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FROM MCMILLAN TO GREER. THIS MESSAGE IN SIX PARTS.

PART I. THIS MESSAGE PROVIDES THE DIRECTION WHICH HAS EVOLVED AS A RESULT OF THE PRESENTATIONS AND DISCUSSIONS OF 17-19 MAY ON THE MOL PROGRAM AND IS TO BE APPLIED TO THE MOL EFFORTS IMMEDIATELY. PLEASE PROVIDE A COPY OF THIS MESSAGE TO GENERALS FUNK AND BLEYMAIER FOR THEIR GUIDANCE AND NECESSARY ACTION.

PART II. THE DEVELOPMENT OF OPTICAL TECHNOLOGY LEADING TO OPTICAL SYSTEMS CAPABLE OF IMPROVED RESOLUTION IS THE PRIMARY OBJECTIVE OF THE MOL PROGRAM. THE INITIAL OBJECTIVE IS TO DEVELOP AND DEMONSTRATE AT THE EARLIEST TIME AN OPERATIONALLY USEFUL HIGH RESOLUTION MANNED OPTICAL RECONNAISSANCE SYSTEM CAPABLE OF ACHIEVING AT LEAST [REDACTED] GROUND RESOLUTION. OTHER MISSION APPLICATIONS OF THE MOL PROGRAM SUCH AS SEA SURVEILLANCE, COMINT AND ELINT ARE SECONDARY AND MAY BE ACCOMMODATED IF NO APPRECIABLE COMPROMISE TO THE ORBITAL VEHICLE WHICH MEETS THE PRIMARY OBJECTIVE IS REQUIRED.

PART III. MY ASSESSMENT OF THE PRESENT STATE OF OPTICAL TECHNOLOGY INDICATES THAT THERE WILL BE CONSIDERABLE SKEPTICISM REGARDING THE PRESENT ABILITY TO FABRICATE MIRRORS OF THE NECESSARY OPTICAL QUALITY IN DIAMETERS GREATER THAN APPROXIMATELY 60 INCHES. THIS SKEPTICISM WILL EXTEND TO FLATS TO BE USED IN CONJUNCTION WITH SUCH MIRRORS THAT ARE NECESSARILY LARGER. FURTHER, THERE IS GENERAL AGREEMENT THAT FLATS TO BE USED IN CONJUNCTION WITH MIRRORS OF THE ORDER OF [REDACTED]

[REDACTED] IN DIAMETER OR GREATER ARE NOT WITHIN THE PRESENT STATE-OF-THE-ART AND MAY NOT BE ACHIEVABLE WITHIN THE FORESEEABLE FUTURE.

IN ADDITION THERE ARE SIGNIFICANT THERMAL, WEIGHT AND STRUCTURAL PROBLEMS FOR VERY LARGE MIRRORS AND FLATS. THEREFORE, THE INITIAL FLIGHTS SHOULD BE PREDICATED ON A MIRROR OF APPROXIMATELY 60 INCHES DIAMETER OF CONSERVATIVE DESIGN. THIS OPTICAL SYSTEM MAY BE DESIGNED TO OPERATE EITHER WITH OR WITHOUT A TRACKING MIRROR. THE ADVANTAGES OF A TRACKING MIRROR SYSTEM VERSUS POINTING THE PRIMARY OPTICS WILL BE SUBJECTED TO CAREFUL ANALYSIS, AND THE RESULTS WILL BE REVIEWED BY SAFUS. AS A PARALLEL EFFORT, WORK SHOULD BE UNDERTAKEN IMMEDIATELY TO DEVELOP A MIRROR AT LEAST 60 INCHES IN DIAMETER OF LIGHTER WEIGHT WITH THE INTENTION THAT IT BE DEMONSTRATED IN LIEU OF THE MORE CONSERVATIVE DESIGN APPROACH IF THE TECHNOLOGY PROGRESSES SUFFICIENTLY TO JUSTIFY A FLIGHT DEMONSTRATION. DEVELOPMENT WILL ALSO BE UNDERTAKEN OF LARGER OPTICAL SYSTEMS OF DIAMETERS (ESTIMATED TO BE [REDACTED]) UP TO THAT FLYABLE WITHIN THE WEIGHT

AND SIZE ENVELOPE OF THE TITAN 111C 7 SEGMENT ORBITING VEHICLE COMBINATION. A DESIGN BASED ON POINTING OF THE PRIMARY OPTICS WILL BE USED. CONTINUING INVESTIGATION OF THE TECHNOLOGY OF ACHIEVING MIRROR DIAMETERS IN EXCESS OF [REDACTED] WILL BE CONTINUED, TO INCLUDE

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CONCEPTUAL DESIGN OF SYSTEMS WHICH COULD REACH RESOLUTION PERMITTED
[REDACTED]; THIS WORK IS INTENDED TO DEFINE
ADVANCED TECHNOLOGY EXPERIMENTS THAT COULD BE CONDUCTED ON THE MOL
VEHICLE. THE DESIGN OF THE INITIAL ORBITAL VEHICLE WILL BE
CAPABLE OF ACCOMMODATING THIS PROGRESSIVE OPTICAL CAPABILITY WITH
MINIMAL CHANGE.

PART IV. AS A PARTIAL IMPLEMENTATION OF THE ABOVE, ITEK AND
PERKIN-ELMER WILL ENTER INTO ADDITIONAL STUDY CONTRACTS AND ANALYSES
COVERING THE OBJECTIVES OUTLINED ABOVE IN THE RANGE OF [REDACTED]

[REDACTED] OPTICAL SYSTEMS. THE EASTMAN KODAK DORIAN CONTRACT WILL BE
REORIENTED TO PERMIT ADDITIONAL STUDY IN THESE AREAS. CONTACT WITH
CORPORATE LEVEL PERSONNEL OF OWENS ILLINOIS IS AUTHORIZED AND A
SINGLE INDIVIDUAL OF CORPORATE VICE PRESIDENT LEVEL OR ABOVE MAY
BE BRIEFED ON THE NATIONAL RECONNAISSANCE PROGRAM IN ORDER THAT THE
NATIONAL SECURITY IMPLICATIONS AND IMPORTANCE OF THEIR WORK WITH
CERVIT MATERIALS IS FULLY UNDERSTOOD. OWEN ILLINOIS WILL BE
ENCOURAGED TO ACCELERATE THE DEVELOPMENT OF TECHNOLOGY AND FACILIT-
IES TO HANDLE LARGE OPTICAL BLANKS UP TO APPROXIMATELY [REDACTED]

[REDACTED] AND TO MAKE THEIR FACILITY NEEDS KNOWN TO ACCOMPLISH THIS
TASK. THIS CONTRACT IS TO BE COORDINATED WITH EASTMAN KODAK TO
INSURE THAT OWENS ILLINOIS IS AWARE THAT THEIR PRESENT WORK WITH
EASTMAN IS PART OF THE SAME OVERALL PROGRAM OF NATIONAL INTEREST.
IN ADDITION THE PRESENT CAPABILITY AT AMERICAN OPTICAL TO FABRICATE
LARGE BERYLLIUM MIRRORS OF THE NECESSARY OPTICAL QUALITY SHOULD BE
REVIEWED AND PROCUREMENT OF AN ADDITIONAL BLANK SHOULD BE CONSIDERED.
A PROGRAM MUST BE DEFINED TO IDENTIFY AND BRING EXPERT EXPERIENCE AND
TECHNIQUES TO BEAR ON THE METALLURGICAL AND OTHER KEY PROBLEMS ASSOC-
IATED WITH BERYLLIUM MIRROR FABRICATION.

PART V. CONTINUING WORK MUST ALSO BE CARRIED ON TO MORE ADEQUATELY
DEFINE APPROPRIATE DEVELOPMENT PROGRAMS FOR COMINT, SEA SURVEILLANCE,
AND ELINT PAYLOADS. IT IS EVIDENT THAT THERE ARE MANY UNKNOWNNS IN
THE DEVELOPMENT OF A USEFUL COMINT CAPABILITY. PARTICULAR EMPHASIS
IS REQUIRED TO DEFINE THESE UNKNOWNNS IN SOME DETAIL AND SPECIFY THE
DETAILED PROGRAM REQUIRED FOR SOLUTION. MAXIMUM SIMULATION,
GROUND AND AIRCRAFT TESTS SHOULD BE PLANNED. ORBITAL FLIGHT TESTS
WILL BE APPROVED ONLY AFTER SUFFICIENT PLANNING AND ANALYSIS HAS BEEN
DONE TO SHOW THE NEED FOR SUCH FLIGHT TESTS.

PART VI. ADDITIONAL GUIDANCE ON ALTERNATIVE PROGRAM PLANS AND
ORGANIZATION OF THE TWO HOUR PRESENTATION TO THE MOL POLICY
COMMITTEE ON 1 JUNE 1965 AND SUBSEQUENT PRESENTATIONS WILL BE
PROVIDE. AN INITIAL REVIEW OF THE DEVELOPMENT PLAN, SCHEDULES AND
COST TO MEET THE MOL PROGRAM AS DEFINED ABOVE WILL BE CONDUCTED
BY GENERAL EVANS ON 28 MAY AT SSD.

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CFN: WILL RERUN UPON REQUEST

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