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April 15, 1969

MEMORANDUM FOR RECORD

SUBJECT: Briefing to Dr. McLucas

A general program orientation was given to Dr. John McLucas on 8 April from 0800 to 1145 at the MOL Systems Office. Principals in attendance were: Dr. McLucas, General Stewart, General Bleymaier, General King and Dr. B. P. Leonard.

General Bleymaier's presentation included a brief history of the evolution of the MOL program, a description of program objectives and management arrangements, an overall system description and present program technical and financial status.

The attached charts were used by General Bleymaier in his presentation. General Bleymaier emphasized the points that the program was on schedule, that there were no technical problems, progress was measurable, management tools and relationships between the government and contractors are adequate and satisfactory.

There was very little discussion at the conclusion of the presentation and there were no instructions or policy statements made.



RALPH J. NORD
Colonel, USAF
Chief, Program and Policies
Div, SAFSL

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BRIEFING TO DR. JOHN L. McLUCAS
8 APRIL 1969

PRESENTATION OUTLINE

- HISTORY
- OBJECTIVES
- MANAGEMENT
- SYSTEM DESCRIPTION
- PRESENT STATUS

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DYNASOAR
STUDIES
T-III C-DEVELOPMENT
ITL CONCEPT
MERCURY
GEMINI
NEED FOR
MILITARY
EXPERIMENTS

DOD
ANNOUNCES
MOL
PROGRAM
DEC 63

SPO
CADRE

MANNED
ASSEMBLY
LARGE
STRUCTURES
ANTENNAS

COMMAND
& CONTROL

LARGE
EXPERIMENTAL
OPTICS

MULTI-
SPECTRAL
SENSORS

ETC

?

PROGRAM
REDIRECTED
JAN '65'

EARTH
SATELLITE
RECONNAISSANCE
SYSTEMS

OPTICAL
TECHNOLOGY
STUDIES

DNRO
DIRECTION
INVESTIGATE
MANS
CONTRIBUTION
TO SATELLITE
RECONNAISSANCE

INDUSTRY
SURVEY
APPLICATION
OF MAN TO
RECON
SYSTEM
SIZED TO
T-III C

MANNED
SYSTEM
STUDIES
AT EKC
DEC 63-
JUL 64

SYSTEM
OPTIMIZATION

OPTICAL
SYSTEM
CONFIGURATION
STUDIES
JUL-64
JAN-65

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1963

1964

1965

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PROGRAM
REDIRECTED
JAN 65

PHASE
'O'
STUDIES

T-III C
PLUS AF
DEVELOPED
LAB
MAY 65

SOURCE
SELECTION

COMBINED
MOL
&
PROJECT
DORIAN
JUN-JUL 65

PRESIDENTIAL
ANNOUNCEMENT
OF
SEGMENT
CONTRACTORS
AUG 65

NASA
COORDINATION

OPTICAL
SYSTEMS
CONFIGURATION
STUDIES
JUL 64
JAN 65

1965

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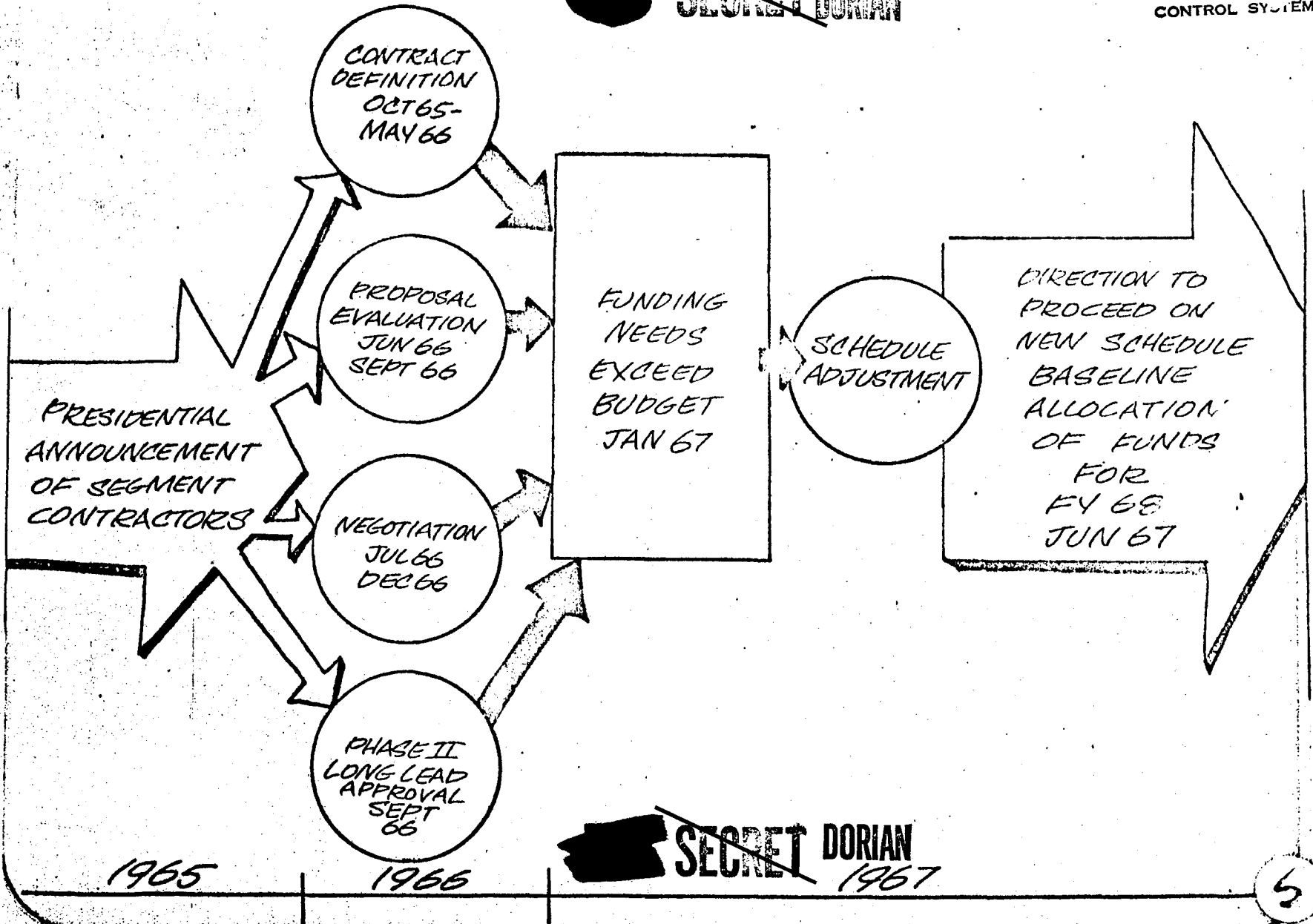
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ASSESSMENT OF THE PERIOD
LEADING UP TO NEGOTIATED BASELINE, DEC 66

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o GROUND RULES WE WERE OPERATING UNDER:

- FIRST MANNED FLIGHT BEFORE 1970 (DEC 69)

o REPRODUCTION - CONTRACTS MAINLY FPI, WITH DX PRIORITY

o INFORMATION - BARE BONES TECHNICAL CONTENT

o TIME - NO CONTINGENCY FOR PROGRAM CHANGES

- USE EXPENDITURE + FEE FUNDING

- PROGRAM INITIALLY SENSITIVE TO TOTAL COST WITH NO
FY FUNDING ESTABLISHED

o INITIAL PLANNING FOR FY 68

o ESTABLISHED - FY 68 FUNDING REQUIREMENTS ESTIMATED AT \$587

o MAINTAIN - BASED ON FY 68 FUNDING, FY 69 FUNDING \$647

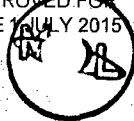
- RECOGNIZED THAT SCHEDULE WAS PACED AS MUCH BY
TECHNICAL PROGRESS AS AVAILABILITY OF FUNDS

- SCHEDULE DOUBTFUL NOT ONLY BECAUSE OF FUNDS BUT
ALSO LEAD TIMES, ETC.

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MAA DECISION *(Handwritten marks)*

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- o REPROGRAM TO 12-COMPACT BASELINE SCHEDULE
67/68/69 FUNDING REQUIREMENTS 292/640/640 (TOTAL 2350)
- o UNDERSTANDING WITH CONTRACTORS TO PRESERVE SCHEDULE, DELAY
AS MUCH WORK AS POSSIBLE, AND DO ONLY NECESSARY WORK FOR FY 68
- o FULL FUNDING FOR EK
- o RECOGNIZED FUNDS WERE NOT ADEQUATE TO SUPPORT TOTAL EFFORT
- o NEW PROBLEM - SAFETY, APOLLO ACCIDENT STUDY
- o ESTIMATED THAT AN ADDITIONAL \$60M TO \$80M IN FY 68. REQUIRED TO
MAINTAIN SCHEDULE AND EFFORT

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PROGRAM CONTENT REEVALUATED

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- o 27 OCT 67 NEW PROBLEM: ACTUAL \$570/FY68 PLAN \$640/FY 69
 - EMPHASIS ON UNMANNED FLIGHTS 6 AND 7
 - "OPTIMIZATION IS TO PERFORMANCE . . . ADJUST SCHEDULE"
- o DEFICIT STARTS - CONTRACTOR FORECAST \$601 vs PLAN \$430
 - NEW PROGRAM REQUIREMENT IVS .
- o MANAGEMENT EVALUATION REVIEWS
 - DIRECTED CONTRACTORS TO REDUCED FUNDS
 - CONTRACTOR VISITS
- o EVALUATION OF A 12C + 3 MOS SCHEDULE ADJUSTMENT

0.000000 1.000000 1.000000 1.000000
FLIGHT, AUG 1970
TOTAL PROGRAM ESTIMATED AT

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- o 20 MOS EXTENDED BASELINE APPROVED
- o CONTRACTORS AUTHORIZED TO PROCEED ON BOGIES PROVIDED 7 DEC
- o FY 68 ALLOCATIONS (TWX)
 - ADJUSTED SCHEDULE TO \$ AND PERFORMANCE
 - EK FULLY FUNDED
 - CONTROLLED OBLIGATIONS

- o ORIGINAL NEG. BASELINE (DEC 66) - ASSUME \$646.5/FY 69 (1ST MANNED FLIGHT, DEC 1969)

VS

- o 20 MOS EXTENDED BASELINE (DEC 67) - ASSUME \$640.0/FY 69 (1ST MANNED FLIGHT, AUG 1971)
- TOTAL PROGRAM ESTIMATED AT \$2840.3

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JULY 68

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CONTROL SYSTEM ON

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- 1 JUL DECISION: ACTUAL \$515 / FY 69, PLANNED \$600 / FY 70
- EXERCISED THE PROBLEM WITH CONTRACTORS AT HUNTINGTON BEACH
- 19 JUL 68, NEW SCHEDULE - 24 MOS EXTENSION

FLT 1	15 DEC 70
FLT 2	9 JUL 71
FLT 3	15 DEC 71
- PRELIMINARY ESTIMATE OF TOTAL COST \$3150.3

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~~SECRET / SAR~~

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OBJECTIVES

- o CAPABILITY FOR STEREO PHOTOGRAPHIC RECONNAISSANCE, TO INCLUDE BOTH MANNED AND UNMANNED OPERATIONS, WITH A PROBABILITY OF 30-DAY MISSION EFFECTIVENESS OF 0.85 FOR THE MANNED SYSTEM AND 0.63 FOR THE UNMANNED SYSTEM.
- o A SYSTEM CAPABILITY OF [REDACTED] RESOLUTION PHOTOGRAPHY
- o A MISSION DURATION OF 30 DAYS ON THE BASELINE ORBIT WITH A TWO-MAN FLIGHT CREW
- o A CAPABILITY FOR A SHIRTSLEEVE ENVIRONMENT FOR THE 30 DAYS UNMANNED SYSTEM. A MISSION DURATION AS LONG AS POSSIBLE WITHIN THE CAPABILITIES OF THE MANNED SYSTEM HARDWARE WITH AVAILABLE OR AUGMENTED EXPENDABLES AND CONSISTENT WITH BOOSTER CAPABILITIES.

INTELLIGENCE DATA

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SUBJECT

OBJECTIVES (CONT'D)

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- o ORBITAL INCLINATION CAPABILITY OF 80° TO 100° SHALL BE PROVIDED.
- o NOMINAL ORBIT SHALL BE AT 90° INCLINATION AND 80 nmi PERIGEE ALTITUDE.
- o CAPABILITY FOR ACCESS TO ARBITRARILY LOCATED TARGETS ANYWHERE ON THE SUNLIT SURFACE OF THE EARTH BETWEEN 80°S AND 80°N LATITUDE AT LEAST THREE TIMES DURING A 30-DAY MISSION
- o MANNED SYSTEM. CAPABILITY TO EXPOSE 15,000 FRAMES DURING THE 30-DAY MISSION
- o UNMANNED SYSTEM. CAPABILITY TO EXPOSE 500 FRAMES PER DAY AND MAXIMIZE CLOUD-FREE PHOTOGRAPHY.
- o MANNED SYSTEM. EARLY DEVELOPMENT OF THE UNMANNED MISSION CAPABILITY AND THE ENHANCEMENT OF THE QUALITY AND QUANTITY OF INTELLIGENCE DATA

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SUBJECT

OBJECTIVES (CONT'D)

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- o ONE LAUNCH EVERY FOUR MONTHS
- o SYSTEM. RESPONDING TO A RE-DIRECTION OF THE PLANNED OPERATIONAL ORBIT AS LATE AS SEVEN DAYS PRIOR TO A SCHEDULED LAUNCH
- o INFORMATION DERIVED FROM THE MANNED OPERATIONS USED TO ASSESS THE USEFULNESS OF MAN IN THE DEVELOPMENT AND OPERATION OF RECONNAISSANCE SPACE SYSTEMS

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0 A CAPABILITY FOR A...

0 A SYSTEM CAPABILITY OF...

OBJECTIVES

0 A MISSION DURATION OF...
FLIGHT CREW

0 A CAPABILITY FOR A...

0 UNMANNED SYSTEM...

WITHIN THE CAPABILITIES OF THE...

OR AUGMENTED EXPENDABLES AND...

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SAFETY OBJECTIVES

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- 0 NO SINGLE FAILURE WILL CAUSE MISSION ABORT OR CREW FATALITY.

- 0 CREW SAFETY SHALL BE EQUIVALENT TO THAT PREDICTED FOR THE NASA GEMINI PROGRAM.

- 0 BIOMEDICAL MONITORING FOR ASSURANCE OF CREW SAFETY AND AN INDICATION OF CREW CAPABILITY LIMITS.

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SYSTEM CONSTRAINTS

- o MAX USE OF EXISTING MAN-RATED SUBSYSTEMS & COMPONENTS
- o MAX COMMONALITY BETWEEN MANNED & UNMANNED SYSTEMS
- o T-111C WITH MINIMUM MODIFICATION - T-111M
- o GEMINI WITH MINIMUM MODIFICATION
- o SINGLE LAUNCH PAD AT VAFB
- o UNMANNED SYSTEM CAPABLE OF RETURNING EXPOSED FILM
EVERY 10 DAYS

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MOL ASSOCIATE CONTRACTORS

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MC DONNELL DOUGLAS ASTRONAUTICS CORPORATION

EASTERN DIVISION

WESTERN DIVISION

GENERAL ELECTRIC

EASTMAN KODAK CORPORATION

MARTIN MARIETTA CORPORATION

UNITED TECHNOLOGY CENTER

AEROJET GENERAL CORPORATION

A. C. ELECTRONICS

HAMILTON STANDARD

WHIRLPOOL

TRW

GEMINI B

LABORATORY MODULE

MISSION MODULE

PHOTOGRAPHIC PAYLOAD

T-111M CORE

SOLID ROCKET MOTORS

LIQUID ROCKET PROPULSION

BOOSTER INERTIAL GUIDANCE

PRESSURE SUIT ASSEMBLY

FEEDING SYSTEM

ASCENT & REENTRY SOFTWARE

MISSION PLANNING AND

EVALUATION SOFTWARE

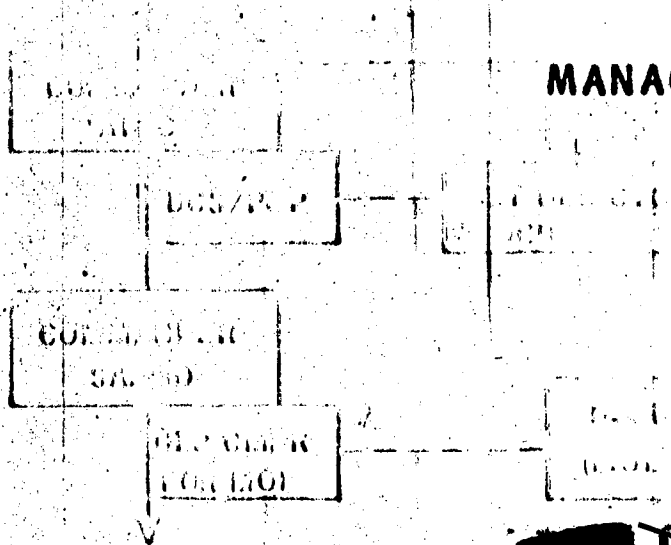
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MANAGEMENT



AFSCF
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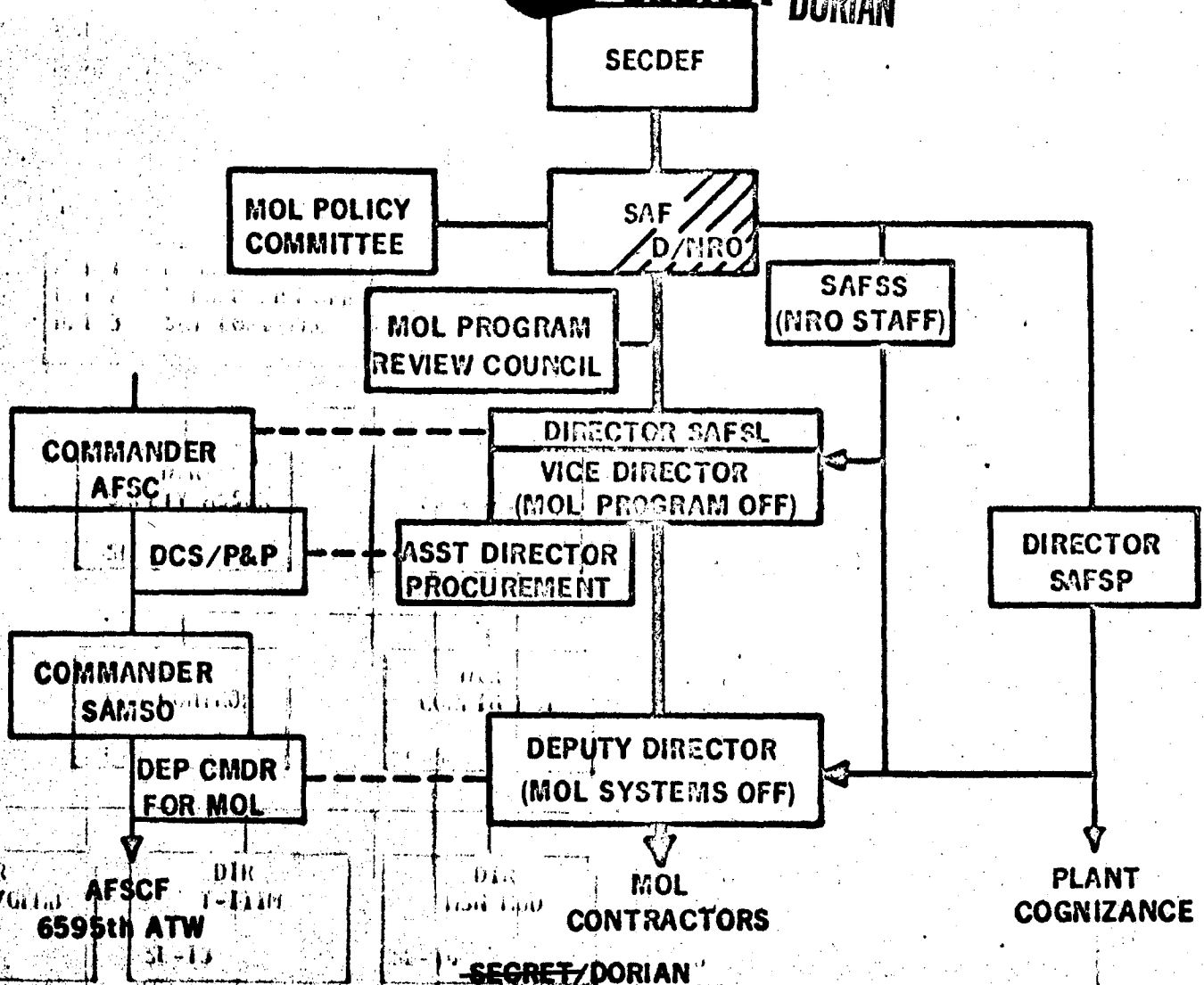
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MOL MANAGEMENT STRUCTURE

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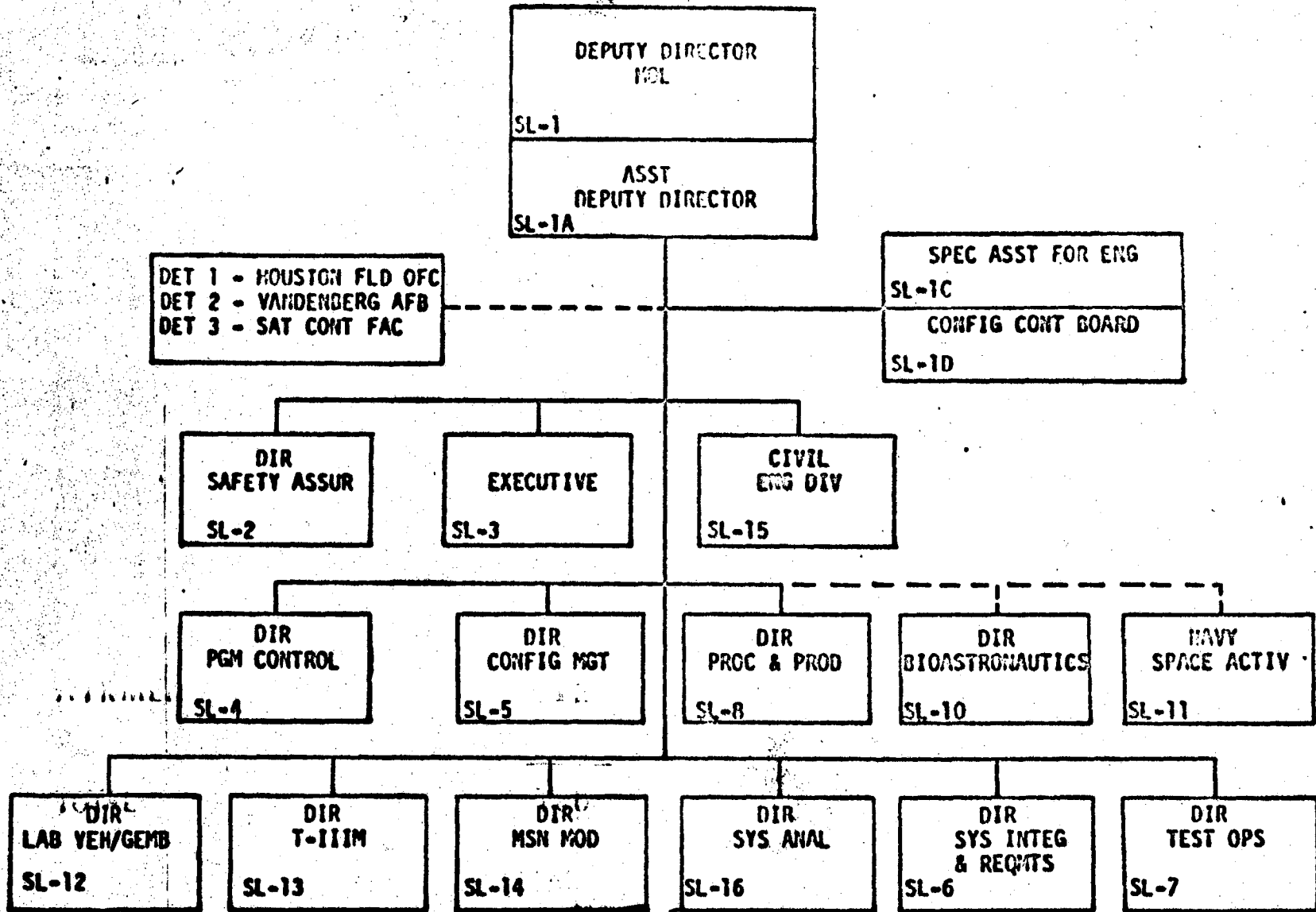
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MILITARY PERSONNEL STATUS

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	<u>AUTHORIZED</u>	<u>ASSIGNED</u>	<u>KNOWN LOSSES</u>
GENERAL	1	1	
COLONEL	14	9	5
LT COLONEL	40	28	9
MAJOR	66	54	2
CAPTAIN	39	58	11
LIEUTENANT	8	14	3
AIRMEN	12	12	1
TOTAL	<u>180</u>	<u>176</u>	<u>31</u>

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DISTRIBUTION OF MANPOWER AUTHORIZATIONS

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	<u>OFF</u>	<u>AMN</u>	<u>CIV</u>	<u>TOTAL</u>
LAAFS	161	11	101	273
HOUSTON	5	1	1	7
VANDENBERG AFB	1			1
VALLEY FORGE	1			1
	<hr/> 168	<hr/> 12	<hr/> 102	<hr/> 282

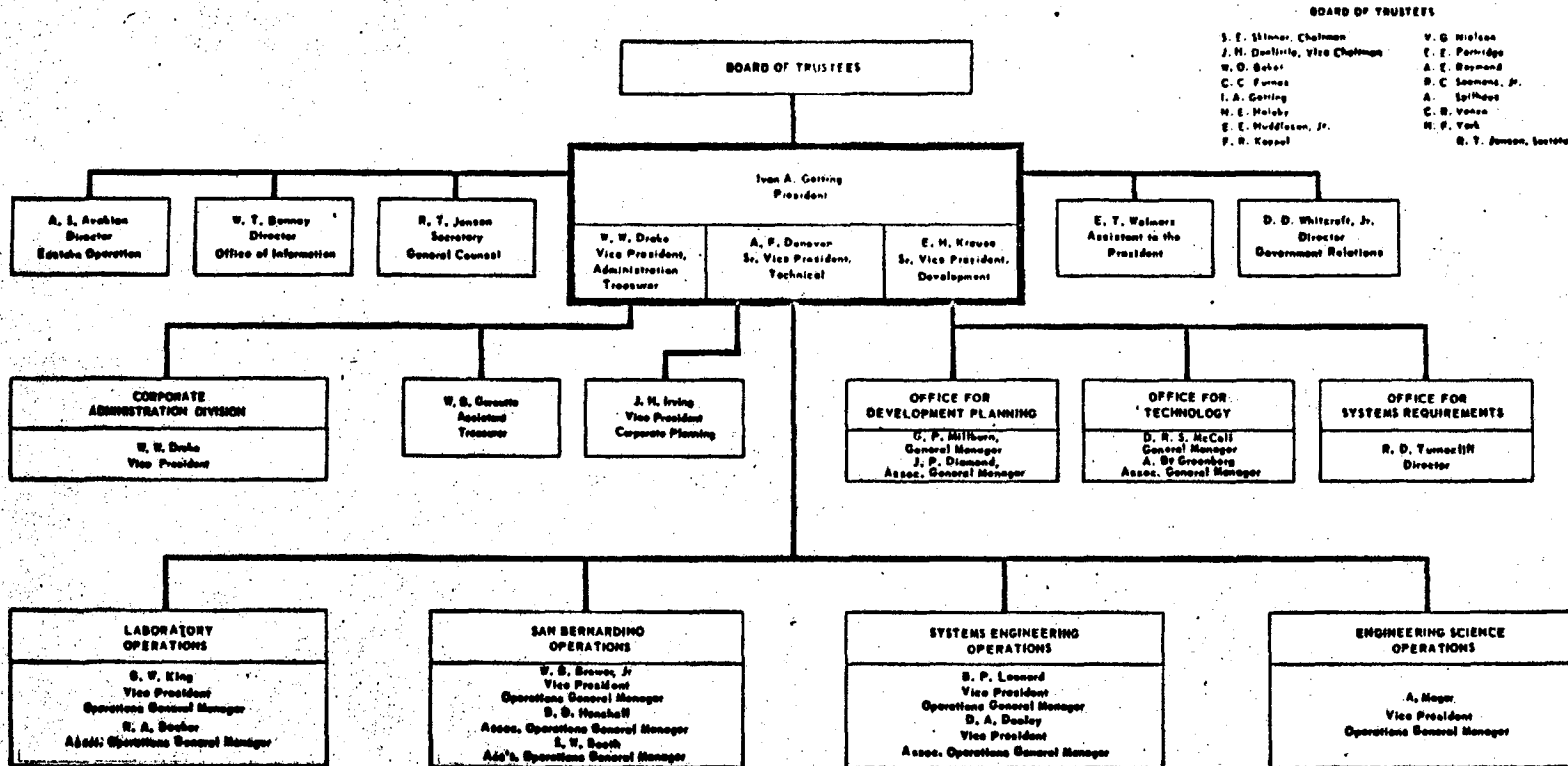
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APPROVED:

Ivan A. Getting

Aerospace  Corporation

ORGANIZATION:
THE AEROSPACE CORPORATION

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B. P. Leonard
Vice President
Operations General Manager
D. A. Dooley
Vice President
Assoc. Operations General Manager

G. J. Todd
Assistant to the
Operations General Manager

MOL DIVISION
W. C. Williams
Vice President
General Manager

SATELLITE SYSTEMS
DIVISION
W. F. Leverton
Vice President
General Manager
C. W. Miller
Assoc. General Manager

VEHICLE SYSTEMS
DIVISION
(D. A. Dooley)

APPROVED: *B. P. Leonard*
B. P. Leonard
Vice President
Assoc. Operations General Manager

 The Aerospace Corporation

ORGANIZATION:
SYSTEMS ENGINEERING OPERATIONS

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MOL DIVISION
W. C. Williams - Vice President, General Manager

MOL SAFETY COUNCIL
W. C. Williams - Chairman*

SAFETY
R. R. Wolfe - Director
J. G. Urban - Ass't Director

**MANAGEMENT SYSTEMS
AND ADMINISTRATION**
J. F. Chalmers - Director

**ADVANCED PLANS AND
REQUIREMENTS**
C. L. Olson - Director

ENGINEERING DIRECTORATE
S. M. Tennant - Group Director
B. A. Hohmann - Assoc. Group Director - Acting
S. S. Strong - Assoc. Group Director

OPERATIONS DIRECTORATE
J. D. Sorrels - Group Director
H. Bernstein - Assoc. Group Director

**PLANNING, LAUNCH OPERATIONS
& TEST DIRECTORATE**
B. A. Hohmann - Group Director

LAUNCH VEHICLE
W. G. Reynolds - Director

SYSTEMS ENGINEERING
G. D. McGhee - Director
D. R. Howard - Assoc. Director

FLIGHT OPERATIONS
L. R. Bush - Director

**ACCEPTANCE &
TECHNICAL READINESS**
J. F. Bazyk - Director
P. W. Richardson - Ass't Director

MAC
W. D. Pittman - Director
F. W. Bushl - Assoc. Director

DATA SYSTEMS
H. W. Nurdyke - Director
A. E. Pope - Assoc. Director

ORBITAL OPERATIONS
A. D. Halenbeck - Director

LAUNCH OPERATIONS
J. F. Wambolt - Director

DAC
K. G. Greff - Director
J. Meltzer - Assoc. Director

SYSTEMS INTEGRATION
J. R. Emerson - Director
R. H. Herndon - Assoc. Director

**SIMULATION & CREW
OPERATIONS**
M. M. Gibbs - Director

GE
J. R. Henry - Director
R. S. Gaylord - Assoc. Director

*Reports directly to Senior
Vice President, Technical

APPROVED

BP Leonard

B. P. LEONARD

FEBRUARY 1968

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T-IIIIM ORGANIZATION

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MARTIN MARETTA DENVER DIVISION

AEROSPACE

MOLSO

DAC

DAC

MMG

M A C
GEMIN(" B "

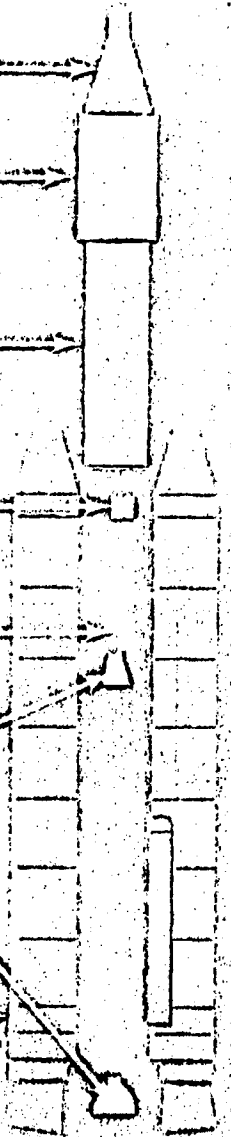
G. E.
MISSION MODULE

A. C. ELECT
GUIDANCE

M M C
C O S I E

A G C
P R O P

U T C
S R M ' S



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SYSTEM DESCRIPTION

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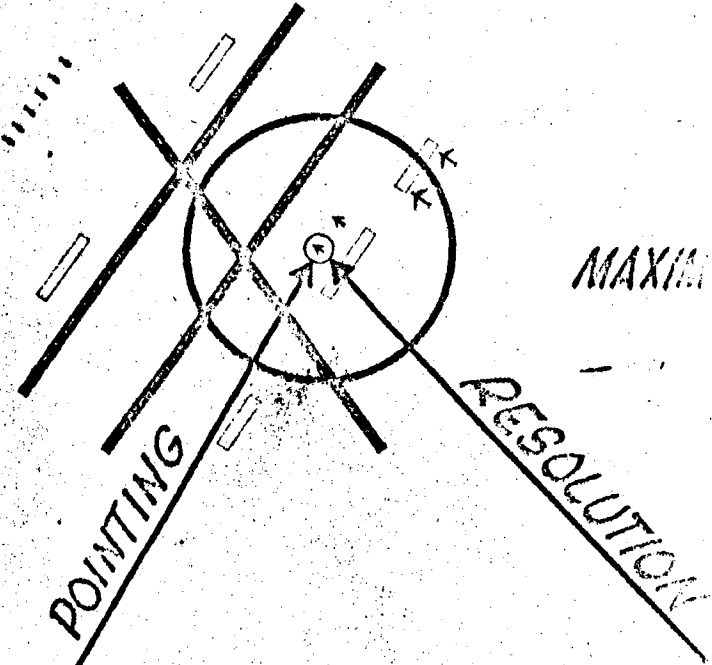
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SYSTEM CONSIDERATION

CF 1010



PHOTOGRAPHIC
SYSTEM DESIGN
(EK)

MAXIMUM THEORETICAL PERFORMANCE

STATIC OPTICAL ANALYSIS
(EK)

DYNAMIC
CHARACTERISTICS
AND
CONTROL (GE)

TARGETING
(GE)

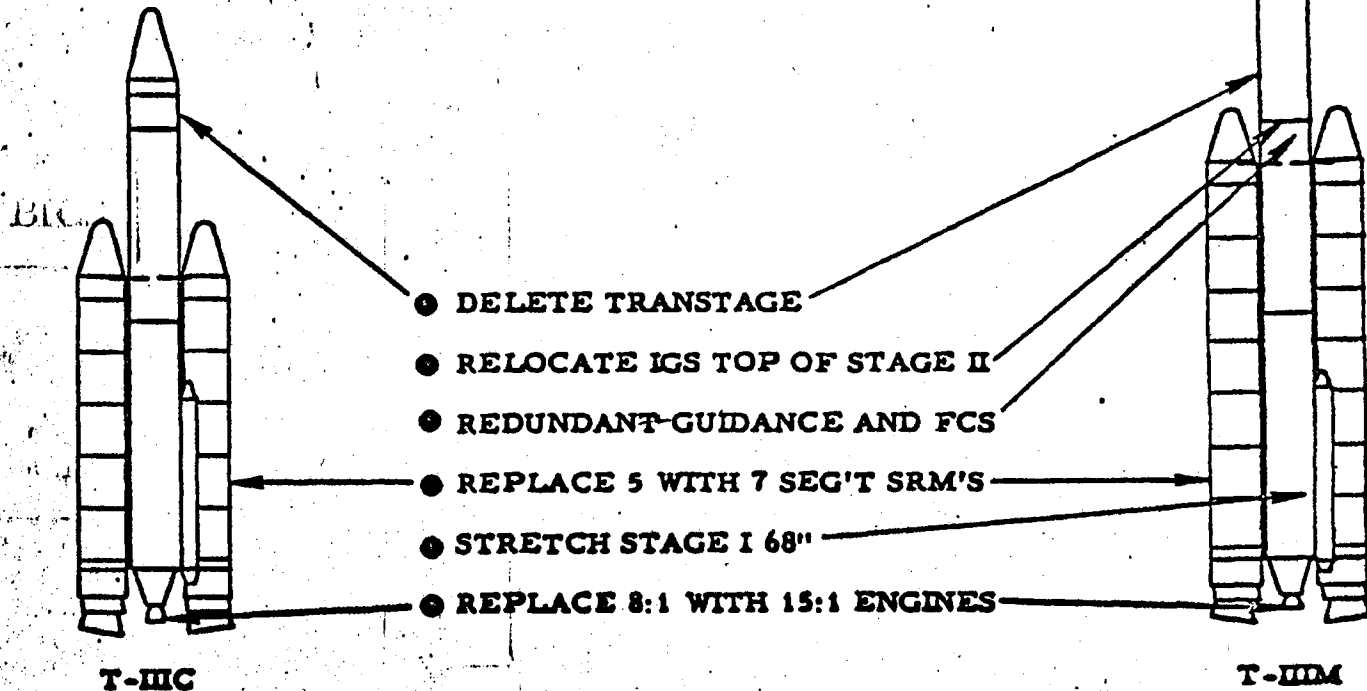
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● VEHICLE DESCRIPTION



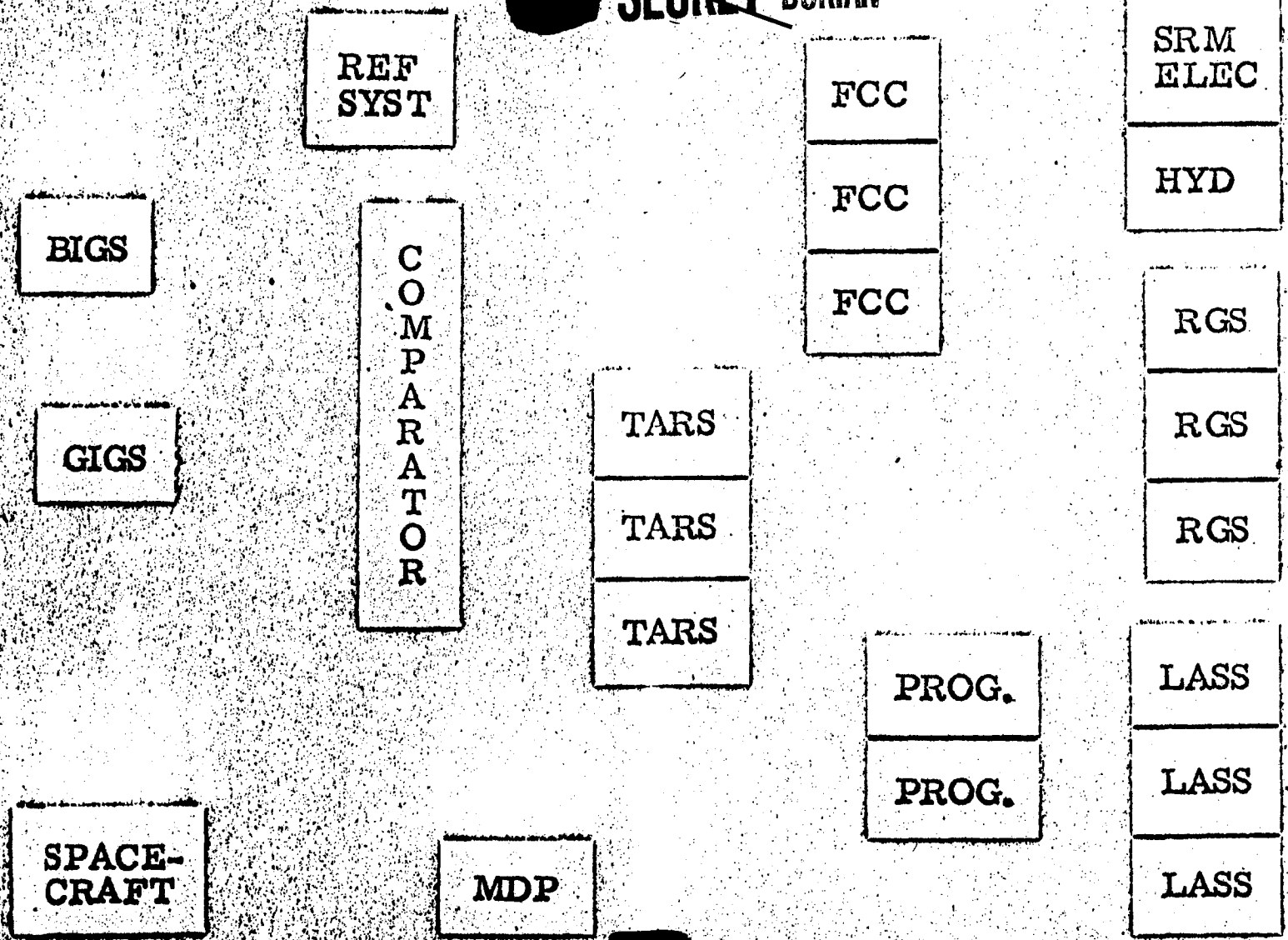
SPACE-CRAFT

MID

T-111M FLIGHT CONTROL SYSTEM

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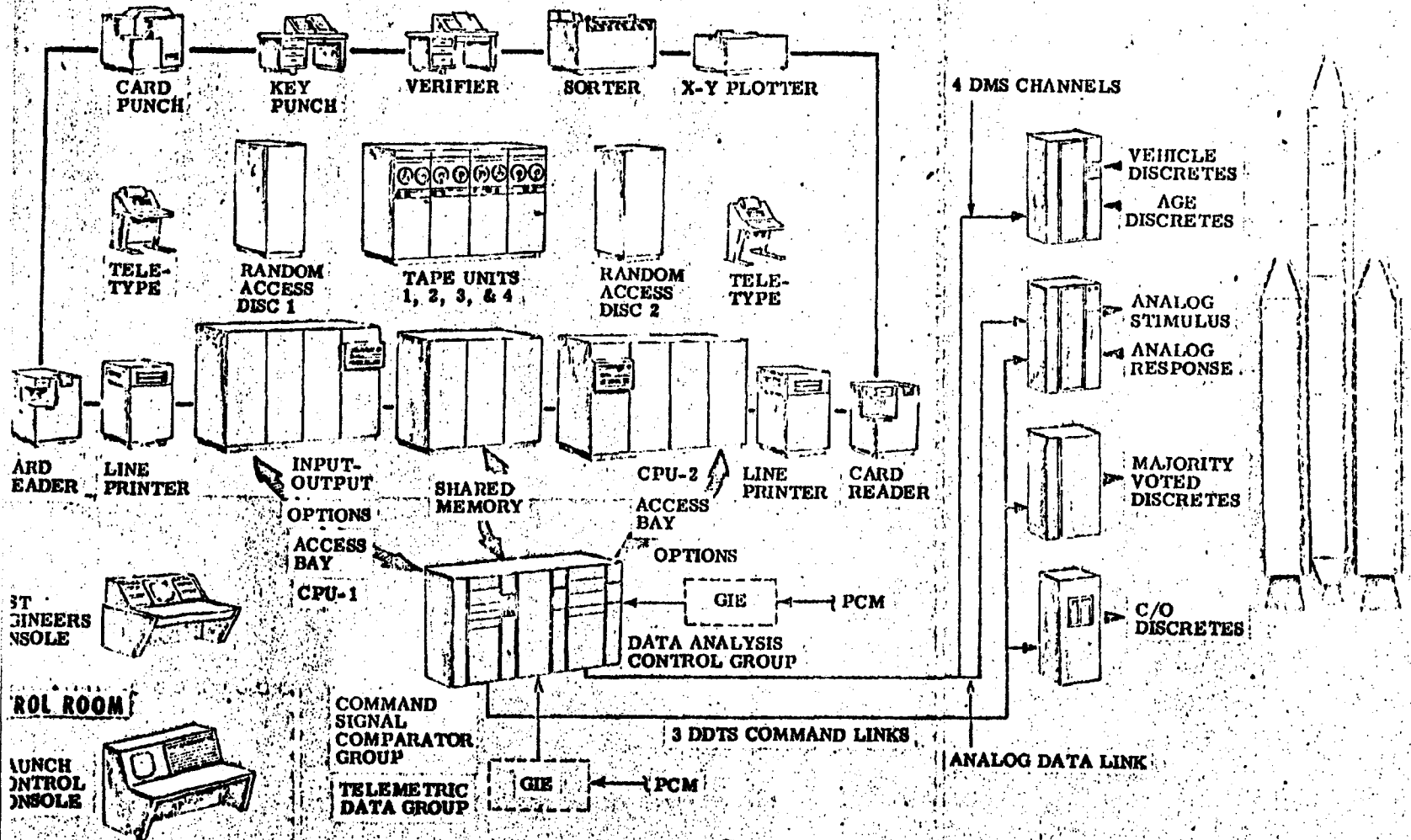
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CONTROL CENTER

PAD



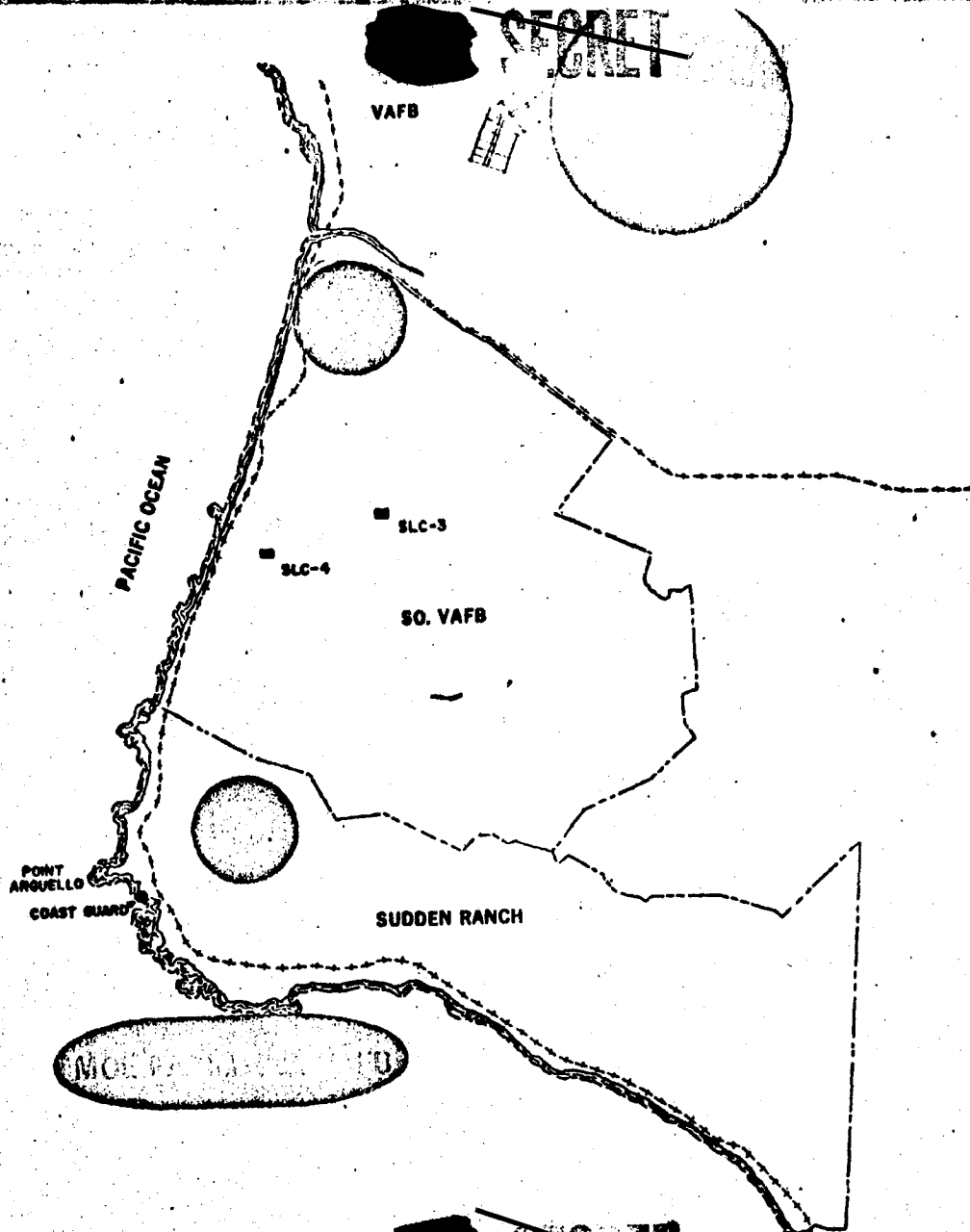
CONTROL ROOM

ENGINEERS CONSOLE

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MOL FACILITIES
VANDENBERG AFB

SLC-6 LAUNCH FACILITIES

35.6M

MOL SUPPORT FACILITIES

6.1M

41.7M

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SLC-6 LAUNCH FACILITIES
VANDENBERG AFB

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<u>ITEM</u>	<u>FUNDS REQUIRED</u>	<u>CONSTRUCTION STATUS</u>
PACKAGE I - SITE PREPARATION	1.3M	COMPLETE
PACKAGE II - FACILITIES CONSTRUCTION	28.6M	85% (SCHEDULED COMPLETION DATE 1 SEP 69)
A. MOBILE SERVICE TOWER		
B. LAUNCH PAD AND UMBILICAL TOWER		
C. LAUNCH CONTROL CENTER		
D. ASSOCIATED BUILDINGS		
PACKAGES III & IV - POWER PLANT	3.2M	COMPLETE
PACKAGE V - MODIFICATIONS	2.5M	0% (SCHEDULED TO START CONSTRUCTION OCT 69)
A. FACILITIES MODIFICATIONS		
B. MOL RECOVERY FACILITIES		
TOTAL	<u>35.6M</u>	

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MOL SUPPORT FACILITIES
VANDENBERG AFB

<u>ITEM</u>	<u>FUNDS REQUIRED</u>	<u>CONSTRUCTION STATUS</u>
PACKAGE I - FACILITIES CONSTRUCTION	5.0M	79% COMPLETE (SCHEDULE COMPLETION SEP 69)
A. (OTEF) OPERATION TRAINING & EVALUATION BUILDING		
B. (ORU) OPERATIONS READINESS UNIT BUILDING		
C. (EOB) ENGINEERING OPERATIONS BUILDING		
PACKAGE II - FACILITIES MODIFICATIONS AND MINOR CONSTRUCTION	1.1M	3% COMPLETE (SCHEDULE COMPLE- TION MAY 1970)
C. W. HUTTON		
C. J. DORRENBACHER		
TOTAL	6.1M	

MDAC W.
VP - GEN MGR
J. P. ROGAN
VP - DEP GEN MGR
L. BROMBERG

LAU
OPERATIONS
VP - GEN MGR
O. J. F. ANI

DIR
OFFICE
BRIDGE
P. G. [unclear]
YAR

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MCDONNELL DOUGLAS AERONAUTICS COMPANY

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*CORPORATEWIDE PROGRAM
GENERAL MANAGER

MDAC HEADQUARTERS
C. R. ABLE
CHAIRMAN AND CHIEF
EXECUTIVE OFFICER
W. F. BURKE
PRESIDENT

* MANNED ORBITING
LABORATORY
PROGRAM
W. F. BURKE

* SENTINEL-SPARTAN
PROGRAM
T. W. STEPHENS

* AAP PROGRAM
J. F. YARDLEY

VICE PRESIDENT
MARKETING
C. W. HUTTON

VICE PRESIDENT
ADVANCED SYSTEMS
& TECHNOLOGY
C. J. DORRENBACHER

VICE PRESIDENT
FISCAL MANAGEMENT
J. L. SIGRIST

DIRECTOR
PLANNING
DEVELOPMENT
P. HORTON

MDAC-W
VP - GEN MGR
J. P. ROGAN
VP - DEP GEN MGR
J. L. BROMBERG

LAUNCH
OPERATIONS
VP - GEN MGR
O. J. RITLAND

MDAC-E
VP - GEN MGR
B. G. BROMBERG
VP - DEP GEN MGR
J. F. YARDLEY

L.

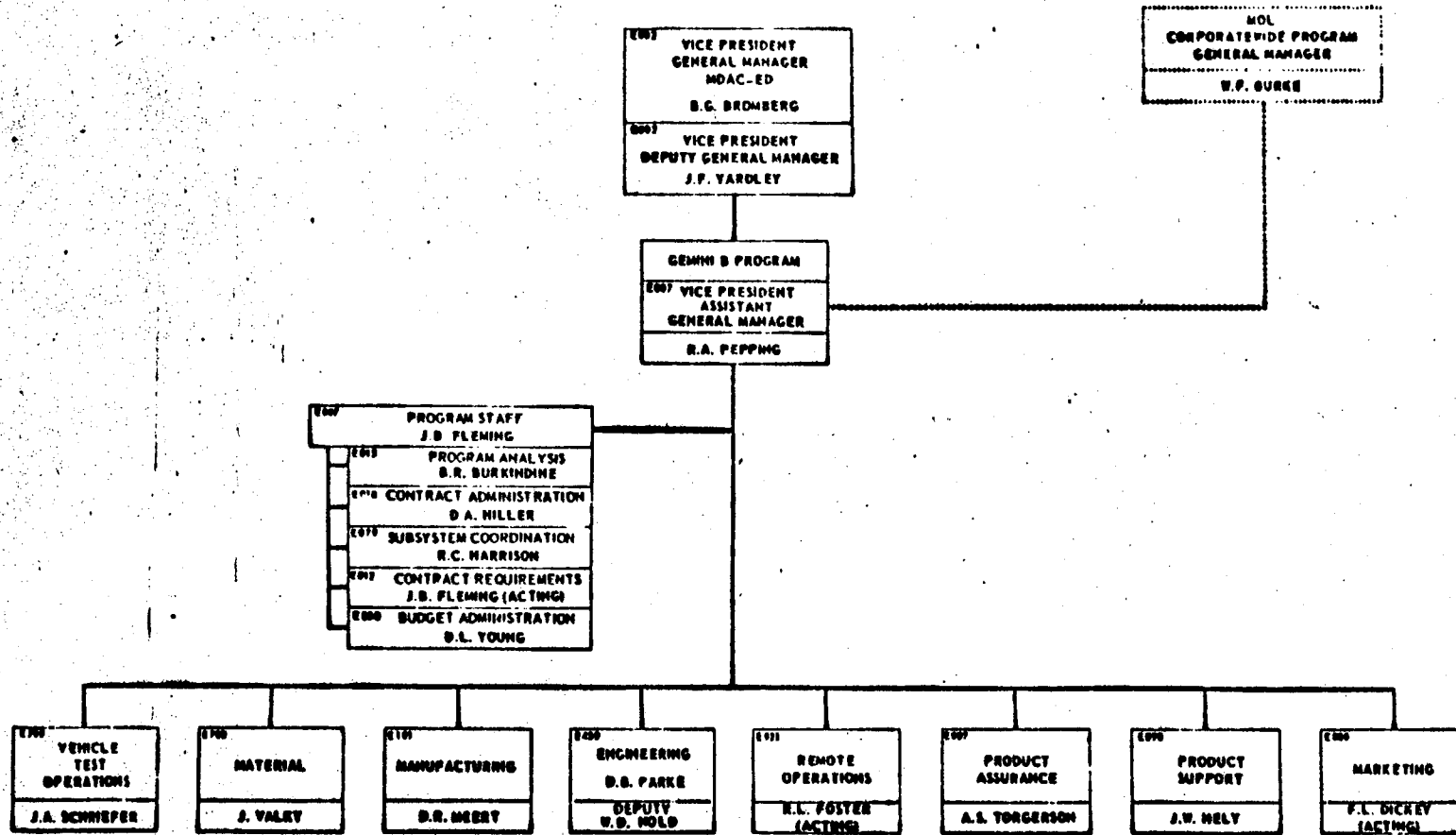
HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

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GEMM B PROGRAM



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GEMINI B
CHARACTERISTICS

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

- 0 WEIGHT 5980 LBS
- 0 POWER AVERAGE - 100 WATTS FOR 30 DAYS
- 0 PEAK - EARLY ORBIT 700 WATTS
- 0 MISSION ORBIT 300 WATTS
- 0 LATE ORBIT 630 WATTS

ASCENT PHASE

- 0 MODES A/B/C ABORTS ARE REQUIRED
- 0 IF NO ABORT, SEPARATE FROM T-111M, APPLY ACTS THRUST TO OBTAIN ORBIT
- 0 PERFORM STAGE II SHUTDOWN & T-111M/OV SEPARATION
- 0 EMPLOY DROGUE CHUTE (40,000 FT)
EARLY ORBIT
- 0 MAIN CHUTE DEPLOYMENT (10,000 FT)
- 0 GEMINI B SWITCH TO LAB VEHICLE POWER & START CREW TRANSFER
- 0 TOUCHDOWN
- 0 SHUT DOWN GEMINI B & COMPLETE CREW TRANSFER

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GEMINI B
CHARACTERISTICS

LATE ORBIT

- 0 INITIATE CREW TRANSFER BACK TO GEMINI B
- 0 SEPARATE GEMINI B FROM LABORATORY VEHICLE AND START LOITER PHASE

DATA RETURN

REENTRY PHASE

- 0 SEPARATE EQUIPMENT ADAPTER
- 0 RETROFIRE (5 RETRO ROCKETS)
- 0 RETRO ADAPTER JETTISON, AND REORIENTATE GEMINI B TO REENTRY ATTITUDE
- 0 EMPLOY DROGUE CHUTE (40,000 FT)
- 0 MAIN CHUTE DEPLOYMENT (10,600 FT)
- 0 TOUCHDOWN

TOUCHDOWN
TO MAIN CHUTE

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GEMINI 8 CAPABILITIES

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

- o OPERATE IN ORBITS
 - INCLINATION 80° TO 100°
 - ALTITUDE 75 TO 200⁺ n.mi.
 - DURATION 30+ DAYS
- o DATA RETURN UP TO 2300
- o AUTONOMOUS LOITER
 - PROVIS IN UP TO 3 HR NORMAL
 - UP TO 14 HR EMERGENCY
- o SEA SURVIVAL TIME UP TO 36 HRS
- o ABORT CAPABILITY
 - AT ALL TIMES FROM CREW INSERTION TO TOUCHDOWN EXCEPT FROM RETROGRADE TO MAIN CHUTE DEPLOYMENT

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GEMINI B, MDAC - EASTERN DIVISION

HANDLE V BYEMAN
CONTROL SYSTEM ONLY

CONTRACT STATUS

TYPE CONTRACT - FPIF

NEGOTIATED VALUE DEC 1966	\$180.5	
NEGOTIATED VALUE TODAY	\$181.3	
PROVISION	\$125.9	\$307.2

GOVT FUNDING:	<u>FY 67</u>	<u>FY 68</u>	<u>FY 69</u>
INCREMENT	38.7	27.3	32.0
CUMULATIVE	38.7	66.0	98.0

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MDAC-ED HARDWARE ON CONTRACT

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

- 0 ONE HEAT SHIELD QUALIFICATION SPACECRAFT (HSQ) (SEPARATE CONTRACT)
- 0 ONE GEMINI B PROCEDURES SIMULATOR (GBPS)
MODIFIED NASA GEMINI MISSION SIMULATOR (GMS)
- 0 FOUR GEMINI B SPACECRAFT
ONE UNMANNED - GEMINI B QUALIFICATION (GBQ)
THREE MANNED CRAFT
- 0 AEROSPACE GROUND EQUIPMENT (AGE)
 - REFURBISHED NASA AGE
 - LAUNCH CONTROL CENTER
 - LAUNCH PAD
 - HANDLING AND SERVICING
 - SUBSTITUTES
 - ELECTRICAL
 - MECHANICAL
- 0 DEVELOPMENT HARDWARE
 - ELECTRONIC SYSTEM TEST UNIT
 - DUAL GAS SYSTEM TEST ARTICLE
 - THERMAL VACUUM TEST ARTICLE
 - STRUCTURAL TEST ARTICLES
 - ABORT SEPARATION TEST ARTICLE

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CONTRACTOR: MDAC-ED

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

ORIGINAL NO.

MANPOWER EQUIV. HEAD

5000

2000

1000

HONEYWELL 68

69

70

71

72

73

74

FISCAL YEAR

HONEYWELL

HONEYWELL

IBM

PHILCO-FORD

ROCKET DYNE

WORTH

SEA - ORDNANCE ENGR. AS D.

GULTON

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

GULTON

69

70

71

72

73

74

FISCAL YEAR

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CLASS

MANPOWER EQUIV. HEAD

ENG

MFG

1498

1217

2380

2530

1190

340

100

83.7

67.0

42.1

50

32.2

39.8

43.0

5.4



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HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

MDAC - ED MAJOR SUBCONTRACTORS

<u>CONTRACTOR</u>	<u>SYSTEM</u>	<u>COST</u>
AIRESEARCH	ENVIRONMENTAL CONTROL SYSTEM	6.0M
COLLINS	HF/VHF RADIOS	0.7M
EMR - ELECTRO-MECHANICAL RESEARCH	DATA TRANSMISSION SYSTEM	3.4M
HONEYWELL	PAD-ABORT THRUSTER ELECTRONICS	1.2M
HONEYWELL	GUIDANCE INTERFACE ADAPTER	1.0M
HONEYWELL	INERTIAL MEASUREMENT UNIT	8.0M
IBM	COMPUTER	7.5M
PHILCO-FORD	ABORT SYSTEM THRUSTER ASSY.	0.7M
ROCKETDYNE	REENTRY CONTROL SYSTEM	4.4M
THIOKOL	RETRO-ROCKETS	0.9M
OEA - ORDNANCE ENGR. ASSO.	SEPARATION ASSY.	0.8M
GULTON	COOLANT PUMP POWER INVERTER	0.6M
GULTON	STATIC POWER SUPPLY	0.5M

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MDAC - ED STATUS

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

- o HEATSHIELD QUALIFICATION FLOWN IN NOV 66 (HSO)
- o AEROSPACE GROUND EQUIPMENT - INITIAL DELIVERY SCHEDULED FOR JULY 69
- o PROCEDURES SIMULATOR - COMPLETION OF MANUFACTURING AND FACTORY CHECKOUT TO START IN JUNE 69

ADVANCE
MISSION
OFFICE

START OF MAJOR ASSEMBLY OF FIRST FLIGHT SPACECRAFT IN JULY 69 (GBQ)

G. C. GOLDBACH

DEVELOPMENT HARDWARE IS NOW IN EXISTENCE AND TEST PROCEEDING

M. C. BROWN
OPERATIONS

ELECTRONIC SYSTEMS TEST - FINISH AUG 69

R. E. FOSTER

DUAL GAS SYSTEM TEST - FINISH MAY 69

THERMAL VACCUUM TEST - FINISH FABRICATION JAN 70

STRUCTURAL TESTS - FINISH AUG 70

DEVELOPMENT
ENGINEERING

ABORT SEPARATION TEST - EARLY 70 AT HOLLOMAN AFB NM

A. V. F. SIMONICK

S. P. ...

HANDLE VIA BYEMAN
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MDAC WD SUPPORT

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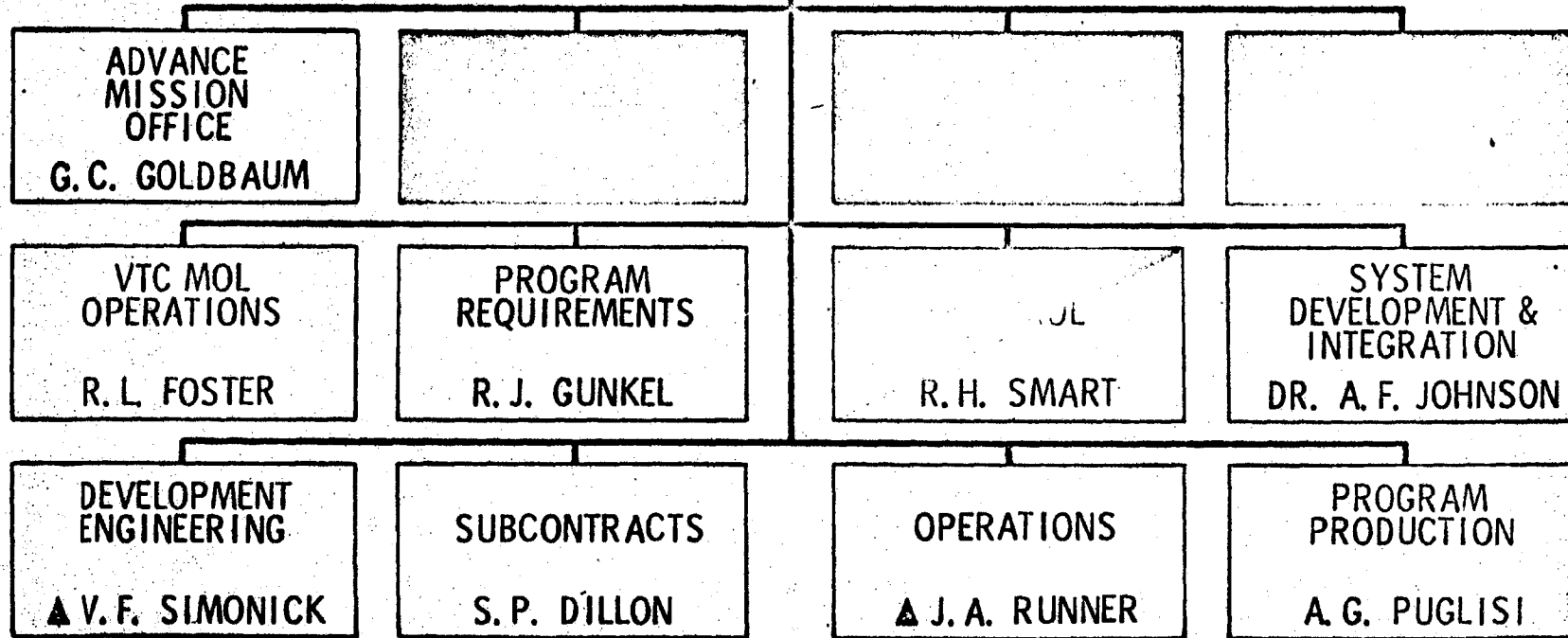
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MANNED ORBITING LABORATORY SUBDIVISION McDONNELL DOUGLAS AERONAUTICS COMPANY-WESTERN DIVISION

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HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

VICE PRESIDENT ASSISTANT GENERAL MANAGER, MDAC-WD MOL R. L. JOHNSON
DEPUTY DIRECTOR R. K. JACOBSON
SYSTEM DEVELOPMENT & INTEGRATION DIRECTOR DR. A. F. JOHNSON



▲ MDAC-WD SUPPORT

APR 69

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

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~~SECRET DORIAN~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

LABORATORY MODULE CHARACTERISTICS & FUNCTIONS

0 CONFIGURATION

/ SIZE - 10' DIAMETER, 21' LONG

/ CURRENT WEIGHT - 14,298 LBS (INCLUDING MISSION MODULE STRUCTURE)

0 LAUNCH AND ASCENT

/ LAB BASICALLY DORMANT

0 EARLY ORBIT

/ LAB LIFE SUPPORT ACTIVATED

/ CREW TRANSFER VIA PRESSURIZED TUNNEL (NORMAL) OR EVA (EMERGENCY)

0 ON-ORBIT

/ DUAL GAS (O_2, H_e) ATMOSPHERE AT 5 PSI

/ 4.5 KW (PEAK) AND 1.8 KW (AVG) POWER

/ ORBIT ADJUST (100 LBS THRUSTORS)

/ ATTITUDE CONTROL (25 LBS THRUSTORS)

/ COMPUTATIONAL CAPABILITY (2 DIGITAL COMPUTERS, 24K CORE MEMORY EACH)

/ CREW AND CREW OPERATIONS SUPPORT

/ TTCV CAPABILITY VIA SGLS

/ MONITOR AND ALARM (206 CHANNELS)

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

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~~SECRET~~ DORIAN

HANDLE VIA BYEMAN
CONTROL SYSTEM

LABORATORY MODULE CHARACTERISTICS & FUNCTIONS

(CONTINUED)

o DE-ORBIT

- / CONTROLLED DE-ORBIT INTO BROAD OCEAN AREA
- / VELOCITY DECREMENT EFFECTED BY ACTS 100 LBS THRUSTORS AFTER GEMINI B SEPARATION

PROVISION

GOVT FUNDING:	10.0	
INCREMENT	10.0	
CUMULATIVE	10.0	

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CONTROL SYSTEM ONLY

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~~SECRET/DORIAN~~
LAB VEHICLE, MD, C - WESTERN DIVISION
~~SECRET/DORIAN~~
CONTRACT STATUS

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

TYPE CONTRACT - FPIF

NEGOTIATED VALUE DEC 1966	\$687.8	
NEGOTIATED VALUE TODAY...	\$693.3	
PROVISION	\$622.6	\$1315.9

GOVT FUNDING:	<u>FY 67</u> MECHANISM	<u>FY 68</u>	<u>FY 69</u>
INCREMENT	108.0	130.5	170.0
CUMULATIVE	108.0	238.5	408.5

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MDAC-WD CONTRACT STATUS (HARDWARE ON CONTRACT)

HANDLE VIA BYEMAN
CONTROL SYS ONLY

0 DELIVERABLE ITEMS

0 AVE

- 0 LABORATORY MODULES (5)
- 0 MISSION MODULES, FORWARD SECTIONS (13)
- 0 MISSION MODULES, AFT SECTIONS (10)
- 0 AIRBORNE DIGITAL COMPUTERS (11)
- 0 FLIGHT CREW EQUIPMENT (3)

0 SUBSTITUTES

- 0 MECHANICAL/STRUCTURAL (VARIOUS) (18)
- 0 THERMAL (VARIOUS) (4)
- 0 ELECTRICAL (3)

0 NON-DELIVERABLE - TEST ITEMS, ELECTRONIC DEVELOPMENT, TEST STRUC

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CONTROL SYSTEM ONLY

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MDAC - WD CONTRACT STATUS (HARDWARE ON CONTRACT)

HANDLE VIA L MAN
CONTROL SYSTEM ONLY

0 DELIVERABLE ITEMS (CONT'D)

0 SOFTWARE

- 0 AGE
- 0 AVE
- 0 MISSION SIMULATOR
- 0 MCC

0 AGE

- 0 MISSION SIMULATOR (1)
- 0 ALL SYSTEMS TEST EQUIPMENT GROUP (5)
- 0 MISC ELECTRICAL AGE (15 TYPES -
VARIOUS QUANTITIES)
- 0 MISC MECHANICAL AGE (50 TYPES -
VARIOUS QUANTITIES)

0 NON-DELIVERABLE - TEST ITEMS (ELECTRONIC DEVELOPMENT TEST UNIT AND
DEVELOPMENT TEST STRUCTURE).

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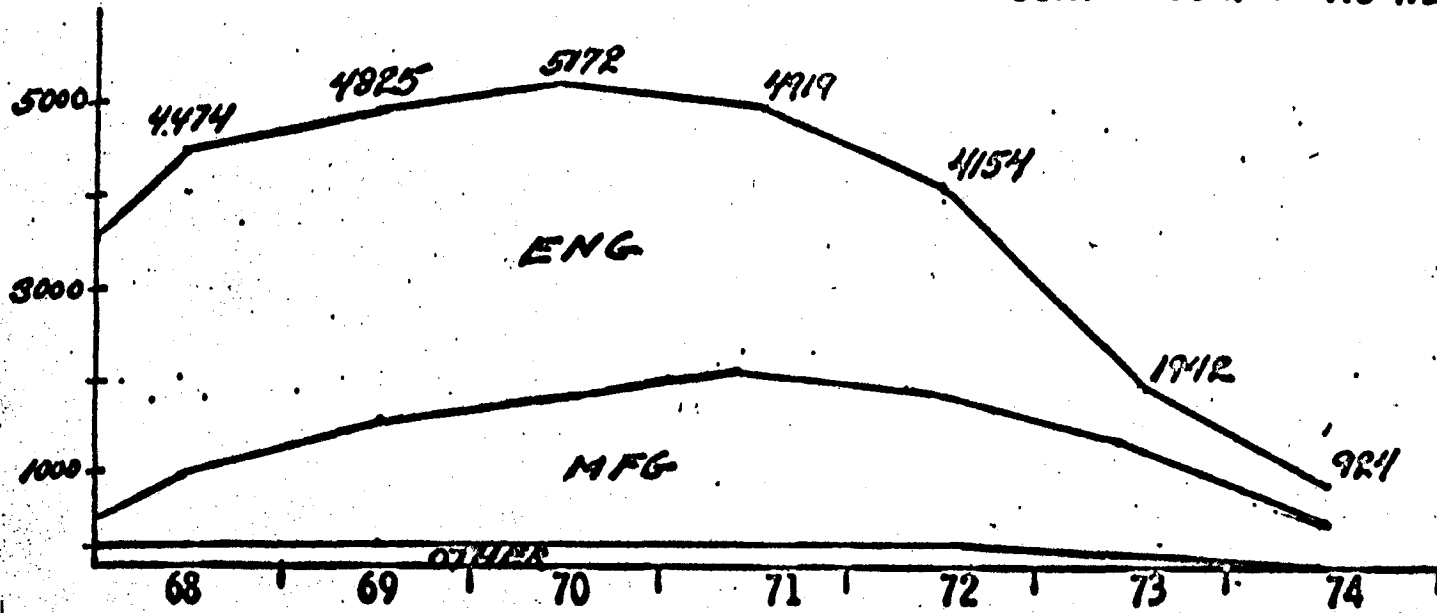
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CONTROL SYSTEM ONLY

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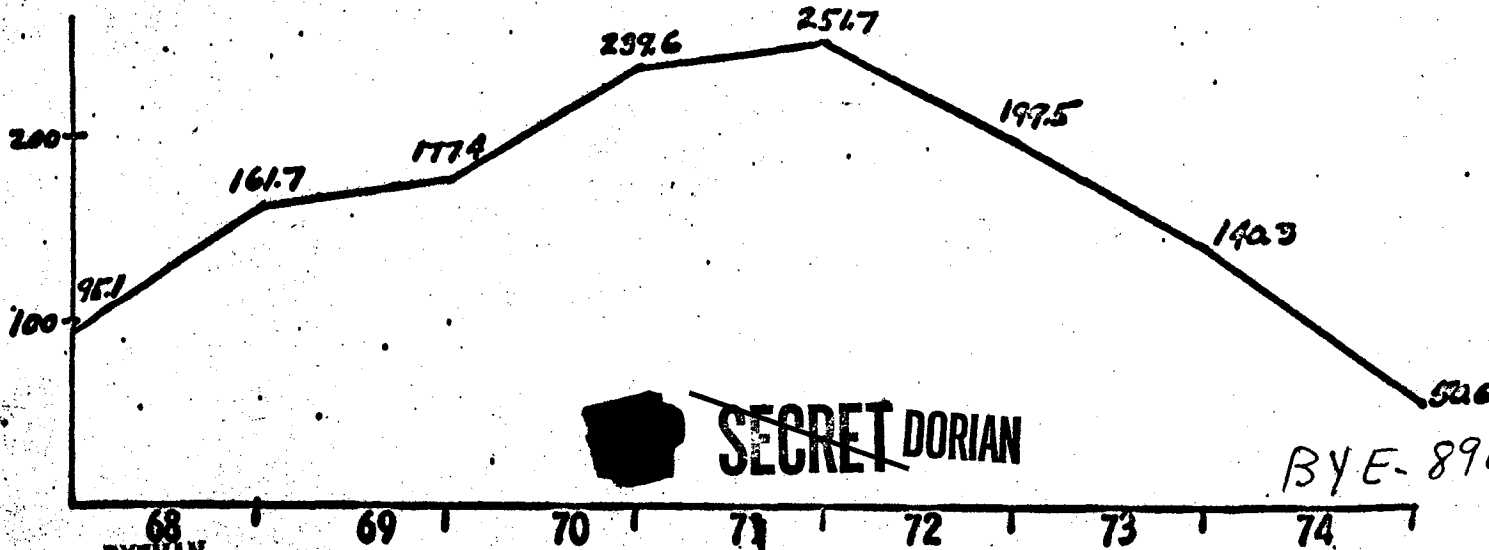
CONTRACTOR: MDAC-WD

MANPOWER EQUIV. HEAD



FISCAL YEAR

DOLLARS PER YEAR
(MILLIONS)



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HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

FISCAL YEAR

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~~SECRET / DORIAN~~
~~SECRET / DORIAN~~
MDAC - WD MAJOR SUBCONTRACTORS

HANDLE VIA BYEMAN
CONTROL SYSTEMS ONLY

<u>SYSTEM</u>	<u>CONTRACTOR</u>	<u>COST</u>
o ATMOSPHERE REACTANT SUPPLY	AIRESEARCH	14.2M
o ATTITUDE CONTROL AND TRANSLATION	HONEYWELL	49.3M
o FUEL CELLS	ALLIS CHALMERS.	14.9M
o PROPULSION TANKS	ROCKETDYNE	4.9M
o THRUSTORS	MARQUARDT	16.8M
o COMMUNICATION	COLLINS	33.6M
o DATA COMPUTATION	IBM	31.9M
o ENVIRONMENTAL CONTROL	HAMILTON-STANDARD	23.2M
o WASTE MANAGEMENT	FAIRCHILD-HILLER	4.1M

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HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

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MDAC-WD
~~SECRET/DORIAN~~

HANDLE VIA I MAN
CONTROL SYSTEM ONLY

STATUS

- o AVE DELIVERED
 - o TWO AVE COMPUTERS (PROTOTYPES)
 - o TWO MISSION MODULE FORWARD STRUCTURES (TEST)
- o SUBSTITUTES DELIVERED
 - o FOUR STRUCTURE SUBSTITUTES
 - o ONE ELECTRICAL SUBSTITUTE
 - o ONE THERMAL SUBSTITUTE
- o SOFTWARE DELIVERED
 - o PRELIMINARY PROGRAMS
- o AGE
 - o MINOR HANDLING AGE

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HANDLE VIA BYEMAN
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GENERAL ELECTRIC CORPORATION

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET~~

AEROSPACE GROUP
VICE PRESIDENT AND
GROUP EXECUTIVE
H. W. PAIGE

MISSILE AND SPACE DIVISION
VICE PRESIDENT AND
GENERAL MANAGER
H. MORTON

APOLLO SYSTEMS

REENTRY SYSTEMS

SPACE SYSTEMS
GENERAL MGR.
D. J. FINK

MOL PROGRAM
MANAGER
M. S. MALKIN

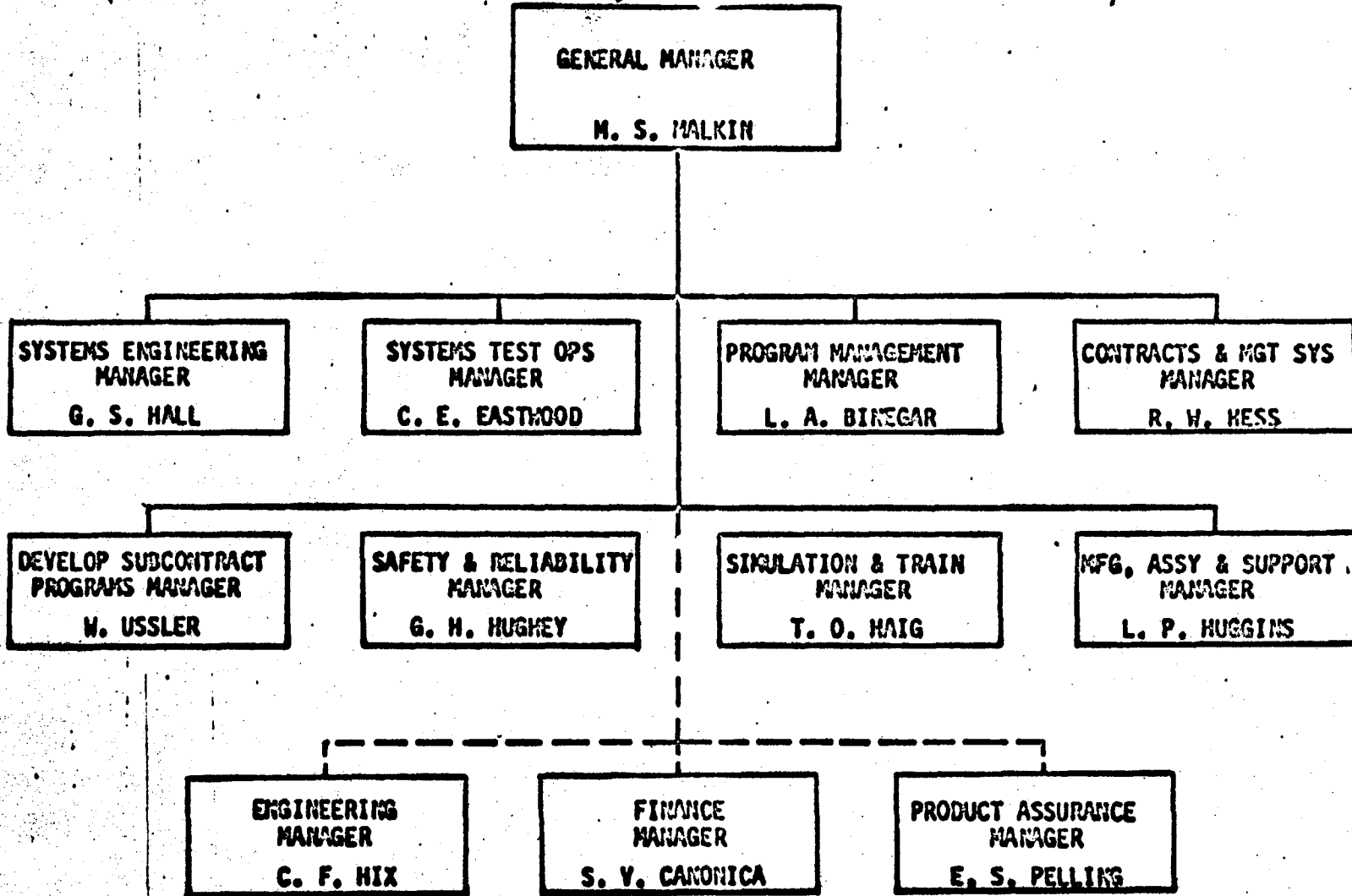
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DORIAN

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HANDLE VIA BYEMAN
CONTROL SYS ONLY



HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

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HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

MISSION MODULE SEGMENT CHARACTERISTICS

o WEIGHT 2.869 LBS.

o POWER

AVERAGE 317 WATTS
PEAK 1414 WATTS

o CAPABILITIES

PROVIDE CAPABILITY FOR TRACKING GROUND [REDACTED]

o POINT - [REDACTED]

o TRACK RATE - [REDACTED]

PROVIDE ASTRONAUTS WITH INDEPENDENT TARGET OBSERVATION AND SELECTION

o RESOLUTION - 3.6/FT

o POINT - ± 9 ARC MIN

o SMOOTHNESS - ± 0.25 ARC SEC

PROVIDE TEMPERATURE CONTROL FOR OPTICAL BAY AREA ($70^{\circ} \pm 5^{\circ}$)

PROVIDE SIMULATORS FOR HARDWARE DEVELOPMENT AND ASTRONAUT TRAINING
IN MISSION TASKS

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MISSION MODULE, GENERAL ELECTRIC

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CONTROL SYSTEM ONLY

CONTRACT STATUS

~~SECRET/DORIAN~~

TYPE CONTRACT - CPIF

NEGOTIATED VALUE DEC 1966 \$170.5

NEGOTIATED VALUE TODAY \$534.8

PROVISION \$ 4.1 \$538.9

GOVT FUNDING:	<u>FY 67</u>	<u>FY 68</u>	<u>FY 69</u>
INCREMENT	30.8	77.3	106.0
CUMULATIVE	30.8	108.1	214.1
MISSION			
MISSION			

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GENERAL ELECTRIC COMPANY

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CONTROL SYSTEM ONLY

CONTRACT DELIVERABLES

AVE

DEVELOPMENT

PRODUCTION

GIMBAL & TRIPOD	5	6
TRACKING MIRROR DRIVE SYSTEM	3	5
ACQUISITION & TRACKING SYSTEM	3	4
IMAGE VELOCITY SENSOR	3	5
STAR TRACKER	3	5
MISSION DATA ADAPTER UNIT	4	6
CONSOLES 2 & 8	3	4

AGE

MISSION MODULE TRANSPORTER		2
COMPUTER INTEGRATED TEST EQUIP. & MM TEST EQUIP.		6

SIMULATION EQUIP.

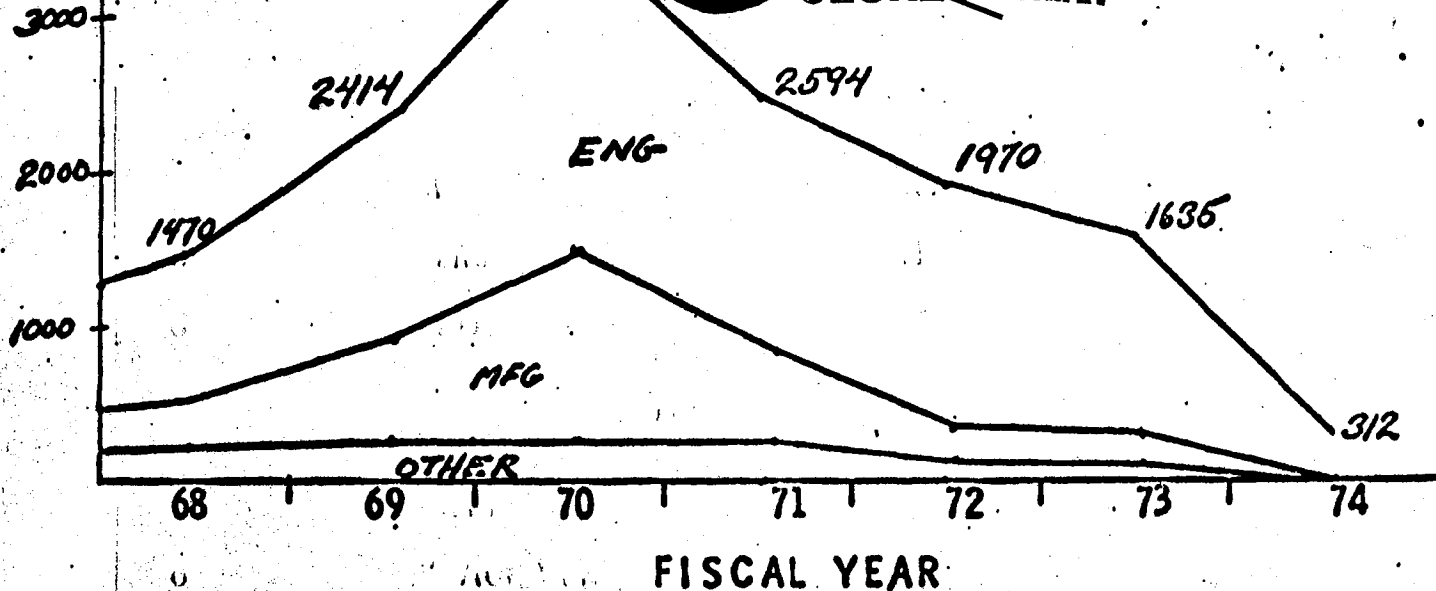
ENVIR. DEV. SIM.	1	
MISSION DEV. SIM.	1	
MISSION MODULE SIMULATION		1

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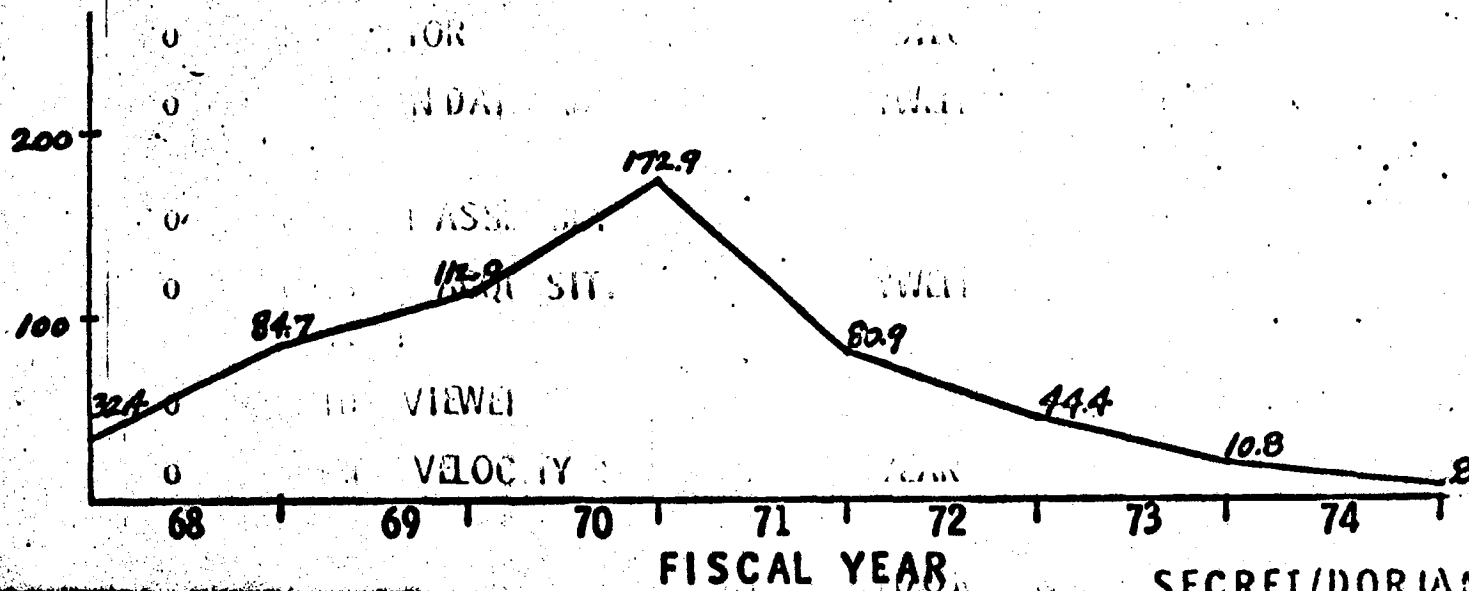
CONTRACTOR: GE

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CONTROL SYSTEM ONLY

MANPOWER EQUIV. HEAD



DOLLARS PER YEAR
(MILLIONS)

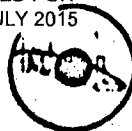


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HANDLE VIA BYEMAN
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GENERAL ELECTRIC MAJOR SUBCONTRACTORS

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	SYSTEM	CONTRACTOR	COST
0	PCM TELEMETER	NORDEN	1.9 M
0	RATE GYROS	HONEYWELL	2.5 M
0	STAR TRACKER	KOLLSMAN	10.9 M
0	COMPUTER INTEGRATED TEST EQUIPMENT	G.E. - APOLLO SUPPORT DIV.	31.8 M
0	LOW "G" ACCELEROMETER	BELL	2.4 M
0	PROJECTOR	LEAR SIEGLER	2.0 M
0	MISSION DATA ADAPTER UNIT	HONEYWELL	6.6 M
0	OPTICAL ASSEMBLY	ITEK	10.4 M
0	GYROS, ACQUISITION OPTICS	HONEYWELL	1.6 M
0	SLIDE VIEWER	ITEK	5.6 M
0	IMAGE VELOCITY SENSORS	GOODYEAR	1.5 M

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~~SECRET/DORIAN~~

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~~SECRET DORIAN~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

GENERAL ELECTRIC MAJOR SUBCONTRACTORS (CONT'D)

	<u>SYSTEM</u>	<u>CONTRACTOR</u>	<u>COST</u>
0	IMAGE VELOCITY SENSORS	HYCON	.8 M
0	BERYLLIUM STRUCTURE	MCDONNELL DOUGLAS	8.3 M
0	MISSION MODULE TEST EQUIPMENT	GE - APOLLO SUPPORT DIV.	12.0 M

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~~SECRET DORIAN~~

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CONTROL SYSTEM ONLY

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EASTMAN KODAK CORPORATION

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET/DORIAN~~

VICE PRESIDENT & GENERAL MANAGER
KODAK APPARATUS DIVISION
H. H. WAGERSHAUSER

**MANAGER GOVERNMENT
CONTRACTS**
E. J. BROWN

**ASS'T VICE PRESIDENT &
ASS'T GENERAL MGR**
KODAK APPARATUS DIVISION
K. C. BOEN

ASS'T VICE PRESIDENT
RESEARCH & ENGINEERING
A. B. SIMONS

PROGRAM MGR.
PRODUCT EVALUATION
E. KSIAZEK

PROGRAM MGR.
L. P. MITCHELL

PROGRAM MGR.
DORIAN
J. H. SEWELL

PROGRAM MGR.
MANUFACTURING
R. C. KLEINHANS

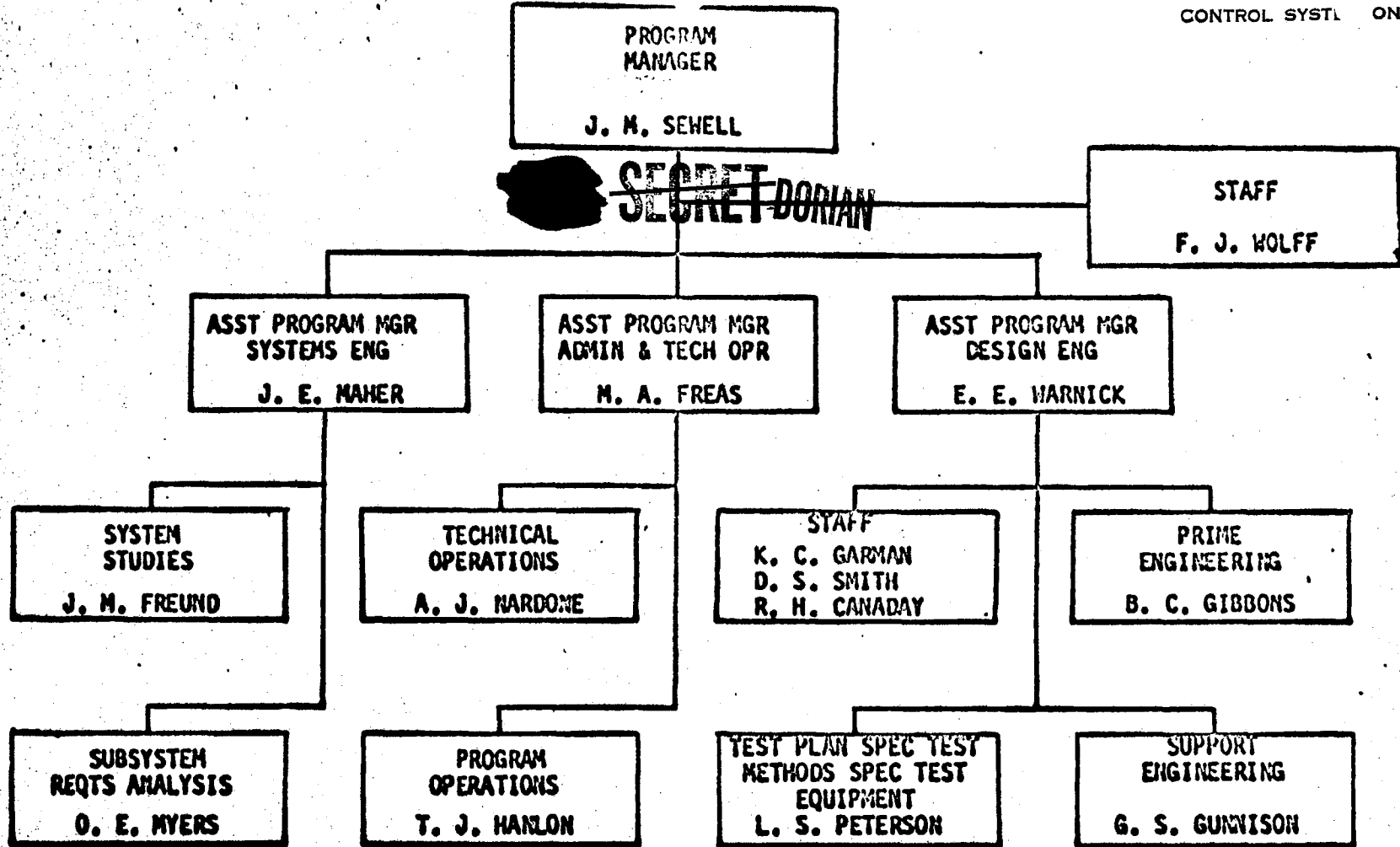
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~~SECRET/DORIAN~~
EASTMAN KODAK CORPORATION

HANDLE VIA BYEMAN
CONTROL SYSTL ONLY



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~~SECRET/DORIAN~~

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CONTROL SYSTEM ONLY

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HANDLE VIA BYEMAN
CONTROL SYS ONLY

PHOTOGRAPHIC SYSTEM SEGMENT CHARACTERISTICS

~~SECRET/DORIAN~~

WEIGHT 5772 POUNDS

POWER REQUIREMENT - PEAK 1262 WATTS
AVERAGE 289 WATTS

IMAGE SMEAR RATE (ALLOWABLE FROM DSS) [REDACTED] (20)

PRIMARY OPTICS

LENS TYPE ROSS-TELEPHOTO

FOCAL LENGTH [REDACTED]

RELATIVE APERTURE [REDACTED]

SEMI-FIELD ± 0.54 DEGREE

LENS APERTURE (MAJOR AXIS) 70 INCHES

VISUAL OPTICS

NO. OF OUTPUT STATIONS 2 (PRIMARY & SECONDARY)

APPARENT FULL FIELD 40 DEGREES

MAGNIFICATION [REDACTED] x (4 STEPS)

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PHOTOGRAPHIC SYSTEM SEGMENT CHARACTERISTICS (CONT'D)

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET DORIAN~~

CAMERA

0	TYPE	FRAME, WITH INTERCHANGEABLE PLATENS FOR MANNED-AUTOMATIC
0	SHUTTER TYPE	FOCAL PLANE
0	TIME TO EXPOSE FRAME	0.2 SECONDS
0	NOMINAL EXPOSURE TIME	1/165 SECONDS
0	EXPOSURE BRACKETING	NOMINAL AND \pm 1 STOP
0	CAMERA FRAME RATE	1 FRAME/SECOND (PRIMARY) 1 FRAME/3 SECOND (SECONDARY)
0	FILM HOLD DOWN	VACUUM
0	IMAGE FORMAT	9.4 INCH CIRCULAR
0	FOCUS TOLERANCE (2 SIGMA)	
0	IMC	
	ON AXIS	MIRROR TRACKING
	OFF AXIS	PLATEN JOG & SHUTTER ORIENTATION

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HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET DORIAN~~

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~~SECRET/DORIAN~~

PHOTOGRAPHIC SYSTEM SEGMENT CHARACTERISTICS (CONT'D)

HANDLE VIA RYEMAN
CONTROL SYSTEM ONLY

~~SECRET/DORIAN~~

FILM LOAD

PRIMARY FILM

WEIGHT (IF TB)	190 LBS
WEIGHT (IF UTB)	121 LBS
NO. OF FRAMES (TB OR UTB)	12,425

SECONDARY FILM

WEIGHT (B&W, ON-BOARD PROCESSING)	20 LBS
WEIGHT (SPECIAL FILM)	30 LBS
NO. OF SECONDARY FRAMES	2575

PROCESSOR

TYPE	BIMAT FILM
CAPACITY (MAX)	50 FRAMES/BATCH
NO. OF BATCHES	43
FILM FOR PROCESSING - SECONDARY	1160 FEET
- PRIMARY	110 FEET

~~SECRET/DORIAN~~

HANDLE VIA RYEMAN
CONTROL SYSTEM ONLY

~~SECRET/DORIAN~~

BYE-89624-69 #5



~~SECRET/DORIAN~~

PHOTO SYSTEMS, EASTMAN KODAK

~~SECRET/DORIAN~~
CONTRACT STATUS

HANDLE VIA ~~EMAN~~
CONTROL SYSTEM ONLY

TYPE CONTRACT - CPFF

NEGOTIATED VALUE DEC 1966

\$239.0

NEGOTIATED VALUE TODAY

\$269.6

PROVISION

\$345.7

\$615.3

GOVT FUNDING:

FY 67

FY 68

FY 69

INCREMENT

58.1

116.8

104.8

CUMULATIVE

58.1

174.9

279.7

PARTICIPATION

SUPPORT

RECRUIT AN

ION OPERA

OPERATOR

THE SUP

~~SECRET/DORIAN~~

~~SECRET/DORIAN~~

HANDLE VIA ~~EMAN~~
CONTROL SYSTEM ONLY

BYE-89624-69

~~SECRET/DORIAN~~
EASTMAN KODAK CORPORATION

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

CONTRACT DELIVERABLES

o SUPPLY PHOTOGRAPHIC HARDWARE AS FOLLOWS:

	<u>FLIGHT</u>	<u>DEVELOPMENT</u>
CAMERA ASSEMBLIES	5	7
OPTICAL ASSEMBLIES	5	6
FILM HANDLING ASSEMBLIES	3	5
ON BOARD FILM PROCESSORS	3	5
FILM VIEWERS	3	5
VISUAL OPTICS	3	5
DATA RETURN CONTAINERS	3 (SETS)	9 (SETS)

- o BUILD, DEVELOP AND OPERATE VARIOUS TESTING CHAMBERS AND FACILITIES AT ROCHESTER.
- o PROVIDE SUPPORT FOR INTEGRATED TESTING AT GENERAL ELECTRIC AND MC DONNELL DOUGLAS - WESTERN DIVISION.
- o PARTICIPATE IN CHECKOUT AND LAUNCH OPERATIONS AT VANDENBERG AFB.
- o SUPPORT THE MISSION OPERATIONS AT THE SCF.

~~SECRET/DORIAN~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET/DORIAN~~

BYE-89624-69 #1

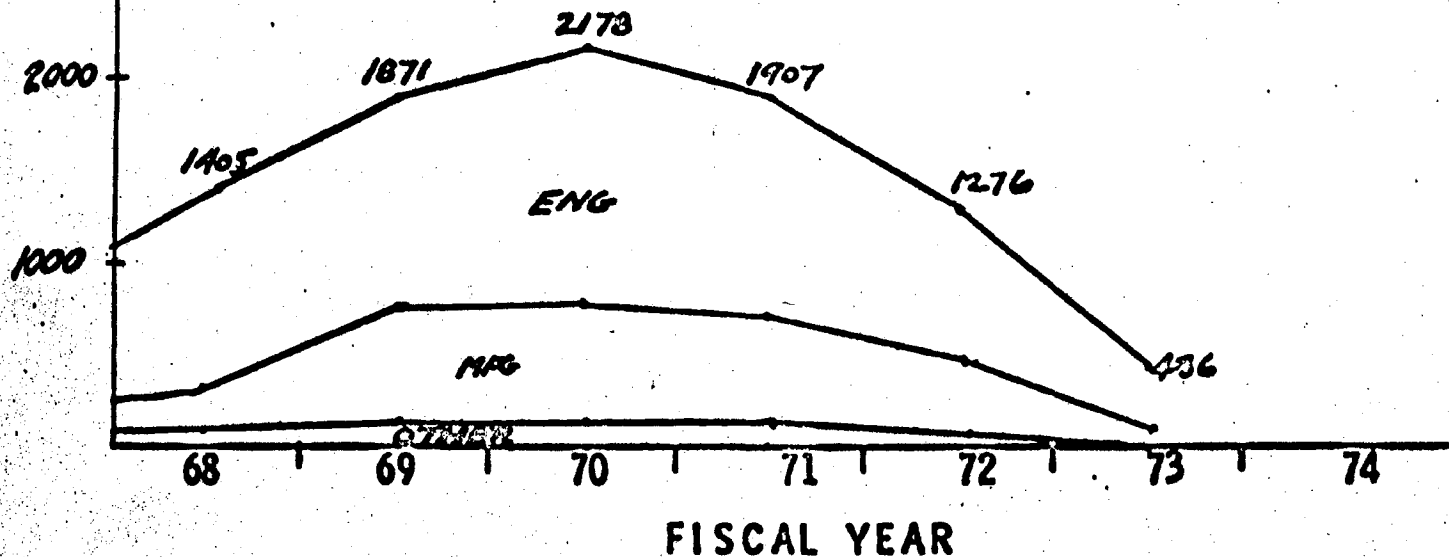
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CONTRACTOR: EK

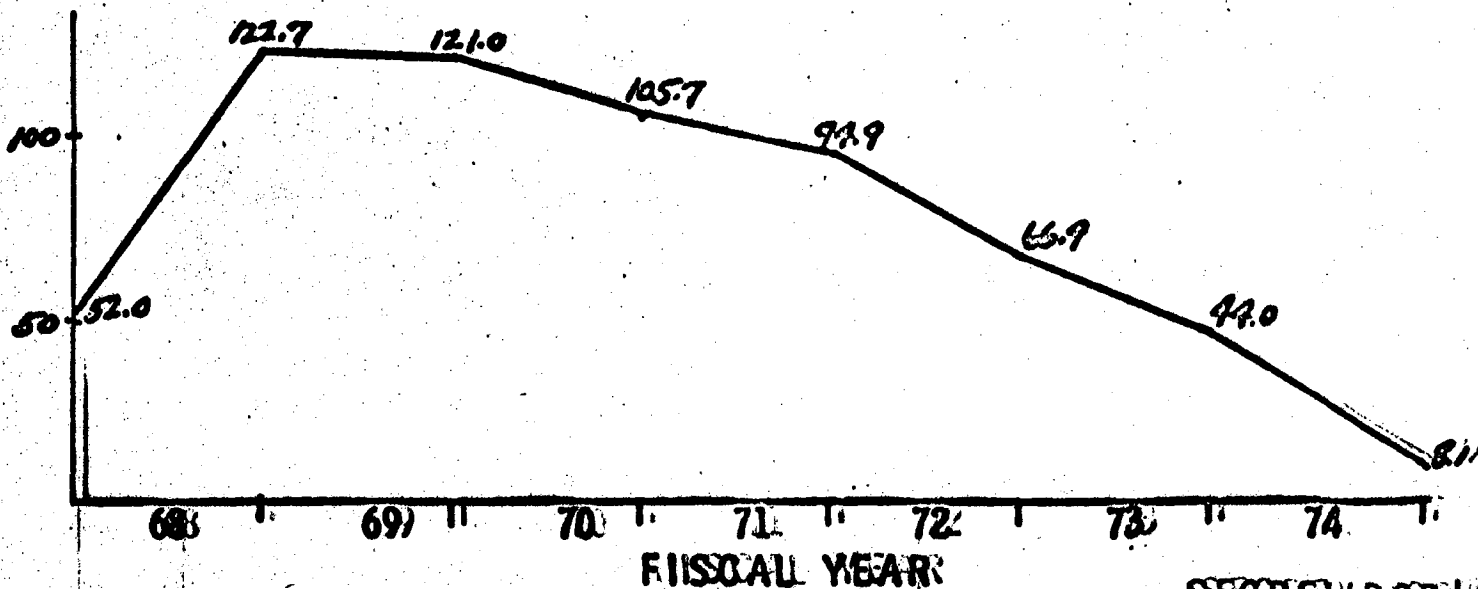
HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET~~

MANPOWER EQUIV. HEAD



DOLLARS PER YEAR
(MILLIONS)



~~SECRET/DORIAN~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET/DORIAN~~

BYE-89624-69

~~SECRET/DORIAN~~
EASTMAN KODAK M'OR SUBCONTRACTORS

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

<u>SYSTEM</u>	<u>CONTRACTOR</u>	<u>COST</u>	<u>% COMPLETE</u>
CAMERA ASSEMBLY	ITEK	\$41.0M	83
LM & MM POWER SWITCHING UNITS, SENSOR TEST SETS, AEROSPACE SUPPORT EQUIPMENT	TRW	25.3	87
ALIGNMENT CONTROL SUBSYSTEM, FOCUS CONTROL SUBSYSTEM	MINN. - HONEYWELL	13.4M	82
ACOUSTIC TEST FACILITY	LTV	11.3M	96
OPTICAL ASSEMBLY STRUCTURES AND END CAPS	MDAC - WD	8.7M	76
CONTROLS AND DISPLAYS	MDAC - WD	2.8M	49
MISSION MODULE ELECTRICAL SIMULATOR	MINN. - HONEYWELL	1.5M	83
DATA CONTROL UNIT AND TEST SET	ELECTRICAL MECHANICAL RESEARCH	1.5M	70
		<hr/> 105.5M	

~~SECRET/DORIAN~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET/DORIAN~~

BYE-89624-69

PHOTOGRAPHIC SYSTEM SEGMENT STATUS

HANDLE VIA ~~EMAN~~
CONTROL SYSTEM ONLY

HARDWARE STATUS

STATIC LOAD STRUCTURE - STATIC LOAD TESTING 90% COMPLETE.
STRUCTURAL DEVELOPMENT MODEL-MODAL SURVEY COMPLETE
BEING PREPARED FOR ACOUSTIC TESTING
THERMAL MODEL - TESTING COMPLETE AT OPTICAL ASSEMBLY LEVEL
AWAITING MM BUILD-UP
ENGINEERING MODEL - OPTICAL ASSEMBLY COMPLETE AND UNDERGOING
TEST LM COMPONENTS BEING PREPARED FOR GROUP TESTING
QUALIFICATION MODEL - COMPONENT FABRICATION IN PROCESS
FORMUAL SAMPLE - COMPLETE, UNDERGOING TEST
COMPONENT QUALIFICATION TESTING STARTED MARCH 69
MIRROR PROCESSING ON SCHEDULE TO SUPPORT PRESENT PROGRAM
SCHEDULE

~~SECRET/DORIAN~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET/DORIAN~~

BYE-89624-69 (2)

PHOTOGRAPHIC SYSTEM SEGMENT STATUS

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET/DORIAN~~

FACILITY STATUS

- o BUILDINGS COMPLETED. SEVEN TEST CHAMBERS COMPLETE AND ACCEPTED. THERMAL/VACUUM CHAMBER UNDERGOING ACCEPTANCE.
- o TWO SENSOR TEST SETS DELIVERED.
- o ACOUSTIC TEST/VIBRATION FACILITY COMPLETE.

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HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET/DORIAN~~

BYE-89624-69 #22



HAMILTON STANDARD
DIVISION OF UNITED AIRCRAFT CORPORATION

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET DORIAN~~

CONTRACT

- o FIRM FIXED PRICE CONTRACT. PRESENT NEGOTIATED VALUE OF \$ 8.7 M.
- PRESENT MANPOWER - 101

CONTRACT DELIVERABLES

- o DESIGN, DEVELOPMENT, QUALIFICATION AND PRODUCTION OF THE PRESSURE SUIT ASSEMBLY (PSA).
 - 24 FLIGHT PRESSURE SUITS
 - 3 SAMPLE PRESSURE SUITS
 - 26 TRAINING PRESSURE SUITS
- o GROUND MAINTENANCE EQUIPMENT & OTHER RELATED GROUND SUPPORT
- o EMERGENCY OXYGEN SYSTEM
- o FIELD SUPPORT AT VANDENBERG AFB

~~SECRET DORIAN~~

BYE-89624-69

~~SECRET~~ DORIAN

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

HAMILTON STANDARD (CONT'D)

STATUS

- o ALL SAMPLE PRESSURE SUITS HAVE BEEN DELIVERED
- o EIGHT TRAINING SUITS DELIVERED
- o DEVELOPMENT PROGRAM IS ON SCHEDULE, DUE TO BE COMPLETED IN FEBRUARY 1970
- o QUALIFICATION PROGRAM SCHEDULED FOR MAY THROUGH OCTOBER 1970

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET~~ DORIAN

BYE-89624-69



~~SECRET~~ DORIAN
WHIRLPOOL CORPORATION

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

CONTRACT

- o FIRM FIXED PRICE CONTRACT, NEGOTIATED VALUE TODAY, \$0.5M.

CONTRACT DELIVERABLES

- o FLIGHT QUALIFIED FOODS FOR THE MOL MISSION
- o DEVELOPMENT OF NEW FOODS, PACKAGING AND PACKING
- o FOODS FOR SIMULATOR AND CREW TESTS

STATUS

- o APOLLO SYSTEM UPDATED AND VALIDATED FOR MOL
- o NEW FOOD ITEMS ADDED
- o ACCEPTABILITY & TIMELINES DETERMINED IN TESTING & SIMULATION
- o SPOON FEEDING CONCEPT DEVELOPED & TESTED UNDER ZERO GRAVITY

~~SECRET~~ DORIAN

CONTRACTS

- o TWO SEPARATE COST PLUS INCENTIVE FEE CONTRACTS WITH REWARDS AND PENALTIES FOR COSTS, SCHEDULE AND PERFORMANCE ON BOTH.
- o THE ASCENT/REENTRY PROJECT NEGOTIATED VALUE - \$4.96M
- o MISSION PLANNING AND EVALUATION PROJECT NEGOTIATED VALUE - \$2.37M.

CONTRACT DELIVERABLES

- o ASCENT AND REENTRY SOFTWARE
- o MISSION PLANNING AND EVALUATION SOFTWARE

STATUS

- o COMPLETION OF DESIGN REQUIREMENTS BASELINE SCHEDULED FOR MID-MAY 1969.

~~SECRET~~ DORIAN

BYE-89624-69
11/26

~~SECRET~~
~~SECRET DORIAN~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

TITAN IIIM DESCRIPTION

MAJOR FEATURES

- 0 - PERFORMANCE
30,923 LBS AT 90° INCLINATION - 80/187.5N. MI.
- 0 - TOTAL THRUST AT LIFTOFF - 3 MILLION POUNDS
- 0 - 7 - SEGMENT SOLIDS
- 0 - CORE - 2 STAGES
NO TRANSTAGE
STAGE 1 ENGINES - 15:1 NOZZLE EXPANSION
RATIO
- 0 - REDUNDANT FLIGHT CONTROL SYSTEM
- 0 - BOOSTER INERTIAL GUIDANCE SYSTEM DURING ASCENT
(BIGS)
GEMINI INERTIAL GUIDANCE SYSTEM BACKUP (GIGS)

N-11

124

- HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

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~~SECRET DORIAN~~

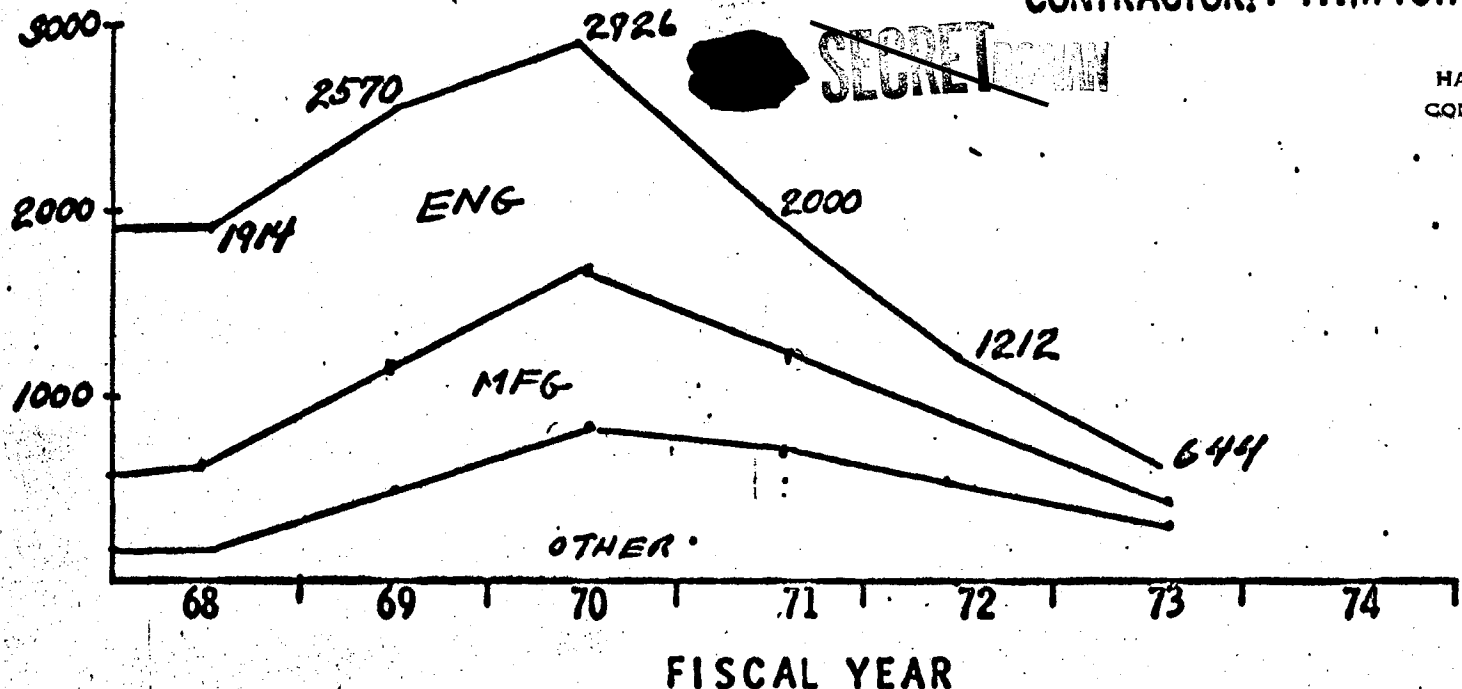
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CONTRACTOR: T-111M TOTAL

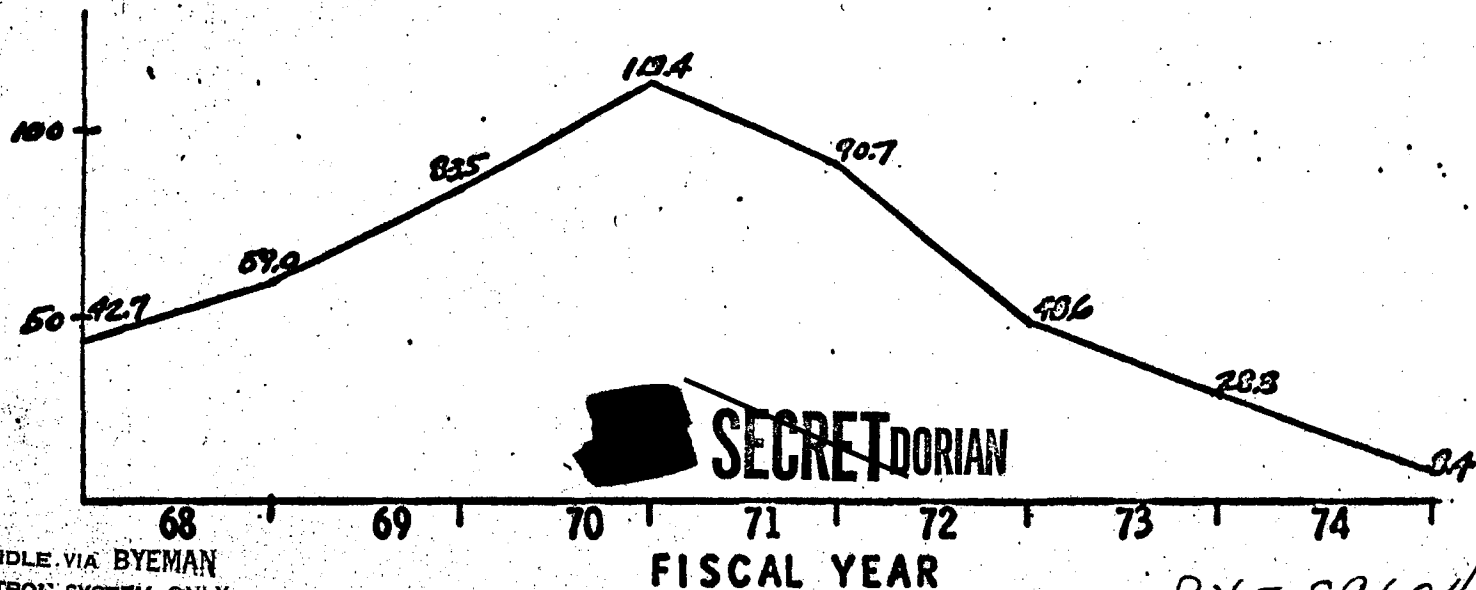
HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

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MANPOWER EQUIV. HEAD



DOLLARS PER YEAR
(MILLIONS)



~~SECRET~~

HANDLE VIA BYEMAN
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BYE-89624-69

MARTIN MARIETTA CORPORATION

~~SECRET~~ DORIAN
PRESIDENT

AEROSPACE GROUP
MARTIN MARIETTA CORP.
J. D. RAUTH

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

DENVER DIVISION
VICE PRESIDENT & GEN MANAGER
W. G. PURDY

MANNED SPACE SYSTEMS
DIRECTOR
C. B. HURT

LAUNCH VEHICLES VICE PRESIDENT
D. S. LEVINE

PLANETARY SYSTEMS VICE PRES.
A. J. KULLAS

ENGINEERING TECHNICAL DIR.
A. L. SCHAEFLE

TITAN IIIM PROGRAM ENGINEER
S. F. ALBRECHT

~~SECRET~~ DORIAN

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

BYE-89624-69



~~SECRET~~ DORIAN
MARTIN MARIETTA
CONTRACT STATUS

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

TYPE CONTRACT - FPIF

NEGOTIATED VALUE DEC 1966	\$136.5	
NEGOTIATED VALUE TODAY	\$165.4	
PROVISION	\$ 43.7	\$209.1

GOVT FUNDING:	<u>FY 67</u>	<u>FY 68</u>	<u>FY 69</u>
INCREMENT	18.5	25.0	33.4
CUMULATIVE	18.5	43.5	76.9

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CONTROL SYSTEM ONLY

~~SECRET~~ DORIAN

BYE-89624-69

~~SECRET DORIAN~~

MARTIN MARIETT CORPORATION
CONTRACT AF04(695)-997

HANDLE VIA BYEM
CONTROL SYSTEM ONLY

HARDWARE ON CONTRACT

- AIRBORNE** -
 - CORE AIRFRAME - STAGE I - 8
 - CORE AIRFRAME - STAGE II - 8
 - FLIGHT CONTROLS SYSTEM - 11
 - MALFUNCTION DETECTION PACKAGE - 11
 - ELECTRICAL SUBSYSTEM - 11
 - PROPELLANT SUBSYSTEM - 11
 - ORDNANCE - 11
 - POGO SUPPRESSORS - 10

- GROUND** -
 - PROPELLANT TRANSFER SYSTEMS
 - GAS PRESSURIZATION SYSTEMS
 - AIR CONDITIONING SYSTEMS
 - COMPUTERIZED AGE FOR VEHICLE VERIFICATION AND LAUNCH
COUNTDOWN - 2
 - GROUND INSTRUMENT SYSTEM
 - ELECTRICAL POWER DISTRIBUTION SYSTEMS

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET DORIAN~~

BYE-89624-69



MAJOR SUBCONTRACTORS
MARTIN MARILTA CORPORATION

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET~~ DORIAN

<u>SUBCONTRACTORS</u>	<u>SYSTEM TITLE</u>	<u>VALUE</u>
KEARFOTT	LATERAL ACCELERATION SENSING SYSTEMS & GYROS	1.9
SCIENTIFIC DATA SYSTEMS	COMPUTERS, GROUND CHECKOUT EQUIPMENT	3.1
MOOG, INC.	GUIDANCE & CONTROL (HYD.)	3.3
TAYLOR FORGE	GASEOUS STORAGE SYSTEM	1.4
CARRIER AIR CONDITIONING COMPANY	AIR CONDITIONING	1.0

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~~SECRET~~ DORIAN

BYE-89624-69

AREA OF RESPONSIBILITY

~~SECRET DORIAN~~

DESIGN, DEVELOP, TEST, FABRICATE BOOSTER CORE AIRFRAME AND SUPPORTING EQUIPMENT.
INTEGRATE AND TEST BOOSTER AT LAUNCH SITE. PROVIDE LAUNCH OPERATIONS AND SUPPORT.

(1) FISCAL 1969 ACCOMPLISHMENTS

COMPLETED CRITICAL DESIGN REVIEW OF:

10 AIRBORNE AND 36 GROUND END ITEMS

COMPLETED QUALIFICATION TESTING OF:

7 AIRBORNE AND 2 GROUND SYSTEMS

BEGAN FABRICATION OF:

VEHICLE #1 AIRFRAME

MALFUNCTION DETECTION PACKAGE

COMPUTERIZED VEHICLE CHECKOUT EQUIPMENT

COMPLETE FABRICATION AND CHECKOUT OF

VEHICLE #1 CORE

ALL GROUND SYSTEMS

(CONT)

MARTIN MARIETTA CORP. (CONT)

~~SECRET DORIAN~~

HANDLE VIA BYEMAI
CONTROL SYSTEM ONLY

(2) FISCAL 1970 SCHEDULE

COMPLETE CRITICAL DESIGN REVIEW OF:

10 GROUND ITEMS

COMPLETE DEVELOPMENT AND TESTING OF

CORE AIRFRAME STRUCTURE

FLIGHT CONTROLS COMPUTER

ORDNANCE ITEMS

POGO SUPPRESSION ACCUMULATORS

COMPUTERIZED VEHICLE CHECKOUT EQUIPMENT

OTHER GROUND EQUIPMENT COMPONENTS

COMPLETE FABRICATION AND CHECKOUT OF

VEHICLE #1 CORE

ALL GROUND SYSTEMS

HANDLE VIA BYEMAI
CONTROL SYSTEM ONLY

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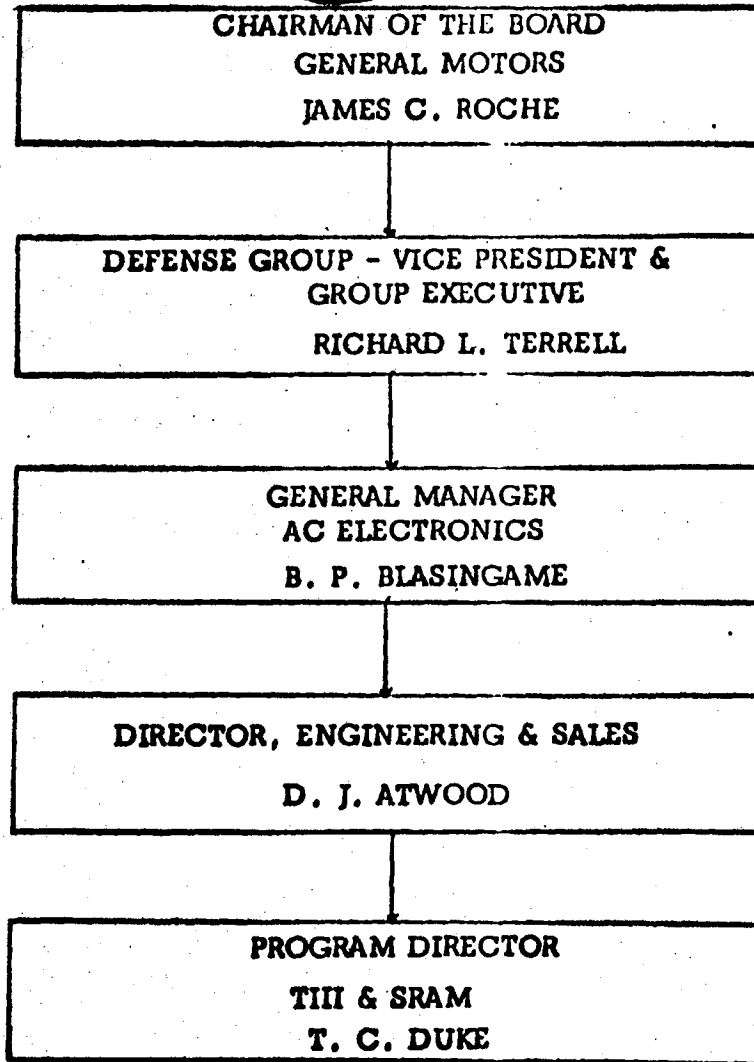
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AC ELECTRONICS DIVISION

~~SECRET~~ DORIAN

HANDLE VIA BYEM,
CONTROL SYSTEM ONLY



HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

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BYE-89624-69



~~SECRET DORIAN~~
A. C. ELECTRONICS DIVISION
CONTRACT STATUS

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

TYPE CONTRACT - FPIF

NEGOTIATED VALUE DEC 1966 \$22.3

NEGOTIATED VALUE TODAY \$22.6

PROVISION \$30.5 \$53.1

GOVT FUNDING:	GUIDANCE IN INFO.		
	FY 67	FY 68	FY 69
INCREMENT	9.1	4.7	2.8
CUMULATIVE	9.1	13.8	16.6

HANDLE VIA BYEMAN
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BYE-89624-69

AC ELECTRONICS

~~SECRET~~ DORIAN

BOOSTER INERTIAL GUIDANCE SYSTEM

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

HARDWARE ON CONTRACT

AIRBORNE VEHICLE EQUIPMENT

MISSILE GUIDANCE COMPUTERS	14
SIGNAL CONDITIONERS	14
INERTIAL MEASUREMENT UNITS	10

AEROSPACE GROUND EQUIPMENT

TELEMETRIC DATA MONITORING GROUP	2
MISSILE GUIDANCE ALIGNMENT AND CHECKOUT GROUP	5
GUIDANCE MONITOR SETS	5
MISSILE GUIDANCE SYSTEM TEST SET	3

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BYE-89624-69 *rat*



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MAJOR SUBCONTRACTOR
A C ELECTRONICS DIVISION

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

SUBCONTRACTOR

SYSTEM TITLE

VALUE

UNIVAC	24 COMPUTERS	30.0
(INCLUDES 10 T-11C COMPUTERS)		

AEROSPACE VEHICLE CONTROL SYSTEM	INITIAL	
WESTERN TEST RANGE SITE ACTIVITIES - INITIAL		
AIRBORNE GUIDANCE SOFTWARE PRELIMINARY	CRITICAL TEST REVIEWS	

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CONTROL SYSTEM ONLY

~~SECRET~~ DORIAN

BYE-89624-69

~~SECRET~~
AC ELECTRIC ICS DORIAN

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

RESPONSIBLE FOR THE DESIGN, MODIFICATION, FABRICATION ASSEMBLY, TEST, DELIVERY
AND LAUNCH SUPPORT OF THE TITAN IIIM INERTIAL GUIDANCE SYSTEM (IGS).

FY-69

FIRST ARTICLE CONFIGURATION INSPECTION - MISSILE GUIDANCE COMPUTER SERIAL NUMBER 3.

AEROSPACE VEHICLE EQUIPMENT DELIVERY - MISSILE GUIDANCE COMPUTERS 3 THRU 7
SIGNAL CONDITIONERS 4 THRU 6

ALL AEROSPACE GROUND EQUIPMENT FABRICATION - COMPLETE.

FINAL DESIGN REVIEW OF BOOSTER INERTIAL GUIDANCE SYSTEM GUIDANCE LABORATORY COMPLETE

MISSILE GUIDANCE COMPUTER NUMBER 4 FLOWN ON TIIIC VEHICLE 17.

MISSILE GUIDANCE COMPUTER AND SIGNAL CONDITIONER QUALIFICATION TEST PROGRAM -
COMPLETE

FY-70

AEROSPACE VEHICLE EQUIPMENT - TIIIM SIGNAL CONDITIONERS - 2 DELIVERED.
INERTIAL MEASUREMENT UNITS - 7 NEW BUILD IN PRODUCTION -
3 REFURBISHED

WESTERN TEST RANGE SITE ACTIVITIES - INSTALLATION AND CHECKOUT OF GUIDANCE LAB AT
VANDENBERG AFB.

AIRBORNE GUIDANCE SOFTWARE PRELIMINARY AND CRITICAL DESIGN REVIEWS.

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET~~ DORIAN

BYE-89624-69

~~SECRET~~
AEROJET GENERAL CORPORATION

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

AEROJET GENERAL CORPORATION
(EL MONTE, CALIF)
PRESIDENT
R. I. MCKENZIE

AEROJET GENERAL CORPORATION
(SACRAMENTO FACILITY)
VICE PRESIDENT & GEN MANAGER
R. B. YOUNG

SOLID ROCKET OPERATIONS
R. F. COTTRELL

LIQUID ROCKET OPERATIONS
R. C. STIFF, JR.

NUCLEAR ROCKET OPERATIONS
W. O. WETMORE

TITAN SYSTEMS DEVELOPMENT
L. D. WILSON

TITAN IIIM PROGRAM
D. E. ROBISON

~~SECRET DORIAN~~

BYE-89624-69



~~SECRET~~ DORIAN
AEROJET GENERAL

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

CONTRACT STATUS

TYPE CONTRACT - FPIF

NEGOTIATED VALUE DEC 1966	\$26.4	
NEGOTIATED VALUE TODAY	\$27.7	
PROVISION	\$27.9	\$55.6

GOVT FUNDING:	<u>FY 67</u>	<u>FY 68</u>	<u>FY 69</u>
INCREMENT	6.7	10.2	8.0
CUMULATIVE	6.7	16.9	24.9

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET~~ DORIAN

BYE-89624-69

AEROJET CORPORATION
~~SECRET DORIAN~~
HARDWARE ON CONTRACT

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

AIRBORNE VEHICLE EQUIPMENT

STAGE I

ENGINE ASSEMBLIES	7
ABLATIVE SKIRTS	14
START CARTRIDGES	14
INSTRUMENTATION KITS	7

STAGE II

ENGINE ASSEMBLIES	7
ABLATIVE SKIRTS	7
START CARTRIDGES	7
INSTRUMENTATION KITS	7

AEROSPACE GROUND EQUIPMENT

ROCKET ENGINE PRESSURE TEST SET	1
GAS GENERATOR OXIDIZER TEST SET	1
INSTRUMENTATION TEST SET	1
STAGE I CLOSURE & PROTECTIVE KIT	7
STAGE II CLOSURE & PROTECTIVE KIT	7
ROCKET ENGINE CRADLES	3

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET DORIAN~~

BYE-89624-69

AEROJET GENERAL CORPORATION

~~SECRET DORIAN~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

PROVIDE STAGE I AND STAGE II LIQUID ROCKET ENGINES FOR TITAN II IM VEHICLES.

FY-69

COMPLETE STAGE I DEMONSTRATION PROGRAM.

RELEASE STAGE I ENGINE TO PRODUCTION.

VALIDATE MARTIN MARIETTA CORPORATION POGO HARDWARE.

DEVELOP STAGE I EXIT CLOSURE.

DEVELOP IMPROVED STAGE II THRUST CHAMBER ASSEMBLY.

FY-70

STAGE II DEVELOPMENT TESTS.

STAGE I POGO BATTLESHIP TESTS.

OPERATIONS

STAGE II DEMONSTRATION TESTS.

MANUFACTURE AND DELIVER FIRST TWO ENGINE SYSTEMS (STAGE I & STAGE II).

TITAN PRO MANAGER

R

~~SECRET DORIAN~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

BYE-89624-69

UNITED TECHNOLOGY CENTER
DIVISION OF UNITED AIRCRAFT

~~SECRET~~ DORIAN

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

UNITED AIRCRAFT CORPORATION

PRESIDENT

A. SMITH

UNITED TECHNOLOGY CENTER

DIVISION PRESIDENT

B. R. ADELMAN

DIVISION VICE PRESIDENT

TITAN III PROGRAMS

E. ROBERTS

AFETR
OPERATIONS

AFWTR
OPERATIONS
E. A. SWANKE

TITAN III PROGRAMS
T-IIIIM PROGRAM MANAGER

R. W. PURDY

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET~~ DORIAN

BYE-89624-69



~~SECRET~~ DORIAN
UNITED TECHNOLOGY

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

CONTRACT STATUS

TYPE CONTRACT - FPIF

NEGOTIATED VALUE DEC 1966 \$ 5.9

NEGOTIATED VALUE TODAY \$119.8

PROVISION \$ 7.4 \$127.2

GOVT FUNDING	FY 67	FY 68	FY 69
INCREMENT	5.9	11.3	24.2
CUMULATIVE	5.9	17.2	41.4

HANDLE VIA BYEMAN
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~~SECRET~~ DORIAN

BYE-89624-69



MAJOR SUBCONTRACTORS
UNITED TECHNOLOGY CENTER

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY.

~~SECRET~~ DORIAN

SUBCONTRACTORS

SYSTEM TITLE

VALUE

RUHR

CASES, CLOSURES, NOZZLES,
INSULATION

15.1

MARQUARDT

THRUST VECTOR

.9

STANDARD TOOL & DIE

NOZZLE SHELL, TOOLING

.6

HAMILTON STANDARD

ELECTRO-MECHANICAL VALVE
ELECTRONICS

.6

MARK PRODUCTS

CABLES

.5

LOCKHEED, BURBANK

INJECTANT MANIFOLD

.4

GULTON

INADVERTENT SEPARATION DETECTION
SYSTEM

.5

~~SECRET~~ DORIAN

BYE-89624-69

UNITED TECHNOLOGY CENTER

~~SECRET DORIAN~~

HANDLE VIA BYEMA.
CONTROL SYSTEM ONLY

PROVIDE THE STAGE "O" SEVEN SEGMENT SOLID ROCKET MOTORS FOR THE TIIM LAUNCH VEHICLES.

FY-69

COMPLETE SUBSCALE TESTING AT ARNOLD ENGINEERING DEVELOPMENT CENTER

COMPLETE ULLAGE BLOWDOWN SYSTEM DEVELOPMENT TESTING.

COMPLETE ELECTRO-MECHANICAL VALVE DESIGN.

COMPLETE ALL AEROSPACE VEHICLE EQUIPMENT CRITICAL DESIGN REVIEWS.

FIRST FULL SCALE DEVELOPMENT FIRING.

FY-70

TWO FULL SCALE DEVELOPMENT FIRINGS.

THREE PRELIMINARY FLIGHT RATING TEST FIRINGS.

COMPLETE SYSTEMS DEVELOPMENT AND QUALIFICATION TESTING.

COMPLETE AEROSPACE GROUND EQUIPMENT CRITICAL DESIGN REVIEWS.

MANUFACTURE AND DELIVER FIRST SET OF SOLID ROCKET MOTORS.

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET DORIAN~~

BYE-89624-69

15

NRO APPROVED FOR
RELEASE 1 JULY 2001

MUL SUMMARY SCHEDULE

CALENDAR YEAR	1968				1969				1970				1971				1972				1973				1974			
QUARTER	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

~~SECRET~~ DORIAN

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

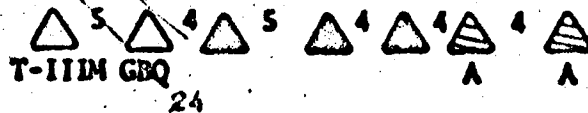
ORIGINAL NEG N/L
DEC 66



12 MOS EXTENSION
MAY 67



20 MOS EXTENSION
DEC 67



CURRENT N/L
JUL 68



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~~SECRET~~ DORIAN

BYE-89624-69

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~SECRET DORIAN~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

IMPLEMENTATION OF BYEMAN/DORIAN (COVERT) SECURITY

~~SECRET DORIAN~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

D/SAFSP

DEP/DIR/MOL

- o Processing Background Investigations
- o Dorian Clearance Reviews
- o Dorian TWX Facilities
- o Assistance as needed in planning, etc.

- o Black Mgmt (SPDRXSAFSLs)
 - . Black Contracts
 - . Black Engineering Mgmt (Specs, ECPs, etc.)
- o Military Ops
 - . VAFB Training Launch
 - . STC Missions Ops
 - . Recovery (Product)
- o Industrial Ops
 - . Black Development
 - . Hdwr Transportation

- o Functional Security
 - .. Covert Plans & Procedures
 - . Covert Personnel Control
 - . Briefings
 - . Documents
 - . Guidance to Contractors
 - . Inspection
 - . Enforcement

DORIAN CLEARED PERSONNEL IN SAMSO, MOL, SP, STC, VAFB 608

DORIAN CLEARED PERSONNEL IN CONTRACTOR FACILITIES 11,470

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**BREAKDOWN OF INDUSTRIALS
BRIEFED DORIAN**

<u>COMPANY</u>	<u>NO OF PEOPLE</u>
EK	2,590
GE	3,681
DAC	3,058
Aerospace	519
Others-such as ITEK, PE, Minne/Honey, TRW, LMSC, etc.	1,622
TOTAL	11,470

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PRESENT STATUS

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	<u>EXPEND</u>	<u>NCC</u>	<u>TOTAL</u>	<u>AVAILABLE</u>	<u>EXPEND</u>	<u>BALANCE OF NCC</u>
END OF FY 68 POSITION ACTUALS	678.2	71.5	749.7	722.6	COVERED	-27.1
END OF FY 69 POSITION CONTR FCST AS OF 1 MAR 69	1233.8	82.1	1315.9	1237.6	COVERED	-78.3

TODAY

● CONTRACTORS ARE IN AGREEMENT WITH FY 69 YEAR END FINANCIAL POSITION - UNDERSTANDING CONFIRMED.

● **SECT. LAIRD'S RECOMMENDATION TO SENATE ARMED FORCES COMMITTEE, 19 MAR:**
 AEROSPACE \$556 FOR FY 70 - 2 DEVELOPMENT PLUS 4 MANNED FLIGHTS
 OTHERS

● **IN HOUSE FY 70 SCHEDULE ASSESSMENT EXERCISE BEING WORKED**
 TOTAL RECOGNIZE FY 70 FUNDING DEFICIENCY

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END OF FY 69 POSITION

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CONTRACTOR FORECAST, AS OF 1 MAR

	EXPEND	NCC	TOTAL	AVAILABLE	EXPEND	TOTAL BALANCE
MDAC-WD	412.4	21.7	434.1	408.5	- 3.9	- 25.6
MDAC-ED	91.5	17.5	109.0	93.0	+ 6.5	- 11.0
GE	214.9	14.2	229.1	214.1	- .8	- 15.0
EK	279.7	16.0	295.7	279.7	0	- 16.0
MARTIN	77.6	3.0	80.6	76.9	- .7	- 3.7
ACED	17.2	.3	17.5	16.6	- .6	- .9
AEROJET	25.0	.4	25.4	24.9	- .1	- .5
UTC	41.4	8.0	49.4	41.4	0	- 8.0
T-111M SPT	12.4	0	12.4	13.0	+ .6	+ .6
AEROSPACE	28.4	0	28.4	28.4	0	0
OTHERS	33.3	1.0	34.3	36.1	+2.8	+ 1.8
TOTAL	1233.8	82.1	1315.9	1237.6	+3.8 COVERED	- 78.3

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DIRECTION TO CONTRACTORS (TWX, 2 APR)

- 0 INFORMED OF FY 70 PLANNING NOA OF \$556
- 0 INITIATE ACTION IMMEDIATELY TO HOLD COSTS DURING FOURTH QUARTER OF THIS FISCAL YEAR
- 0 EFFECTIVE IMMEDIATELY,
 1. SCHEDULE DELAY OF AT LEAST 3 MONTHS ANTICIPATED
 2. MAINTAIN THE DEVELOPMENT PROGRAM ON SCHEDULE WITH DEFERMENT AS NECESSARY OF QUAL. & FLIGHT HARDWARE
 3. ACTIVITIES SHOULD NOT BE INITIATED DURING BALANCE OF FY 69 WHICH CANNOT BE CONTINUED DURING FY 70 WITHIN THE SAME FUNDING LEVEL AS FY 69
 4. HOLD PRESENT SCHEDULE OF EXCHANGE HARDWARE SPECIFIED FOR DELIVERY IN LAST QUARTER OF FY 69
 5. CRITICALLY EXAMINE EXCHANGE HARDWARE DELIVERY BEYOND FY 69 - SO APPROVAL REQUIRED ON ANY REVISED DATES
- 0 SIX FLIGHT PROGRAM (2 DEV, 4 MANNED)
- 0 NO QUANTITATIVE CHANGES TO SUBCONTRACTS
- 0 DETAILED REVISED SCHEDULE IN APPROXIMATELY 6 - 8 WEEKS

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HARDWARE ON CONTRACT

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AEROSPACE VEHICLE EQUIPMENT

FLIGHT MOTORS	14
PRELIMINARY FLIGHT RATING TEST MOTORS	5
DEVELOPMENT MOTORS	3

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THESE MOTORS INCLUDE:

LOADED FORWARD CLOSURE	22
LOADED AFT CLOSURE	22
SEGMENT CASE	154
NOZZLE	22
NOZZLE EXTENSION CONE	22
AFT SUPPORT STRUCTURE	15
THRUST VECTOR CONTROL SYSTEM	22
ELECTRICAL SYSTEM	22
ORDNANCE SYSTEM	22

AEROSPACE GROUND EQUIPMENT

INJECTANT TANK CARGO SET	1
NOZZLE EXTENSION CONE LIFTING SLING	1
AFT SECTION HANDLING SET	1
PNEUMATIC TEST SET	1
ELECTRICAL TEST EQUIPMENT	1

150

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CONTRACTORS' FORECASTED REQUIREMENTS
(A/O LATEST CFR'S)

	<u>CUM</u> <u>68</u>	<u>69</u>	<u>70</u>	<u>71</u>	<u>72</u>	<u>73</u>	<u>74</u>	<u>TOTAL</u>
LAB VEHICLE	256.8	177.4	239.6	251.7	199.5	140.3	50.6	1,315.9
MISSION MODULE	117.1	112.0	172.9	80.9	44.4	10.8	.8	538.9
PHOTO SYSTEMS	174.7	121.0	105.7	94.9	66.9	44.0	8.1	615.3
GLIMINI B	66.0	43.0	83.7	67.0	42.1	5.4	0	307.2
T-111 TOTAL	101.7	83.5	113.4	90.7	48.6	28.3	8.4	474.6
MIC	45.6	35.0	47.4	41.3	25.1	10.8	3.9	209.1
ACED	13.9	3.6	9.9	11.9	6.9	6.0	.9	53.1
AGC	16.1	9.3	13.5	7.4	4.3	3.6	1.4	55.6
UTC	18.1	31.2	36.3	24.7	9.3	5.4	2.2	127.2
T-111 MISC	8.0	4.4	6.3	5.4	3.0	2.5	0	29.6
OTHER	<u>33.4</u>	<u>29.3</u>	<u>61.4</u>	<u>63.0</u>	<u>49.4</u>	<u>30.2</u>	<u>5.7</u>	<u>272.4</u>
TOTAL	749.7	566.2	776.7	648.2	450.9	259.0	73.6	3,524.3
PLANNED DOLLARS:	722.6	515.0	525.0	550.0	450.0			

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PRELIMINARY ALLOCATION OF \$525 FOR FY 70

MDAC - WESTERN DIV	\$ 155.7
MDAC - EASTERN DIV	56.5
GENERAL ELECTRIC	108.9
EASTMAN KODAK	73.4
MARTIN MARIETTA	29.4
A. C. ELECTRONICS DIV	6.3
AEROJET GENERAL	7.8
UNITED TECHNOLOGY	27.7
T-111M SUPPORT	4.6
OTHER	54.7
	<u>\$ 525.0</u>

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