

ROUGH DRAFT

SPECIAL HANDLING

~~SECRET~~

8 September 1967

Basis for Confidence in Achieving the Objectives of MOL

- I. Wherever reasonable, we are building upon the experience from and the best features of G and G<sup>3</sup>. This includes:
  - A. Experienced personnel, many from G and some from G<sup>3</sup> are working on the MOL program.
  - B. Materials
  - C. Design (e.g.)
    1. Thermal Control
    2. Film Handling
    3. Focus sensing and control
  - D. Manufacturing and testing techniques
  - E. Reliability and Quality Control
- II. Where MOL is beyond G and G<sup>3</sup>, we are designing with as much conservatism as reasonable to assure achieving the objectives.
  - A. Although optics are larger
    1. Circular mirrors
    2. No hole in flat mirror
    3. Milder aspheric mirror than G<sup>3</sup>
  - B. Optical alignment in orbit
  - C. Strain-free mirror mounts
  - D. Redundant camera
  - E. Exposure bracketing
- III. Since the achievement of the objectives necessitates precise measurements and adjustments, we are building the very best of tools for test and manufacture.
  - A. There has been an early recognition of the need for extending previous test procedures and for building extremely good test facilities.
  - B. However, the techniques will be based upon and extrapolated from those now evolving and being proved on G<sup>3</sup>.

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- C. At this time, early results indicate that our test facilities should satisfy the needs of the program.
- IV. We now have, and will continue to argue for, an adequate and orderly program schedule.
- A. There is enough time scheduled to carry out the program. For example, there is a much longer period between the receipt of glass and the requirement for finished mirrors than in G<sup>3</sup>.
- B. The schedule is orderly, providing for sequential validation or correction at many steps along the way. For example, there are more test models and time for testing compared to G<sup>3</sup>.
- V. In the early photographic flights, the operation will be attended by man and all reasonable attempts are being made to capitalize on his capabilities to provide early success and improvement of subsequent operations.
- A. Manual backup of critical functions
1. Focus
  2. Alignment
  3. Pointing
  4. Image motion compensation
  5. Film Handling
- B. In flight failure analysis, limited repair or replacement, and feedback for further improvements.

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C. P. Spoelhof

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