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HANDLE VIA BYEMAN CONTROL SYSTEM

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March 12, 1969

MEMORANDUM FOR MR. I. NEVIN PALLEY

SUBJECT: Summary of Ground Rules Used for Staffing Actions Resulting from Meetings of the MSFPC and SACC

SACC was established as a working group to screen NASA "activities" for compliance with the SACC Charter.

The SACC charter was written to set forth explicit screening rules for DOD and NASA members. The SACC Charter has been viewed as a regulation which was not subject to policy interpretations. In cases where NASA wished to re-clama a DOD action the item was made an agenda item for a MSFPC meeting or else staffed through the MSFPC members without a meeting.

The MSFPC members discussed and established DOD-NASA policies so they would be consistent with the NSAM 156 Committee recommendations.

NASA has consistently felt that DOD was too tough on screening studies and advanced plans which were making the case for earth imaging systems for earth resources that would provide better resolution than 0.1 milliradians angular resolution.

NASA will probably try to establish specific policies on certain programs which have been examined and permitted to break the 156 guidelines, i.e., astronomy programs -- point to seconds and fractions of sec of arc, meteorology programs, synchronous orbit programs like the meteorology satellites. Waivers on these programs are now tacitly used by NASA but no written policy was ever signed off by the MSFPC.

The definition of "activities" includes studies but one paragraph in NSAM 156 states that it is OK for NASA to study systems which might give ten to fifteen foot resolution for advanced ERS systems.

Within SACC we have asked for the specifications and bench test verification of cameras NASA flies on any of their programs.

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A more comprehensive check sheet needs to be established for SACC members so the resolution determination can be based upon agreed-to equations, image motion compensation degradation, film index, etc. (A proposed form is attached which could become a part of any request NASA sends over to fly a camera.)

It would be well if explicit guidelines can be worked out which remove individual judgement from the screening problems. Such instructions could serve as a guide for NASA management and aid them in screening volumes of data, studies, proposals and plans which then would not have to be 100% reviewed by the SACC members. This would generate more consistent actions out of DOD than I have been able to provide and it would offer NASA an opportunity to police most of their activities themselves. I believe that an "instruction book" kept current would be invaluable in maintaining tight security regardless of personnel changes.

(b)(3)

CAMERA RESOLUTION

Camera resolution is to be determined in accordance with Method II, page 27 of Mil Standard 150. A copy of this method is set forth below. A set of these test exposures will be made for each camera, filter, and film combination which is proposed for flight. The target is to be placed either on-axis or a position off-axis for the maximum resolution.

These bench tests will be the resolution determination and no degradation will be allowed for mis-match of IMC or haze conditions. Low contrast (2:1) resolution target will be used.

Film is to be processed to the manufacturer's recommended gamma level. A minimum of three targets each read by three photo interpreters will be averaged to determine resolution of the system for each film tested.

Method II -- Collimator Method

For lenses primarily intended for use on distant objects, this method should be used. The resolving power target is placed at the principal focus of a collimator and illuminated with white light. A filter of a specified color may be used and it shall be placed between the light source and the target. It is recommended that, in order to eliminate vibration effects, a flash discharge lamp be used as the light source and that the light from it be filtered if necessary to approximate white light. Exposure can be controlled by means of neutral density filters between the light source and the target. The lens to be tested shall be placed in the collimated beam from the target and a test plate or film made in a series of focal settings. Unless otherwise specified, the lens shall be set at the specified maximum relative aperture. With the test plate perpendicular to the optical axis of the lens, exposure shall be made of the test target at the specified angular distance from the axis out to and including the multiple of the specified angle falling nearest the corner of the plate inside the picture format. The specified angle should be multiples of 1 1/4 degrees and should be spaced to provide 5 increments or more in the semi-field of the lens. The exposure

time shall be the same for all angular settings and shall be the exposure time which gives the highest resolving power at the angular setting nearest the angle equal to one-half the half angle of view. The different angular settings may be obtained by moving the lens and test plate about an axis near the entrance pupil or by moving the collimators, or by means of a series of collimators placed in the correct angular positions. The lens may be tested with or without the filter provided with it, as required.