices, etc... They receive another inspection immediately after processing and prior to shipment. All defects are listed in this report.

(3) Miscellaneous - Significant observations noted during the normal course of work, which affect mission quality, are recorded. New operational procedures and techniques are also included.

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SECTION C - GENERAL INFORMATION

FLIGHT INFORMATION

1.	Vehicle	1662
2.	Launch	10 September 1971
3.	Orbits	104-300
4.	Recovery	29 September 71; Dry
5.	Arrival at Processing Site*	30 September 71

*All camera records received in suitcases.

SECTION D - PROCESSING INFORMATION

The Panoramic Camera records received dual gamma processes. The Stellar and Terrain Camera records received a single level immersion process.

Additional processing information is as follows:

CAMERA	FILM TYPE	PROCESSOR	TOTAL FOOTAGE
FORWARD	3414	Viscous Fultron	8032
AFT	3414	Viscous Trenton	8046
STELLAR	3401	Versamat	860
TERRAIN	3400	Versamat	1119

All camera records were processed without incident.

SECTION E - MISCELLANEOUS INFORMATION

Defilming:

Forward - Severe damage was noted on the end of the record for twenty inches of film. This was removed and processed by hand, along with twelve inches of loose film

which arrived taped to the camera spool.

Aft - The film broke near the end of defilming. Possible cause was the reverse wrap which occurs during change from Vehicle 1 to Vehicle 2.

Stellar - No problems were encountered.

Terrain - No problems were encountered.

SECTION F - DISCREPANCIES

1. Main Camera Records: Random intermittent plus-density spots were present in the center of the format on the Forward record beginning in Rev 119 and continuing to the end of the mission. Similar spots were also observed on the Aft record. In addition, intermittent base and emulsion scratches, light pinholes, static marks, embedded dirt, and abrasions were noted throughout. Specific degradation are listed by rev and frame on the following pages.

Forward Camera Record:

REV	FRAME	COMMENT
D-104	—	—
A-105	—	—
D-105	15	Emulsion Tear
A-106	001-040	Edge Wrinkles
D-115	004	Title Transfer
D-117	—	—
D-119	001-104	Edge Wrinkles
D-120	—	—
D-121	—	—

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REV	FRAME	COMMENT
D-127	—	—
D-134	—	—
D-135	—	—
D-137	—	—
D-138	—	—
D-150	—	—
D-151	—	—
D-153	001-031	Edge Wrinkles
D-154	001-100	Emulsion Scratches
D-166	001-055	Emulsion Scratches
D-167	—	—
D-168	—	—
D-169	054-060	Crease; Emulsion Pickoff
D-170	001-002	Crease
D-176	—	—
D-181	—	—
D-182	001-023	Edge Wrinkles
D-183	001-030	Edge Wrinkles
D-185	—	—
D-186	—	—
D-187	—	—

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REV	FRAME	COMMENT
D-197	—	—
D-199	—	—
D-200	—	—
D-201	—	—
D-202	—	—
D-203	—	—
D-217	—	—
D-218	—	—
D-219	—	—
D-224	—	—
D-233	—	—
D-234	—	—
D-249	—	—
D-250	—	—
D-251	—	—
D-264	—	—
D-265	—	—
D-266	—	—
D-267	—	—
D-274	002	Adhesive Residue
D-280	—	—

REV	FRAME	COMMENT
D-282	—	—
D-283	—	—
D-284	—	—
D-296	025-029	Emulsion Scratch
D-299	012-013 001-030	Crease Edge Wrinkles
D-300	—	—

Aft Camera Record:

REV	FRAME	COMMENT
D-104	190	Production Splice
A-105	—	—
D-105	—	—
A-106	—	—
D-115	—	—
D-117	—	—
D-119	—	—
D-120	—	—
D-121	—	—
D-127	—	—
D-134	—	—
D-135	—	—

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REV	FRAME	COMMENT
D-137	—	—
D-138	045-050	Emulsion Scratches & Crease
D-150	—	—
D-151	—	—
D-153	—	—
D-154	—	—
D-166	—	—
D-167	—	—
D-168	—	—
D-169	—	—
D-170	—	—
D-176	—	—
D-181	—	—
D-182	—	—
D-183	—	—
D-185	—	—
D-186	—	—
D-187	—	—
D-197	—	—
D-199	001	Adhesive Residue
D-200	—	—

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REV	FRAME	COMMENT
D-201	—	—
D-202	—	—
D-203	—	—
D-217	—	—
D-218	023	Title Transfer
D-219	—	—
D-224	—	—
D-233	042,052,060 063,067	Title Transfer
D-234	—	—
D-249	—	—
D-250	—	—
D-251	—	—
D-264	—	—
D-265	—	—
D-266	—	—
D-267	—	—
D-274	—	—
D-280	022,025-027	Title Transfer
D-282	—	—
D-283	—	—

REV	FRAME	COMMENT
D-284	—	—
D-296	—	—
D-299	—	—
D-300	057-058	Emulsion Scratches
	055-058	Edge Wrinkles

2. Stellar Camera Record: The physical quality was judged to be good. Intermittent static was present throughout the roll.

3. Terrain Camera Record: The physical quality of the film is good. Light intermittent emulsion and base scratches, static marks, pinholes, and kinks were observed throughout. Other anomalies are as follows:

REV	FRAME	COMMENT
D-130	001-002	Heat Buckle
D-135	015-021	Base Abrasions
	034	Heat Buckle
D-136	006-008	Moisture Spots
D-250	023-028	Edge Wrinkles

SECTION G - SENSITOMETRIC CURVES

The flight roll sensitometric characteristics are evaluated prior to mission arrival and the process is adjusted from standard control conditions, if necessary, to attain maximum photographic speed with reasonable fog for the particular batch of flight film involved. The mission record is then processed under these conditions with additional flight roll sensitometric strips attached to each end of the mission record. Sensitometric curves from these strips are published in this section of the report and are most representative of the sensitometry

of the flight film.

When flight roll sensitometric strips are not available, the average head and tail sensitometric curves are published. These sensitometric curves are used to certify the processors and to assure that process control was maintained from head to tail of the record.

SENSITOMETRIC CURVE

MISSION MATERIAL

FORWARD CAMERA

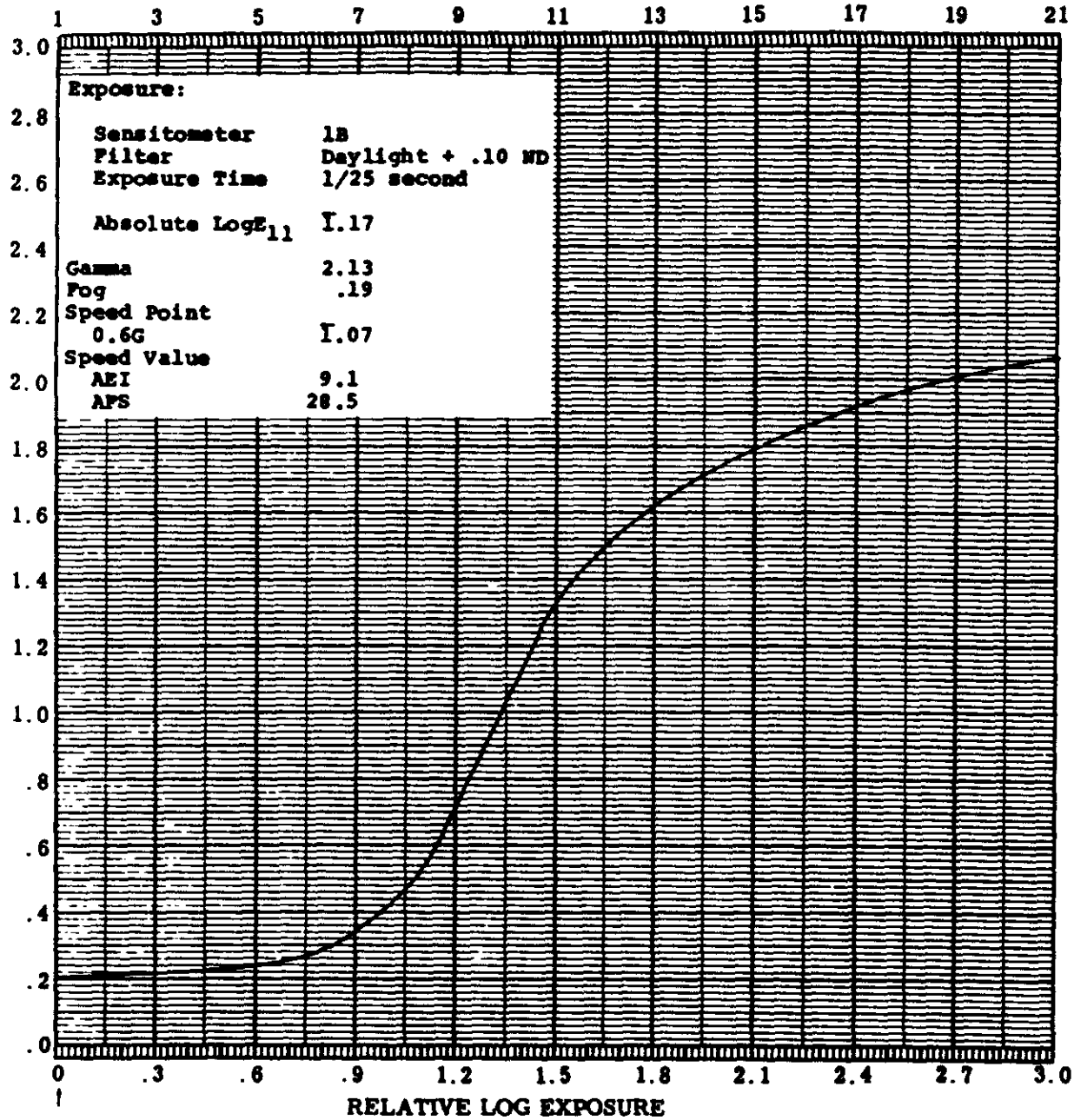

FIGURE 1

SENSITOMETRIC CURVE

MISSION MATERIAL

AFT CAMERA

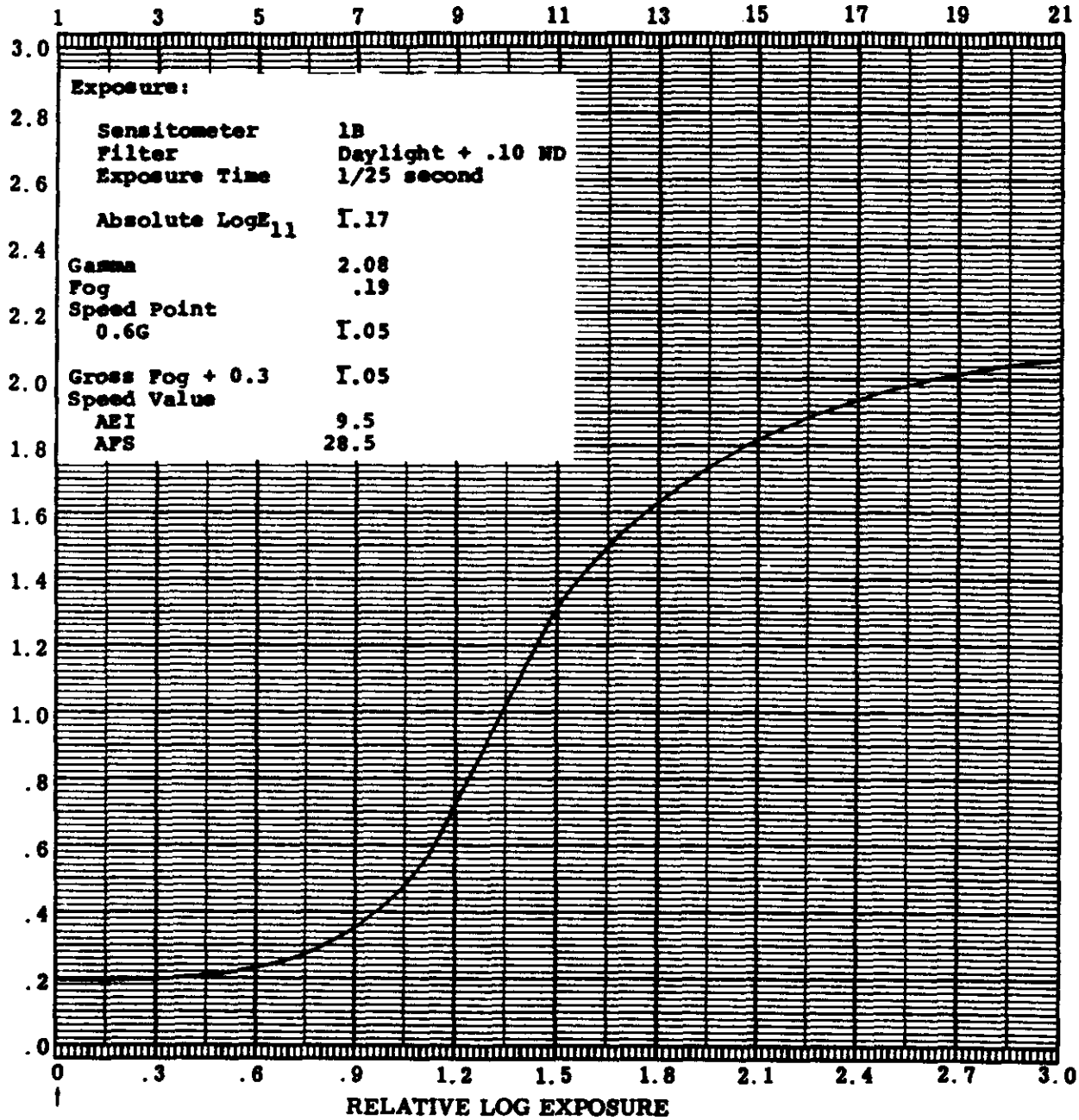

FIGURE 2

SENSITOMETRIC CURVE

AVERAGE HEAD AND TAIL

STELLAR CAMERA

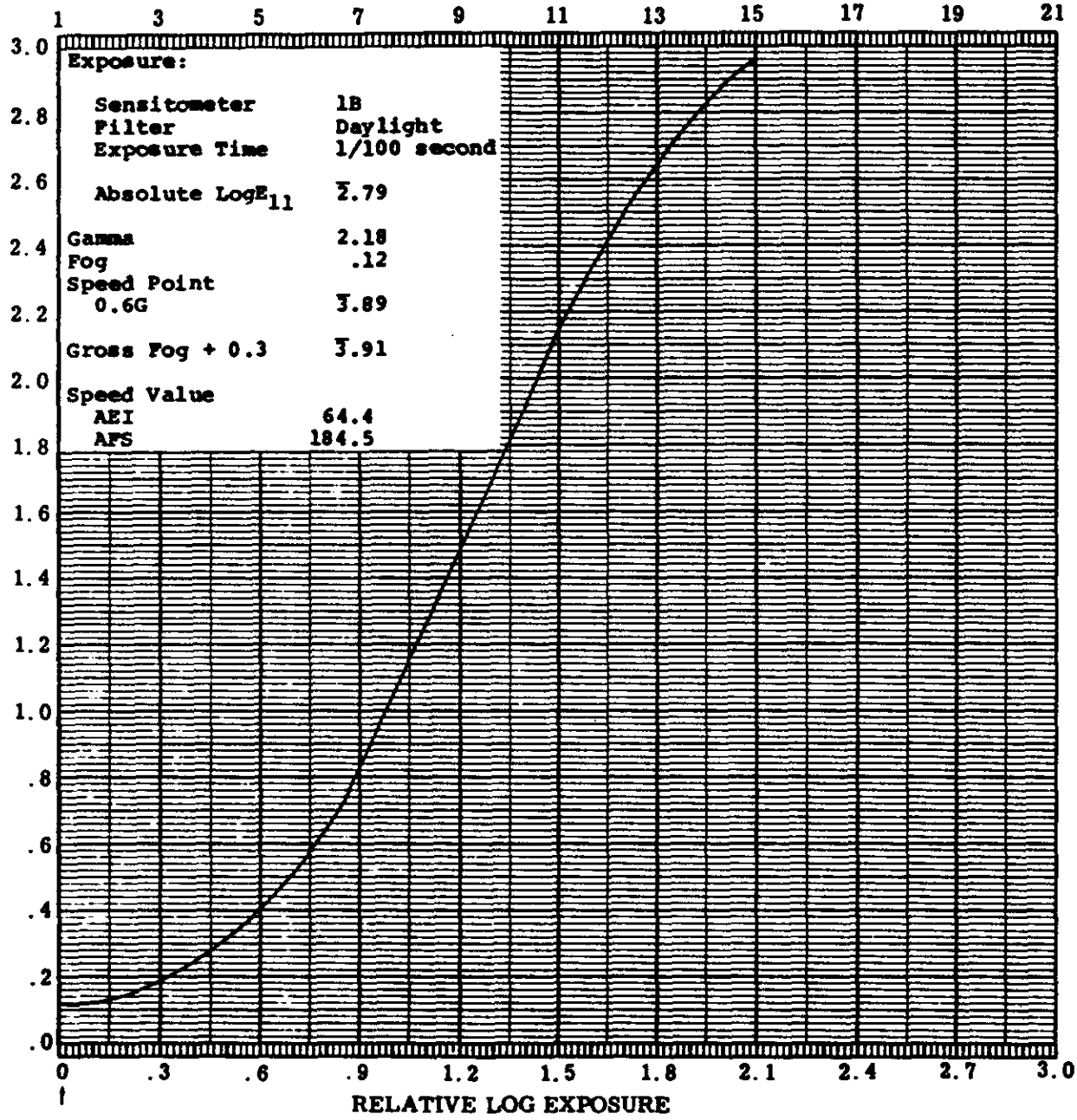

FIGURE 3

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SENSITOMETRIC CURVE

AVERAGE HEAD AND TAIL

TERRAIN CAMERA

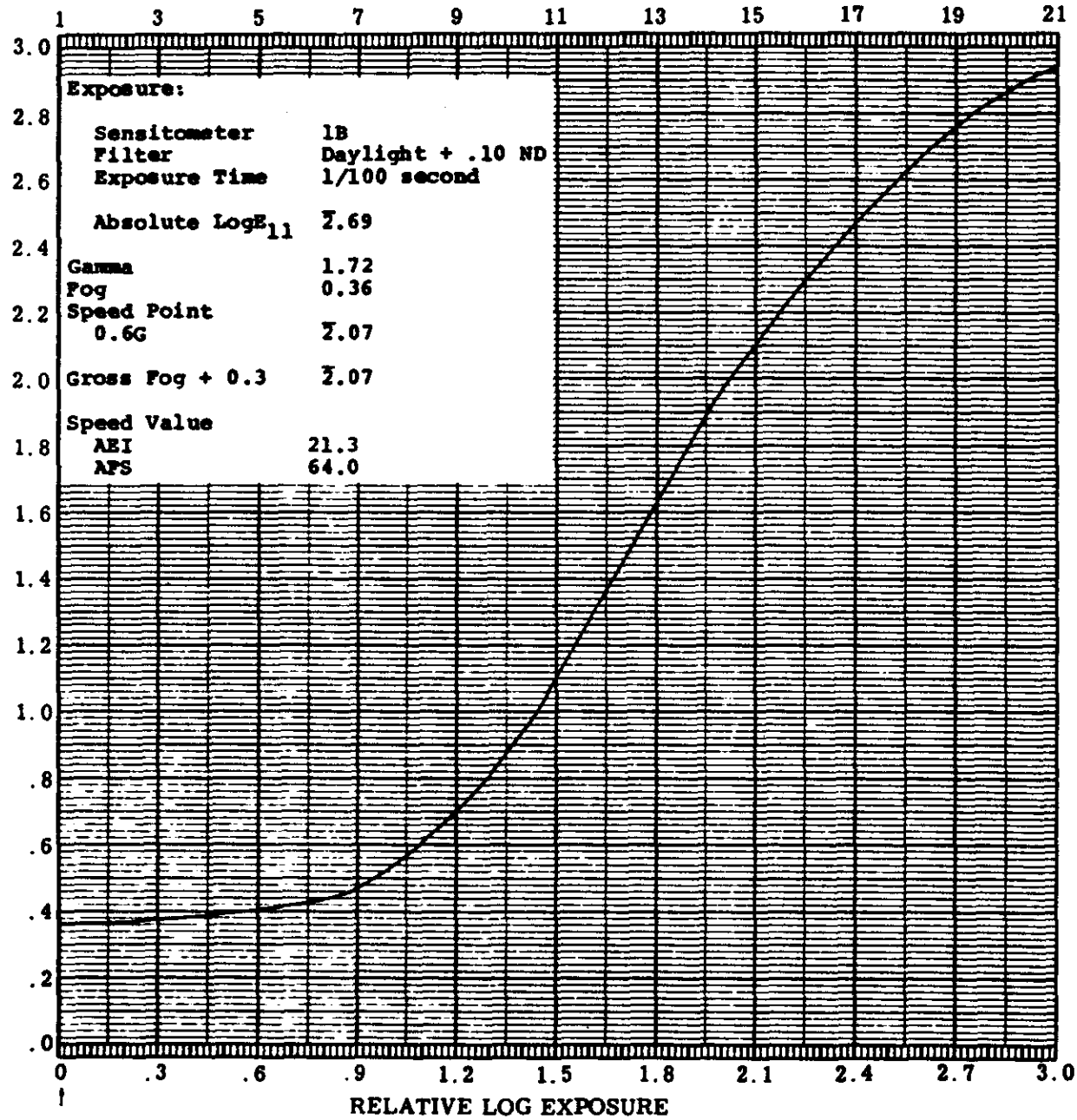

FIGURE 4

SECTION H - PRODUCTION INFORMATION

1. Time Summary:

a. Priority I : Completed at H plus 66 hours.

b. Priority II : DIA/IAS completed at H plus 76 hours, SAC completed at H plus 85 hours.

c. Priority III: Completed at H plus 124 hours.

2. Production Summary:

		PERCENT OF TOTAL FILM USED	FOOTAGE
a.	Film Shipped	59.0	601,954
b.	Film Rejected	6.0	59,199
c.	Printer Certification	1.0	7,700
d.	Printer Threading	7.0	69,360
e.	Processor Certification	20.0	200,900
f.	Tag Ends	7.0	73,769
	TOTAL FILM USED		1,012,882

REJECT RATE: 8.9 PERCENT

EFFECTIVE PROCESS RATE PER HOUR: 4,855 FEET

3. Cost Summary:

a. Facility [redacted]

b. Data Processing [redacted]

c. Manpower [redacted]

d. Materials [redacted]

TOTAL COST [redacted]

COST PER FOOT FILM SHIPPED [redacted]

4. Comments:

The reject rate of 8.9 percent is considered exceptionally good as this mission represents our first extended run of SO-192 using the modified Niagara Printers and spray mode of processing. The experience and problem solving techniques previously accomplished by [redacted] for SO-192 aided in maintaining the low reject rate. The five technical representatives from [redacted] who were on site during production provided valuable aid and advice particularly during the original processing phase.

The percentage of film shipped (59%) in relation to total amount of film expended is considered good; however, with continued experience, the percentage could be improved. As this was the first original negative mission with the use of SO-192 for duplication, printer and processor certification was established and replicated several times to ensure validity of product quality. Previous experience has proven that with continued real experience and use of special emulsions, the problem of certification becomes less difficult.

[redacted]

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PRODUCTION GRAPH

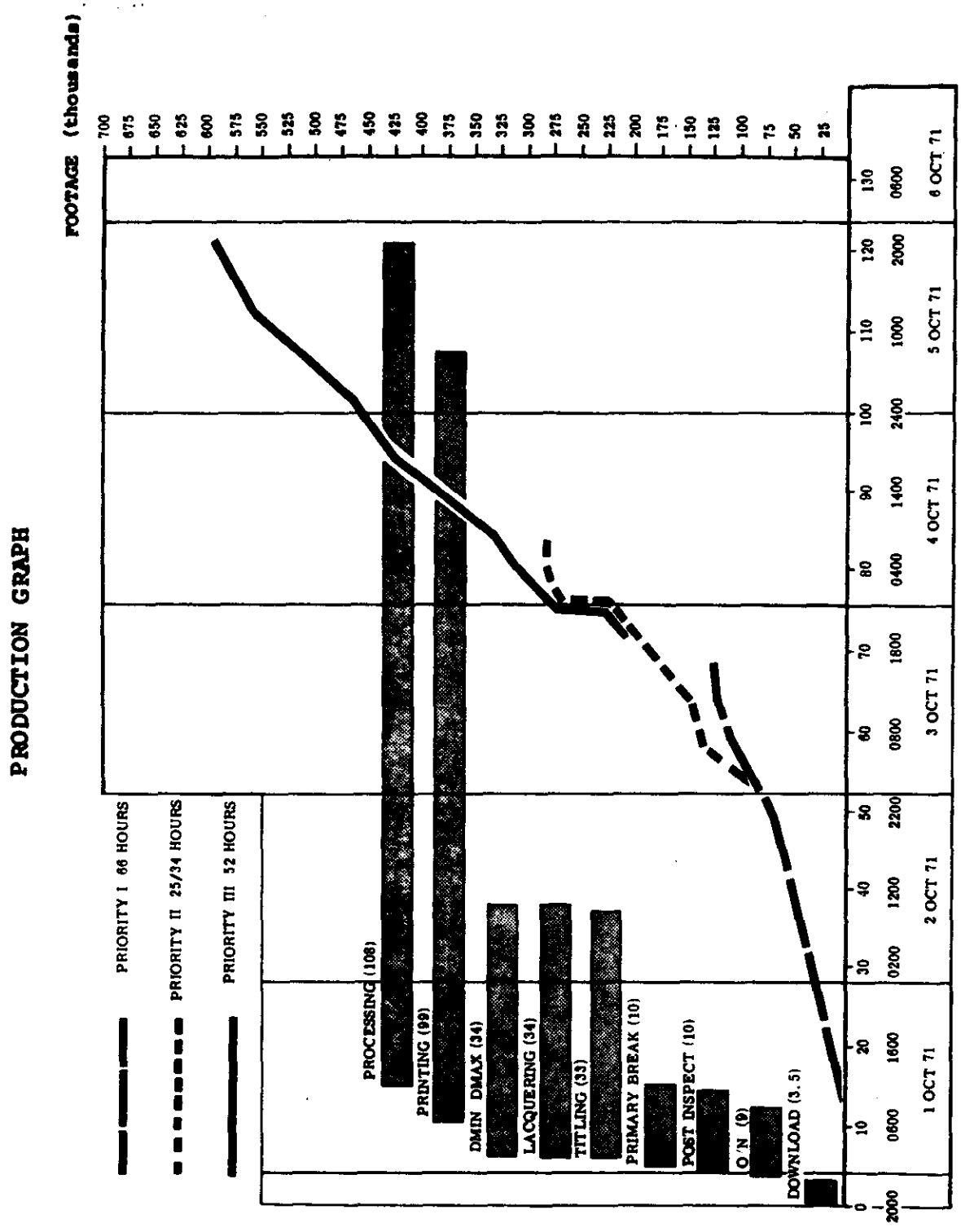

FIGURE 5