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fgw

1212-1 General Data Summary

Highlights

1. Film Load - The Fwd Record consisted entirely of 1414 (29,992') while the Aft contained three film types: 1414 (24,385'), SO-255 (2000') and SO-130 (2000').
2. Stack Measurements - Stack radius measurements, as requested by the customer, were taken at 4 places along the inboard and outboard edges of both records.
3. SO-130 Fog - Inadvertently during presplice, the IR Edge Sensor was left on after the transition from film type 1414 to SO-130. The oversight was caught but not before 28 inches of Frame 1, Op 022 had received a narrow band of fogging.
4. Y-6 Machine Cut - A machine cut was made on the Fwd Record in the IOR of Op 104 due to an electrical problem which inhibited optical titling. The problem was traced to Power House #7 and corrected.
5. Film Creases - 16 (R-831) film creases (13 to 30 inches in length) were noted on the Fwd Record. This anomaly occurred only on film piece 71 and then again on the tail flash. Investigation is continuing.
6. A new viscous developer delivery system was used on Y-5 with no problems.
7. B&W/Color - The Rainbow #104 was used to print all internegatives in place of the Framinghams, which have been moved from L. P. to H. E.
  - One Op/Part shipped as a dual (DP: Medium & Dark).
8. Noform O. Neg. - A new Noform O. Neg handling procedure was instituted on this mission. The major difference was that the Noform O. Neg was stored in the Preliminary Evaluation Area (instead of MAA) under the control of the Special Evaluation Honcho.
9. In-Line Evaluation - A new In-Line Evaluation Procedure was instituted on this mission.
10. Damaged Film Reports - Twenty-five B&W damaged film reports were made out this mission. Most (18) were due specifically to wrinkled edges.

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30 August 1976

To: R. W. Stowe  
From: [REDACTED]  
Subject: 1212-1 General Data Summary

Part I - General Information and B&W/B&W

I. Recovery Vehicle Information

- A. Launched - 8 July 1976.
- B. Received - 0900 EDT Wednesday, 4 August 1976  
Lot #2302, Dry Recovery.
- C. Film Load

<u>Camera</u>	<u>Film Type</u>	<u>Size</u>	<u>Footage</u>
FWD	1414-63-8	6.6"	29,992'
AFT	1414-63-13	6.6"	24,385'
	SO-130-12-1	6.6"	2,000'
	SO-255-124-2	6.6"	2,000'

D. Exterior Condition

- 1. R. V. received in good condition, no anomalies noted.
- 2. R. V. Weight - pounds.

<u>Full</u>	<u>Empty</u>
1083.4	612.90

- 3. Pictures taken by [REDACTED] group.
- 4. Dome was cleaned by lab personnel.

E. Interior Condition

- 1. Core locking pins were fired and engaged. Neither pin was sheared.

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2. Batteries were cool and normal.
3. No moisture or excessive temperature noted.
4. Condition of Stacks
  - a. Centering good - approximately 5/16" each side, both records.
  - b. Stacking good - no unspooling, spills or stickouts noted on either record.
5. Stack Measurements
  - a. The customer requested that 4 stack measurements be taken along the inboard and outboard edges of both records at approximately 90° increments.

b. Stack Radius Measurements (Inches) -

<u>Fwd</u>	<u>In</u>	<u>Out</u>	<u>Aft</u>	<u>In</u>	<u>Out</u>
1	8.628	8.625	1	8.615	8.614
2	8.620	8.619	2	8.612	8.615
3	8.619	8.622	3	8.612	8.614
4	8.619	8.617	4	8.615	8.617

II. Presplice Information

A. Presplice Room

1. Hex Presplice Complex used.
2. Safelights and Sensors
  - a. 1414 - Safelights were used in the up position with 7-1/2 watt bulbs, Wratten Safelight Filter #3. All sensors were on.
  - b. SO-255 - Prespliced under the same safelight and sensor conditions as the 1414.
  - c. SO-130 - Prespliced in total darkness with all sensors off\*.

B. Presplice Sequence - 4 August 1976.

Start Time: 1250

Finish Time: 1945

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\* The IR edge sensor was inadvertently left on for 28 inches of Frame 001, Op 104. This caused a narrow band of fog.

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B. Presplice Sequence - Cont'd.

Fwd Tag - 1414  
Fwd Main - 1414  
Aft Tag - 1414  
Aft Main - SO-255 (2 segments)  
Aft Main - SO-130 (2 segments)  
Aft Main - 1414 (4 segments)

C. Presplice Static

1. Jet Ionizers were not used.
2. Static monitor was used.
3. No static was observed.

D. Rate of Despooling

1414 - 350 FPM  
SO-255 - 100 FPM  
SO-130 - 100 FPM

E. RMP Package removed and sent to Q. C.

F. Miscellaneous

1. During payload inspection, a 1/8" piece of metal skiving was removed from the titled edge of the Fwd Record.
2. During post evaluation of the R. V. , many metal chips and skivings were noted in the R. V. Dome and take-up assembly.
3. Eight window splices were removed from the Aft Record.  
Four were 1414/SO-255 and four were 1414/SO-130.

III. Original Negative Process

- A. Safelights - Eastman Kodak 10 X 12 Utility Safelights in the up position with 7-1/2 watt bulbs and Wratten Safelight Filter #3.
- B. Process - See Appendix A, Figure 1.

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<u>Record</u>	<u>Film Type</u>	<u>Processor</u>	<u>Spec.</u>	<u>Base &amp; Fog</u>			
				<u>Job</u>	<u>R-2</u>	<u>Control</u>	<u>Monitor</u>
FWD (Tag)	1414-63	Y-6	783	.24-.30	.25	.19	.24
AFT (Tag)	1414-63	Y-5	782	.21-.27	.25	.16	.18
FWD (Main)	1414-63	Y-6	783	.24-.30	.25	.19	.24
AFT (Main)	1414-63	Y-5	782	.21-.27	.25	.16	.18

C. Processing Comments

1. FWD Record (Y-6) ("1212-1 B&W Report (Lot #2302)", [REDACTED] to R. W. Stowe, 10 August 1976).
  - a. The Fwd Record was cut in the IOR of Op 104 due to the inability to optically title. The problem was found to be electrical and was traced to a burned out insulator in Power House #7.
  - b. 16 intermittent film creases (13 to 30 inches long) were noted in film piece 71 (946' long). This anomaly also occurred in the tail flash. The rest of the Fwd Record was processed without incident. Investigation of the cause is underway.
2. AFT Record (Y-5) - No processing problems.
3. A new delivery system for viscous developer on Y-5 was used without incident.
4. Gray Spots - None noted on Aft Record and only minor occurrences noted on Fwd Record.

D. Optical Titling

1. Fwd Record - Y-6

a. Performance

<u>Mode</u>	<u>Frame Count</u>	<u>Titled Correctly</u>
30°	1324	1303
60°	1588	1485
90°	1021	995
120°	-	-
Total	3933	3783

% Correctly and Accurately Titled - 96.2%

- b. There were 2 extra frame marks. All frames from Op 98 Frame 1 to Op 101 Frame 43 were not optically titled due to a voltage drop which shut down the titling computers.

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2. Aft Record - Y-5

a. Performance

<u>Mode</u>	<u>Frame Count</u>	<u>Titled Correctly</u>
30 <sup>o</sup>	1057	977
60 <sup>o</sup>	1130	1104
90 <sup>o</sup>	896	883
120 <sup>o</sup>	-	-
Total	3083	2964

% Correctly and Accurately Titled - 96.1%

b. There was 1 extra frame mark. The majority of Aft frames not optically titled were as a result of the color breaks.

E. Process Monitor Data

1. Process monitor data was recorded but since the manual marker was inoperative and no written records were kept, it is impossible to exactly correlate monitor footage to mission material.
2. A rough guess was made as to what portion of the monitor data was mission material. This data was then analyzed and can be found in Appendix A, Table 1.

F. UV/Visual Relationship - See Appendix A, Figures 2-3.

IV. General Mission Information

A. Number of Ops (MFI)

	<u>Fwd</u>	<u>Aft</u>
Operational - 1414	217 <sup>(2)</sup>	171 <sup>(1) (2)</sup>
SO-255	-	15 <sup>(3)</sup>
SO-130	-	20 <sup>(4)</sup>
Nofofn - 1414	18 <sup>(5)</sup>	14 <sup>(5)</sup>
SO-255	-	1
SO-130	-	2
Total	235	223

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- (1) Does not include 7 Ops which were only part 1414
- (2) Includes 2 Ops which were edited (114, 115).
- (3) Includes 3 Ops part SO-255 and part 1414
- (4) Includes 4 Ops part SO-130 and part 1414
- (5) Includes 1 Op which was edited (116).

B. Number of Op/Parts (MFI)

	<u>Fwd</u>	<u>Aft</u>
Operational - 1414	254 (1)	202 (1)
SO-255	-	15
SO-130	-	20
Noform - 1414	19 (2)	14 (2)
SO-255	-	1
SO-130	-	2
<b>Total</b>	<b>273</b>	<b>254</b>

- (1) Includes 2 Op/Parts which were edited.
- (2) Includes 1 Op/Part which was edited.

C. Number of Composites (MFI)

	<u>Fwd</u>	<u>Aft</u>
Operational - 1414	90 (1)	68 (1)
SO-255	-	11
SO-130	-	9
Noform - 1414	6	4
SO-255	-	1
SO-130	-	1
<b>Total</b>	<b>96</b>	<b>94</b>

- (1) Includes 1 Composite which was edited (97).

D. Number of Frames (R-831) - 7662

<u>Film Type</u>	<u>Mode</u>	<u>Fwd</u>	<u>Aft</u>
1414	120 <sup>0</sup>	0	0
	90 <sup>0</sup>	1021	1058
	60 <sup>0</sup>	1588	1133
	30 <sup>0</sup>	<u>1324</u>	<u>896</u>
		3933	3087

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<u>Film Type</u>	<u>Mode</u>	<u>Fwd</u>	<u>Aft</u>
SO-255	120°	-	0
	90°	-	25
	60°	-	204
	30°	-	91
			<u>320</u>
SO-130	120°	-	0
	90°	-	43
	60°	-	122
	30°	-	157
			<u>322</u>
Total		3933	3729

E. Number of Manufacturing Splices

<u>Film Type</u>	<u>Fwd</u>	<u>Aft</u>
1414	23	14
SO-255	-	3
SO-130	-	-
Window Splices	<u>0</u>	<u>8</u>
Total	23	25

F. Mission Start and Stop Points

<u>Mission</u>	<u>Record</u>	<u>Film Type</u>	<u>Start</u>		<u>Stop</u>	
			<u>Op</u>	<u>Frame</u>	<u>Op</u>	<u>Frame</u>
1212-1	Fwd	1414	001	001	235	018*
1212-1	Aft	1414	001	001	010	021*
"	"	SO-130	010	021*	022	001
"	"	1414	022	002	034	040
"	"	SO-255	035	001	046	011*
"	"	1414	046	011*	056	002*
"	"	SO-130	056	002*	065	029*
"	"	1414	065	029*	100	004*
"	"	SO-255	100	004*	103	027*
"	"	1414	103	027*	235	016*

\* Partial Frames

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G. Number of Lab Cuts

<u>Film Type</u>	<u>Fwd</u>	<u>Aft</u>
1414	23*	21*
SO-255	0	4
SO-130	<u>0</u>	<u>2</u>
Total	23	27

\* This figure does not include 2 lab cuts of preflight.

V. Reproduction Data

A. Density Data - B&W Only

1. Acquisition Method - Cayuga
2. Total Samples for Density Data

		<u>Fwd</u>	<u>Aft</u>
Frames	1414	3720	2859
Parts	1414	251	200

3. Density Data from Operational Photography

Frame x Frame

<u>Mean</u>	<u>Min.</u>	<u>Max</u>	<u>Mean</u>	<u>Range</u>
Fwd 1414	.73	1.55	1.13	.82
Aft 1414	.55	1.43	.99	.88

<u>Std. Dev.</u>	<u>Min</u>	<u>Max</u>	<u>Mean</u>	<u>Range</u>
Fwd 1414	.241	.181	.182	.219
Aft 1414	.212	.191	.174	.204

Part x Part

<u>Mean</u>	<u>Min.</u>	<u>Max</u>	<u>Mean</u>	<u>Range</u>
Fwd 1414	.65	1.67	1.16	1.01
Aft 1414	.49	1.58	1.02	1.08

<u>Std. Dev.</u>	<u>Min.</u>	<u>Max</u>	<u>Mean</u>	<u>Range</u>
Fwd 1414	.212	.145	.177	.219
Aft 1414	.198	.166	.178	.211

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B. Duplication System - B&W Only

1. Printers

a. All ABCC Redondo print levels predicted using Cayuga density data. The coefficients that were used can be found in Appendix B, Table 1.

b. System Curves

(1) The same Redondo and Cayuga system curves as used for 1211-4 were used for this mission.

(2) See Appendix B, Figures 1-12 for a complete collection of Redondo and Cayuga system curves and printer check forms.

c. On-line analysis of ABCC Redondo and Cayuga printer checks thru the use of an HP-9830, continued on this mission.

2. Processors

a. Dupe process specs and curves - See Appendix B, Figures 13-16.

3. Dupe Stock Classification (classified for ABCC Redondo 3414/SO-192 (2422) Spec. 781 (777) ).

	<u>Classification</u>	<u>Footage</u>
a. DP		
B&W/B&W & B&W/Color	0	1,900,000
b. DN		
(1) AN	-1/2	374,000
(2) TN	0	193,000

4. Machine Control Guidelines - See Appendix B, Table 2.

5. First Copy Guidelines - See Appendix B, Table 3.

6. Patches

a. New 42 step patches were used for this mission. As usual, they were spliced into the tail of every Op/Part.

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- b. Patch Aims - New aims were generated for the new patches - see Appendix B, Table 4.
- c. All 42 step patches were removed by Production prior to final evaluation and shipment of the original.
- d. Cayuga Patch Aims
  - (1) Aims were generated for Cayuga prints at First Copy using the 42 step patches.

(2) Patch Aims

	<u>Step</u>	<u>Aim</u>	<u>Tolerance</u>
DP Normal	J-1	1.10	+ .15
Area Negs.	F-1	.60	+ .15

C. Reproduction System Performance - B&W Only

1. Printer Performance

a. Redondo - 6 ABCC Redondos (#'s 104, 316, 321, 412, 413, 414) were brought on-line for 3414/SO-192 Spec. 781 normal and high contrast. These printers were used without incident.

b. Cayuga

- (1) 4 printers were available for this mission.
- (2) 3 were ABCC (#'s 1, 2, 170) and 1 was standard (#5).
- (3) many problems, especially poor resolution, banding (software problem) and computer hardware problems, hampered the printers.
- (4) Cayuga #5 was never certified due to poor resolution.

2. Printer Utilization

a. ABCC Cayugas were used to print all DP copies of 3 composites (A-11, A-23, A-73) to eliminate Redondo dual prints.

b. See Appendix C, Table 1.

3. Area Neg. Manual Prints - There were no manual area negative prints.

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4. Multiple Prints

a. DP:	<u>Camera</u>	<u>Op/Part</u>	<u>Frames</u>	<u>Area</u>	<u>Comp #</u>	<u>ND's</u>
	Fwd	66-1	1-19	G	F-51	.4m/.7L
	"	73-1	1-28	D	F-37	.5m/.8L
	"	94-1	1-19	A	F-4	.9m/.6D
	Aft	66-1	1-19	G	A-51	.5m/.8L
	"	73-1	1-28	D	A-37	.6m/.9L

b. DN: - None

5. Processor Utilization

<u>Processor</u>	<u>Specs.</u>
D-3	777, 781
D-4	777, 781
D-7	773, 776
D-8	781

6. High Contrast "Instead Of's": Fwd -8, Aft - 3 -  
See Appendix C, Table 2 for an itemized list.

7. ABCC Redondo DP Normal Contrast Print Level  
Distribution - See Appendix C, Histograms 1-2.

8. Patch Return Density Statistics

a. This data was collected after the mission by keying in  
the patch readings on an HP-9830.

b. See Appendix C, Table 3.

D. Target Complex - B&W Only

1. All target negatives were printed on ABCC Cayugas and all  
target positives were printed on ABCC Redondos.
2. All parts were printed normal contrast.
3. Most parts were printed at 1.00 ND except for a few  
parts that went at .90 ND due to snow.

E. Specialized Duplication

1. Flats - Only 3 targets duplicated per record.  
(SO-192 ABCC High Contrast Spec. 781).
2. "In Addition To" Op/Parts - None.
3. Addendums - No addendums were handled by the Specialized  
Dupe Team.

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F. Production Defect Survey\* - B&W and B&W/Color

<u># of Defective Composites</u>	<u># of Composites Shipped</u>	<u>% Reprinted</u>
403	5474	7.36%

\* For an itemized breakdown by defect, see the "Summary of Performance and Behavior of Printers for Mission 1212-1", Production Shipping Office to R. W. Stowe.

G. Miscellaneous - B&W Only

1. Mapping Copy - One full copy, printed ABCC Cayuga onto SO-192 and processed Spec. 773. Return aim was .95 with low and high limits of .40 and 1.60 respectively.
2. Production Monitoring/Labeling
  - a. The modified system was used for the first time - some minor problems.
  - b. Reprints were made on a composite basis this time instead of Op/Part.
  - c. Several new reports improved workflow.
  - d. The new satellite labeling station was used - some minor problems.
  - e. For further information, see "Monitoring & Labeling System for 1212-1", [REDACTED] to QC/Production/DE, 29 July 1976.
3. New Nofor O. Neg. Procedure
  - a. A new trial procedure for handling Nofor O. Neg. was used this mission.
  - b. The major change in procedure was that the Nofor O. Neg. was kept in the Preliminary Evaluation Area (Instead of MAA) and was under the control of the Special Evaluation Honcho.
  - c. No problems were encountered and this procedure will be continued.
4. Duplicate Negatives - Emulsion-in Vs. Emulsion-out.
  - a. Prior to the arrival of 1212-1, there was some discussion concerning the winding of dupe negs. emulsion-in vs. emulsion-out due to the customer's decision for the 9x5 system.
  - b. From discussion with the customer, no change was requested for 1212-1 (dupe negs. were therefore, wound emulsion-out).

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VI. End Point Sampling - B&W Only

A. % Defective

	<u>Minor</u>	<u>Major</u>	<u>Critical</u>	<u>Sample Size</u>	<u># of Shipped Parts Sampled</u>
Op/Parts	92.8%	0.6%	0	681	4.84%
Composites	59.4%	0	0	281	5.86%

B. Problem Areas - Stock dirt, process dirt and malfunctioning printer and processor time clocks were the largest problem areas.

C. Beginning with 1212-1, some slight modifications have been made to the EPS system.

1. The defect codes have been re-assigned to stay abreast with today's duplication systems.
2. The EPS recording form has been modified to include more aids to the operators.
3. For further details, see "End Point Sampling Changes", N. A. Young to D. Schluter/F. Whitmore, 3 August 1976.

VII. Evaluation

A. In-Line Evaluation

1. A new procedure was implemented beginning with this mission.
2. The new procedure is included in Appendix A as Figure 4.
3. 2 Cayugas (#1 & #2) were evaluated during lab-cut printing - many wrinkled edges, scratches and embedded dirt reported.
4. 15 composites were evaluated - again, many wrinkled edges and scratches reported.

B. Final

1. 25 damaged film reports written. This is much higher than the normal 8-9.
2. 18 out of the 25 were specifically written for scalloped (severely wrinkled edges).

C. Evaluation Report - A comprehensive report is being written concerning all evaluations.

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Part II - Black & White from Color

I. Recovery Vehicle Information

A. Film Load

<u>Camera</u>	<u>Film Type</u>	<u>Size</u>	<u>Footage</u>
AFT	SO-255-124-2	6.6"	1996
AFT	SO-130-12-1	6.6"	1984

II. Presplice Information

A. Presplice Room

1. Hex Presplice Complex used.

2. Safelights & Sensors

a. SO-255 - Safelights were used in the up position with 7-1/2 watt bulbs, Wratten Safelight Filter #3. All sensors were on.

b. SO-130

(a) All safelights were off.

(b) All sensors were off except for the IR edge sensor which was inadvertently left on for part of one frame (Op 104 Frame 001). The sensor caused a narrow band of fog 28 inches long.

B. Static - None noted.

C. Rate of Despooling

SO-255 - 100 FPM

SO-130 - 100 FPM

III. Original Process

<u>A.</u>	<u>Film Type</u>	<u>Machine</u>	<u>Spec.</u>	<u>Footage</u>	<u>Location</u>
	SO-255-124	Grafton	E-26-8C	2000	L. P.
	SO-130-12	MP <sup>2</sup>	E-31-3E	2000	H. E.

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- B. Titling - Both film types were manually titled on the Unimak at L. P.

IV. General Mission Information

A. Number of Ops (MFI)

Operational	SO-255	15 <sup>(1)</sup>
	SO-130	20 <sup>(2)</sup>
Noform	SO-255	1
	SO-130	<u>2</u>
Total		38

- (1) Includes 3 Ops part SO-255 and part 1414.  
(2) Includes 4 Ops part SO-130 and part 1414.

B. Number of Op/Parts (MFI)

Operational	SO-255	15
	SO-130	20
Noform	SO-255	1
	SO-130	<u>2</u>
Total		38

C. Number of Composites (MFI)

Operational	SO-255	11
	SO-130	9
Noform	SO-255	1
	SO-130	<u>1</u>
Total		22

D. Number of Frames (R-831) - 642

<u>Film Type</u>	<u>Mode</u>	<u>AFT</u>
SO-255	120°	0
	90°	25
	60°	204
	30°	<u>91</u>
		320

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<u>Film Type</u>	<u>Mode</u>	<u>AFT</u>
SO-130	120 <sup>o</sup>	0
	90 <sup>o</sup>	43
	60 <sup>o</sup>	122
	30 <sup>o</sup>	<u>157</u>
		322

E. Number of Manufacturing Splices

SO-255	3
SO-130	None

F. Mission Start and Stop Points

<u>Film Type</u>	<u>Record</u>	<u>Start</u>		<u>Stop</u>	
		<u>Op</u>	<u>Frame</u>	<u>Op</u>	<u>Frame</u>
SO-130	AFT	010	021*	022	001
SO-255	AFT	035	001	046	011*
SO-130	AFT	056	002*	065	029*
SO-255	AFT	100	004*	103	027*

\* Partial Frame

G. Number of Lab Cuts

SO-255	4*
SO-130	2*

\* In terms of actual original processor lab cuts, there were 3.

V. Reproduction

A. Density Data

1. Original Positive densities collected manually using a 1/2mm densitometer calibrated with a Status A Green Filter.
2. Internegative densities collected manually using a 1/2mm densitometer calibrated to visual.

B. Printers

1. Rainbow #104
  - a. A Rainbow was used to print all internegatives instead of a Framingham since both Framinghams have been moved to H. E.

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b. Printing Setup

2" Slit  
3, 6, 12 FPM  
W-16 Filter  
No Uniformity Mask  
Reference 50/250  
Liquid Gate: SO-255\*  
Dry Gate: SO-130  
Process Spec. 776

\* Chloroethane used for the most part. TCE substituted at slow transport rates because it was less volatile.

2. ABCC Redondo - Used for printing all 3rd generation Duplicate Positives and Duplicate Negatives as follows:

DP: SO-129

Detag Glass  
9363 Corning  
Interference Filter  
@ settings for  
L, M, H contrast  
.10 ND on the Dial  
Process Spec. 773

DN: 2422

No Detag Glass  
No 9863 Corning  
Interference Filter @  
Approx. M. setting  
Dial ND as required  
Process Spec. 777

3. System Curves and Printer Check Forms

a. Rainbow - See Appendix D, Figures 1-3.

b. Redondo - See Appendix D, Figures 4-6.

C. Process

1. Specs. 773 & 777 - See Appendix B, Figures 13-14.

2. Spec. 776 - See Appendix D, Figure 7.

D. Patches

1. A tri-band SO-182 patch was inserted in composite rolls at the head and tail of every Op/Part and as needed within a part, to monitor required contrast changes.

2. DP and DN Patch Aims - See Appendix D, Table 1.

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- E. D-Min/D-Max Guidelines - See Appendix D, Figure 8.
- F. First Copy Guidelines - See Appendix D, Table 2.
- G. Machine Control Guidelines - See Appendix B, Table 2.
- H. Multiple Prints - One Op/Part was shipped with a DP dark print. The dark print was made by printing a much lighter internegative.

<u>Op/Part</u>	<u>Frames</u>	<u>Orig. Emul.</u>	<u>Area</u>	<u>Comp.</u>	<u>DP Contrast</u>
65-1	1-29	SO-130	A	A-3	Low

- I. Contrast Selections - See Appendix D, Table 3.
- J. DMAAC DP Copy - Shipped exactly like all other B&W/Color copies.

VI. End Point Sampling

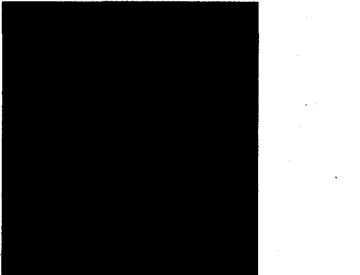
A. % Defective

	<u>Minor</u>	<u>Major</u>	<u>Critical</u>	<u>Sample Size</u>	<u>% of Shipped Parts Sampled</u>
Op/Parts	31.3	0	0	32	2.8%
Composites	37.5	0	0	16	2.4%



LHP:jfm  
Attachments

cc:



GDS File/  
Wet/Dry Foreman  
Trick Foreman  
LHP/File

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APPENDIX A

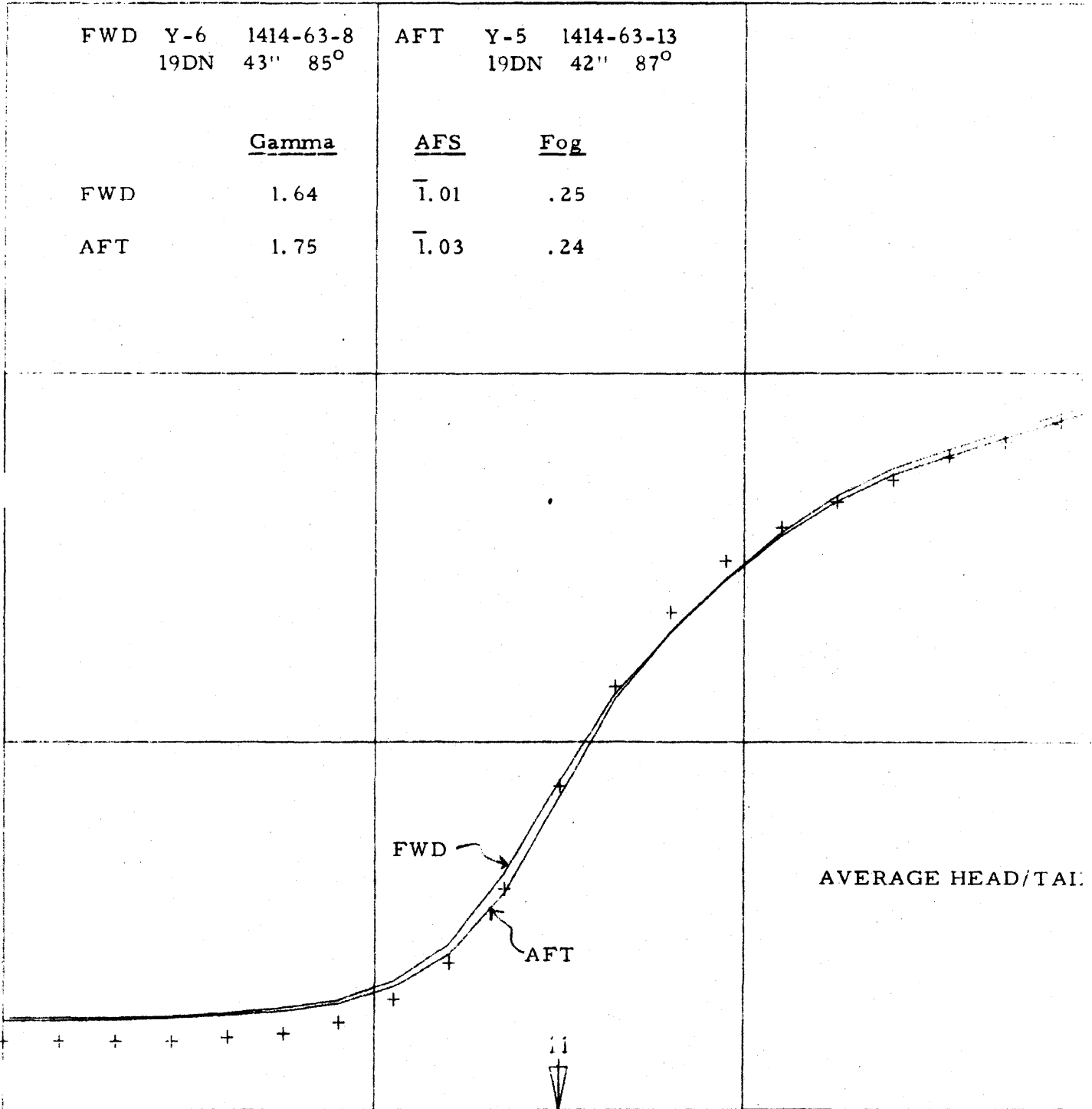
B&W Original Negative Process and Evaluation

Contents:

- 1) Figure 1 - Plot of Fwd and Aft Average R-2 H&D's Versus the Aim.
- 2) Table 1 - Yardleigh Process Monitor Data for Both Y-5 and Y-6.
- 3) Figures 2-3 - UV/Visual Relationship for Fwd (Figure 2) and Aft (Figure 3) Records.
- 4) Figure 4 - New In-Line Evaluation Procedure

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1212-1



Yardleigh Monitor System

TABLE I

\*Malfunctioned or Disconnected

Description	1212-1 FWD Record Y-6				1212-1 AFT Record Y-5					
	Channel	Start	Stop	(Av. 10 Readings) Mean Value	Standard Deviation	Channel	Start	Stop	(Av. 10 Readings) Mean Value	Standard Deviation
Dev. Temp.	1	87.5	87.7	87.658	0.114	1	87.2	87.3	87.205	0.053
Cutoff Temp.	2	78.7	79.0	78.817	0.390	2	84.8	82.4	83.561	1.276
Dye Rem. Temp.	3	71.3	71.3	71.306	0.023	3*	96.8	37.4	65.926	29.683
Sump Temp.	4	86.7	87.0	86.847	0.094	4	86.1	85.9	86.086	0.187
Final Wash Temp.	5	70.9	70.9	70.931	0.137	5	68.3	68.6	68.550	0.140
Fixer Temp.	6	68.6	68.5	68.437	0.086	6	68.5	68.6	68.559	0.019
Dryer Cab. Temp.	7	136.6	144.1	140.464	4.261	7	143.6	153.9	151.907	3.513
Dev. Cab. Temp.	8	85.4	86.4	85.968	0.317	8	85.5	85.4	85.995	0.299
Dye Rem. PH	9	6.7	6.7	6.682	0.040	9*	9.0	9.0	8.998	0.018
Arrest PH	10	2.9	3.3	3.075	0.281	10	3.6	2.4	2.961	0.579
Dev. Viscosity	11*	40.6	36.7	42.579	11.004	11*	187.3	187.3	187.3	0.0
Cutoff Pressure	12	28.2	30.4	31.131	1.474	12	18.8	16.0	17.686	0.739
Visc. Dev. Pressure	13	28.0	27.4	28.541	8.100	13*	3.0	2.4	2.654	1.382
Visc. Cab. % RH	14*	34.0	34.0	34.001	0.020	14	80.9	79.7	81.464	5.561
Dryer Cab. % RH	15	7.5	7.4	7.455	0.238	15	12.2	12.8	12.625	0.561
Transport Speed	16	25.0	25.5	25.370	0.382	16	26.3	26.6	26.562	0.079
Fog Level	17	.23	.22	0.240	0.022	17	.22	.20	0.175	0.022
Supply Tank Level (Inches)	18	48.9	0	23.615	15.309	18*	19.2	19.0	19.442	1.419

(Start) (Stop)

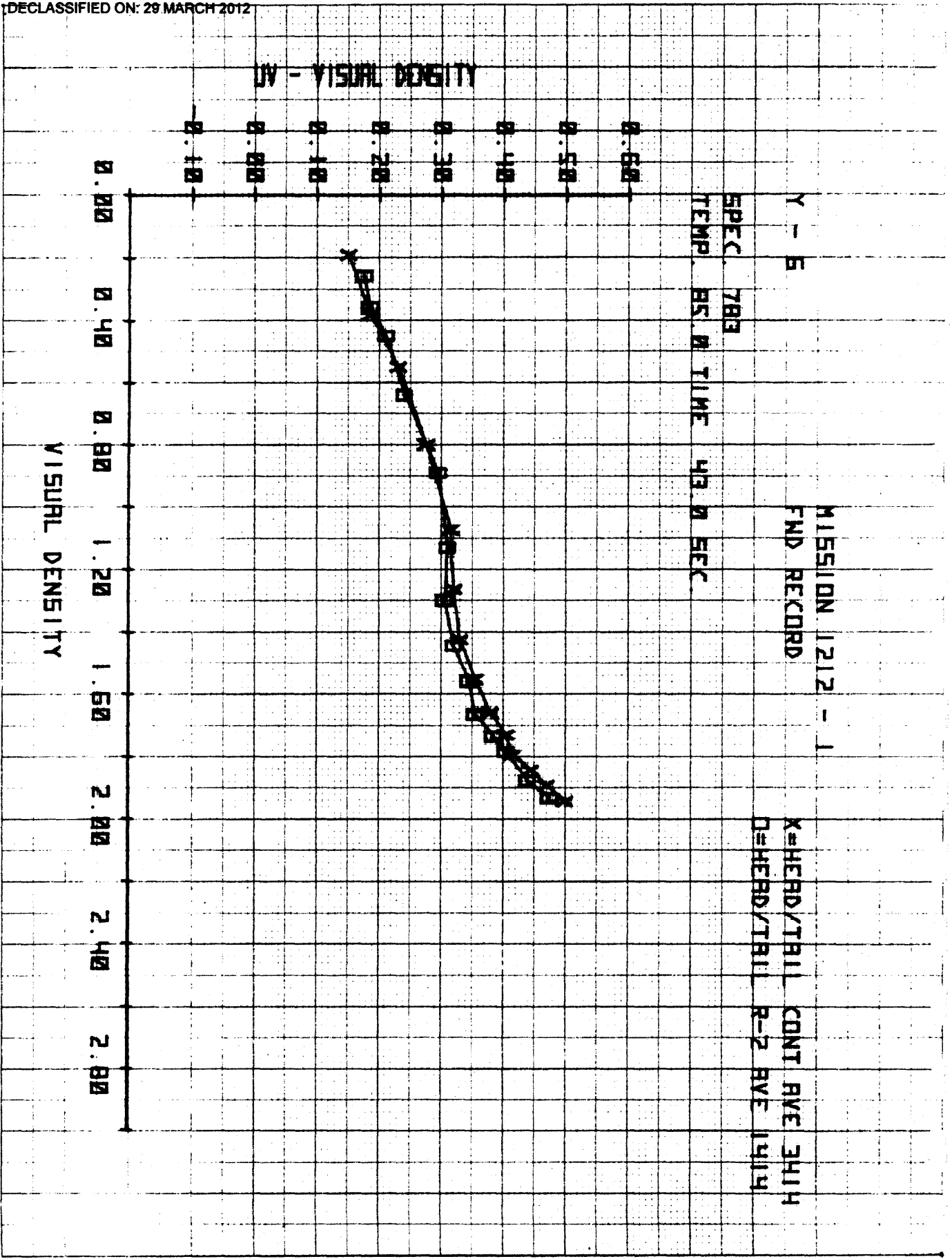
(Start) (Stop)

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DECLASSIFIED BY: CIART  
DECLASSIFIED ON: 29 MARCH 2012

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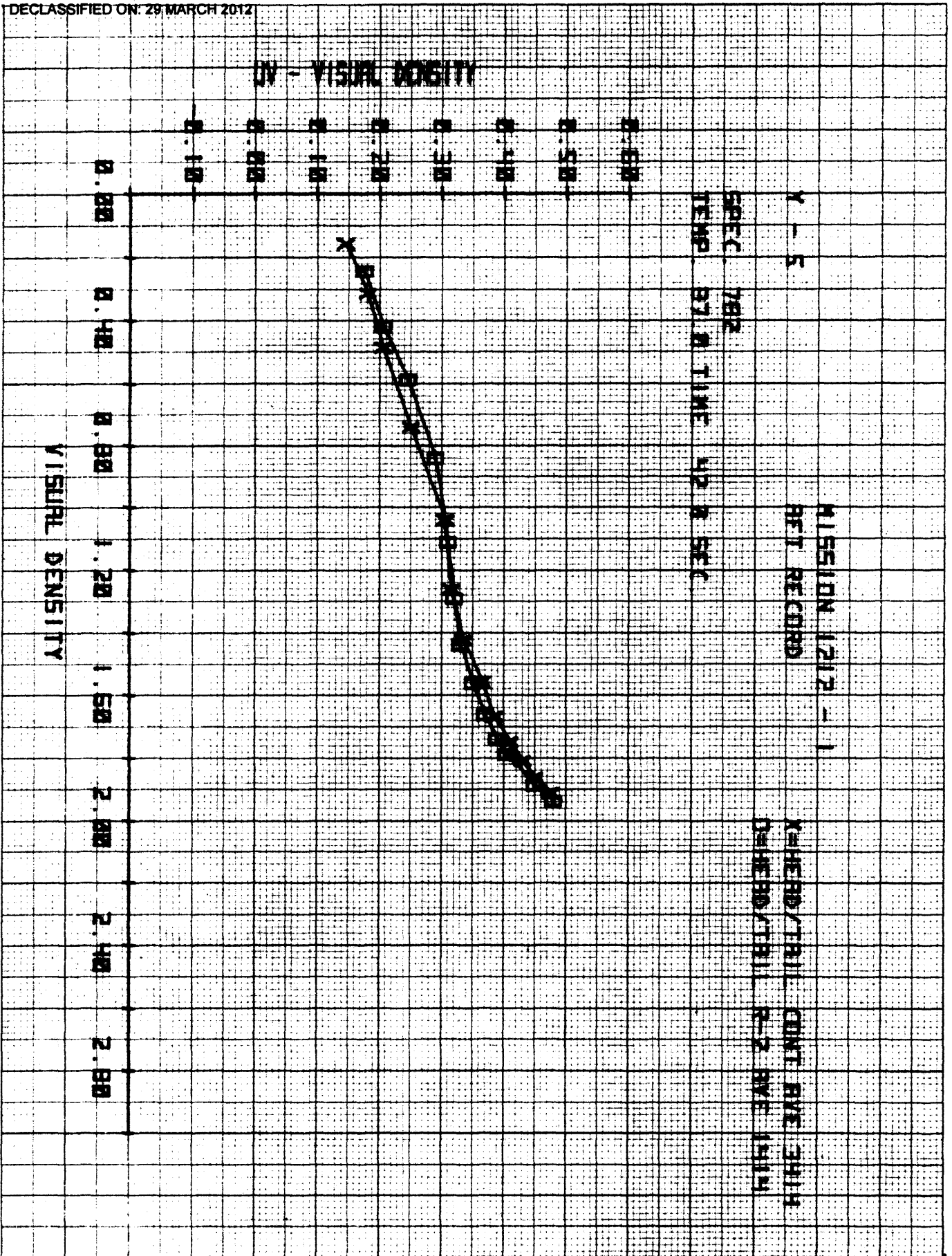
~~SECRET~~  
-21-

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**FIGURE 2**



46 1470

K-3E  
 10 X 10 TO 1 INCH • 2 1/2 X 10 INCHES  
 KEUFEL & ESSER CO. MADE IN U.S.A.



46 1470


K-E  
10 X 10 TO 1 1/2 INCH • 2 1/4 X 10 INCHES  
KEUFFEL & ESSER CO. MADE IN U.S.A.



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FIGURE 4

29 July 1976

**To:** Q. C. /Production  
**From:**   
**Subject:** In-Line Evaluation for 1200 Series Missions

A meeting was held on 28 July 1976 to discuss the procedure for conducting in-line evaluation.

Those in attendance included:



After a brief discussion, the following recommendations and procedures were resolved.

1. Lab Cuts

- a. The first lab cut printed on each Cayuga will be evaluated.
  - (1) The printer operator will note on the white print ticket which Cayuga was used.
- b. Every 5th lab cut printed on each Cayuga will also be evaluated.

2. Composite Cans

- a. The first can composited for each camera record will be evaluated.
- b. It will be evaluated again after:
  - (1) Webster Cleaning
  - (2) 1st - six printings.
  - (3) Every six printings thereafter.
- c. Every 10th can composited for each camera record will also be evaluated as above.

3. Miscellaneous

- a. The evaluation of lab cut rolls will be done on one of the secondary breakdown tables.

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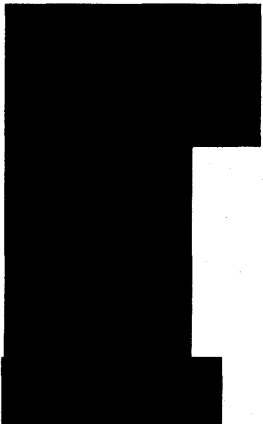
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- b. Lab cuts and selected composite cans will be marked and flagged by Production as required for this evaluation.
- 4. Any damage found on the film during this evaluation must be reported IMMEDIATELY to the Dry Foreman, Q. C. Honcho and the Primary Lead Man.
- 5. The Dry Foreman and the Q. C. Honcho should also be informed throughout the mission on the progress of this evaluation.



SJM:jfm

Distribution:



Approved by:

Dry Foreman "A"  
"B"

Primary Lead Man "A"  
"B"

Q. C. Honcho "A"  
"B"



Q. C. Evaluation (4)  
Print Room Lead Man (2)  
SJM/File

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APPENDIX B

B&W/B&W Duplication Sensitometry & Guidelines

Contents:

- 1) Table 1 - Coefficients for Predicting ABCC Redondo Print Levels
- 2) Figures 1-7 - ABCC Redondo System Curves & PC Forms
- 3) Figures 8-12 - ABCC Cayuga System Curves & PC Forms
- 4) Figures 13-16 - Dalton Specs and Curves for Specs. 773, 777, 780 and 781.
- 5) Table 2 - Machine Control Guidelines
- 6) Table 3 - First Copy Guidelines
- 7) Table 4 - ABCC Redondo Patch Aims

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TABLE 1

Cayuga N. D. Prediction Coefficients, Mission 1212-1

Original Emulsion 1414 for Printer Type ABCC Redondo Spec. 781

4th Degree Coefficients for CANAL Routine

	B(4)	B(3)	B(2)	B(1)	B(0)
DP MD	<u>+0.030</u>	<u>-0.253</u>	<u>+0.709</u>	<u>-1.579</u>	<u>+1.768</u>
DP LT	<u>-0.220</u>	<u>+0.630</u>	<u>-0.411</u>	<u>-1.030</u>	<u>+1.444</u>
DP DK	<u>+0.045</u>	<u>-0.338</u>	<u>+0.880</u>	<u>-1.687</u>	<u>+1.989</u>
DN MD	<u>-2.185</u>	<u>+5.796</u>	<u>-5.225</u>	<u>+0.811</u>	<u>+0.903</u>
DN LT	<u>+0.223</u>	<u>-1.216</u>	<u>+2.249</u>	<u>-2.630</u>	<u>+2.211</u>
SING	<u>+0.030</u>	<u>-0.253</u>	<u>+0.709</u>	<u>-1.579</u>	<u>+1.768</u>
DELTA D's:	DP LT <u>67</u>	DP DK <u>100</u>	DN LT <u>120</u>		
* * * *	* * * *	* * * *	* * * *	* * * *	* * * *

Original Emulsion \_\_\_\_\_ for Printer Type \_\_\_\_\_ Spec. \_\_\_\_\_

4th Degree Coefficients for CANAL Routine

	B(4)	B(3)	B(2)	B(1)	B(0)
DP MD	_____	_____	_____	_____	_____
DP LT	_____	_____	_____	_____	_____
DP DK	_____	_____	_____	_____	_____
DN MD	_____	_____	_____	_____	_____
DN LT	_____	_____	_____	_____	_____
SING	_____	_____	_____	_____	_____
DELTA D's:	DP LT _____	DP DK _____	DN LT _____		

FIGURE 1

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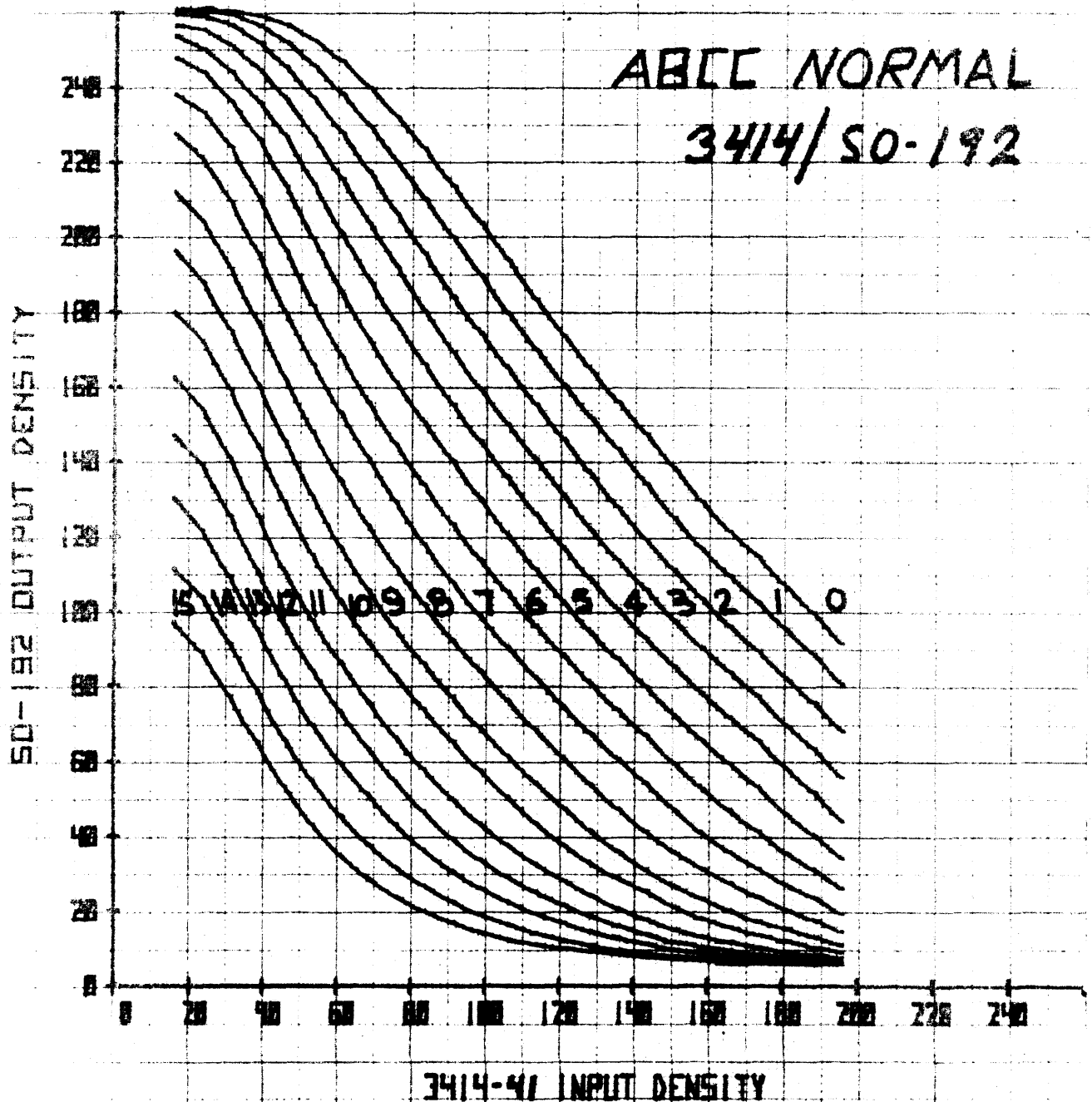
Input Film 3414-41  
Input Code  
Proc/Spec Y-5/783  
Date Run 9-25-74  
Input D: Visual UV Other \_\_\_\_\_

Output Film 50-192  
Class/Batch/Roll 132-45  
Proc/Spec VD/781  
Printers Used 104, 316, 412, 413, 414  
Date Run 2-25-75

Sample Printer Configuration # 316  
Ft/Min 100'  
Slit 2"  
Lamp HG XE IN  
Bias .20  
Wedge Inconel

Comment: ABCC Normal Contrast

Filters 1. 9863 Corning  
2.  
3.



### TONER REPRODUCTION CURVES

FIGURE 2

Input Film **3414-41**  
H&D Code  
Proc/Spec **y-5/783**  
Date Run **9-25-74**  
Input D: Visual UV Other \_\_\_\_\_

~~SECRET~~

Output Film **50-192**  
Class/Batch/Roll **0/147/47**  
Proc/Spec **VD/781**  
Printers Used **104,413,414**  
Date Run  
**2-23-76**

Sample Printer Configuration # **104**  
Ft/Min **100**  
Slit **2"**  
Lamp **HG** XE IN  
Bias **0.0**  
Wedge **INLONEL**

Comment:  
**NEW H-Y CURVES WITH NEW  
GLASSWARE FOR 1211-3**  
Filters 1. **9863 CORNING**  
2. **INTERFERENCE**  
3.

46 1470

K-E 10 X 10 TO 1/2 INCH \* 7/8 X 10 INCHES  
KEUFFEL & ESSER CO. MADE IN U.S.A.

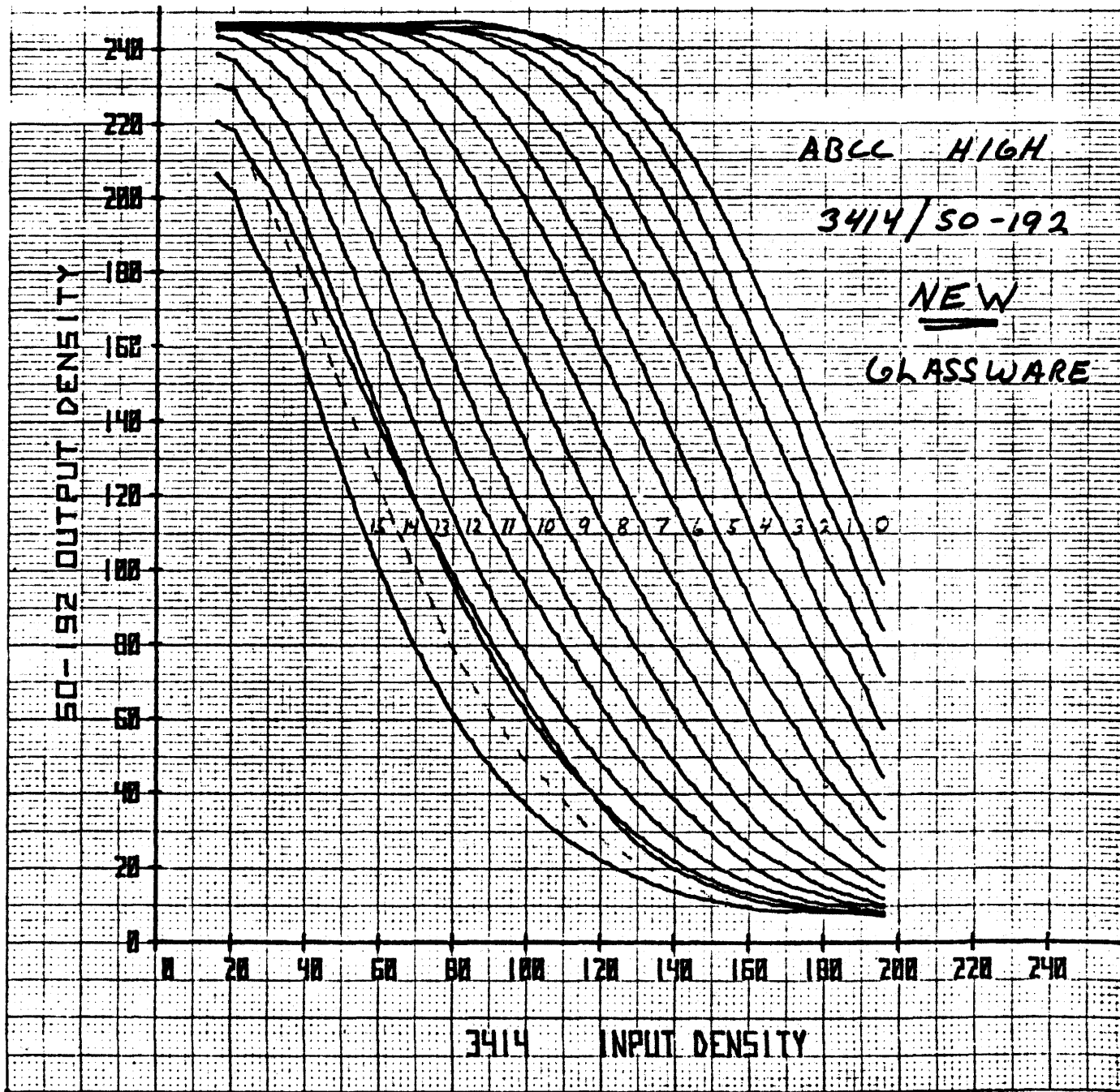
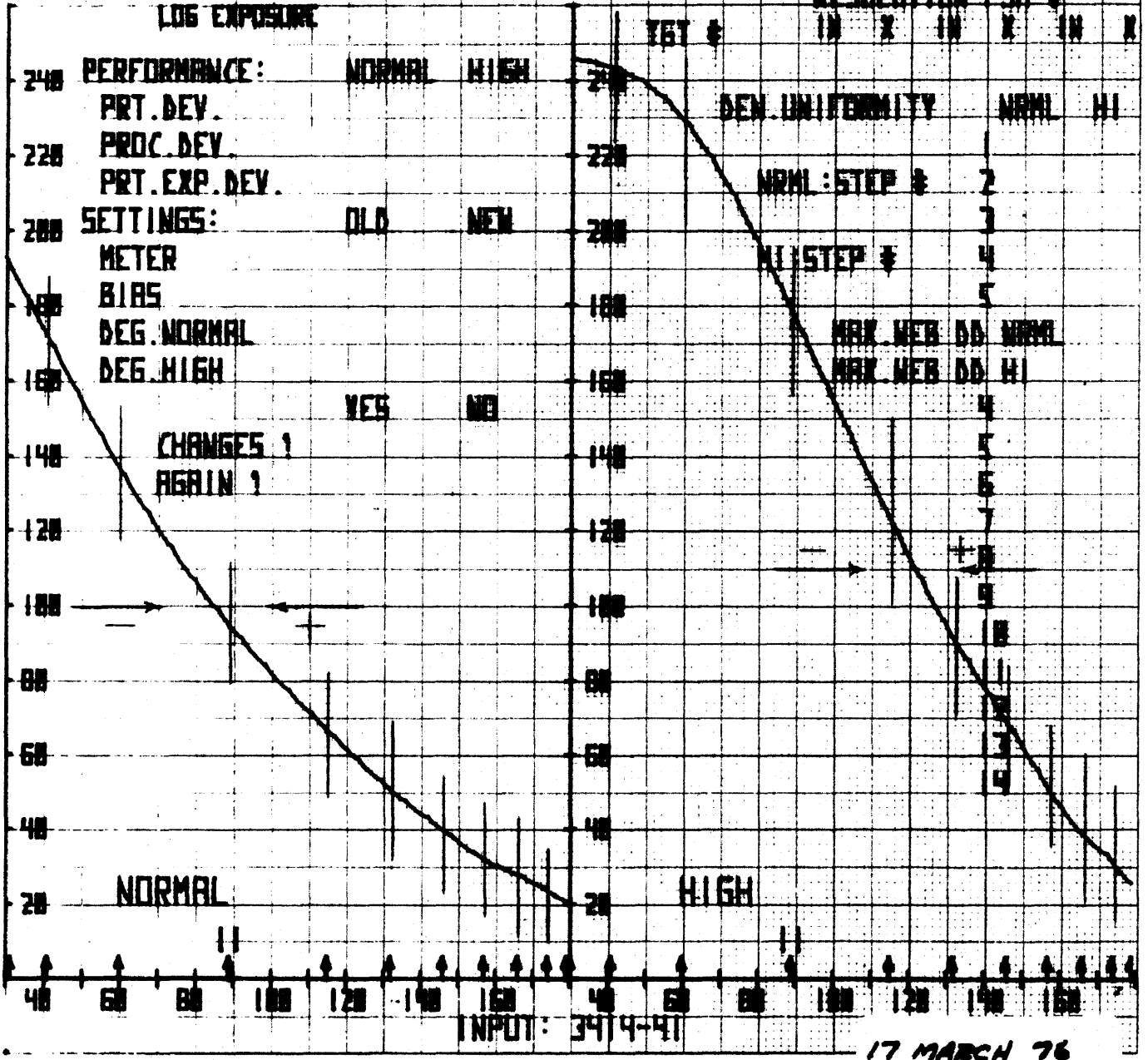
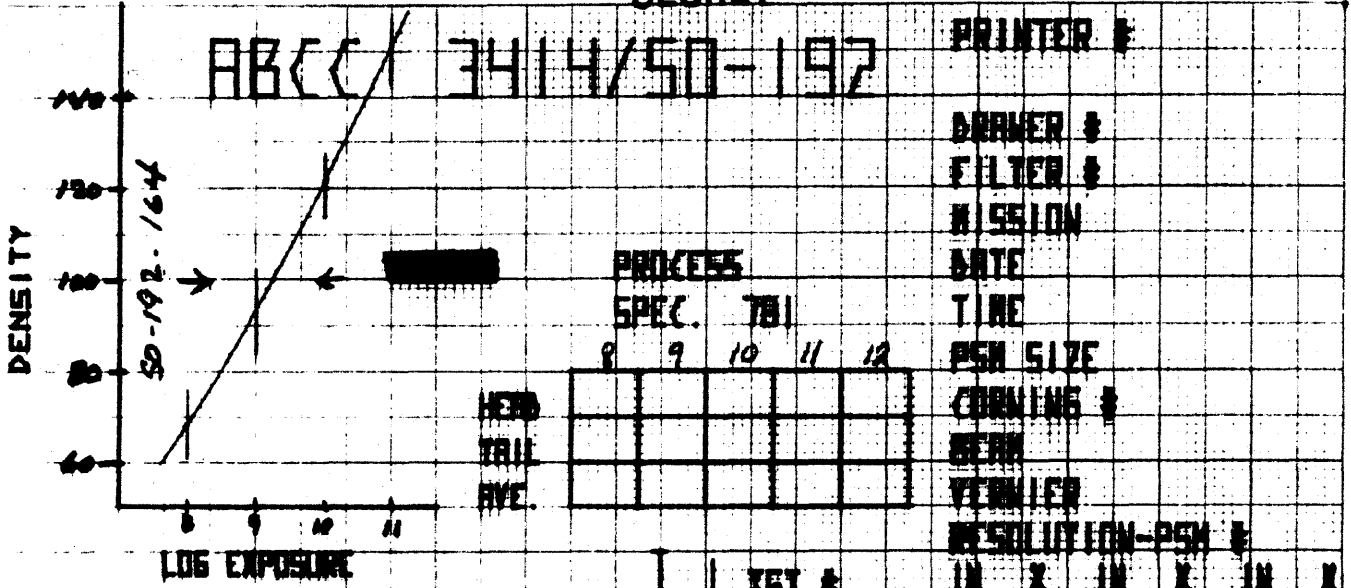


FIGURE 3

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46 1470

Input Film 2422-55  
H&D Code  
Proc/Spec VD/777  
Date Run Feb/75  
Input D: Visual UV Other \_\_\_\_\_

Output Film SO-192  
Class/Batch/Roll 0/132/45  
Proc/Spec VD/781  
Printers Used 104, 316, 412, 413, 414  
Date Run 2-25-75

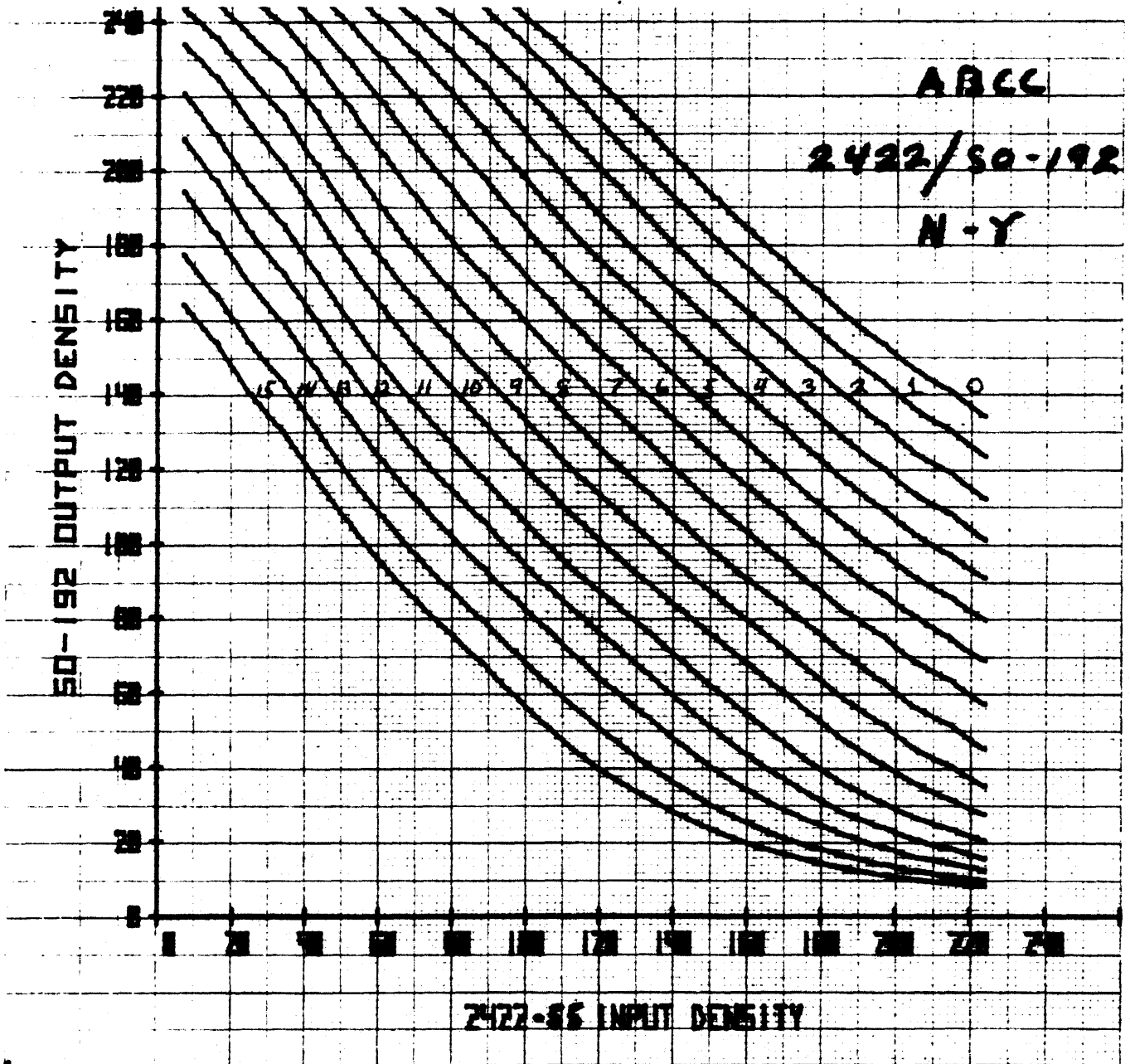
Sample Printer Configuration # 316  
Ft/Min 100'  
Slit 2"  
Lamp HG XE IN  
Bias .20  
Wedge Inconel

Comment: In Control ABCC 3414/SO  
Normal Contrast

Filters 1. 9863 Corning  
2. Interference @ N.C.  
3.

46 1470

K-E 10 X 10 TO INCH  
KUDJEL & SERRICO





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Input Assigned ON 22 MAR 2012

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H&D Code

Proc/Spec VD/777

Date Run Feb/75

Input D: Visual UV Other \_\_\_\_\_

Output Film SO-192  
 Class/Batch/Roll 0/132/45  
 Proc/Spec VD/781  
 Printers Used 104, 316, 412, 413, 414  
 Date Run 2-25-75

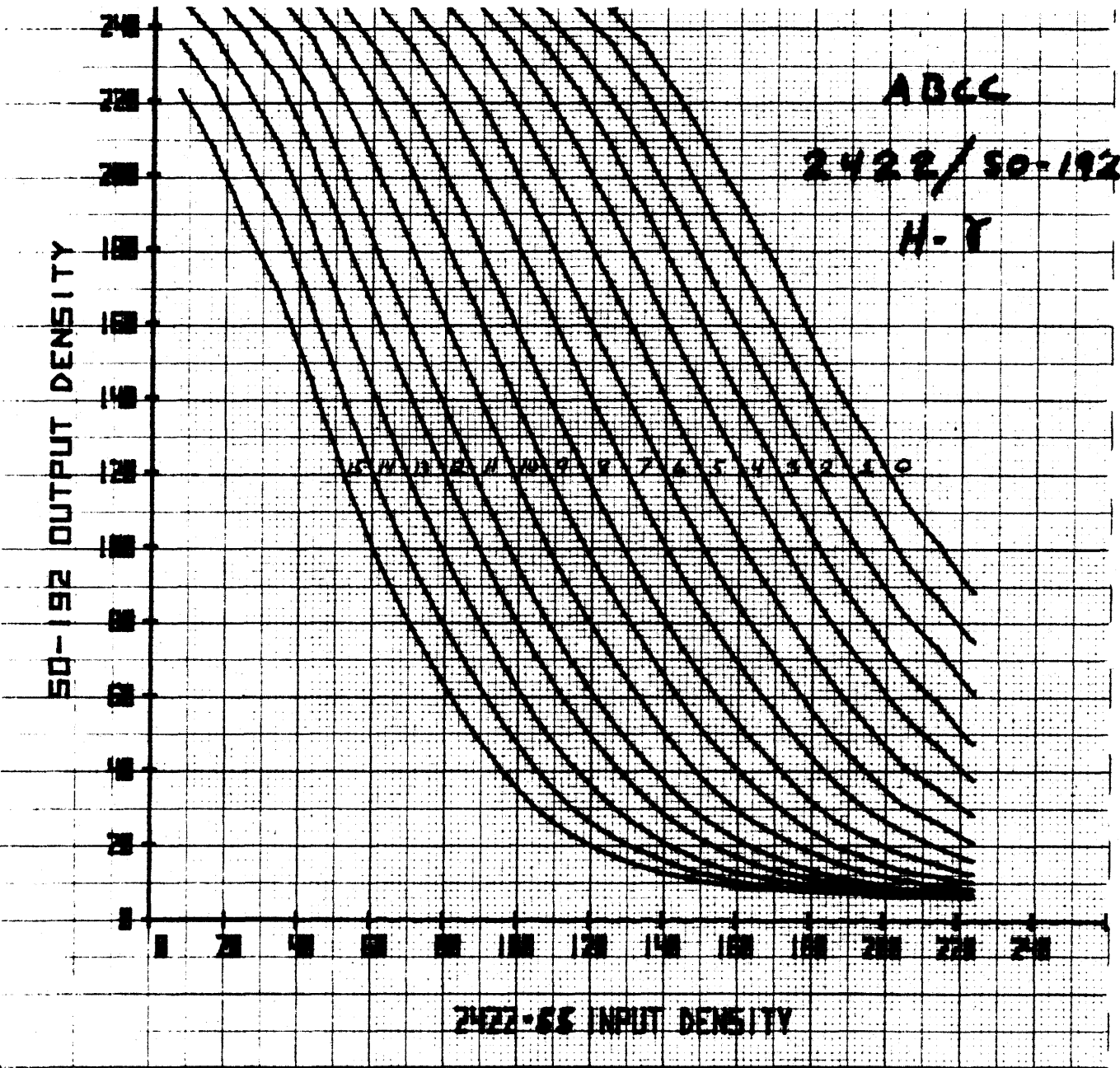
Sample Printer Configuration # 316  
 Ft/Min 100'  
 Slit 2"  
 Lamp HG XE IN  
 Bias .20  
 Wedge Inconel

Comment: In Control ABCC  
 3414/SO-192 High Contrast

- Filters
1. 9863 Corning
  2. Interference @ H.C.
  - 3.

46 1470

50-192 OUTPUT DENSITY



K-E 1/2 X 1/2 TO 1/4 INCH\*  
PLATE INSERED

2422-65 INPUT DENSITY

Input Film 3414-41  
H&D Code  
Proc/Spec Y-5/783  
Date Run 9-25-74  
Input D: Visual UV Other \_\_\_\_\_

~~SECRET~~

Output Film SO-182  
Class/Batch/Roll -/2/7  
Proc/Spec VD/780  
Printers Used 316  
Date Run 2-28-75

Sample Printer Configuration # 316  
Ft/Min 100'  
Slit 2"  
Lamp HG XE IN  
Bias 0.0  
Wedge Inconel

Comment: In Control ABCC 3414/19;  
H.C., then remove 9863 Corning.

- Filters 1. No Corning
- 2. Interference @ H.C.
- 3.

46 1470

K-E 10 X 10 TO 1/4 INCH KEUFFEL & ESSER CO.

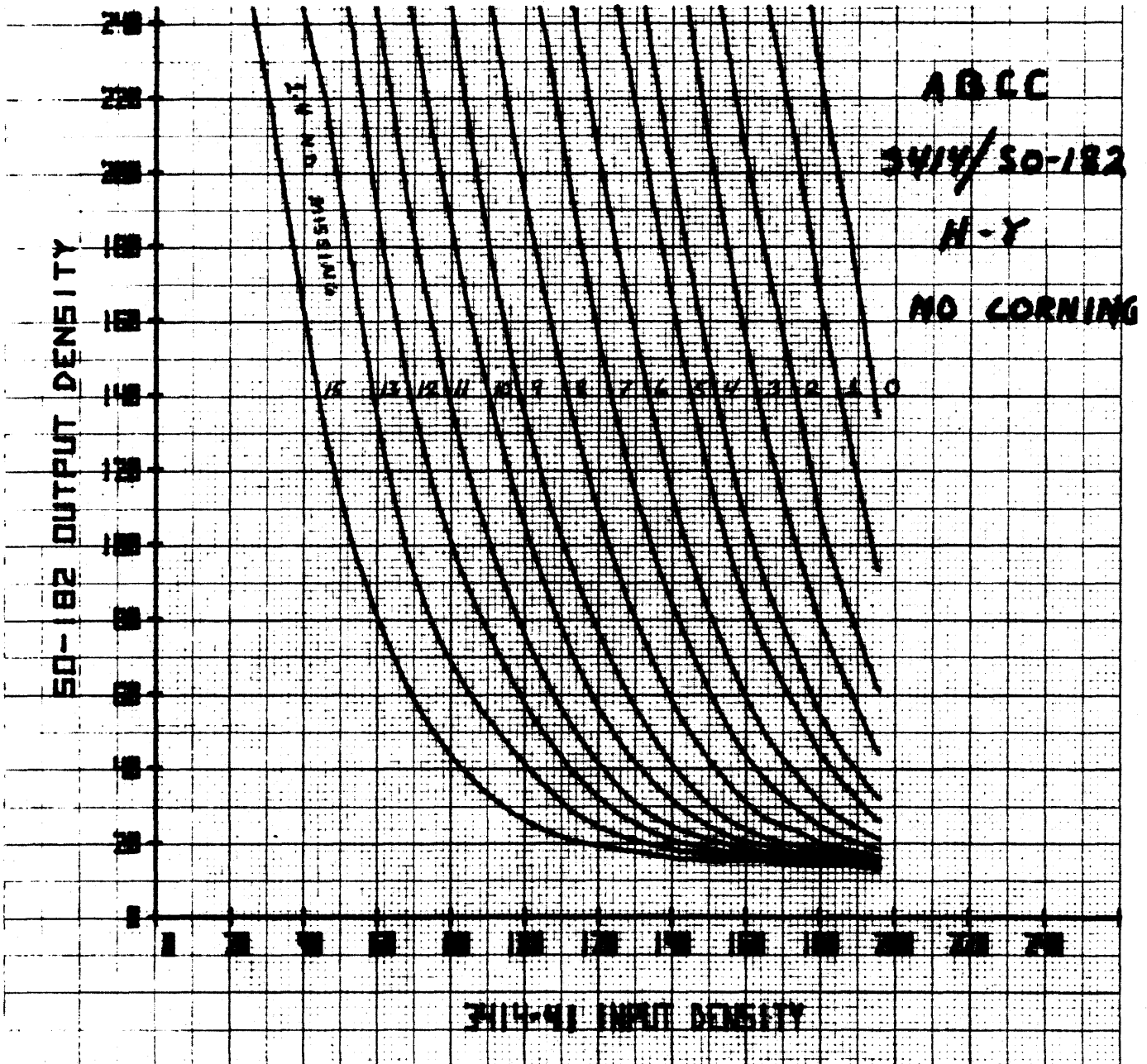
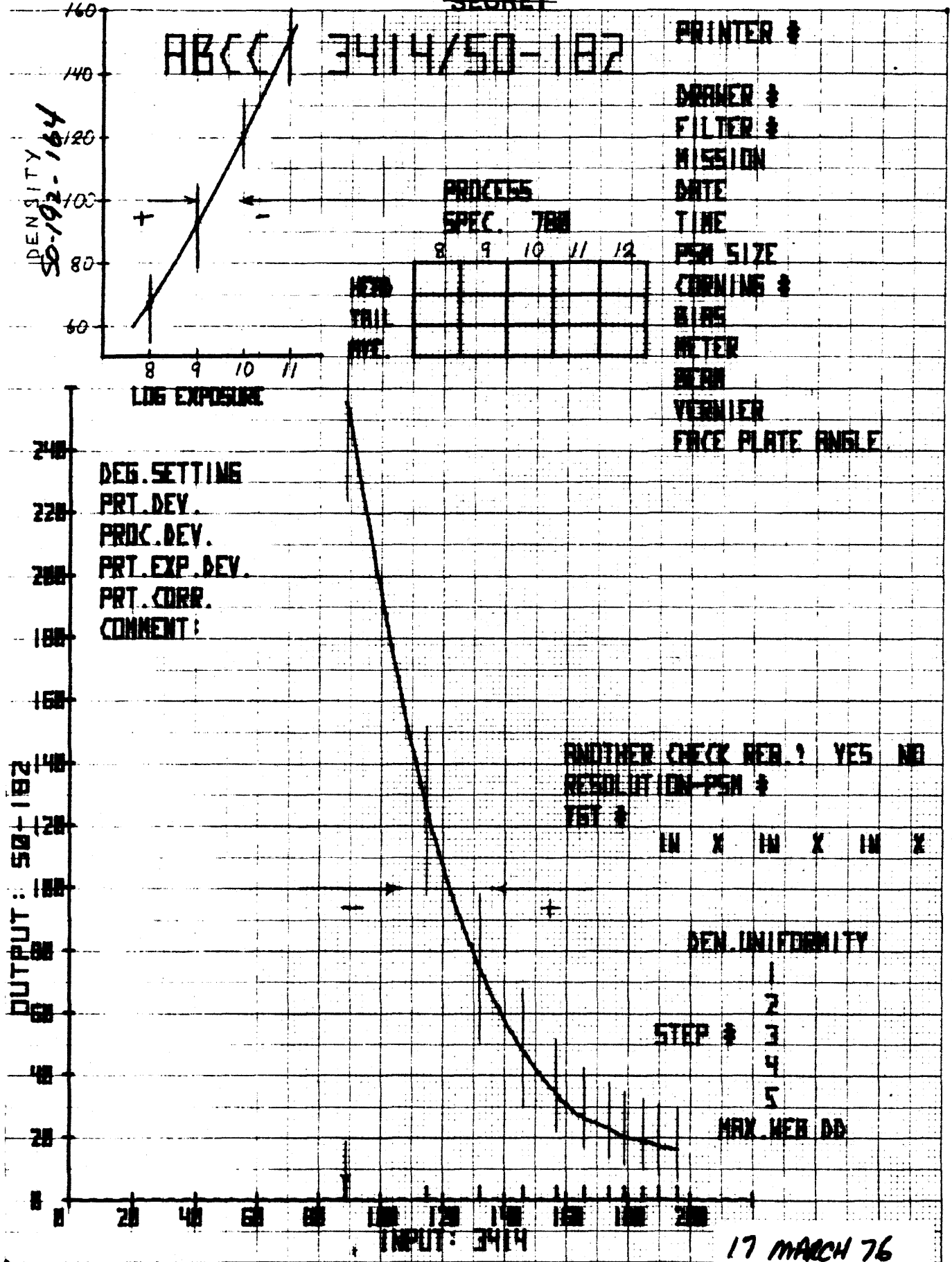


FIGURE 7

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46 1470

K-E 10 X 10 TO 1/4 INCH • 1/2 X 1/4 INCHES  
 KODAK & ESSER CO.

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DECLASSIFIED ON: 29 MARCH 2012  
Input Film 3414-41

~~SECRET~~  
FIGURE 8

Proc/Spec Y-5/783  
Date Run 9/25/74  
Input D: Visual UV Other \_\_\_\_\_

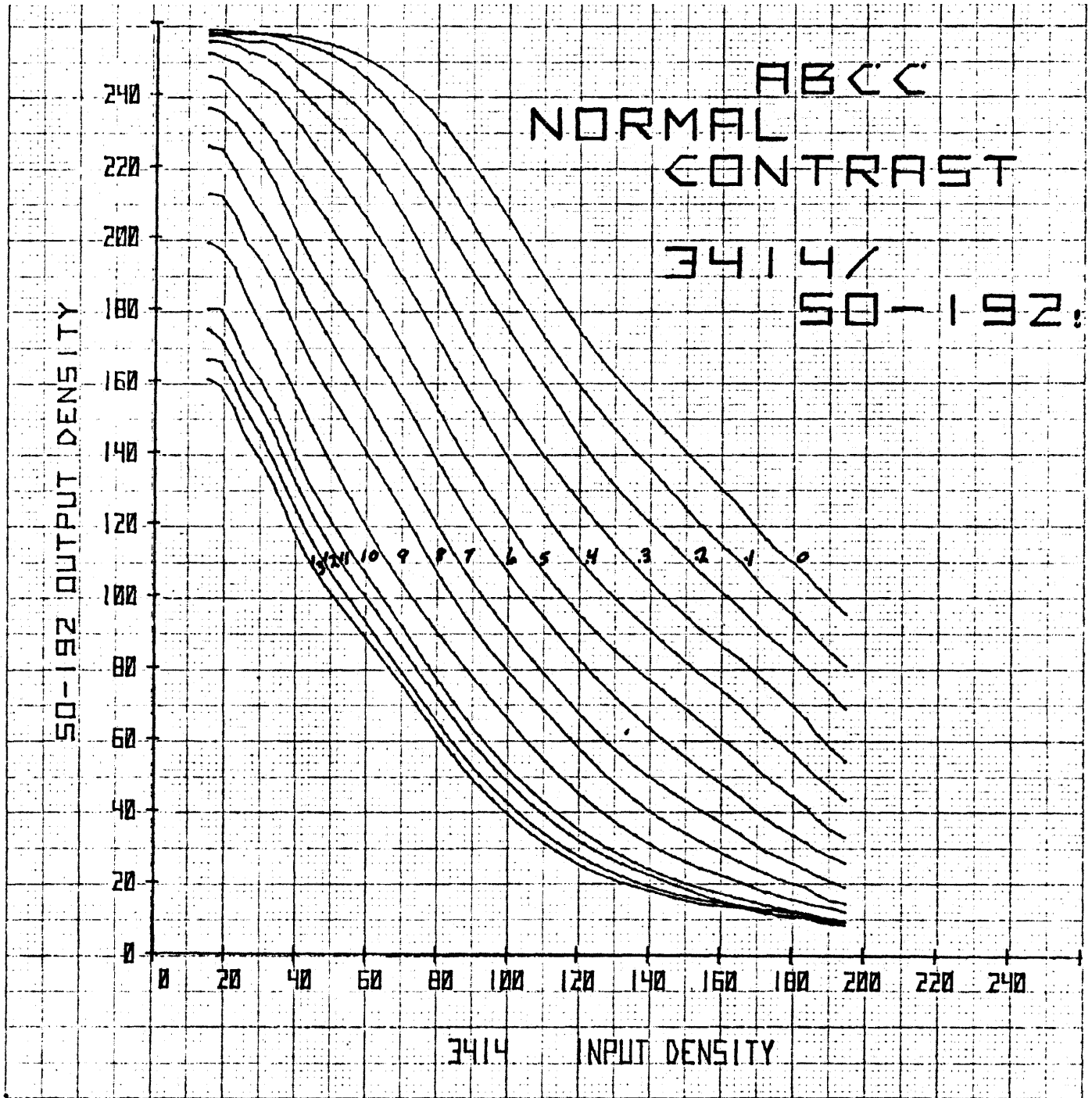
Output Film SO-192  
Class/Batch/Roll O/132-36  
Proc/Spec 781  
Printers Used C - 1 & 3  
Date Run 12/24/75  
Degree Setting 35  
Comment:

Sample Printer Configuration # C-3  
Ft/Min 100  
Slit 1.5"  
Lamp XE  
Inconel Bias Wedge @ .55

Filters:  
Cold Mirror 5916-3, 5916-4  
Interference 5987-2, 5985-1  
Corning 9863

1211

46 1470



10 X 10 TO 15 INCH \* MAX 10 INCHES  
KELPPEL & GOSSET CO. VAN NUT, NY

TONE REPRODUCTION CURVES

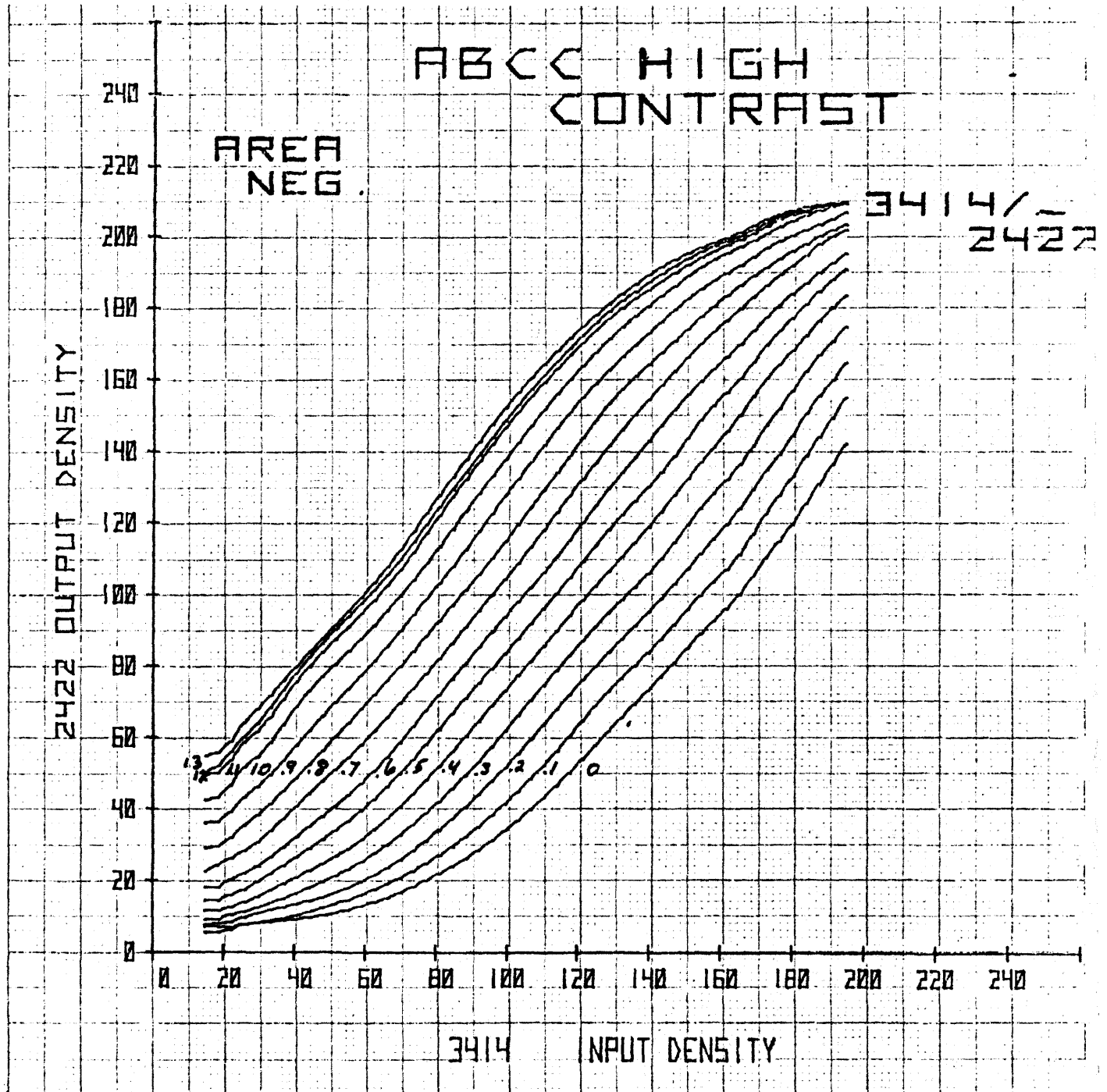
FIGURE 9

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Input Film 3414-41  
Proc/Spec Y-5/783  
Date Run 9/25/74  
Input D: Visual UV Other \_\_\_\_\_

Output Film 2422  
Class/Batch/Roll 0/79-12  
Proc/Spec 777  
Printers Used C - 1 & 3  
Date Run 12/24/75  
Degree Setting 45  
Comment:  
Vycor Safety Glass  
Filters:  
Cold Mirror 5916-3, 5916-4  
Interference 5987-2, 5985-1  
Corning None

Sample Printer Configuration # 3  
Ft/Min 100  
Slit 1.5"  
Lamp XE  
Inconel Bias Wedge @ .50



46 1470

FIGURE 10

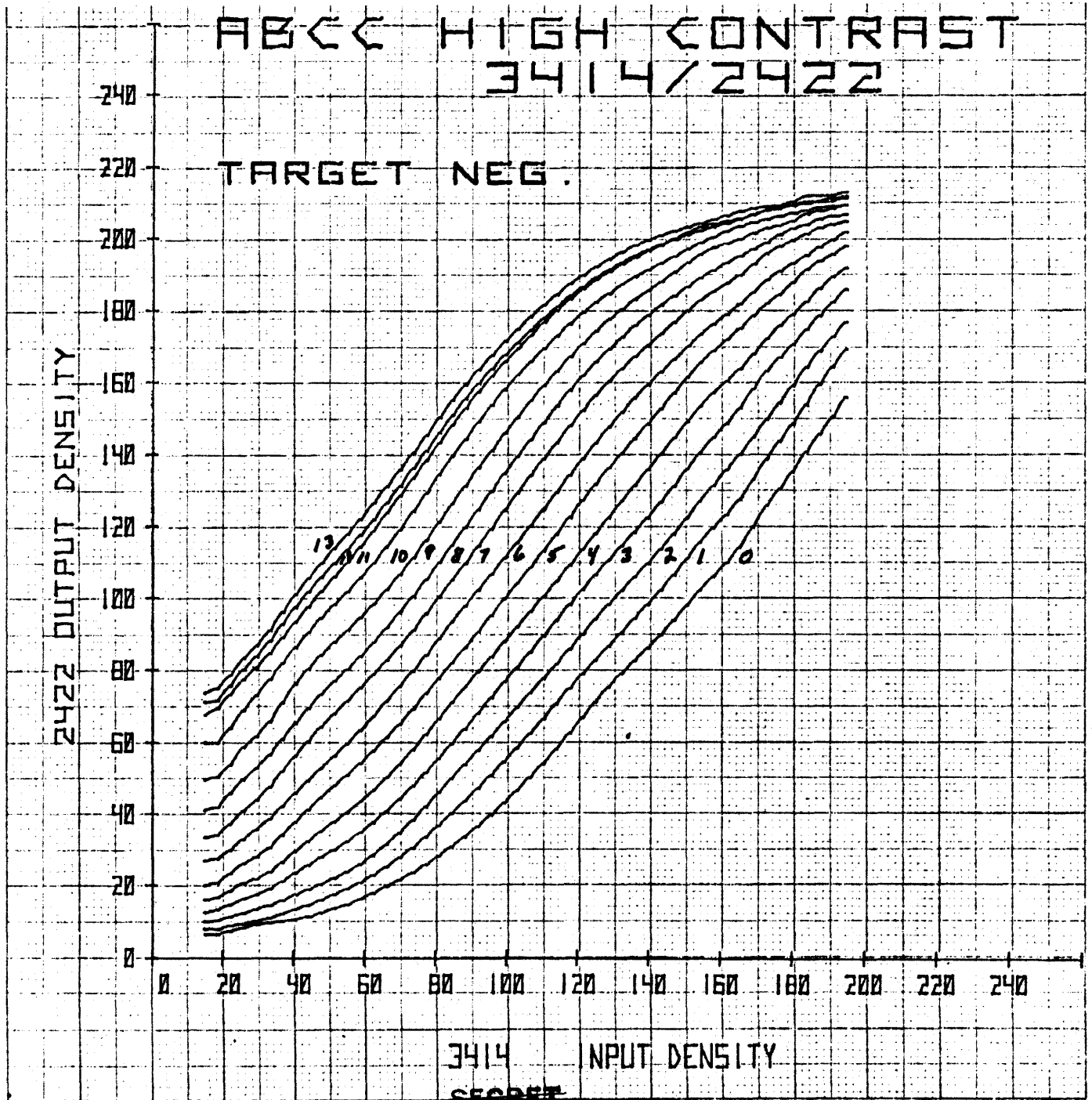
~~SECRET~~

Input Film 3414-41  
Proc/Spec Y-5/783  
Date Run 9/25/74  
Input D: Visual UV Other \_\_\_\_\_

Output Film 2422  
Class/Batch/Roll 0/79-12  
Proc/Spec 777  
Printers Used C - 1 & 3  
Date Run 12/24/75  
Degree Setting 45  
Comment:  
Vycor Safety Glass  
Filters:  
Cold Mirror 5916-3, 5916-4  
Interference 5987-2, 5985-1  
Corning None

Sample Printer Configuration # C-3  
Ft/Min 100  
Slit 1.5"  
Lamp XE  
Inconel Bias Wedge @ .70.

1211



46 1470

NO. 10 X 10 TO 1 INCH • 1/2 X 10 INCHES  
KUFFEL & ESSER CO. MADE IN U.S.A.

~~SECRET~~

FIGURE 11

Input Film 3414-41  
Proc/Spec Y-5/783  
Date Run 9/25/74  
Input D: Visual UV Other \_\_\_\_\_

~~SECRET~~

Output Film SO-192  
Class/Batch/Roll O/132-36  
Proc/Spec 773  
Printers Used C-1 & 2  
Date Run 1/26/76  
Degree Setting 30°  
Comment:

Sample Printer Configuration # C-2  
Ft/Min 100  
Slit 1.5"  
Lamp XE  
Inconel Bias Wedge @ .45

Filters:  
Cold Mirror 5916-3, 5896-3  
Interference 5987-2, 5988-2  
Corning 9863

12''

46 1470

K&S 10 X 10 TO 1/2 INCH • 2 1/2 X 10 INCHES  
KEUFFEL & ESSER CO. MADE IN U.S.A.

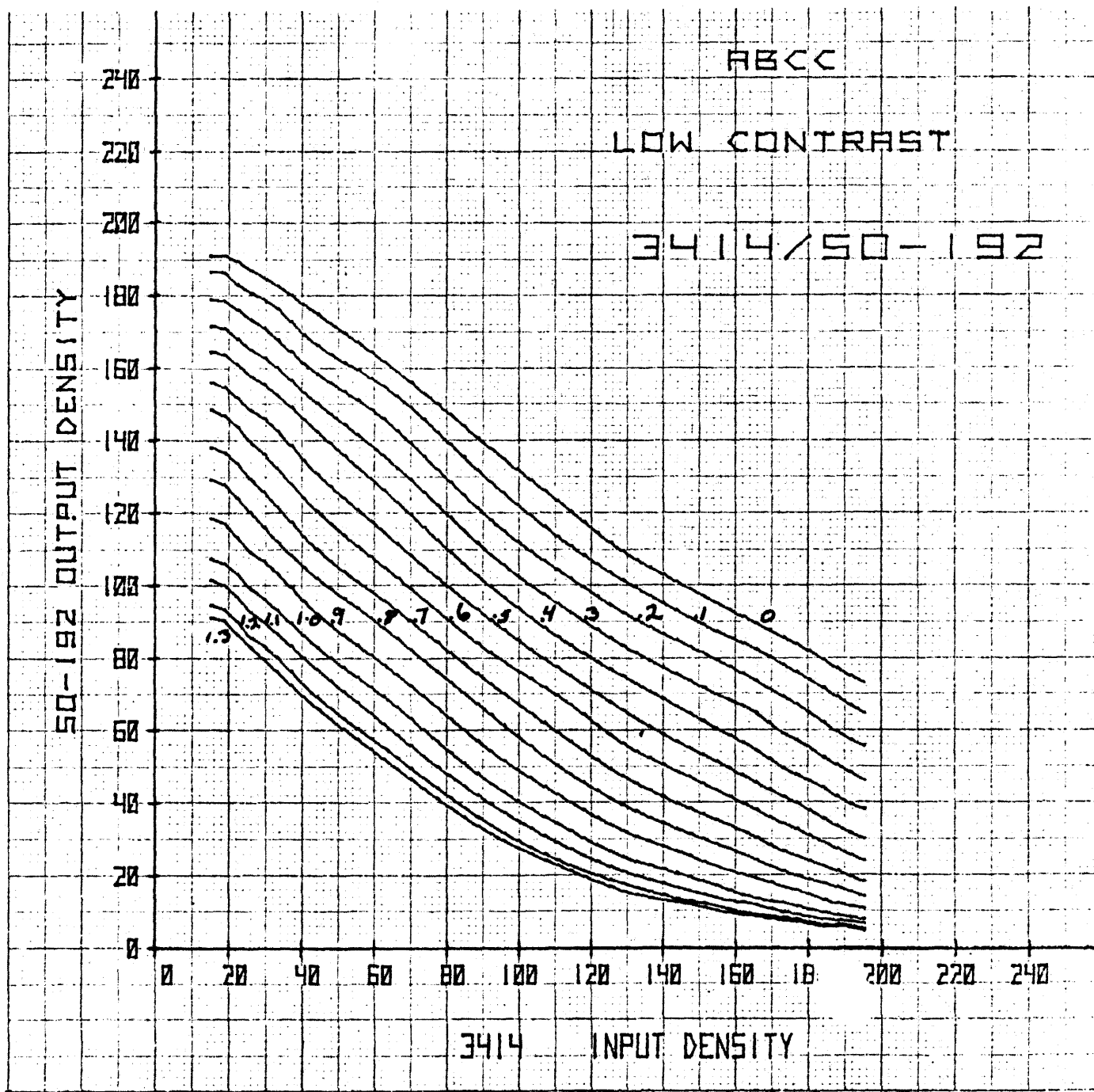
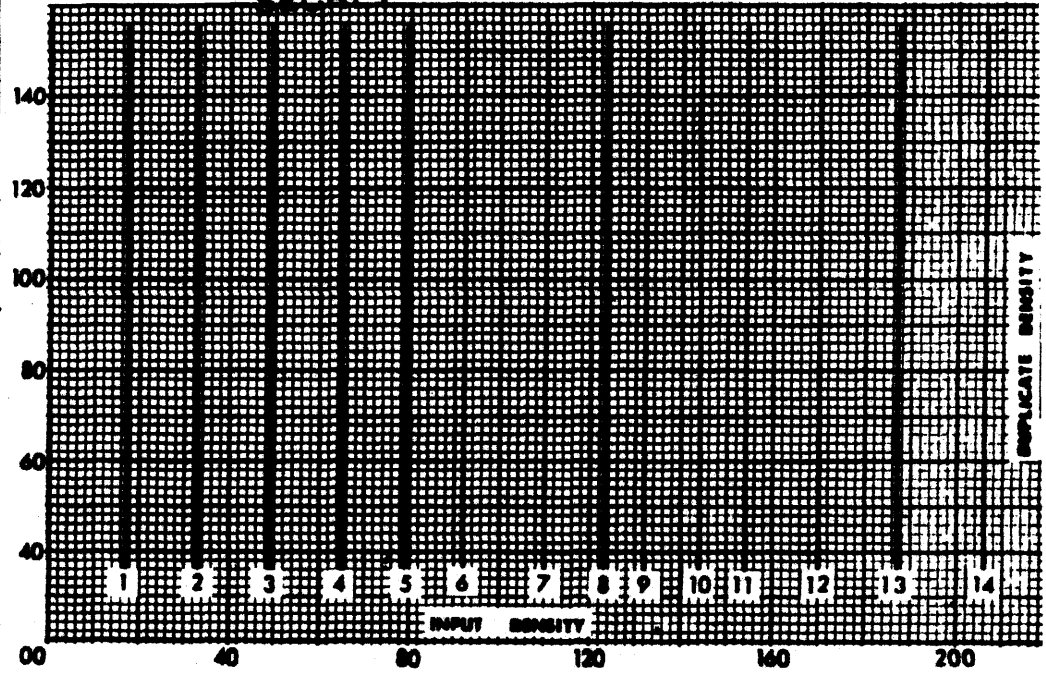


FIGURE 12

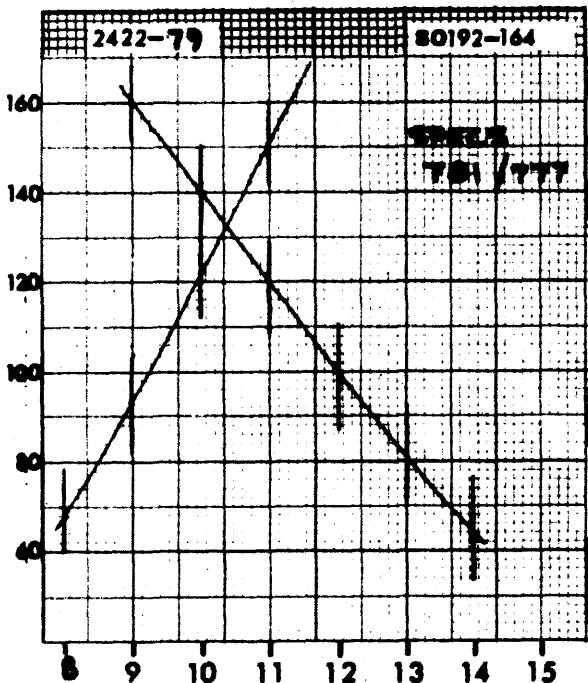
**AUTOMATIC CAYUGA PRINTER CHECK**

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MISSION
DAILY
PRINTER
DATE
TIME
MODE - AN , TN , DP
FILM TYPE
STOCK CLASS
BIAS
SLOPE
NCEPT
DEGREE
OK? _____ REPEAT? _____



COMMENTS: \_\_\_\_\_ DUPE DEN. AIM \_\_\_\_\_  
 \_\_\_\_\_ SPEC. \_\_\_\_\_



**RESOLUTION**

IN	X
1	_____
2	_____
3	_____

**UNIFORMITY**

1 \_\_\_\_\_  
 2 \_\_\_\_\_  
 3 \_\_\_\_\_  
 4 \_\_\_\_\_  
 5 \_\_\_\_\_

**AD** \_\_\_\_\_

**STEP**

1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

PROCESSOR \_\_\_\_\_  
 PROC. DEV. \_\_\_\_\_

HEAD	8	9	10	11	12	13	14	15
TAIL								
3-17-76 AVE								

min		
step		
max		
step		
tilt		
d.dev		

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773

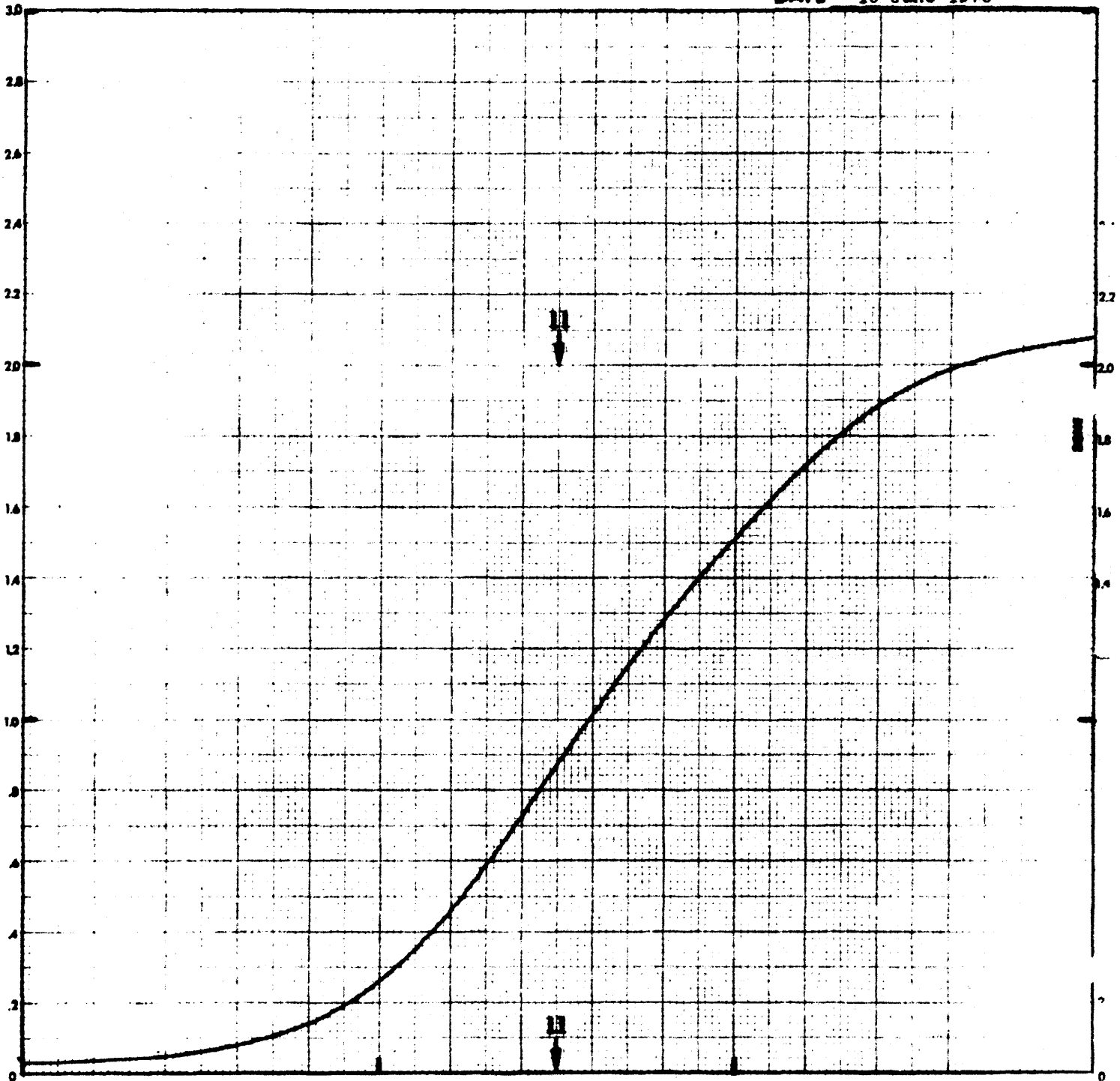
**SENSITOMETRIC AIM CURVE FOR PROCESS SPECIFICATION NO.**

FILM TYPE S0-192-177

EXPOSURE	SENSITOMETER	1B
	LIGHT SOURCE	3000°K
	FILTER	None
	EXPOSURE TIME	8 sec.
	LOG (E <sub>11</sub> mcs)	2.20

	A	B	C	D
GAMMA	1.45			
BASE + FOG	.03			

DATE 10 June 1976



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PROCESSING SPECIFICATION NO. **773**

DATE 9 March 1976

MACHINE Viscous Dalton  
 EMULSION TYPE Duplicating  
 FILM TYPE SO-192

PROCESS EMULSION Down  
 FILM STRIP SPEED 100 FPM (Approx.)  
 THREAD-UP Note 1

PROCESSING STAGE	SOLUTION	REPLENISHER RATES ml/min.				EQUIL. TEMP.	TIME (SEC)	NOZZLE TYPE	PUMP PRESS (PSIG)
		70mm	5"	6.6"	9.5"				
Twister Rolls (2) Air Supply									10.0
Dev. Cabinet Air						70±3			
Developer	21DN-V	750	1420	1420	1600	70±3	18		Note
Cut-Off (Note 3)	Sump Water	4 GPM for All Sizes				Note 4	3	1/8K-3	35
Fix	36FN	450	900	1190	1700	Note 4	15	1/8K-3	15
Pre-Wash (Dip Tank)	Water	1000	1000	1000	1000	Note 4	5	1/8K-3	Note
Wash	Sump Water	7.8 GPM (Make-up from Final)				Note 4	13	1/8K-3	15
Pre-Wash	Water	1000	1000	1000	1000	Note 4	18	1/8K-3	15
Wash	Sump Water	7.8 GPM (Make-up from Final)				Note 4	13	1/8K-3	15
Wash - Final	Water	7.8 GPM for all Sizes				70±3	6	1/8K-3	15
Photo-Flo (Note 3)	P.F.	140	250	335	480	Ambient	2		
Dryer Cabinet Air		See Note 5				130±5	14		
Conditioner Cabinet Air						Ambient	20		

VARIAC SETTING

FILM SIZE	70 mm	5", 6.6" & 9.5"
AT-1	110	115
AT-3	80	110
AT-5	120	135
AT-7	120	135

WEIGHTS (POUND)

FILM SIZE	70mm	5" & 6.6"	9.5"
Feed	24	36	72
Cond.	24	48	48
Take-Up	18	18	24

NOTES

- Thread-Up  
 Developer - AB - See Diagram.  
  
 Fix (D-7&8) - First section full (adjustable roller fully extended). Exit into the wash (Dip Tank) over the large Idler Roller in second fix section.
- Pot Setting - While transporting film, adjust pot until a slight uniform flow of developer is observed over the Shell Coater wier. Replenisher rates are approximate for these conditions.
- Wiper Blades  
 1 - Blade against emulsion at cut-off.  
 1 - Blade against emulsion after photo-flo.
- Temperature is slaved to final wash and therefore approximately the same.
- Dryer Damper Setting  
 Extractor - D-7&8 closed - D-3&4 (2) set 1/2 open  
 Intake - Not applicable  
 Exhaust - Open (set when processor is installed).
- Pre-Wash set at 30% on Rotameter

~~SECRET~~ FIGURE 14

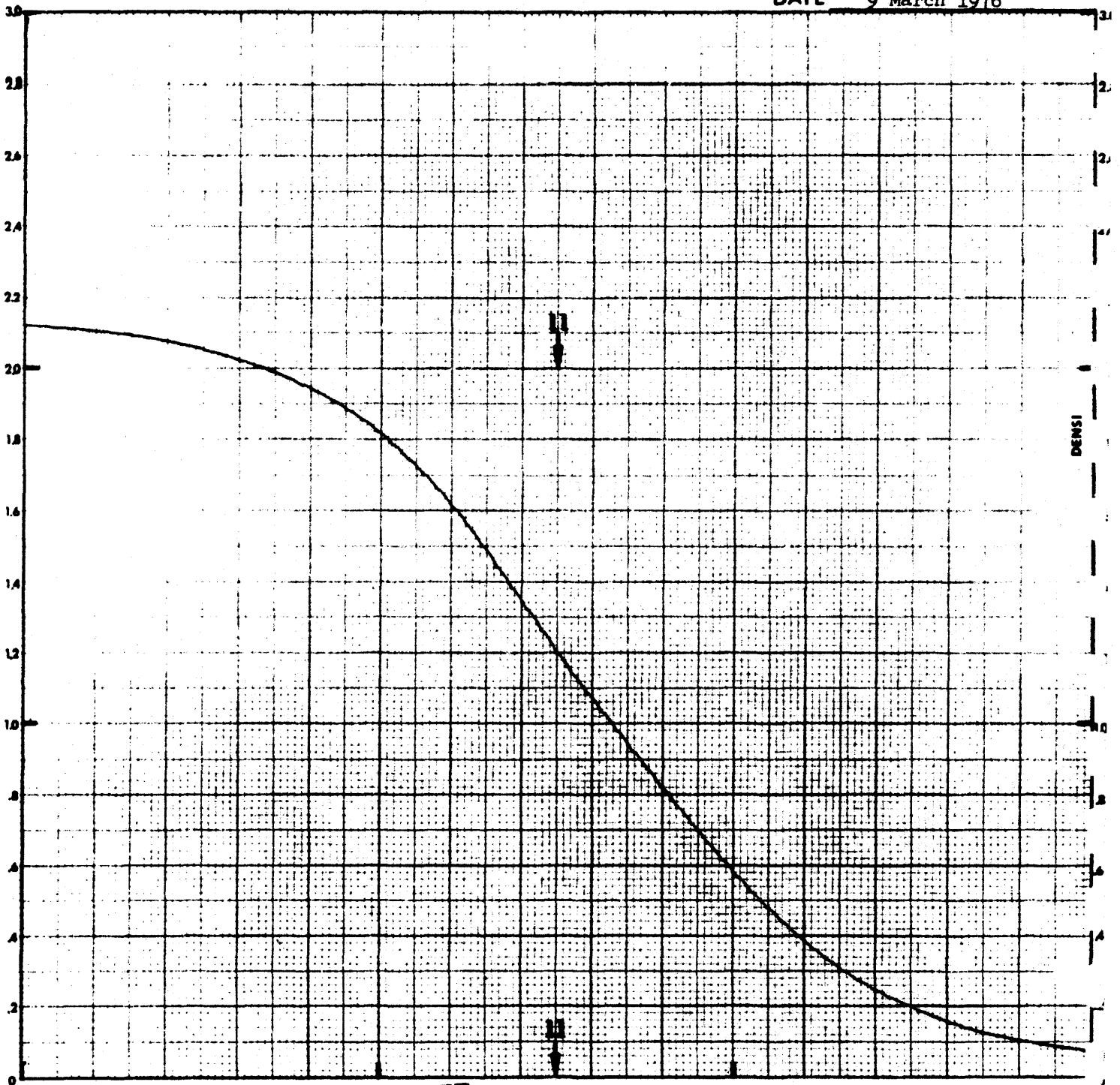
SENSITOMETRIC AIM CURVE FOR PROCESS SPECIFICATION NO. 777

FILM TYPE 2422-79

EXPOSURE	SENSITOMETER	1B
	LIGHT SOURCE	3000°K
	FILTER	None
	EXPOSURE TIME	1 sec.
	LOG (E <sub>11</sub> mcs)	1.30

AVERAGE GRADIENT	A	B	C	D
0.40 - 1.80	1.22			
D Min	.08			

DATE 9 March 1976



~~SECRET~~

PROCESSING SPECIFICATION NO. 777

DATE 9 March 1976

MACHINE Viscous Dalton  
 EMULSION TYPE Duplicating  
 FILM TYPE 2422

PROCESS EMULSION Down  
 FILM STRIP SPEED 90 FPM (Approx.)  
 THREAD-UP Note 1

PROCESSING STAGE	SOLUTION	REPLENISHER RATES ml/min.				EQUIL. TEMP. (°F)	TIME (SEC)	NOZZLE TYPE	PUMP PRESS (PSIG)	
		70mm	5"	6.6"	9.5"					
Twister Rolls (2)	Air Supply								10.0	
Dev. Cabinet Air						80±2				
Developer	18DN-V	675	1240	1240	1440	80±2	50		Note 2	
Cut-Off (Note 3)	Sump Water	4 GPM for All Sizes				Note 4	4	1/8K-3	35	
Fix	36FN	400	800	1070	1540	Note 4	22	1/8K-3	15	
D-3&4 D-7&8	Pre-Wash (Dip Tank)	Water	1000	1000	1000	1000	Note 4	6	1/8K-3	Note 6
	Wash	Sump Water	7.8 GPM (Make-up from Final)				Note 4	18	1/8K-3	15
D-3&4	Pre-Wash	Water	1000	1000	1000	1000	Note 4	20	1/8K-3	15
	Wash	Sump Water	7.8 GPM (Make-up from Final)				Note 4	14	1/8K-3	15
Wash - Final	Water	7.8 GPM for all Sizes				80±2	7	1/8K-3	15	
Photo-Flo (Note 3)	P.F.	140	250	335	480	Ambient	2			
Dryer Cabinet Air		See Note 5				150±5	18			
Conditioner Cabinet Air						Ambient	24			

VARIAC SETTING

FILM SIZE	70 mm	5", 6.6" & 9.5"
AT-1	110	115
AT-3	80	110
AT-5	120	135
AT-7	120	135

WEIGHTS (POUND)

FILM SIZE	70mm	5" & 6.6"	9.5"
Feed	24	36	72
Cond.	24	48	48
Take-Up	18	18	24

NOTES

- Thread-Up  
 Developer - ABCD - See Diagram.  
  
 Fix (D-7&8) - First section full (adjustable roller fully extended). Exit into the wash (Dip Tank) over the large Idler Roller in second fix section.
- Pot Setting - While transporting film, adjust pot until a slight uniform flow of developer is observed over the Shell Coater wier. Replenisher rates are approximate for these conditions.
- Wiper Blades  
 1 - Blade against emulsion at cut-off.  
 1 - Blade against emulsion after photo-flo.
- Temperature is slaved to final wash and therefore approximately the same.  
  
Dryer Damper Setting  
 Extractor - D-7&8 closed - D-3&4 (2) set 1/2 open  
 Intake - Not applicable  
 Exhaust - Open (set when processor is installed).

6. Pre-Wash set at 30% on Rotameter -43-

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1/72-5

~~SECRET~~ FIGURE 15

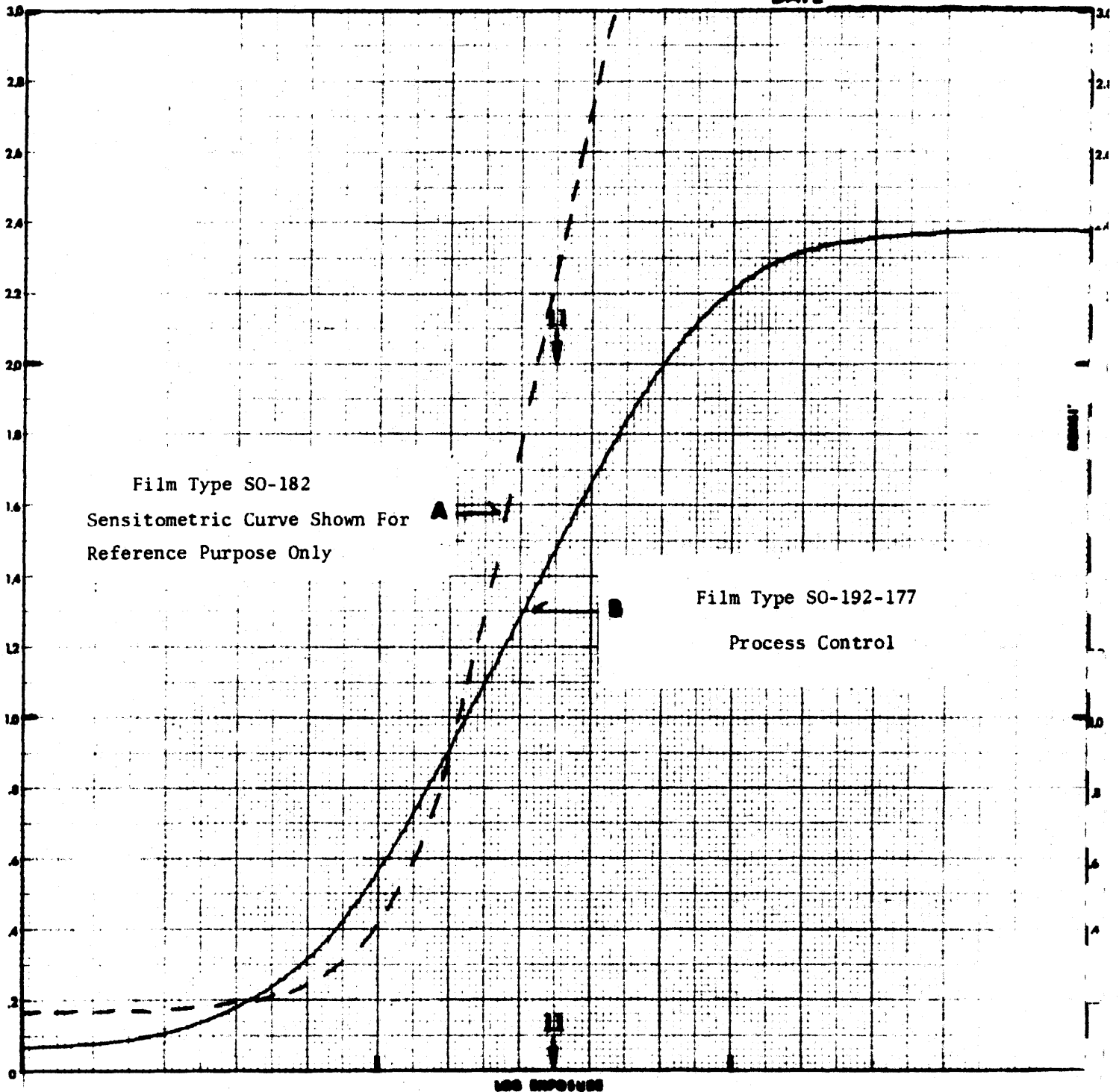
**SENSITOMETRIC AIM CURVE FOR PROCESS SPECIFICATION NO. 780**

FILM TYPE S0-182 (Control w/S0-192)

EXPOSURE	SENSITOMETER		1B		
	LIGHT SOURCE		3000°K		
	FILTER		None		
	EXPOSURE TIME	REF	4 sec.	CONT	8 sec.
	LOG (E <sub>11</sub> mcs)		1.90		2.20

	A	B	C	D
GAMMA	4.90	1.90		
BASE + FOG	.17	.07		

DATE 10 June 1976



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PROCESSING SPECIFICATION NO. **780**

DATE 9 March 1976

MACHINE Viscous Dalton  
 EMULSION TYPE Duplicating  
 FILM TYPE SO-182 (Control w/SO-192)

PROCESS EMULSION Down  
 FILM STRIP SPEED 90 FPM (Approx.)  
 THREAD-UP Note 1

PROCESSING STAGE	SOLUTION	REPLENISHER RATES ml/min.				EQUIL. TEMP.	TIME (SEC)	NOZZLE TYPE	PUMP PRESS (PSIG)	
		70mm	5"	6.6"	9.5"					
Twister Rolls (2) Air Supply									10.0	
Dev. Cabinet Air						80±2				
Developer	18DN-V	675	1240	1240	1440	80±2	50		Note	
Cut-Off (Note 3)	Sump Water	4 GPM for All Sizes				Note 4	4	1/8K-3	35	
Fix	36FN	400	800	1070	1540	Note 4	22	1/8K-3	15	
D-7&8 Dashed	Pre-Wash (Dip Tank)	Water	1000	1000	1000	1000	Note 4	6	1/8K-3 Note	
D-3&4 Dashed	Wash	Sump Water	7.8 GPM (Make-up from Final)				Note 4	18	1/8K-3	15
Dashed	Pre-Wash	Water	1000	1000	1000	1000	Note 4	20	1/8K-3	15
Dashed	Wash	Sump Water	7.8 GPM (Make-up from Final)				Note 4	14	1/8K-3	15
Dashed	Wash - Final	Water	7.8 GPM for all Sizes				80±2	7	1/8K-3	15
Photo-Flo (Note 3)	P.F.	140	250	335	480	Ambient	2			
Dryer Cabinet Air		See Note 5 & 7					175±5	18		
Conditioner Cabinet Air							Ambient	24		

VARIAC SETTING

FILM SIZE	70 mm	5", 6.6" & 9.5"
AT-1	110	115
AT-3	80	110
AT-5	120	135
AT-7	120	135

WEIGHTS (POUND)

FILM SIZE	70mm	5" & 6.6"	9.5"
Feed	24	36	72
Cond.	24	48	48
Take-Up	18	18	24

NOTES

- Thread-Up  
 Developer - ABCD - See Diagram.  
 Fix (D-7&8) - First section full (adjustable roller fully extended). Exit into the wash (Dip Tank) over the large Idler Roller in second fix section.
- Pot Setting - While transporting film, adjust pot until a slight uniform flow of developer is observed over the Shell Coater wiper. Replenisher rates are approximate for these conditions.
- Wiper Blades  
 1 - Blade against emulsion at cut-off.  
 1 - Blade against emulsion after photo-flo.
- Temperature is slaved to final wash and therefore approximately the same.
- Dryer Damper Setting  
 Extractor - D-7&8 closed - D-3&4 (2) set 1/2 open  
 Intake - Not applicable  
 Exhaust - Open (set when processor is installed).
- Pre-Wash set at 30% on Rotameter
- To Dry 9.5" rolls of SO-182, limit to short runs only.

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**SENSITOMETRIC AIM CURVE FOR PROCESS SPECIFICATION NO.**

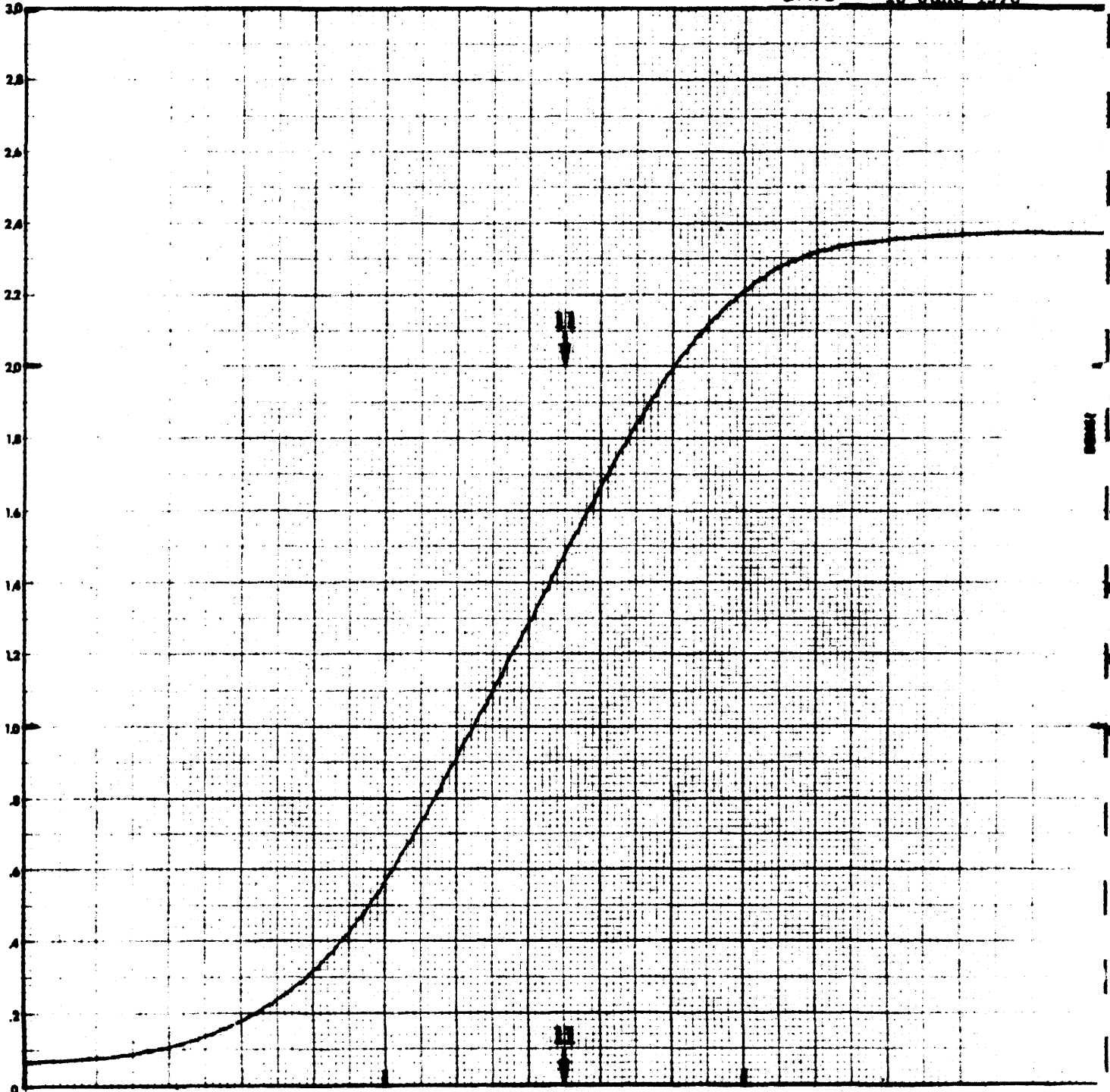
**781**

FILM TYPE S0-192-177

EXPOSURE	SENSITOMETER	1B
	LIGHT SOURCE	3000°K
	FILTER	None
	EXPOSURE TIME	8 sec.
	LOG (E <sub>11</sub> mcs)	2.20

	A	B	C	D
GAMMA	1.90			
BASE + FOG	.07			

DATE 10 June 1976



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**781**

DATE

9 March 1976

MACHINE Viscous Dalton  
 EMULSION TYPE Duplicating  
 FILM TYPE SO-192

PROCESS EMULSION Down  
 FILM STRIP SPEED 90 FPM (Approx.)  
 THREAD-UP Note 1

PROCESSING STAGE	SOLUTION	REPLENISHER RATES ml/min.				EQUIL. TEMP.	TIME (SEC)	NOZZLE TYPE	PUMP PRESS (PSIG)
		70mm	5"	6.6"	9.5"				
Twister Rolls (2) Air Supply									10.0
Dev. Cabinet Air						80±2			
Developer	18DN-V	675	1240	1240	1440	80±2	50		Note
Cut-Off (Note 3)	Sump Water	4 GPM for All Sizes				Note 4	4	1/8K-3	35
Fix	36FN	400	800	1070	1540	Note 4	22	1/8K-3	15
D-7&8 Pre-Wash (Dip Tank)	Water	1000	1000	1000	1000	Note 4	6	1/8K-3	Note
D-7&8 Wash	Sump Water	7.8 GPM (Make-up from Final)				Note 4	18	1/8K-3	15
D-3&4 Pre-Wash	Water	1000	1000	1000	1000	Note 4	20	1/8K-3	15
D-3&4 Wash	Sump Water	7.8 GPM (Make-up from Final)				Note 4	14	1/8K-3	15
Wash - Final	Water	7.8 GPM for all Sizes				80±2	7	1/8K-3	15
Photo-Flo (Note 3)	P.F.	140	250	335	480	Ambient	2		
Dryer Cabinet Air		See Note 5				130±5	18		
Conditioner Cabinet Air						Ambient	24		

VARIAC SETTING

FILM SIZE	70 mm	5", 6.6" & 9.5"
AT-1	110	115
AT-3	80	110
AT-5	120	135
AT-7	120	135

WEIGHTS (POUND)

FILM SIZE	70mm	5" & 6.6"	9.5"
Feed	24	36	72
Cond.	24	48	48
Take-Up	18	18	24

NOTES

- Thread-Up  
 Developer - ABCD - See Diagram.  
 Fix (D-7&8) - First section full (adjustable roller fully extended). Exit into the wash (Dip Tank) over the large Idler Roller in second fix section.
- Pot Setting - While transporting film, adjust pot until a slight uniform flow of developer is observed over the Shell Coater wiper. Replenisher rates are approximate for these conditions.
- Wiper Blades  
 1 - Blade against emulsion at cut-off.  
 1 - Blade against emulsion after photo-flo.
- Temperature is slaved to final wash and therefore approximately the same.
- Dryer Damper Setting  
 Extractor - D-7&8 closed - D-3&4 (2) set 1/2 open  
 Intake - Not applicable  
 Exhaust - Open (set when processor is installed).
- Pre-Wash set at 30% on Rotameter

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TABLE 2

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MACHINE CONTROL GUIDELINES

**DALTON/VFP**

Spec	Film Type	Can #	L D			D D			EFS			D-Min	D-Max.
			Step	Aim	Tol.	Steps	Aim	Tol.	Step	Aim	Tol.		
773	SO-172-177	116	9	.45	.03	15-9	1.16	.05	12	1.06	.04	.02	2.08
776	SO-192-177	116	9	.50	.03	14-8	1.29	.05	11	.94	.04	.02	2.22
777	2422-79	114	15	.48	.03	8-15	1.28	.05	12	1.00	.04	.08	2.12
781	SO-192-177	116	7	.42	.03	13-7	1.56	.05	9	.90	.04	.07	2.37

**CAYUGA**

Mode	Film Type	Spec	Aim Output		Range Control			Setup		
			Density	Tolerance	Input	Output	@ L. L.	9863 Or Vycor	Int. Filter	Extra
(1) D. P. Lab Cuts	SO-192	781	1.10	Slope $\pm .03$ Speed $\pm .05$	1.80	1.10	0.0	9863	N	None
(1) D. P. Normal	SO-192	781	1.10	"	1.80	1.10	0.0	9863	N	"
(1) D. P. Low Gamma	SO-192	773	.95	"	1.60	.95	0.0	9863	L	"
(2) AN	2422	777	.55	"	1.30	.55	0.0	Vycor	H	"
(2) TN	2422	777	1.10	"	1.60	1.10	0.0	Vycor	H	"

**REDONDO**

Mode	Film Type	Spec	Nrml. Contrast		Nrml. Speed		High Speed		Setup		
			Computer Toler.	Manual	Control Density	Log E Toler.	Control Density	Log E Toler.	9863	Int. Filter	Extra
B&W/B&W											
DP <sup>(1)</sup>	SO-192	781	.030	Subjective	1.00	$\pm .04$	1.10	$\pm .04$	Yes	N&H	None
B&W/Color											
DP <sup>(1)</sup>	SO-192	773	-	Subjective	1.00	$\pm .03$	-	-	Yes	L, M, H	Detag
DN <sup>(3)</sup>	2422	777	-	-	.55	$\pm .03$	-	-	No	M	None

(1) Controlled with SO-192-169-2

(2) " " 2422-79-12

(3) " " 2422-79-28

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TABLE 3

FIRST COPY GUIDELINES MISSION 1212-1

B&W/B&W

	<u>Printer</u>	<u>Process</u>	<u>Stock</u>	<u>Min.</u>	<u>Max.</u>	<u>Aim</u>
LAB CUTS	ABCC Cayuga	<u>781</u>	<u>SO-192</u>	<u>.40</u>	<u>2.00</u>	<u>Avg. of 1.10</u>
	ABCC Cayuga	781	SO-192	.40	2.00	Avg. of 1.10
DP MID: Area Nrml.	ABCC Redondo	<u>781</u>	<u>SO-192</u>	<u>.40</u>	<u>2.00</u>	<u>Avg. of 1.0</u>
	Area High ABCC Redondo	<u>781</u>	<u>SO-192</u>	<u>.40</u>	<u>2.00</u>	<u>Avg. of 1.10</u>
	Target Nrml. ABCC Redondo	<u>781</u>	<u>SO-192</u>	<u>.40</u>	<u>2.00</u>	<u>Avg. of 1.0</u>
	Target High ABCC Redondo	<u>781</u>	<u>SO-192</u>	<u>.40</u>	<u>2.00</u>	<u>Avg. of 1.10</u>
DP LITE	ABCC Redondo	<u>781</u>	<u>SO-192</u>	<u>-</u>	<u>-</u>	<u>Max. of 1.4</u>
DP DARK	ABCC Redondo	<u>781</u>	<u>SO-192</u>	<u>-</u>	<u>-</u>	<u>Min. of .70</u>
-----						
DN MID: Area	ABCC Cayuga	<u>777</u>	<u>2422</u>	<u>.40</u>	<u>1.75</u>	<u>Min. of .40</u>
	Target ABCC Cayuga	<u>777</u>	<u>2422</u>	<u>-</u>	<u>-</u>	<u>Avg. of 1.10</u>
DN LITE	ABCC Cayuga Man.	<u>777</u>	<u>2422</u>	<u>-</u>	<u>-</u>	<u>Max. of 1.2</u>
-----						
DP Low Gamma	ABCC Cayuga	773	SO-192	.40	1.60	Avg. of .95

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 Table 4

Patch Aims for Mission 1212-1

Emulsion:	<u>SO-192</u>	<u>SO-192</u>	<u>2422</u>
Process Spec:	<u>781</u>	<u>781</u>	<u>777</u>
Contrast:	<u>Normal</u>	<u>High</u>	<u>-</u>
Limits:	<u>±.15</u>	<u>±.15</u>	<u>±.15</u>

<u>Print Level</u>	<u>Step</u>	<u>Aim</u>	<u>Step</u>	<u>Aim</u>	<u>Step</u>	<u>Aim</u>
.0	W-2	1.06	W-2	1.34	M-1	.60
.1	W-1	.96	W-2	1.20	M-1	.62
.2	V-1	.85	W-2	1.06	L-1	.60
.3	P-1	.95	V-2	.98	K-1	.52
.4	M-1	.99	T-1	.99	J-2	.57
.5	L-1	.98	R-1	1.00	J-2	.66
.6	K-1	1.10	P-1	.97	J-1	.59
.7	J-2	1.03	N-1	.94	I-2	.64
.8	J-2	.89	L-2	.96	H-2	.58
.9	J-2	.76	K-2	1.01	G-2	.57
1.0	I-2	.95	K-2	.86	F-1	.60
1.1	I-1	1.02	K-1	1.00	E-2	.68
1.2	H-1	1.08	J-2	.93	E-1	.81
1.3	G-2	.99	J-1	1.12	E-1	.88
1.4	F-1	.98	J-1	.97	E-2	.99
1.5	D-1	.87	I-2	.91	E-1	1.15

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APPENDIX C

B&W/B&W Duplication System Performance

Contents:

- 1) Table 1 - Printer Utilization
- 2) Table 2 - High Contrast "Instead Of's"
- 3) Histograms 1-2 - ABCC Redondo Normal Contrast  
Print Level Distributions
- 4) Table 3 - Patch Return Density Statistics

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TABLE 1

B&W/B&W

PRINTER UTILIZATION

MISSION 1212-1

Printers	LAB CUTS		AREA POS		TARGET POS		MAPPING POS		AREA NEG.		TARGET NEG.	
	%	Spec.	%	Spec.	%	Spec.	%	Spec.	%	Spec.	%	Spec.
STD Redondo:	-	-	-	-	-	-	-	-	-	-	-	-
ABCC Redondo:	-	-	98.2	781	100	781	-	-	-	-	-	-
STD Cayuga-Auto:	-	-	-	-	-	-	-	-	-	-	-	-
STD Cayuga-Man:	-	-	-	-	-	-	-	-	-	-	-	-
ABCC Cayuga-Auto:	100	781	1.8	781	-	-	100	773	100	777	100	777
ABCC Cayuga-Man:	-	-	-	-	-	-	-	-	-	-	-	-
ABCC Framingham-Auto:	-	-	-	-	-	-	-	-	-	-	-	-
ABCC Framingham-Man:	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>100%</b>		<b>100%</b>		<b>100%</b>		<b>100%</b>		<b>100%</b>		<b>100%</b>	

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TABLE 2

High Contrast "Instead Of's"

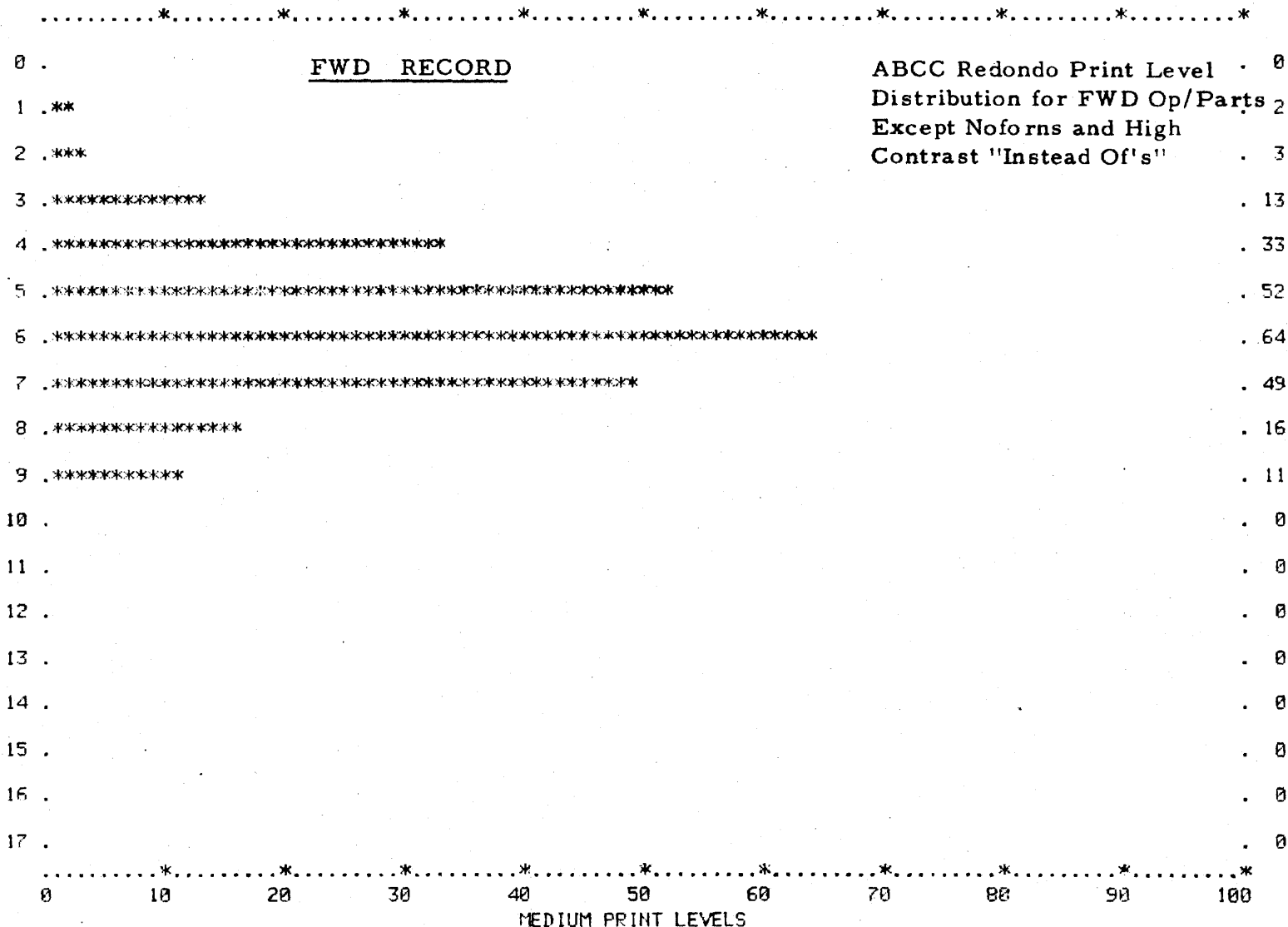
Mission 1212-1

<u>Op/Part</u>	<u>Frames</u>	<u>Area</u>	<u>Camera</u>	<u>Comp. #</u>	<u>Orign. Emul.</u>	<u>N. D.</u>
36-1	1-4	G	Fwd	F-49	1414	.6
41-1	1-25	G	"	F-49	"	.6
87-2	51-56	S	"	F-79	"	.6
128-1	1-7	H	"	F-57	"	.6
169-1	1-5	L	"	F-63	"	.6
197-1	1-15	C	"	F-30	"	.7
216-1	1-40	P	"	F-73	"	.5
226-1	1-4	H	"	F-57	"	.6
87-2	51-56	S	Aft	A-79	1414	.7
128-1	1-7	H	"	A-57	"	.6
169-1	1-5	L	"	A-63	"	.6

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HISTOGRAM #1

NORMAL CONTRAST



FWD RECORD

ABCC Redondo Print Level . 0  
 Distribution for FWD Op/Parts 2  
 Except Noforms and High  
 Contrast "Instead Of's" . 3

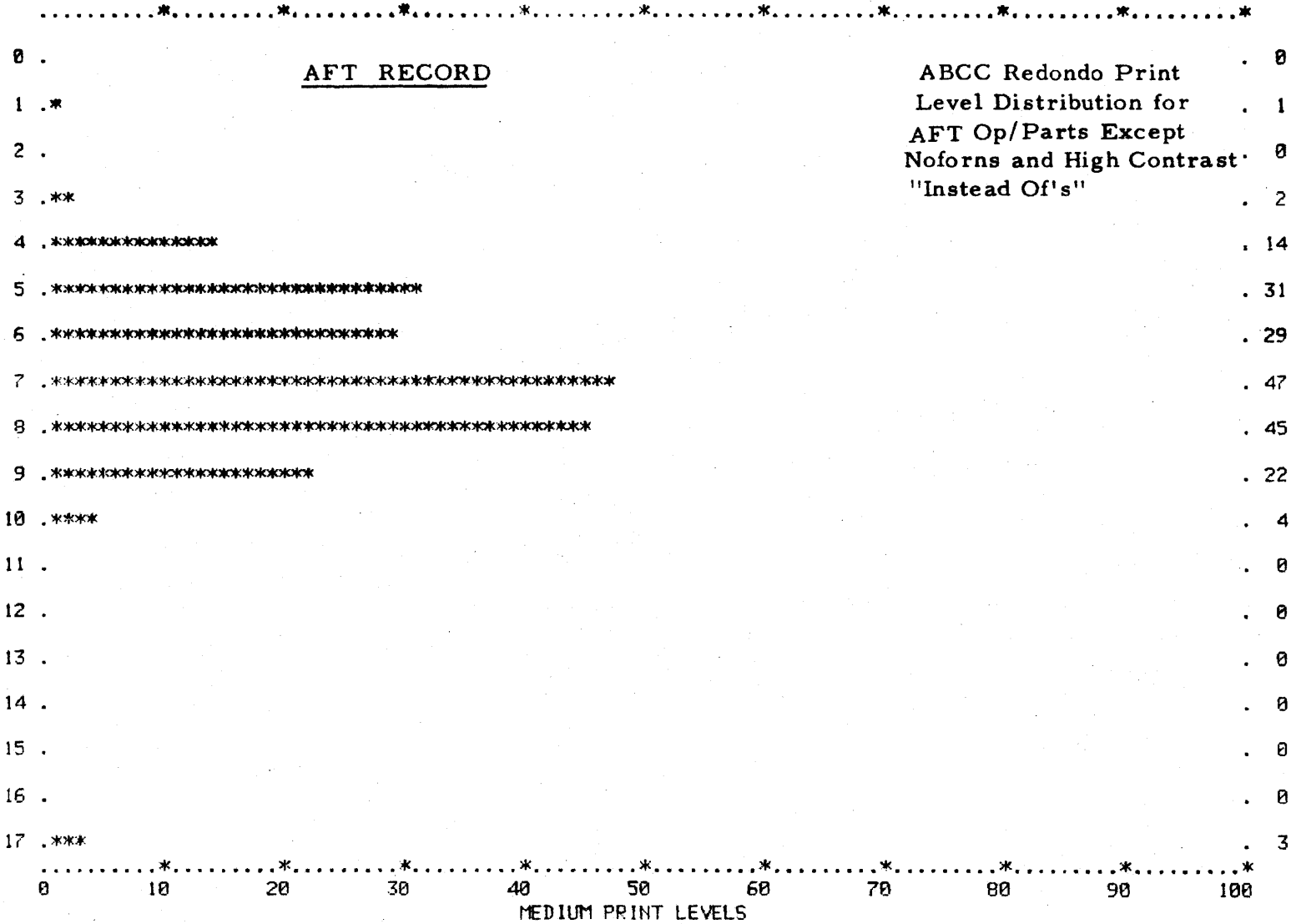
NRO APPROVED FOR RELEASE  
 DECLASSIFIED BY: CIART  
 DECLASSIFIED ON: 29 MARCH 2012

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-54-

HISTOGRAM #2

NORMAL CONTRAST



-55-

NRO APPROVED FOR RELEASE  
 DECLASSIFIED BY: CI/ART  
 DECLASSIFIED ON: 29 MARCH 2012

833



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Table 3

Patch Return Density Distribution Mission 1212-1

Emulsion: SO-192  
Process Spec: 781  
Contrast: Normal

<u>Print Level</u>	<u>Aim</u>	<u>Mean Return</u>	<u>Standard Deviation</u>	<u>Number Samples</u>
.0	<u>1.06</u>	<u>-</u>	<u>-</u>	<u>-</u>
.1	<u>.96</u>	<u>.943</u>	<u>.050</u>	<u>41</u>
.2	<u>.85</u>	<u>.868</u>	<u>.059</u>	<u>23</u>
.3	<u>.95</u>	<u>.948</u>	<u>.045</u>	<u>250</u>
.4	<u>.99</u>	<u>.986</u>	<u>.045</u>	<u>798</u>
.5	<u>.98</u>	<u>.966</u>	<u>.047</u>	<u>1496</u>
.6	<u>1.10</u>	<u>1.095</u>	<u>.059</u>	<u>1862</u>
.7	<u>1.03</u>	<u>1.009</u>	<u>.054</u>	<u>1819</u>
.8	<u>.89</u>	<u>.880</u>	<u>.055</u>	<u>1123</u>
.9	<u>.76</u>	<u>.750</u>	<u>.059</u>	<u>600</u>
1.0	<u>.95</u>	<u>.943</u>	<u>.055</u>	<u>66</u>
1.1	<u>1.02</u>	<u>-</u>	<u>-</u>	<u>-</u>
1.2	<u>1.08</u>	<u>-</u>	<u>-</u>	<u>-</u>
1.3	<u>.99</u>	<u>-</u>	<u>-</u>	<u>-</u>
1.4	<u>.98</u>	<u>-</u>	<u>-</u>	<u>-</u>
1.5	<u>.87</u>	<u>-</u>	<u>-</u>	<u>-</u>
<b>TOTAL</b>				<u>8148</u>

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APPENDIX D

B&W/Color Sensitometry, Guidelines and Performance

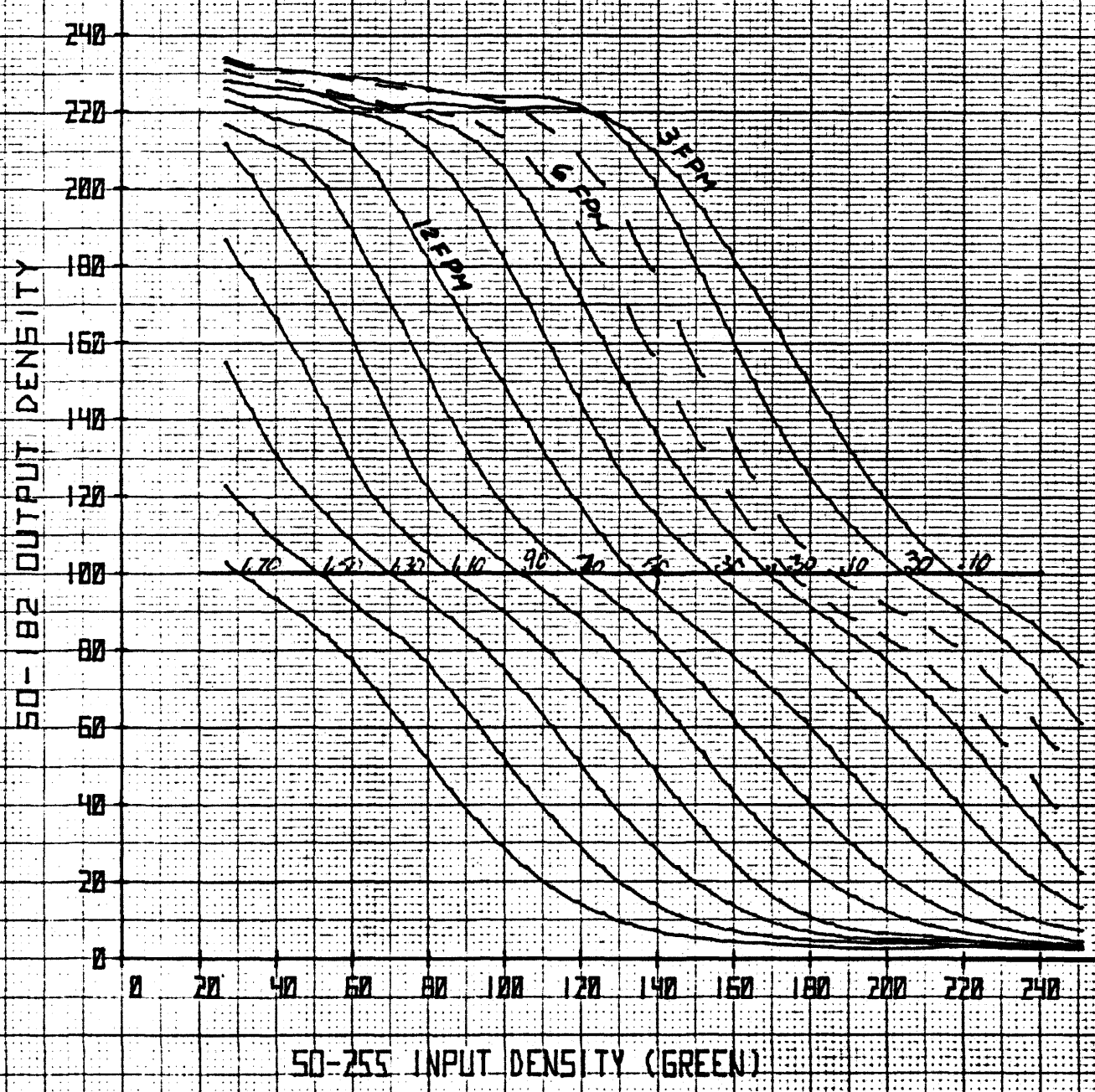
Contents:

- 1) Figures 1-3 - Rainbow System Curves and PC Forms
- 2) Figures 4-6 - Redondo System Curves and PC Forms
- 3) Figure 7 - Spec. 776
- 4) Table 1 - DP & DN Patch Aims
- 5) Figure 8 - D-Min/D-Max Guidelines
- 6) Table 2 - First Copy Guidelines
- 7) Table 3 - DP Final Frame x Frame Contrast Selections and Statistics

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1212-1

RAINBOW #104  
W-16  
LIQ. GATE  
2" SLIT  
3, 6, 12 FPM  
REF 501250  
NO UNIFORMITY MASK  
50-182-3-7  
SPEC 770  
8/2/76



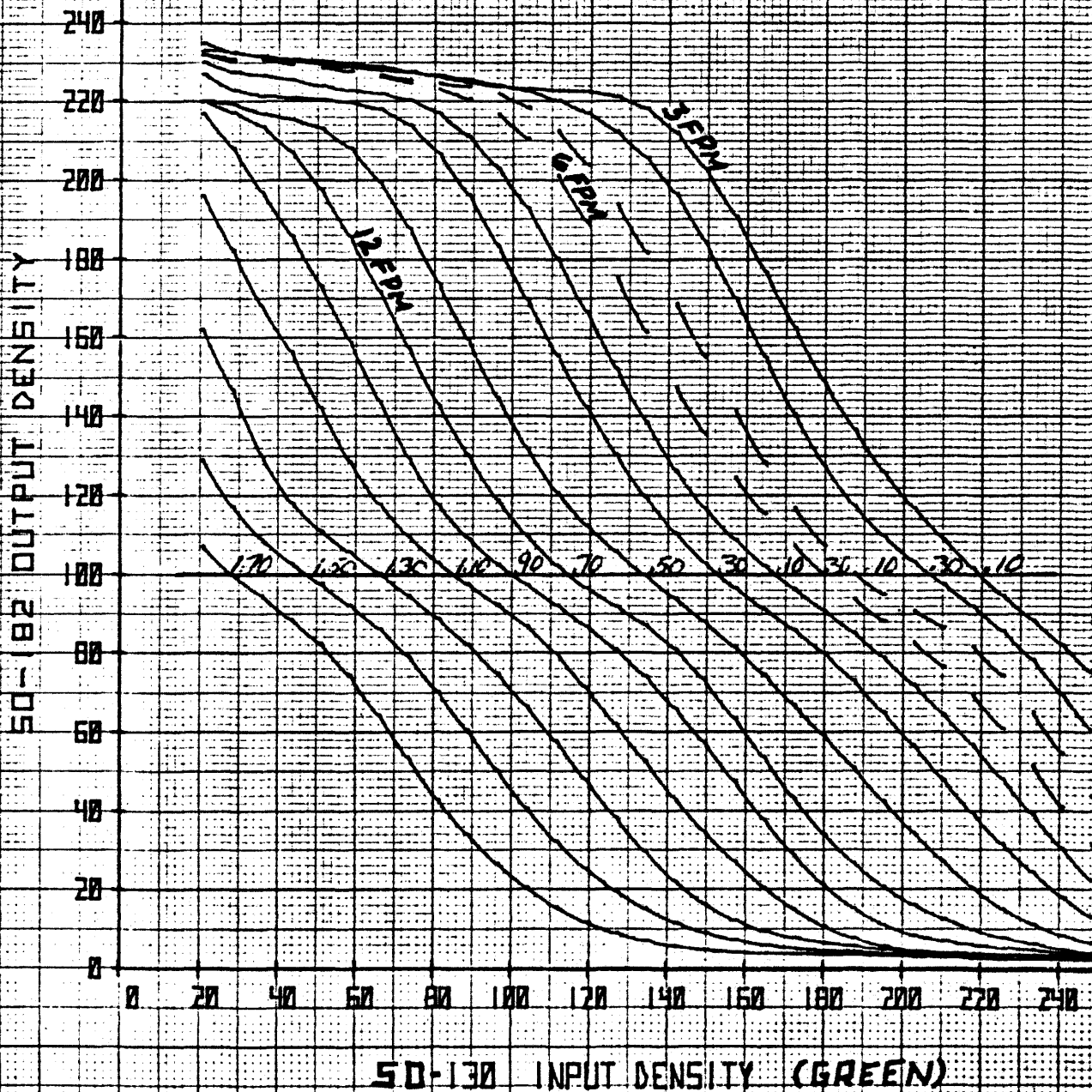
46 1470

K<sup>o</sup>2 KEUFFEL & ESSER CO. MADE IN U.S.A.

12-12-1

DECLASSIFIED ON: 25 MARCH 2012

RAINBOW #104  
V1-16  
11Q GATE  
2" SLIT  
3, 6, 12 EPN  
REF 50/250  
NO UNEFORMITY MASK  
SQ-112-3-7  
SPEC-776  
S/P-776

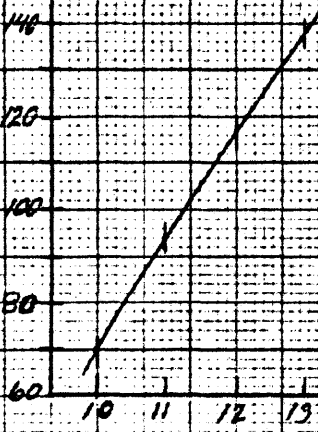


46 1470

K-E 10 X 10 TO 1/2 INCH 7/16 X 10 INCHES  
KEUFFEL & ESSER CO. MADE IN U.S.A.

RAINBOW 2556/1A7

PRINTER #



PROCESS  
SPEC 778

MISSION  
DATE  
TIME  
PSM SIZE  
WRITTEN #  
BAS  
METER  
SLIT  
FPM  
LIQ OR DRY?

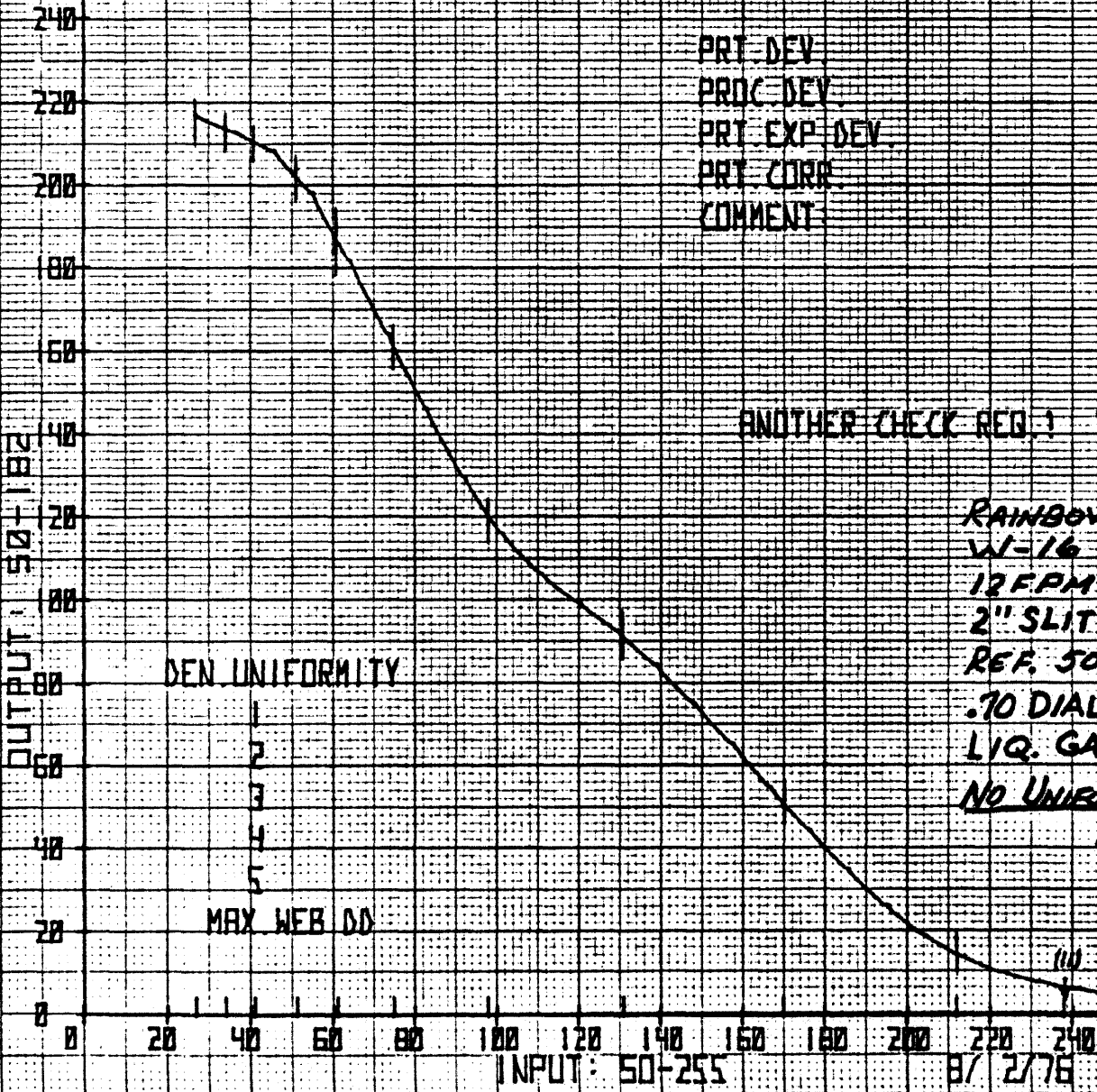
HEAD TAIL AVE	10	11	12	13	14
HEAD					
TAIL					
AVE					

LOG EXPOSURE

PRT DEV  
PROC DEV  
PRT EXP DEV  
PRT CORR  
COMMENT

ANOTHER CHECK REQ. YES NO

RAINBOW # 104  
W-16  
12 FPM  
2" SLIT  
REF. 50/250 (3)  
.70 DIAL ND (3)  
LIQ. GATE  
NO UNIFORMITY  
MASK!



DEN UNIFORMITY

MAX WEB DD

INPUT: 50-255

8/ 2/78

46 1470

K-E 10 X 10 TO 1/8 INCH 7/8 X 10 INCHES  
KEUFFEL & ESSER CO. MADE IN U.S.A.

~~SECRET~~ 1212

PRINTER

B+W/COLOR  
 SO-182/SO-192

DATE  
 TIME  
 MISSION  
 DRAWER  
 CORNING  
 DETAG  
 BIAS  
 METER  
 BEAM  
 VERNIER

50-192-177

SPEC 773

LOW<sup>o</sup>  
 MED<sup>o</sup>  
 HIGH<sup>o</sup>

PRTR. DEV.  
 PROC. DEV.  
 PRTR. EXP. DEV.  
 PRTR. CORR.

RESOLUTION - PSM<sup>o</sup>  
 IN X IN X IN X

DENSITY UNIFORMITY  
 1  
 2  
 3  
 4  
 5  
 AD

SO-192 OUTPUT DENSITY

164-2

.10 ND

(1)

50-182 INPUT DENSITY  
 (FROM SO-255)

8/5/76

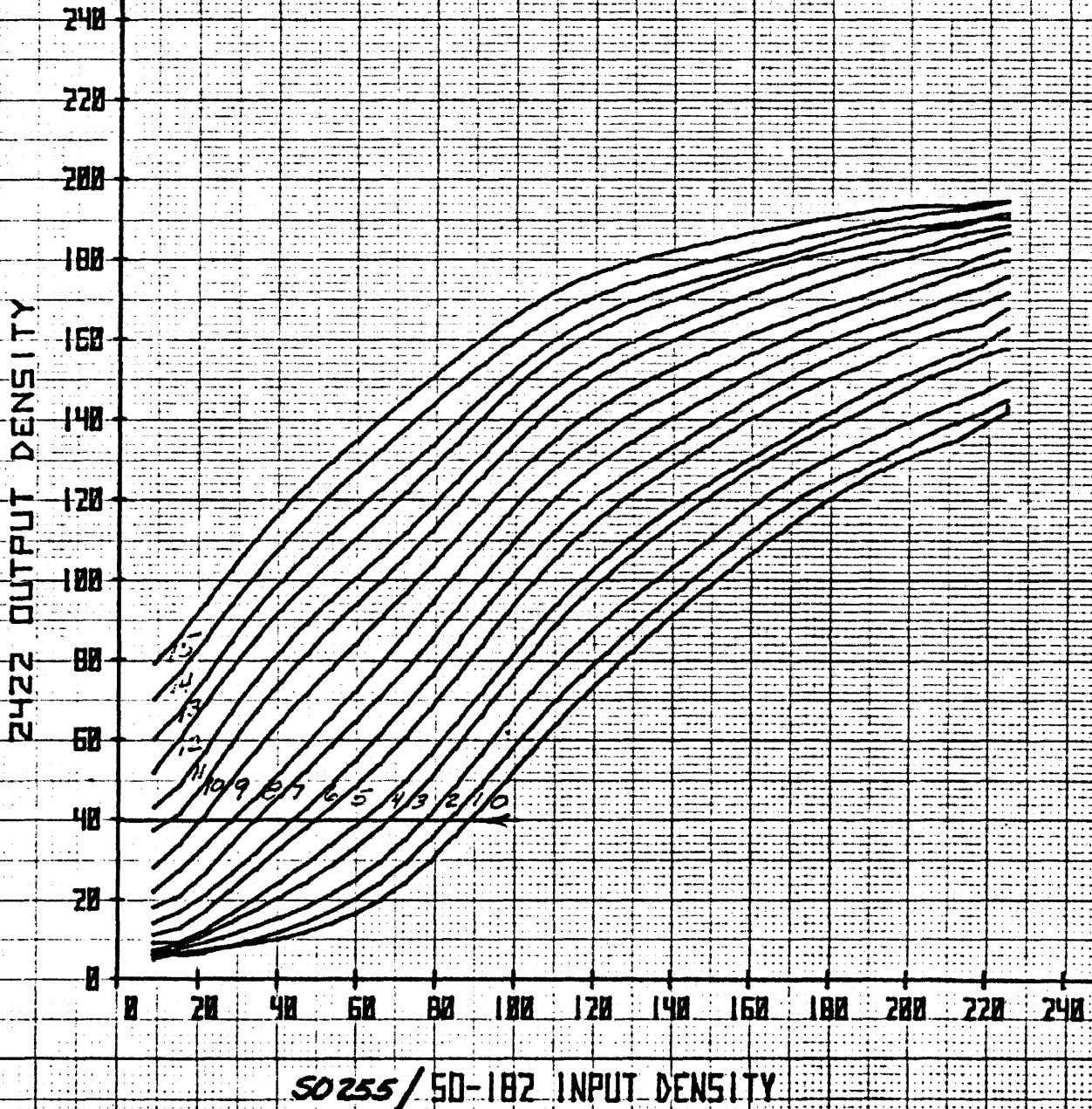
46 1470

K-E 10 X 10 TO 16 INCH 7/8 X 10 INCHES  
 KEUFFEL & ESSER CO. MADE IN U.S.A.

2422 B+W/COLOR SYSTEMS CURVES

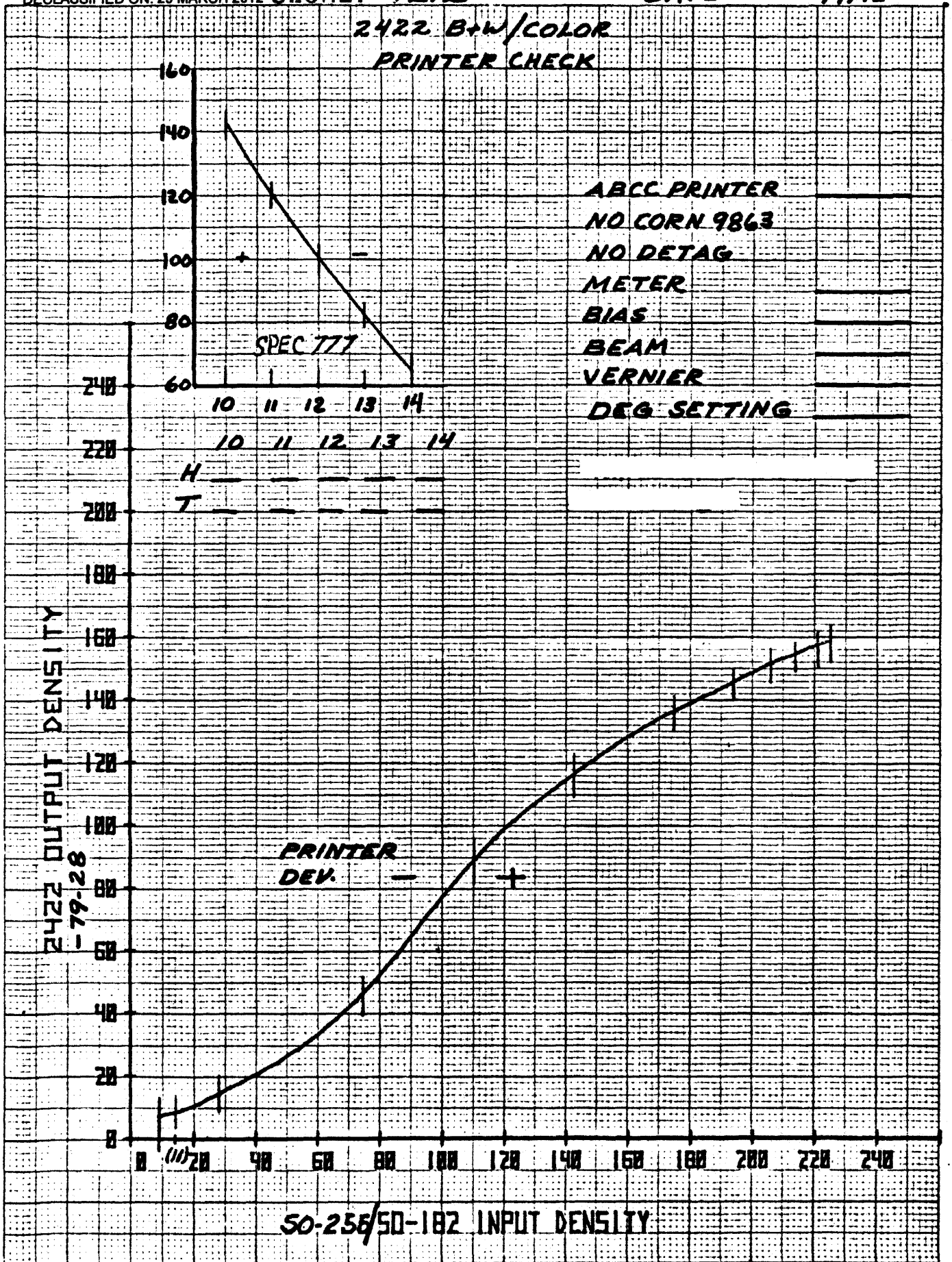
ABCC REDONDO 412  
DRAWER # 2

NO CORN 9863  
NO DETAG  
25°  
SPEC 777  
2422-79-28



46 1470

10 X 10 TO 1/2 INCH • 7 1/2 X 10 INCHES  
KEUFFEL & ESSER CO. MADE IN U.S.A.



46 1470

K·Σ 10 X 10 TO 1 INCH • 2 1/2 X 10 INCHES  
 KUPFEL & ESSER CO. MADE IN U.S.A.



**SENSITOMETRIC AIM CURVE FOR PROCESS SPECIFICATION NO. 776**

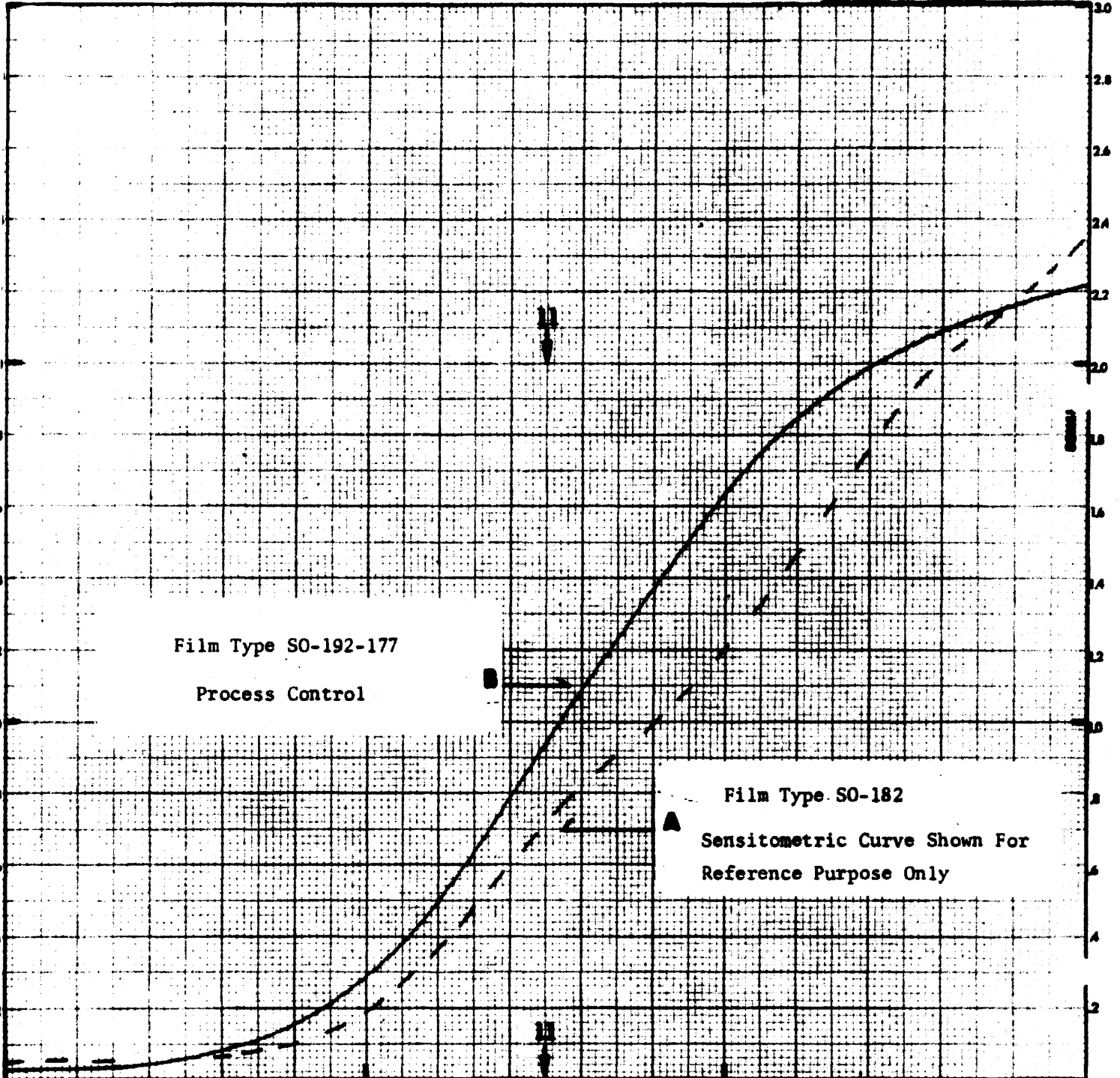
FILM TYPE S0-182 (Control w/S0-192)

EXPOSURE	SENSITOMETER		1B	
	LIGHT SOURCE		3000°K	
	FILTER		None	
	EXPOSURE TIME	REF. 4 sec.	CONT. 8 sec.	
	LOG (E <sub>n</sub> mcs)	REF. 1.90	CONT. 2.20	

	A	B	C	D
GAMMA	1.18	1.54		
BASE + FOG	.05	.03		

\* AVERAGE GRADIENT  
 0.40-1.80

DATE 10 June 1976



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PROCESSING SPECIFICATION NO.

**776**

DATE

9 March 1976

MACHINE Viscous Dalton  
 EMULSION TYPE Duplicating  
 FILM TYPE SO-182 (Control w/SO-192)

PROCESS EMULSION Down  
 FILM STRIP SPEED 75 FPM (Approx.)  
 THREAD-UP Note 1

PROCESSING STAGE	SOLUTION	REPLENISHER RATES ml/min.				EQUIL. TEMP.	TIME (SEC)	NOZZLE TYPE	PUMP PRESS (PSIG)
		70mm	5"	6.6"	9.5"				
Twister Rolls (2) Air Supply						(OF)			10.0
Dev. Cabinet Air						70±3			
Developer	21DN-V	565	1035	1035	1200	70±3	25		Note
Cut-Off (Note 3)	Sump Water	4 GPM for All Sizes				Note 4	4	1/8K-3	35
Fix	36FN	340	675	890	1280	Note 4	21	1/8K-3	15
D-7&8 Pre-Wash (Dip Tank)	Water	1000	1000	1000	1000	Note 4	6	1/8K-3	Note
D-7&8 Wash	Sump Water	7.8 GPM (Make-up from Final)				Note 4	17	1/8K-3	15
D-3&4 Pre-Wash	Water	1000	1000	1000	1000	Note 4	24	1/8K-3	15
D-3&4 Wash	Sump Water	7.8 GPM (Make-up from Final)				Note 4	17	1/8K-3	15
Wash - Final	Water	7.8 GPM for all Sizes				70±3	8	1/8K-3	15
Photo-Flo (Note 3)	P.F.	140	250	335	480	Ambient	3		
Dryer Cabinet Air		See Note 5				175±5	22		
Conditioner Cabinet Air						Ambient	26		

VARIAC SETTING

FILM SIZE	70 mm	5", 6.6" & 9.5"
AT-1	110	115
AT-3	80	110
AT-5	120	135
AT-7	120	135

WEIGHTS (POUND)

FILM SIZE	70mm	5" & 6.6"	9.5"
Feed	24	36	72
Cond.	24	48	48
Take-Up	18	18	24

NOTES

- Thread-Up  
 Developer - AB - See Diagram.  
 Fix (D-7&8) - First section full (adjustable roller fully extended). Exit into the wash (Dip Tank) over the large Idler Roller in second fix section.
- Pot Setting - While transporting film, adjust pot until a slight uniform flow of developer is observed over the Shell Coater wier. Replenisher rates are approximate for these conditions.
- Wiper Blades  
 1 - Blade against emulsion at cut-off.  
 1 - Blade against emulsion after photo-flo.
- Temperature is slaved to final wash and therefore approximately the same.
- Dryer Damper Setting  
 Extractor - D-7&8 closed - D-3&4 (2) set 1/2 open  
 Intake - Not applicable  
 Exhaust - Open (set when processor is installed).
- Pre-Wash set at 30% on Rotameter

TABLE 1

B&W/COLOR PATCH AIDS FOR MISSION 1212-1

	<u>Print Level</u>	<u>Light Band</u>	<u>Medium Band</u>	<u>Dark Band</u>
Emulsion: <u>SO-192</u>	<u>.1 (Low)</u>	<u>.77</u>	<u>-</u>	<u>1.57</u>
Process Spec: <u>773</u>	<u>.1 (Medium)</u>	<u>.61</u>	<u>-</u>	<u>1.71</u>
Tolerance: <u>±.10</u>	<u>.1 (High)</u>	<u>.40</u>	<u>-</u>	<u>1.97</u>
Emulsion: <u>2422</u>	<u>.0</u>	<u>-</u>	<u>.49</u>	<u>-</u>
Process Spec: <u>777</u>	<u>.1</u>	<u>-</u>	<u>.56</u>	<u>-</u>
Tolerance: <u>±.10</u>	<u>.2</u>	<u>-</u>	<u>.65</u>	<u>-</u>
	<u>.3</u>	<u>-</u>	<u>.75</u>	<u>-</u>
	<u>.4</u>	<u>-</u>	<u>.82</u>	<u>-</u>
	<u>.5</u>	<u>-</u>	<u>.93</u>	<u>-</u>
	<u>.6</u>	<u>.43</u>	<u>-</u>	<u>-</u>
	<u>.7</u>	<u>.53</u>	<u>-</u>	<u>-</u>
	<u>.8</u>	<u>.65</u>	<u>-</u>	<u>-</u>
	<u>.9</u>	<u>.71</u>	<u>-</u>	<u>-</u>
	<u>1.0</u>	<u>.82</u>	<u>-</u>	<u>-</u>
	<u>1.1</u>	<u>.91</u>	<u>-</u>	<u>-</u>
	<u>1.2</u>	<u>1.02</u>	<u>-</u>	<u>-</u>
	<u>1.3</u>	<u>1.08</u>	<u>-</u>	<u>-</u>
	<u>1.4</u>	<u>1.17</u>	<u>-</u>	<u>-</u>
	<u>1.5</u>	<u>1.24</u>	<u>-</u>	<u>-</u>

**D-Min/D-Max**

**B&W From Color**

**SO-255 TO SO-182**

1. Use Status A Green Filter
2. One reading every five (5) frames
3. Calculate the average density for each frame.  
(SO-255)

Return the average density for each frame  
Read to 1.00 output density on the PAR-184  
systems curves for SO-255 to SO-182.

(SO-130) L.R.

Same as SO-255 but use the systems curves  
for SO-130 to SO-182.

If print densities for all frames read are within +/- .10 of the  
average print density, use the average print density.

Use the min/max and max/max for the total group of frames  
read to bias your decision.

**SO-182 TO 2422**

1. One reading every ten (10) frames.
2. Return the internegative d-mins to the .40 density level  
using the SO-182 to 2422 systems curves.

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TABLE 2

FIRST COPY GUIDELINES

MISSION 1212-1

B&W/COLOR

	<u>Printer</u>	<u>Process</u>	<u>Stock</u>	<u>Min</u>	<u>Max</u>	<u>Aim</u>
INTERNEG	<u>Rainbow #104</u>	<u>776</u>	<u>SO-182</u>	<u>-</u>	<u>-</u>	<u>Avg. of 1.00</u>
POSITIVE	* <u>ABCC Redondo</u>	<u>773</u>	<u>SO-192</u>	<u>.40</u>	<u>2.00</u>	<u>Avg. of 1.00</u> <u>Proper Contrast</u>
NEGATIVE	** <u>ABCC Redondo</u>	<u>777</u>	<u>2422</u>	<u>.35</u>	<u>1.85</u>	<u>Min. of .40</u>

\* ABCC Redondo equipped with Detag glass, 9863 Corning and blocking style interference filter, 3 settings. Exposure at .10 ND, 2" slit, 100 FPM and one of 3 contrast settings.

\*\* ABCC Redondo with no Detag or Corning, only an interference filter. Exposure at approximately Medium interference filter setting, 2" slit, 100 FPM and appropriate ND.

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1212-1

Black & White From Color Duplicate Positive  
Contrast Selection

<u>Composite Can</u>	<u>Area</u>	<u>Film Type</u>	<u>Op/Part</u>	<u>Frames &amp; Contrast</u>		
				<u>Low</u>	<u>Medium</u>	<u>High</u>
1	A	SO-130	14-1 18-1 19-1 20-1	1-7 1-10 1-12 1-4		
3	A	SO-130	58-1 59-1 65-1	1-3 1-17 1-29		
5	A	SO-255	102-1	1-52		
13	B	SO-130	12-1 13-1	1-33		1-6
14	B	SO-255	35-1	1-13		
16	B	SO-255	100-2	4-46		
21	C	SO-130	11-1 16-1 17-1 22-1	1-31 1-43 1-11 1-1		
24	C	SO-255	46-1	1-11		
26	C	SO-130	57-1 64-1	1-25 1-19		
33	D	SO-130	10-2	21-28		
35	D	SO-255	45-1	1-31		
43	E	SO-130	21-1	1-7		
49	G	SO-255	36-1 41-1	1-4		1-25
55	H	SO-255	42-1			1-10
59	K	SO-130	15-1 60-1	1-6 1-7		

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<u>Composite Can</u>	<u>Area</u>	<u>Film Type</u>	<u>Op/Part</u>	<u>Frames &amp; Contrast</u>		
				<u>Low</u>	<u>Medium</u>	<u>High</u>
61	K	SO-255	103-1		8-27	1-7
70	O	SO-255	43-1		1-10	
77	S	SO-130	56-2	20-27	2-19 28-37	
86	W	SO-255	44-1	14-17	1-13	
88	W	SO-130	62-1 63-1	1-4 1-4		
93	Z	SO-255	37-1 38-1 39-1 40-1	1-13   1-10	1-6 1-9	
95	Z	SO-255	101-1	1-43		

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1212-1

Black & White From Color

Contrast Statistics

	<u>Low Cont.</u>		<u>Med. Cont.</u>		<u>High Cont.</u>		<u>Total</u>	
	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>
SO-130	289	89.5	34	10.5	0	0	323	100
SO-255	224	69.1	93	28.7	7	2.2	324	100
Total	513	79.3	127	19.6	7	1.1	647	100

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