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NPIC/TSG/[]
13 October 1970

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MEMORANDUM FOR: Chief, Technical Services Group, NPIC

SUBJECT : Projects & Programs Staff Monthly Report - September 1970

A. During September, the Projects & Programs Staff conducted staff functions for TSG [including 1) administrative and support services for the Group, 2) continuous control and coordination of all TSG requirements and work orders, 3) working level liaison contact with PPBS on budget matters, and 4) with PSG on production matters] and was also involved in the following actions:

1. Provided TSG representation at the NPIC Training Section Panel on 15 September.

2. Prepared documentation and coordinated activities for the TSG Career Panel that convened on 24 September to complete CER's for GS-13's.

3. Provided for the regular and special EXRAND meetings. Arranged field trip to [] and ACIC, St. Louis, Missouri. Special meeting held on 30 September conducted to consider the status of NRT and its relation to exploitation research and development.

4. Provided the executive secretary for a joint RED-Contractor meeting that convened at the "Plantation" to discuss the future of nonconventional imagery.

5. As Budget Officer for TSG, [] organized a team of Division representatives in preparation for the FY-73-77 Five Year Plan and other budget exercises.

6. Maintained constant coordination with PPBS/RAD, IEG, and PSG in an effort to establish new channels for handling requirements and work orders since the PMB has stopped meeting.

7. Arranged for a series of tours to acquaint new TSG personnel with Center operations and resolve questions regarding inter-Group activities. Also arranged and coordinated briefing and tours of TSG, including visitors from the []

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SUBJECT: Projects & Programs Staff Monthly Report - September 1970

8. Acted as coordinating office for the Group in Building studies of parking problems and reallocation of parking spaces. Performed various coordination activities in connection with the modification of [] including scheduling TSG escort duty.

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B. During October the following significant actions are anticipated:

1. Complete the Foreign Travel Prediction report for submission to the DDI.

2. Analyze and report on domestic travel and training expenditures and estimates through November.

3. Arrange the TSG Career Panel meeting to convene on 27 October.

4. Coordinate with PPBS in directing TSG budget planning, including initial Group preparations for the FY-73-77 Five Year Plan.

5. Arrange for appropriate representation in the imagery exploitation community to hear briefings on the NPIC "chip" position and the latest results of the development in "Free Radical," a dry process system; the information will be disseminated through a scheduled EXRAND meeting.



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Acting Chief,
Projects & Programs Staff, NPIC/TSG

Distribution:

- Orig. - Addressee
- 2 - NPIC/TSG/PPS
- 1 - NPIC/TSG/APSD
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MEMORANDUM FOR: Chief, Projects & Programs Staff,
TSG/NPIC

SUBJECT: APSD Activity Report for September 1970

1. The following items of significant interest occurred in the APSD during September 1970:

A. Administrative

(1) In-depth discussions on division missions, functions and operations were held with [redacted] (PSG) from 14 through 30 Sept., and will continue through 9 October.

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(2) [redacted] departed the Agency on 28 Sept. to enter the School of Law at Ohio State University, Columbus, Ohio.

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(3) [redacted] began the Center-sponsored photogrammetry course on 21 Sept. The course schedule is 0800-1100 on Mondays and Wednesdays for 12 weeks.

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(4) [redacted] enrolled in a chemistry course at the Charles County Community College in LaPlata, Md. The class meets Monday, Tuesday and Wednesday nights for the next three months.

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(5) [redacted] traveled to Norfolk, Va. on 9 Sept. with an Agency group for a one-day, first-hand refresher course on radar interpretation. The presentation was given by [redacted] in the Intelligence Operations Center aboard the USS John F. Kennedy.

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B. Exploitation Support

(1) Interpretation

(a) The breakdown team selected 27 frames for special high contrast duplication (S0-369/6451) on [redacted]. In addition,

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SUBJECT: APSD Activity Report for September 1970

the Middle East coverage received high contrast printing.

(b) The division completed for Army/SPAD, a set of Micro-d raster scans of a "DISH" by a TRY ADD facility to determine if objects are obscured in shadow.

(c) Support of the Army/SPAD's request for isodensity traces of TRY ADD "A" Building Antenna at launch Complex D, SSMTC, was completed this month.

(2) Photogrammetric, Statistics and Investigations

(a) To provide report preparation support to the COMIREX VHR Committee, the division prepared, at a common scale, 25 mathematical best-fit curves relating EEIs and Resolution. Also to be prepared is a cumulative curve of all of these systems. The basic resolution/EEI input data was provided by representatives of the VHR Committee.

(b) In support of a highly sensitive DDS&T project, the division has written and tested two analytical photogrammetric math models. The data reduction is to be accomplished in-house and the results are to be transmitted, informally, directly to DDS&T with no other dissemination.

(c) In support of the stereo scanning utility study, where [] is to obtain information for a management decision concerning the continuation of the automated stereo development, we have prepared for [] differential scale and distortion data. This data consists of generated pan coordinates from a plain ground grid as viewed from various scan angles and at selected focal lengths.

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SUBJECT: APSD Activity Report for September 1970

C. Collection System Support

(1) Operational Activities

(a) The division received a requirement from the NRO to assist in publication of their [] Concept of Operations Manual. With the assistance of PSG components, this document was reproduced in some 200 copies and returned to the NRO for distribution to the Community. Ten copies were requested for NPIC internal distribution.

(b) Division personnel were involved daily in the [] Program providing information to NPIC components on mission status, camera data and film arrival time. Many hours of overtime were required during the month to stay abreast of this high priority and satisfy the informational needs of NPIC officials.

(c) A statistical report on the square nautical miles covered by the KH-4 system from [] (FY 65) to the current date was furnished to [], Chairman of the Imagery Collection Requirements Sub-Committee, COMIREX.

(d) The receipt of only one copy of the newly revised [] Reports Control Manual by NPIC was noted. The division quickly arranged for six additional copies of this manual from the NRO, including two additional for the APSD.

(e) The increase in mission activity of the [] Program was supported closely during the report period. Liaison activities with the IEG component responsible for readout of these missions was maintained and continues daily as of this report. A special cable addressee header was established,

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in coordination with DIA and the Office of the Director, for a special category of information resulting from these missions.

(f) Several briefings were arranged for key officials of the OSA, including their Director, [redacted] on the [redacted] Program during the month. IEG staff members were most helpful in furnishing PI support for these briefings. [redacted] expressed his appreciation to the Center for these briefings.

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(g) The initial phase handling of [redacted] was accomplished on 3 through 6 Sept. The normal breakdown sequence was altered to provide IEG with an advance copy of certain Middle East coverage. Shipment of this special copy was made prior to that of Priority 1A.

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(h) Preliminary results of the Color Reproduction Study were used to determine the techniques for reproducing the color portion of [redacted] Green separation black & white duplicate positives were provided to the PIs for initial phase interpretation; color reproductions were to follow shortly thereafter. This method proved especially valuable since the color duplicates were delayed due to problems encountered during the reproduction phase.

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(i) In response to a request from [redacted] NRO/SOC, a comparison was made of interpretability ratings versus acquisition altitude of the high priority targets on [redacted] This data was presented in tabular form to [redacted] on 23 Sept. [redacted] stated he may require similar data for the non-priority targets of [redacted].

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(j) Initial phase handling support was provided on nine [] missions during the month. In addition, detailed evaluations of each mission are being provided to OSA. Support is expected to continue during the month of October.

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(k) A substantial increase in [] mission activity occurred during the month. Eleven missions were evaluated in September compared to two in August. System-related problems were exhibited on several of these missions indicating that two of the three camera units at OL-19 need refurbishment. [] a manufacturer representative at OL-19, visited the division on 18 Sept. to examine the material and discuss the problems.

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(1) Density profile data plots were generated for the exposure/filter evaluation of KH-4 []. Data plots were provided to [] West Coast Programs Office, during his visit to IEB on 18 Sept. A follow-up message was forwarded to the requester certifying delivery of the data to []. The project is complete.

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(2) Support to R&D

(a) The division reviewed the draft of a memorandum which described the Development Objectives for the proposed Color Control Cell. A memo containing relative comments and suggestions was forwarded to TSG/RED on 23 Sept.

(b) Work on the VHR follow-up study for the DIA has been completed. The project remains open, however, in the event that additional support is required.

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SUBJECT: APSD Activity Report for September 1970

2. The following significant items are anticipated for the month of October:

A. Ten men from IEB are tentatively scheduled to visit the [] facilities, [] the week of 12 or 19 October.

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B. [] will contain approx. 500 feet of color. In addition, the optical titler may be used to title the black/white portion of the mission.

C. [] will attend the Advanced Management Seminar at [] on 12-16 October.

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[] and [] are tentatively scheduled to attend the Maintainability and Reliability course in the DDS&T area at Hqs. during the week of 5 October.

E. [] will attend a meeting on the West Coast concerning the [] Mission Parameter Report Content.

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F. Installation and testing of new optics for the [] 1032T will be accomplished during the month.

G. [] will visit the [] on 9 October.

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H. [] plan to attend the in-house optics refresher course by [] on 22, 23, 29, and 30 October.

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Chief, Applied Photo Science Division,
TSG/NPIC

TSG/ESD-068/70
8 October 1970

MEMORANDUM FOR: Chief, PPS

SUBJECT : ESD Monthly Report for September 1970

A. Noteworthy Events

25X1 1. [] Automatic Target Indexing Device - A Test Plan for this
25X1 device has been written and was distributed on 11 September.
[] on 15-18 September for scheduled pre-acceptance
demonstration. The ATID was inoperative due to computer malfunction at
that time.

2. Experimental Dry-Silver Processors - Modification to 1st Floor
T&E spaces have been completed. The [] Dry Silver 10" Sheet processor
& 40" Paper processor were delivered on 21 September. Preparation for
their testing is virtually complete. 25X1

3. Screen Materials for Light Tables - An additional material was
received in TEB and tested. A report supplementary to that written in
August was written and distributed by [] ESD/TEB-032/70). 25X1

25X1 4. [] 6x6 Twin Stage Comparator - The TSC was modified by
25X1 [] on 15 & 16 September. A memo report (ESD/TEB-031/70) was
25X1 written by [] on 28 September concerning the results of this
modification.

5. Optical Testing Study - [] personnel were in-house
on 2 September to discuss this contract. 25X1

25X1 6. [] 1540 Light Table - Preparation for testing the [] 1540
Pre-Production model continues. The [] Acceptance Test Plan (Preliminary)
25X1 was reviewed with EPB. As a result, an EPB Acceptance Test Plan was
written and has been forwarded to [] by RED. 25X1

7. Emergency Maintenance Service - The Equipment Performance Branch
received 88 requests for miscellaneous emergency service during September.
Approximately 64% were electronic type, 25% mechanical and 11% optical.
These requests by operational components are:

IEG	34	Army	8
PSG	30	TSG	3
DIA	12	IAS	1

SUBJECT: ESD Monthly Report for September 1970

8. Preventive Maintenance -- Under the Preventive Maintenance program a total of 256 instruments were serviced. This included cleaning, repairing, lubrication, alignment, and replacement of missing or malfunctioning parts. Minor modifications were made as required. These actions by operational components are:

IEG	136	Army	3
DIA	105	TSG	2
PSG	9	IAS	1

9. Modification, Design, and Fabrication Projects -- Nine modification, design, and fabrication projects were completed in support of Center components including:

(1) Design, fabrication, and assembly of a special prototype film cutter and splicer for use and evaluation by IAS.

(2) Fabrication of two special type briefing board holders for holding unmounted photo enlargements. These holders are to be used by IEG in conducting morning briefings for Chief, IEG, and the Director, NPIC.

(3) Fabrication of 25 special size plastic templates for use in PSG/AID to identify [] Display Unit Keyboard functions for various computer programs. EPB's cost averaged [] each compared with [] from an outside source. Savings were []

(4) Miscellaneous Projects

a. Twelve new IIS remote stations were installed during September. The remote equipment included (7) Teletype printers, two (2) [] printers and three (3) [] Display Units.

b. Moisture has been found in quite a few Zoom 240R carrying cases, causing rust to form on the lens attachments. [] has been informed of the problem and a carrying case with the pod and attachments has been returned to the plant for study.

c. The first shipment of 92 Zoom 240 pods is now being shipped to [] for image rotation modification. The shipment had been delayed pending arrival of packing material from []

10. The following new equipment was tested for operational components:

[]	Zoom 240R Pod	30
	Widespan Rhomboids	30
	.43X Rhomboid Lenses	60
	1X Rhomboid Lenses	60
	2X Rhomboid Lenses	60
	.5X Mono Lenses	30

SUBJECT: ESD Monthly Report for September 1970

25X1 11. [] attended the non-conventional photographic materials seminar.

25X1 12. [] are attending the "Probability Theory & Statistics" course currently being given at NPIC.

25X1 13. [] entered on duty as a Co-op on 8 September for a 3-month tour. This is [] initial tour.

25X1 14. [] returned to school after his 3rd Co-op tour on 24 September.

25X1 15. [] visited [] to inspect Contrast Enhancer on 23 September. 25X1

25X1 16. [] accompanied [] on 31 August - 1 September to assist in testing and inspecting the Advanced Stereo Rhomboid prototype. 25X1

25X1 17. [] completed his summer intern program and returned to the University of Maryland.

25X1 18. [] a Georgia Tech student, began his second Co-op period in EPB.

25X1 19. [] Co-op student previously assigned to the Test & Evaluation Branch has been dropped from the engineering curriculum at the University of Akron due to unsatisfactory grades. He will not return for his next work term.

25X1 20. [] completed a 3½ week course on maintenance of Photon typesetting equipment.

B. Anticipated Events for October 1970

25X1 1. Pre-acceptance demonstration of ATID is re-scheduled at [] for the last week in October. 25X1

25X1 2. Inspection of the [] Pre-Production model at the manufacturer's plant is scheduled for 26-29 October.

25X1 3. The Test Plan for the [] High-Precision Stereocomparator should be delivered on 12 October for review [] 25X1

Chief
Engineering Support Division, TSG

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8 October 1970

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MEMORANDUM FOR: Chief, Technical Services Group, NPIC

ATTENTION : Chief, FPS/TSG

SUBJECT : RED Monthly Report on Significant Events
(September 1970)

A. Significant Items of Interest for September 1970:

1. EOI Evaluation Effort. FPS/ATB personnel have been engaged in designing and assisting in the execution of a simulated EOI evaluation effort for OEP.

2. Imagery Interpretation Research Program. The FY-69/70 [] Imagery Interpretation Research Program expired on 24 August. An extensive series of briefings on research findings will be offered Center personnel during October. The FY-71 contract was successfully negotiated on 9 September.

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3. Evaluation of Munsell Color Chips. ATB personnel have completed a preliminary evaluation of the use of opaque Munsell color chips to describe the color of filters as seen in a microscope. Intersubject variability was found to be so large as to recommend against the use of Munsell chips for this application.

4. Colorimetric Measurement Report. [] report on Colorimetric Measurement of SO-242 has been released within NPIC.

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5. [] Report. The final report on "The Chemistry of Non-Silver Halide Photographic Processes" has been received from [] It covers the dry silver and RS processes and is very informative.

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6. Image Manipulation Research Facility [] The input scanner and video display output were given initial acceptance tests on 7-8 September; both failed. Corrective action is being taken--the new scheduled delivery date is 2 November 1970.

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GROUP 1
Excluded from automatic
downgrading and
declassification

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SUBJECT: PED Monthly Report on Significant Events (September 1970)

7. Photographic Image Manipulation (Ring Shear, IR&D). In-house ring shear experiments have begun in a cooperative effort with the Photo Lab, PEO. Initial work will be concerned with mounting the ring shear device on the BPE. Tests on positive transparency and paper materials are planned.

8. Power Spectral Density - Quality Measures [redacted] The first successful tests on subjectively graded, operational imagery were completed. Further testing on a greater variety of images is necessary and underway; the prognosis is encouraging.

9. Automatic Stereo Scanner Engineering Audit [redacted] The equipment has been reassembled at [redacted] and is essentially at the same stage of assembly as it was when [redacted] stopped work on it. The engineering audit is now in progress and is on schedule.

10. Automatic Target Indexing Device [redacted]. The system has been assembled and is undergoing final shakedown and adjustment. While the general analysis mode is operating satisfactorily, there have been problems with the target indexing mode of operation. These problems were related to the Honeywell DDP-516 controlling computer and a timing/synchronization difficulty. At this point, the computer problem has apparently been solved and considerable progress has now been made on the timing/synchronization difficulty.

An additional problem, which will cause a delay in delivery of the TID, is that the replacement transform lenses will not be delivered (by the subcontractor) early in October as anticipated, but will arrive during the latter part of October. These lenses have been on order for several months. The lenses presently installed in the TID perform less than optimum; due to improper coatings, they are producing some unwanted spurious effects.

The aforementioned problems and the resultant delivery delay will result in an additional overrun, the magnitude of which cannot be precisely determined at this time but is estimated to be between [redacted]

A revised shipping date of 6 November appears to be realistic at this time.

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TCS-8427/70

SUBJECT: RED Monthly Report on Significant Events (September 1970)

11. Image Comparison Microstereoscope [Redacted Box] The project is still in a "stop-work" status. Negotiations were held at [Redacted Box] in late September and agreements were reached regarding fixed ceilings on overhead and G&A rates and the cost to complete the instrument were negotiated on a cost-sharing basis. Work is expected to resume about 15 October with delivery anticipated at the end of March 1971.

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12. Chip Implementation Study Program [Redacted Box]. The Phase I report on the Chip Implementation Study Program has been reviewed. The recommendations to the EndDir/NPIC are that NPIC not proceed with Phase II and that the contract be terminated. [Redacted Box] performed very well on this contract and enough information is available in the Phase I report to implement the program, if NPIC so desires.

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13. Scan & Search PI Station. The final report for the design of the Scan & Search PI Station has been received and is being evaluated. The design drawings are in shipment and should arrive at NPIC by mid-October.

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14. 1540 Light Tables [Redacted Box] Information Systems personnel gave a progress report on the 1540 tables to NPIC and other interested organizations. The estimated delivery of the first table has slipped about 3 weeks, from 5 to 26 October. However, the first 145 units are still to be delivered on schedule by 1 January 1971.

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15. Advanced Stereocomboid [Redacted Box] A visit was made to [Redacted Box] to verify a re-evaluation of resolution on the Advanced Stereocomboid as reported by the contractor. The resolution data taken by NPIC personnel substantiated the results of the [Redacted Box] re-evaluation, and a determination has been made that the prototype instrument is acceptable with respect to resolution.

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16. High Precision Stereocomparator. [Redacted Box] has encountered some difficulty with the computer used in the High Precision Stereocomparator. The computer has been repaired by the manufacturer [Redacted Box], but several weeks' work has been lost and will more than likely be ultimately reflected in the delivery schedule.

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17. Dry Silver Equipment. Two pieces of equipment, a prototype 40" Wide Enlarger Processor and a Dry Silver Sheet-Film Processor developed under the [Redacted Box] Company Dry Silver Program, have been delivered to NPIC and will shortly undergo extensive test and evaluation.

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SUBJECT: RED Monthly Report on Significant Events (September 1970)

18. AQ System Test. Additional domestic collateral photo coverage was requested by ORD for the AQ system test program. The second test flight of the airborne platform was unsuccessful.

19. Sensitometric Color Processor. A project Approval Request for development of a precision sensitometric color processor by [] has received final approval.

20. Color Analyzer. A proposal was received from [] for a color analyzer. This proposal was rejected based upon its excessively high cost. An alternative source for this instrument will be sought.

21. Briefings and Consultations:

- a. [] Chief, Photo Squadron, Exploitation Wing, [] was extensively briefed on RED activities during 15-18 September.
- b. HFS/ATB and [] personnel met with [] National Bureau of Standards, on 28 September. [] who enjoys international recognition as an expert in the field of color and color perception, has been retained as a consultant under the [] contract.
- c. [] of SAC was briefed on the development of the 40" and 10" Dry Silver Processors.
- d. C/RSB conducted a three-day session on unconventional imagery. A report on the proceedings has been prepared and distributed.
- e. RSB personnel attended several meetings related to the [] project. The ODir/NPIC was briefed on the progress of the project.
- f. RSB sponsored a briefing on real-time given by [] on 16 September to NPIC.
- g. RSB sponsored a briefing on [] given 17 September to NPIC by DIA.
- h. RSB provided representation at several Color Task Force and other color-related meetings.

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SUBJECT: RED Monthly Report on Significant Events (September 1970)

1. Relative to the [] program, three half-days were spent at the SOC, Pentagon, working on the Reports Control Manual. Meetings at [] were attended the week of 14-19 September on the west coast. [] of [] visited RSB for discussions about future modifications to the system.

22. Training:

- a. [] attended the 67th Annual American Psychological Association Convention in Miami Beach, Florida, 3-8 September.
- b. [] attended an intensive short course on "The Science and Technology of Information Display" at Brooklyn Polytechnic Institute, 14-19 September.
- c. [] attended the Electro-Optical Design show in New York City on 23 September.
- d. [] completed the IIS training package early in September.

22. Personnel:

[] joined the SRS staff on 22 September. [] is an engineer formerly with []

B. Anticipated Items of Interest for October 1970

1. Preacceptance tests for the first production unit of the 1540 table are scheduled to start 26 October 1970.
2. Proposals scheduled to arrive during October are:
 - a. Scanning Viewer Investigation
 - b. Variable Density Reticule Development
 - c. Dry Color Development

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SUBJECT: RED Monthly Report on Significant Events (September 1970)

- d. Compact High-Speed Dry Silver Processor
- e. PI Print-Out Station

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Deputy Chief
Research & Engineering Division,
TSG/NPIC

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NPIC/TSG/RED, (8 October 1970)

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