TOP SECRET

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25 April 1963

MEMORANDUM FOR: Chief, Plans & Development Staff, NPIC

25X1A

ATTENTION: [redacted]

SUBJECT: Selection of 60 x 60" Coordinate Plotter for On-line Connection to the [redacted] 490 System 25X1A

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1. The attributes sought in a plotter for connection to the [redacted] 490 stems directly from the proposed uses for such an on-line plotter. The proposed applications are two in number:

(1) The preparation of planimetric representations, over a wide range of scales, of entities observed on photography being processed through the photo-measurement system.

(2) The preparation of map overlays keyed to specific map sheets and showing the limits or extent of photo coverage. A third of application, not now planned but altogether feasible, consists of plotting vehicle track directly on suitably constructed maps or charts while the mission is in progess.

2. On the basis of the end utilizations described above, [redacted] 25X1A of your staff prepared a set of specifications for a 60 x 60 plotter system for use with the [redacted] 490. This set of specifications was to some degree relaxed when it became apparent that the present state of the art did not permit attainment of all of the properties desired in a coordinate plotter system. One of the paramount considerations through the search for a plotting system was maximum reliability. This high reliability requirement stems from two factors:

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(1) Even though the output to the plotter in application is one that is called by the real-time program the application is best described as quasi real-time. The response time must be rapid and for this to be the case, extreme reliability is essential.

(2) The plotter should require only occasional checks by the computer system operator (essentially, it should be capable of unattended operation).

3. The design of any plotter system calls for some compromise solution to the problem of speed versus plotting accuracy. The original specification called for speed that was the lowest possible consistant that the potential use of the plotter for producing coverage plots of orbital missions at jet navigations scales. The accuracy called for in the original specifications was judged necessary to satisfy any potential applications that might arise within the Technical Analysis Branch that would require scribing onto stable base materials. When it became apparent that no manufacturer would be able to meet both of these requirements simultaneously, it was decided that TAB high precision plotting requirements would be handled by some future off-line plotting device in which speed was not an essential consideration. Consequently, the accuracy requirement was relaxed and the various manufacturers that had been contacted were notified accordingly and asked to restudy and amend their proposals. Mr. [redacted] 25X1A solicited proposals to three manufacturers:

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Although there seems to be no doubt that [redacted] has the best record to date in the production of analog plotting equipment, it seems that the analog 25X1A plotter that they proposed still offered considerable risks from the reliability view point. On this basis the [redacted] proposal was dropped from 25X1A further consideration. The two remaining proposals (specifically, [redacted] 25X1A) have placed us in the rare position of having to decide between two organizations very evenly matched in capabilities. Messrs. 25X1A [redacted] had lengthy discussions with both groups on the details of their proposals and were most favorably impressed by both organizations. There exists little doubt that either can meet the objectives laid out in 25X1A the revised specifications. It should be noted at this point that the table for the [redacted] Plotter would be manufactured by [redacted] on sub- 25X1A contract from [redacted] and is, indeed, identical to the one in the [redacted] 25X1A proposal. In this circumstance the question then becomes one of 25X1A the capabilities of both groups in circuit and servo designs. It is our 25X1A feeling that the [redacted] group leads to somewhat more conservative, and hence possible more reliable circuit design than does the [redacted] group. Additionally there is a certain possible advantage to be gained by having

the complete manufacture and assembly of the system in the hands of one manufacturer. On this basis, it is our recommendation that the proposal
25X1A submitted by [redacted] and subsequently amended to conform to the relaxed accuracy requirement be accepted and that action be taken to initial this contract.

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[redacted]

Chief, Technical Intelligence Division

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