

SECRET

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#4039

15 October 1964

MEMORANDUM FOR THE RECORD

SUBJECT: Trip Report

DATE: 6 October 1964

PLACE:

ATTENDEES:

[Redacted]

1. The purpose of this trip was to monitor PAR's 212, 216, and 217 under Contract [Redacted]

2. PAR 216 "Exposure of Photographic Materials with Lasers" was the major area of concern. [Redacted] is now at a point where they can state with authority that there should be no problems when present and predictable future photographic films are exposed with coherent laser radiation.

3. On September 2nd, [Redacted] was instructed to prepare a final report on the portion of PAR 216 dealing with the film as a recording media.

4. Investigation of [Redacted] experiments on using a photograph in the laser's beam indicated that they were only duplicating work already accomplished by [Redacted] under our laser enlarger contract. A subsequent trip to [Redacted] to review their progress, confirmed that the work was, in fact, duplicative. After a detailed comparison of both the [Redacted] and [Redacted] was directed to finish a set of experiments just starting and then to terminate PAR 216 upon completion of their final report.

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Declass Review by NGA.

Excluded from automatic  
downgrading and  
declassification

5. PAR 217 "Optimization of the Laser" is running smoothly. The present glass laser used in conjunction with potassium dihydrogen phosphate (KDP) crystal produces the desired green radiation through frequency doubling effects. The present experiments are designed to increase the energy output of the system. [ ] is currently experimenting with Q switching techniques, and extremely high energy levels with correspondingly low exposure times should result. Nevertheless, there is a possible problem area on PAR 217. There have been recent announcements of an Argon CW laser which lases in the blue green region; however, the energy output of the Argon laser should be much less than the Q switched neodymium doped glass and KDP crystal hookup even after birefringent losses. [ ] was directed to perform a literature search and to obtain as much information as possible on the Argon lasers. A re-evaluation of the project will be made when enough information is available to weigh one approach against the other.

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6. PAR 212 was examined very briefly because of lack of time. [ ] had some fine examples of high-altitude color photography available. The photography was the most encouraging that I have seen to date. An intelligent and objective study is needed to determine the true advantages of color. There is much to be said for and against color; the hard part will be to get an objective evaluation.



Development Branch, P&DS

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