

HIS-13-3-a
-mjn

5

~~SECRET~~

~~SECRET~~

LMSD-6134

~~PRO A-1~~

~~(1960)~~



WS 117L

SENTRY SYLLABUS

LOCKHEED AIRCRAFT CORPORATION
MISSILE SYSTEMS DIVISION
SUNNYVALE, CALIFORNIA

~~SECRET~~

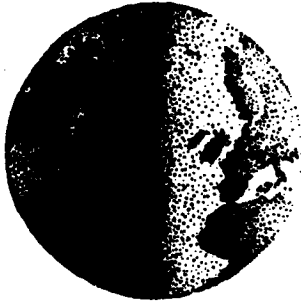
~~SECRET~~

LMSD-6134

12 AUGUST 1958

COPY NO. 60

85 SHEETS



WS 117L
SENTRY SYLLABUS

LOCKHEED AIRCRAFT CORPORATION
MISSILE SYSTEMS DIVISION
SUNNYVALE, CALIFORNIA

~~SECRET~~

808 12 001

FOREWORD

The chart and photograph reproductions which comprise this report are pertinent to a presentation made to Mr. Roy W. Johnson, Director, Advanced Research Projects Agency, and members of his staff. Essentially, the presentation was given in two parts:

Part I a detailed technical briefing on the Sentry Weapon System 117L as currently programmed or proposed, and

Part II . . . a discussion of advanced component requirements and possible system applications to other programs.

Information pertinent to the system is presented herein. The presentation was given at the Pentagon on 14 and 15 August 1958.

117L/ARPA BRIEFING
14-15 August 1958
Pentagon, Room 3E144

Thursday 14 August

0900	Introduction - Mission Concept	Lt. Col. Lee Battle
0910	Sentry System Program	J. H. Carter
0925	System Development Plan	F. W. O'Green
0940	Present Status	
	Support Systems	R. D. King
	Facilities and GSE	
	Recovery	
	Operations Control Plan	
1020	Break	
1040	Subsystems	
	Airframe	} F. W. O'Green
	Propulsion	
	Guidance and Control	
	Power	
		C. W. Burrell
1200	Lunch	
1300	Visual	} F. W. O'Green
	Biomedical	
	Ferret	} P. D. Doersam
	Infrared	
	Communications	
	Data Control	
		J. J. Knopow
1430	Break	J. G. Schaub
1450	Film: Progress Report No. 7	
1510	Questions	
1600	Brochure	
1615	Conclude	

117L/ARPA BRIEFING
14-15 August 1958
Pentagon, Room 3E144

Friday 15 August

0900	Advanced Components	
	Power	
0930	TV Sensing	C. W. Burrell
1000	Ferret	Peter C. Goldmark
1015	Infrared Detection & Tracking	P. D. Doersam
		J. J. Knopow
1035	Break	
1055	Data Storage	
1125	Propulsion	J. P. Nash
		J. E. Laurance
1200	Lunch	
1300	Other Applications of the Sentry System	
	General Satellite Tracking	} J. Jenkins
	Communications	
1330	Weather	
1345	Scientific Measurements	E. V. Stearns
		F. S. Johnson
1400	Break	
1420	MIS	
1440	AICBM	J. W. Brandon
1500	Summary	S. H. Browne
1520	Conclude	J. H. Carter

CONTENTS

CHART REPRODUCTIONS:

Chart No.

P142(3)	Advanced Reconnaissance Vehicle
P14(4)	Advanced Reconnaissance System Evolution
P799	Sentry Operational Objectives
P250(3)	WS117L Program Objectives
P257(5)	WS117L Development Program
P102(5)	Sentry Facilities
P800	Sentry Payload - Defined
P238(3)	The Sentry Subsystems
P283(5)	WS117L R&D Organization
P566	WS117L Airframe and Propulsion
P567	WS117L Payload
P568	WS117L Ground Support Equipment
P565	Lockheed Facilities for WS117L
P235(1)	WS117L Trajectory to Orbit
P229(1)	WS117L Orbital Test Vehicle Design Parameters - Booster Stage
P228(1)	WS117L Orbital Test Vehicle Design Parameters - Sustainer Stage
P792	Altitude vs. Payload - Sentry/Thor
P791	Altitude vs. Payload - Sentry/Atlas
P171(3)	WS117L Ground Traces of 83° Orbits

- P232(2) WS117L Vehicle System
- P468(1) WS117L Structural Breakdown
- P422(2) WS117L Propulsion System
- P315(2) WS117L Auxiliary Power Supply
- P162 Advanced Auxiliary Power Systems
- P335(1) WS117L System APU Life Limitations
- P763 Guidance and Control System
- Typical Sentry Ascent (Thor - Prog. IIA)
- P166(4) Guidance and Control System
- Typical Sentry Ascent (Atlas - Prog. I)
- P707(1) Sentry Ascent Boost Phase
- Guidance and Control Functioning Components
- P708(1) Sentry Coast Phase
- Guidance and Control Functioning Components
- P164(1) Steady-State Orbital Control System
- P262(3) WS117L Satellite Vehicle Weight Analysis
- P400 WS117L Visual Reconnaissance System
- P175(4) WS117L Ferret Subsystem - Project Structure
- P182(3) Airborne Reception
- P204(3) ICBM Attack Alarm
- P609(1) ICBM Attack Alarm System
- Satellite Power Requirements vs. Supply
- P620(1) ICBM Attack Alarm System
- Vehicle Payload
- P617(2) ICBM Attack Alarm System
- Operational Ground Base Requirements
- P509(2) Station Locations - Thor
- P513(3) Station Locations - Atlas

- P163(2) G-S Communications Intercept Station
- P540 Orbiting Object - Traffic Intelligence
- P654 WS117L Data Control - Reconnaissance Mission
- P653 WS117L Data Control - Reconnaissance Mission Assignment
- P652(1) WS117L Data Control - Data Indexing
- P465 WS117L/SM-75 Program Objectives
- P591(4) Flight Missions and Objectives
- P639 WS117L Recovery Orbits
- P621(2) WS117L Recovery Operations
- P577 WS117L Capsule Recovery
- P544(1) WS117L Biomedical Vehicle
- P475 WS117L Aeromedical Recovery Configurations
- P503 WS117L Useful Payload vs. Altitude
- P546 Satellite Weather Missions
- P376(1) WS117L Weather Surveillance
- P545 Types of Weather Data
- P374 Possible Scientific Experiments

PHOTOGRAPH REPRODUCTIONS:

Photo No.

- P3017 Flight Test Vehicles Nos. 1 and 2 in Mod & Checkout
- LMSD Palo Alto
- P3018 Flight Test Vehicles Nos. 1 and 2 in Mod & Checkout
- LMSD Palo Alto

~~SECRET~~

LMSD-6134

P3022 Flight Test Vehicle No. 2 in Mod & Checkout
- LMSD Palo Alto

P3021 Flight Test Vehicle No. 2 in Mod & Checkout
- LMSD Palo Alto

P3039 Model XLR Engines - JP4 and UDMH

P3043 UDMH Propellant Tank

P2862 Horizon Scanner

P2864 Horizon Scanner

P3046 Systems Checkout Complex (excluding LACE Unit)

P3047 LACE Unit (Systems Checkout Complex)

LOCKHEED AIRCRAFT CORPORATION

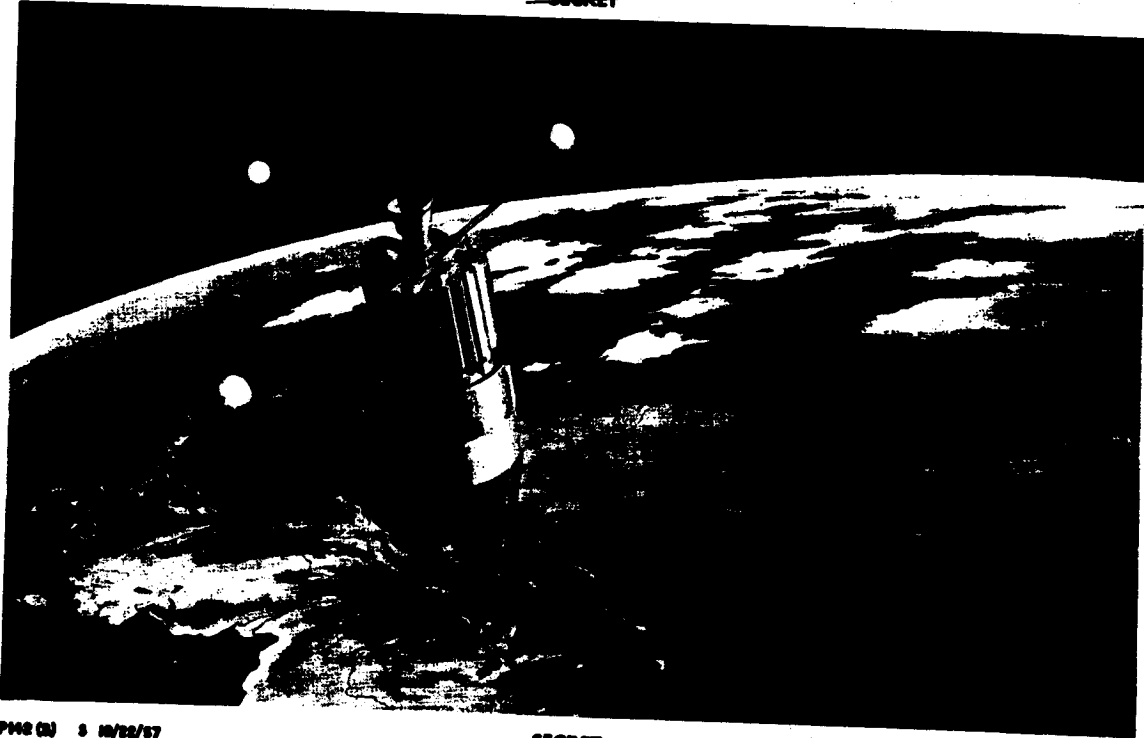
~~SECRET~~

MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

ADVANCED RECONNAISSANCE

~~SECRET~~



P140 (S) 1 10/22/57
WD-55-28048

~~SECRET~~

LOCKHEED AIRCRAFT CORPORATION
MISSILE SYSTEMS DIVISION

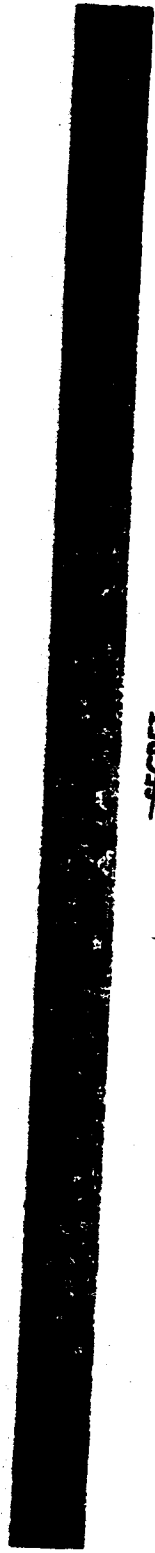
~~SECRET~~

LOCKHEED AIRCRAFT CORPORATION

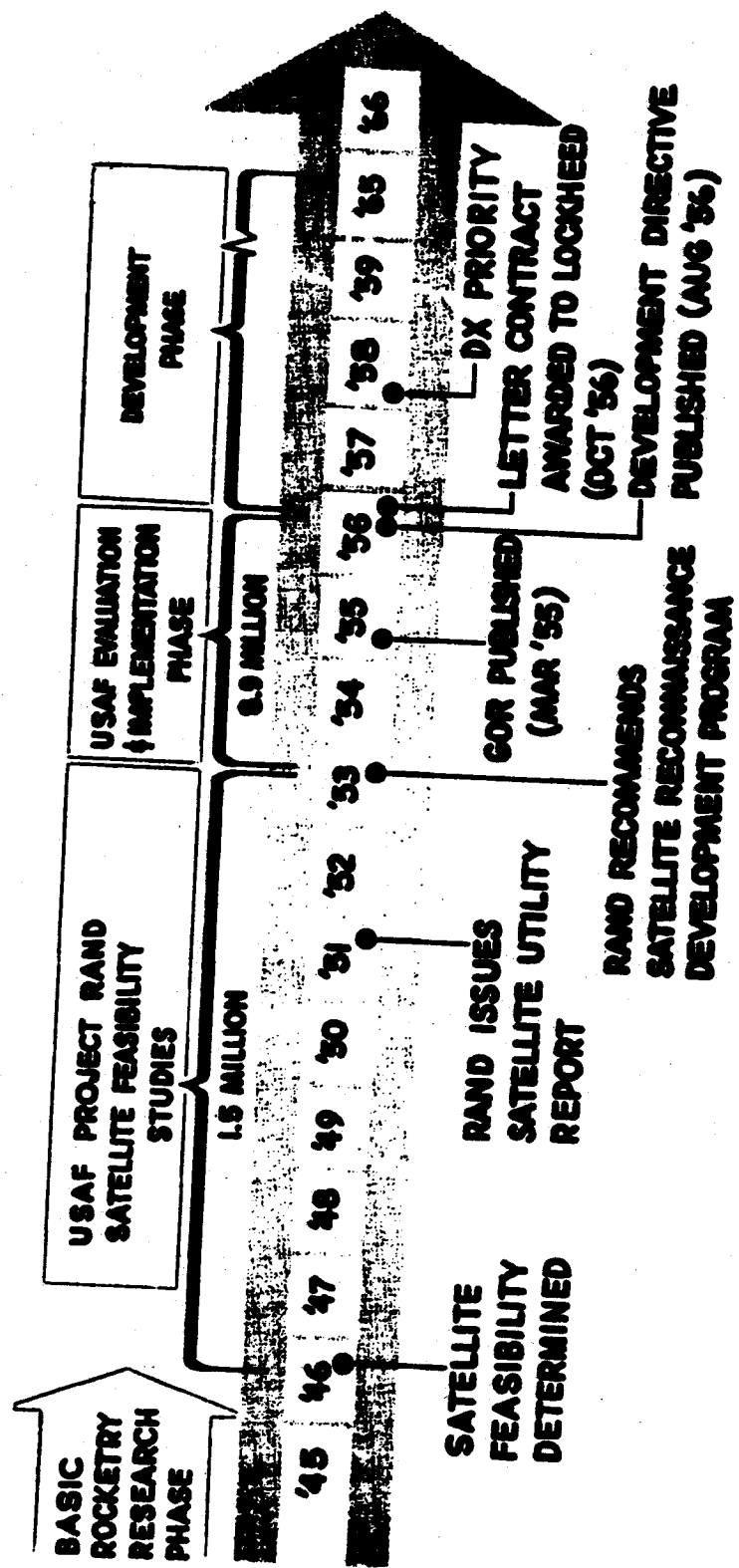
~~SECRET~~

MISSILE SYSTEMS DIVISION

The document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794, its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.



~~SECRET~~



LOCKHEED AIRCRAFT CORPORATION
MISSILE SYSTEMS DIVISION

~~SECRET~~

PA 41 S 5/736
WD-58-01866

~~SECRET~~

SENTRY OPERATIONAL OBJECTIVES

VISUAL RECONNAISSANCE

- MAPPING OF USSR AND SATELLITES
- * STRATEGIC WARNING INDICATIONS
 - WEAPONS AND BASES IN BEING
 - MILITARY LOGISTICS
 - INDUSTRIAL WAR CAPABILITIES

* OPEN SKY NATIONAL OBJECTIVES

- NUCLEAR DETONATION DETECTION
- WEATHER OBSERVATION

ELECTRONIC RECONNAISSANCE

- * DETECT & OBTAIN INFORMATION ON ELECTRONIC EMITTERS IN AREAS OF USSR & SATELLITES NOT NOW AVAILABLE

INFRARED RECONNAISSANCE

- * ICBM ATTACK WARNING COMMUNICATIONS
- * SATELLITE LINKS FOR SECURE & RAPID GLOBAL COMMUNICATIONS

P 799 6/8/58

~~SECRET~~

WD-58-0583



~~SECRET~~
MAJOR DEVELOPMENT OBJECTIVES

PROGRAM TITLE

- I. ENGINEERING PROTOTYPE DEVELOPMENT & TESTS
- II. PIONEER VISUAL RECONNAISSANCE
 - PLACE STABILIZED SATELLITES ON ORBIT AT 300 S.M. ALTITUDE TEST RECONNAISSANCE PAYLOAD AND GENERAL SYSTEM OPERATIONS
 - PROVIDE SMALL SCALE PHOTOGRAPHIC COVERAGE OF USSR SATELLITE BORING FILM PROCESSING; VIDEO TRANSMISSION OF PHOTO IMAGES 100 FT. RANGE PHOTO STRIP PER PASS AVERAGE 100 FT. RESOLUTION 1 MILE TARGET LOCATION ACCURACY
 - PLACE SATELLITES ON POLAR ORBIT. INCORPORATE RECOVERABLE CAPSULE IN SELECTED SATELLITES FOR BIOMEDICAL RESEARCH PURPOSES.
 - INTERCEPT USSR ELECTROMAGNETIC EMISSIONS IN THE 20-10,000 MGS SPECTRUM RECEIVE AND MEASURE BASIC SIGNAL PARAMETERS; 50-100 MILE LOCATION ACCURACY SORT KNOWN SIGNALS FROM UNKNOWN SIGNALS PROVIDE GUIDANCE FOR DESIGN OF ADVANCED FERRET EQUIPMENTS
 - PROVIDE HIGH RESOLUTION PHOTOGRAPHS OF SPECIFIC GROUND TARGETS 17 MILE SWATH WIDTH 20 FT. RESOLUTION 1/2 MILE TARGET LOCATION ACCURACY
 - MORE ACCURATELY DETERMINE PARAMETERS OF ELECTRONIC SIGNALS FREQUENCY RANGE: 30-6,000 MC
- IIA. EARLY ACHIEVEMENT OF ORBITAL CAPABILITY TEST CAPSULE RECOVERY SYSTEM
- III. PIONEER FERRET RECONNAISSANCE
- IV. ADVANCED VISUAL RECONNAISSANCE
- V. ADVANCED FERRET RECONNAISSANCE
- VI. VISUAL SURVEILLANCE
 - SIMILAR TO PROGRAM IV, BUT USING:
 - LONG DURATION POWER SUPPLY
 - MULTIPLE VEHICLES
 - HIGHER RESOLUTION
 - HIGH SPEED GROUND TRANSMISSION OF DATA
 - POSSIBLY SUBSTITUTE TV WITH TAPE RECORDING FOR FILM
- VII. INFRARED SURVEILLANCE
- VIII. FERRET SURVEILLANCE
 - PROVIDE SATELLITE SYSTEM TO FURNISH INSTANTANEOUS WARNING OF AN ICBM ATTACK LATER SATELLITE SYSTEM TO PROVIDE PRECISION AUCM DETECTION-PREDICTION DATA
 - SIMILAR TO PROGRAM V, BUT USING:
 - MULTIPLE FUNCTIONS AND FLEXIBILITY
 - EMPLOYS MULTIPLE VEHICLES
 - LONG DURATION POWER SUPPLY
 - IMMEDIATE WARNING OF HOSTILITIES WARNING

P-250 (3) 2/17/58
WD-56-00776

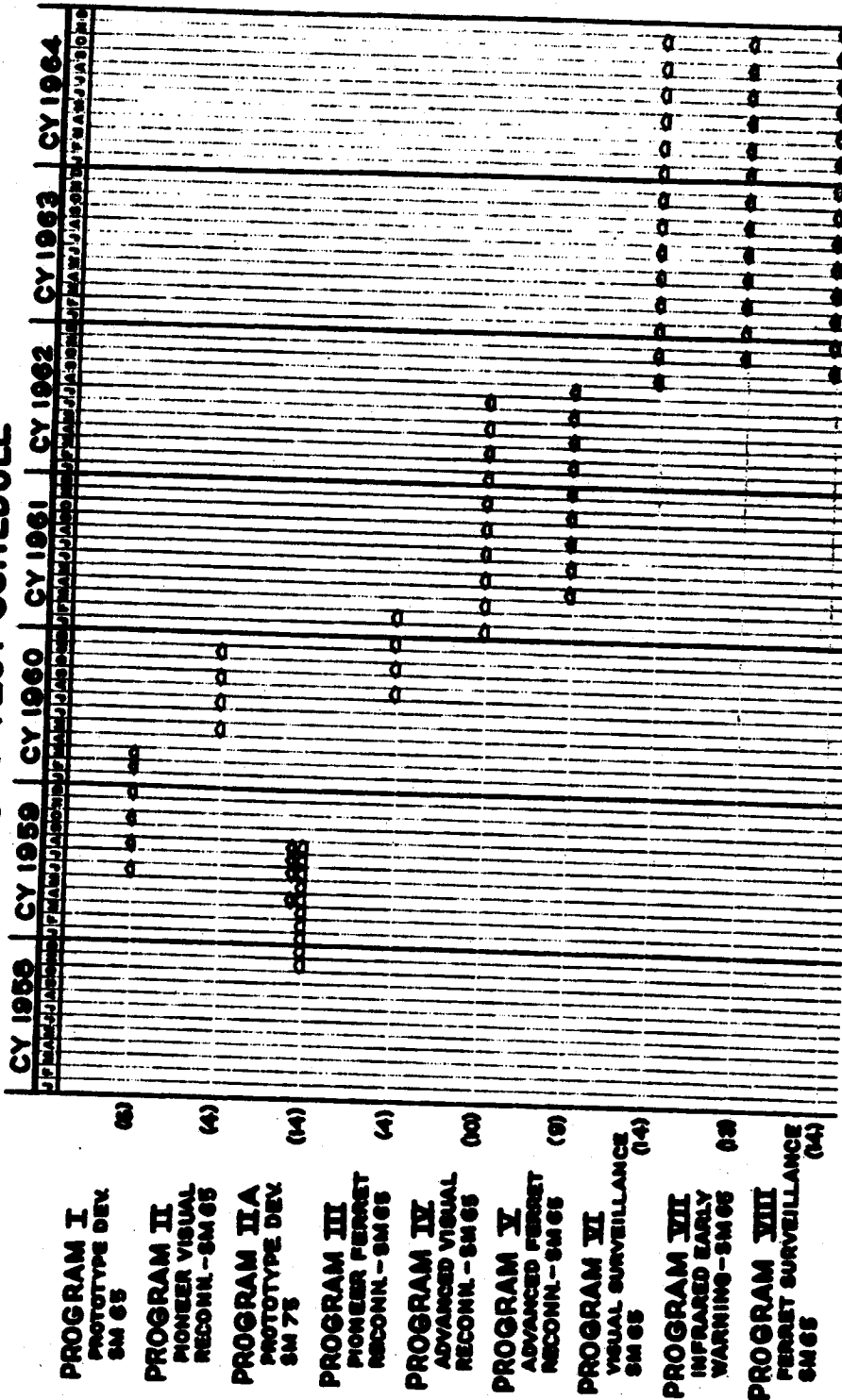
~~SECRET~~

LOCKHEED AIRCRAFT CORPORATION
Missile Systems Division

~~SECRET~~

~~SECRET~~

FLIGHT TEST SCHEDULE



P257 (3)-9723/56
WD-56-02843

WS 117L STATEMENT OF WORK, AFBMO, 16 APRIL 1958
AS AMENDED 7 JULY 1959

LOCKHEED AIRCRAFT CORPORATION
MISSILE SYSTEMS DIVISION

~~SECRET~~

LOCKHEED AIRCRAFT CORPORATION

~~SECRET~~

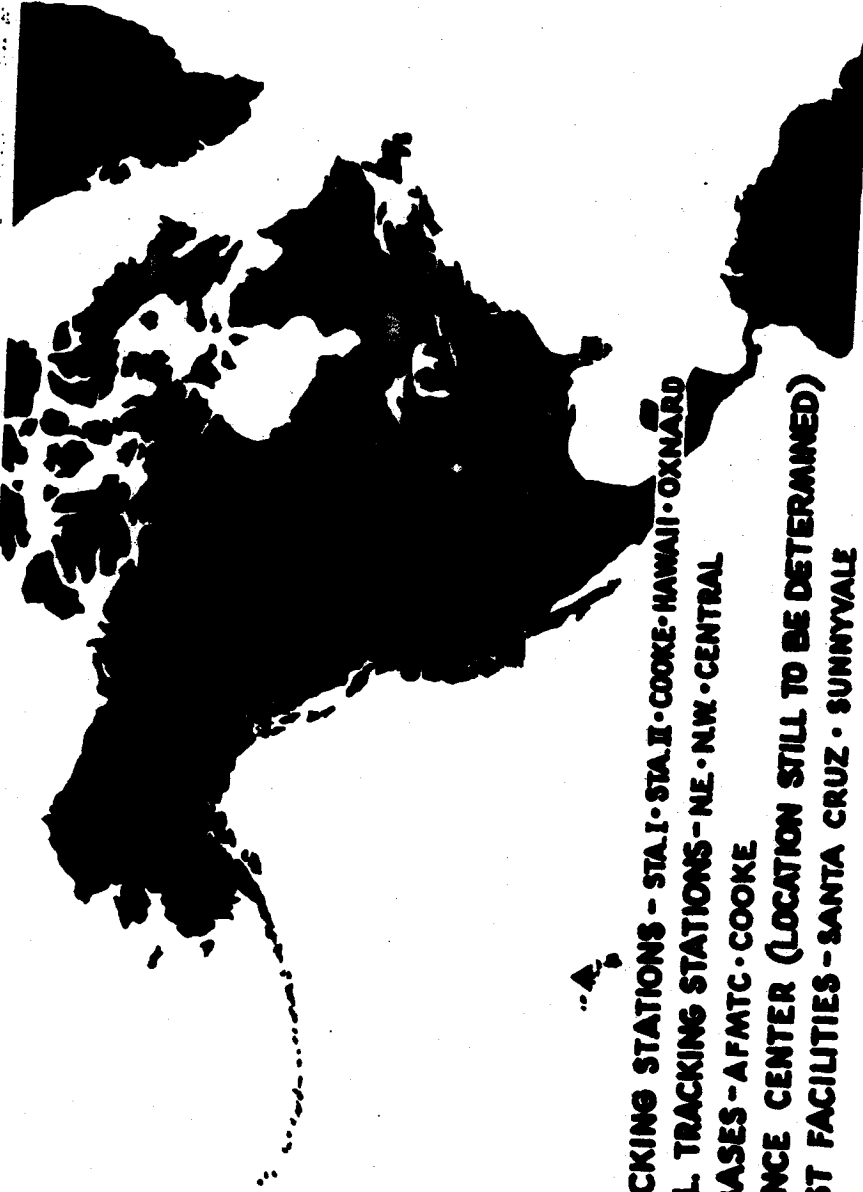
MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

SENTRY FACILITIES



LEGEND

- ▲ TEST TRACKING STATIONS - STA. I. - STA. II. - COOKE - HAWAII - OXNARD
- DEV./OPN'L. TRACKING STATIONS - NE - N.W. - CENTRAL
- LAUNCH BASES - AFMTC - COOKE
- ◇ INTELLIGENCE CENTER (LOCATION STILL TO BE DETERMINED)
- ◆ LMSD TEST FACILITIES - SANTA CRUZ - SUNNYVALE

P102 (S) 90 9/2/88
WD-86-08845

~~CONFIDENTIAL~~

LOCKHEED AIRCRAFT CORPORATION
MISSILE SYSTEMS DIV.

LOCKHEED AIRCRAFT CORPORATION

~~CONFIDENTIAL~~

MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

~~SECRET~~

SENTRY PAYLOAD - DEFINED

RECONNAISSANCE MISSIONS:

- ALL SENSING, PROCESSING & STORAGE EQUIPMENT
- ALL RELATED AUXILIARY POWER SYSTEM EQUIPMENT
- ALL RELATED COMMUNICATIONS EQUIPMENT

BIOASTRONAUTIC RECOVERY MISSIONS:

- RECOVERY CAPSULE & ROCKET
- CAPSULE CARGO

P 800 8/8/58
WD-50-0183

UNCLASSIFIED

~~SECRET~~

LOCKHEED AIRCRAFT CORPORATION

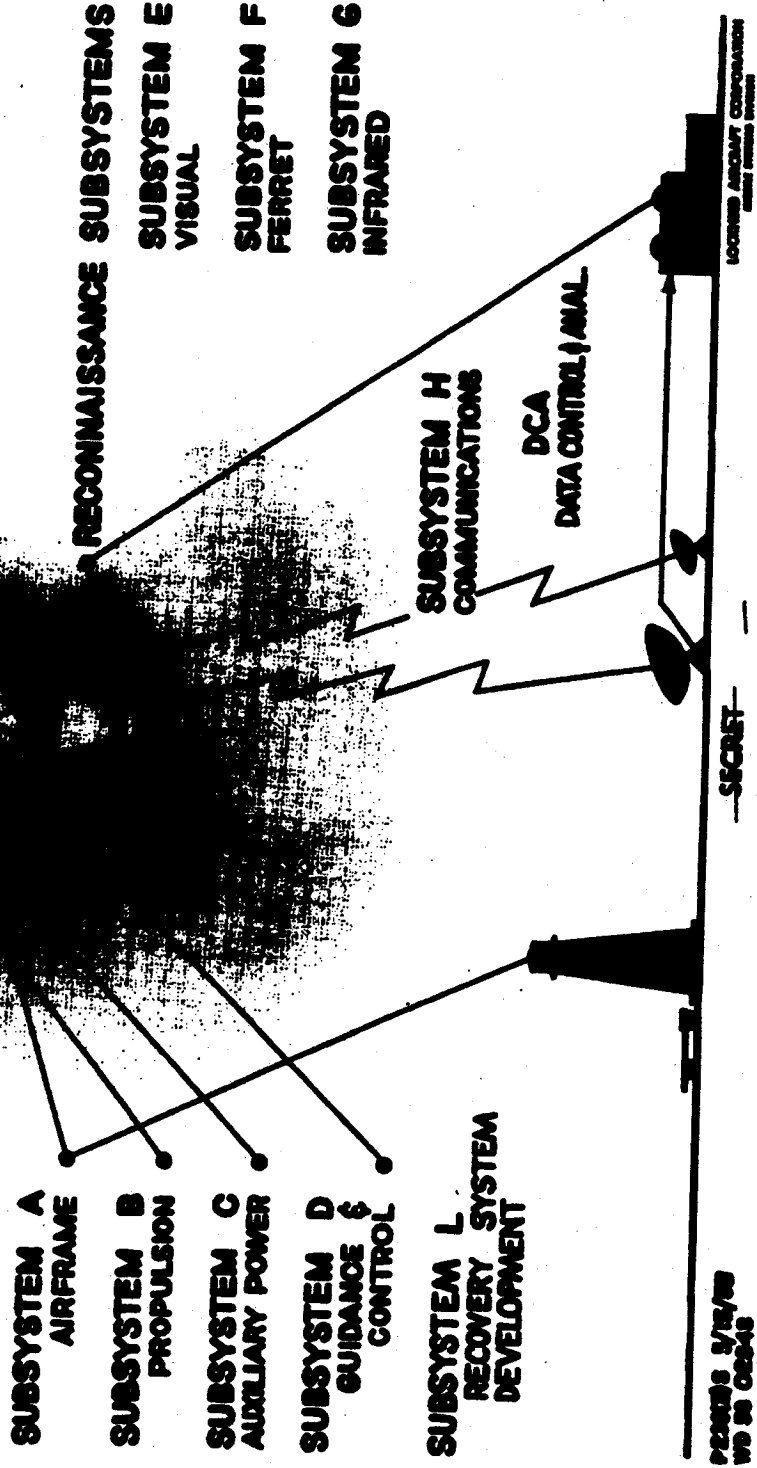
~~SECRET~~

MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

~~SECRET~~

~~SECRET~~
MISSILE SUBSYSTEMS



~~SECRET~~

~~SECRET~~

PERFORM 3/15/78
WD 58 02045

~~SECRET~~

WSIITL R&D ORGANIZATION

LOCKHEED AIRCRAFT CORP MISSILE SYSTEMS DIVISION WEAPON SYSTEM CONTRACTOR

RESEARCH & ANALYSIS
ANTENNA DEVELOPMENT
TELEMETRY
AIRFRAME FABRICATION
CHECKOUT & ASSEMBLY
STATIC & FLIGHT TESTS

PRINCIPAL SUBCONTRACTORS

PROPULSION

- BELL AIRCRAFT CORP
- AEROMET-GENERAL CORP

AUXILIARY POWER

- SONOTONE CORP
- EAGLE-PYCHER CO
- ENGINEERED MAGNETICS
- HOFFMAN ELECTRONICS CORP
- BIECHCRAFT R & D INC.

GUIDANCE & CONTROL

- DETROIT CONTROLS CORP
- REEVES INSTRUMENT CORP
- MINNEAPOLIS-HONEYWELL REGULATOR CO
- BENDIX AVIATION CORP

VISUAL RECONN.

- EASTMAN KODAK CO
- COLUMBIA BROADCASTING SYS
- SPICA INC
- AMPLEX CORP

FERRET

- AIRBORNE INSTRUMENTS LAB. INC.
- WALLER, RAYMOND & BROWN INC.

INFRARED RECONN.

- EASTMAN KODAK CO.
- SAIRD ATOMIC CO.
- AEROMET-GENERAL CORP
- GENERAL MILLS INC.

GROUND-SPACE COMM.

- PHILCO CORP
- REEVES INSTRUMENT CORP
- RADIATION INC.
- LOCKHEED AIRCRAFT SERVICES INC.
- HUGHES AIRCRAFT CO.
- TEXAS INSTRUMENT CORP

TEST MGMT & OPERATIONS

- AEROMET-GENERAL CORP
- RALPH E. PARSONS CO.

GROUND SUPPORT EQUIP

- OTIS ELEVATOR CO.
- CONSOLIDATED AVIONICS CORP
- SEMCO, INC.
- STANDARD MFG. CO. INC.
- HUFFORD CORP.

BIO MEDICAL CAPSULE

- GENERAL ELECTRIC CO.
- ALL AMERICAN ENGINEERING CO.

ASSOCIATE CONTRACTORS

BOOSTERS

- DOUGLAS A/C CORP (8M-78)
- CONVAIR AERONAUTICS (8M-88)

GUIDANCE & CONTROL

- INSTRUMENTATION LAB., MIT
- GENERAL ELECTRIC CO.

AUXILIARY POWER

- THE MARTIN CO.
- ATOMICS INTERNATIONAL

DATA PROCESSING

- RAMO-WOOLDRIDGE CORP

~~SECRET~~

P288 (P) S. 8/4/68
WD-58-02843

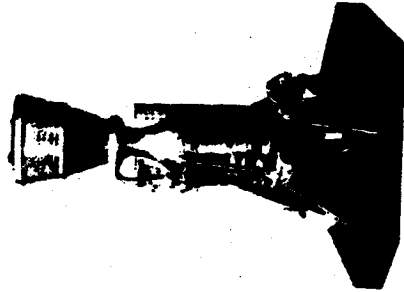
~~SECRET~~

LOCKHEED AIRCRAFT CORPORATION
Missile Systems Division

~~CONFIDENTIAL~~

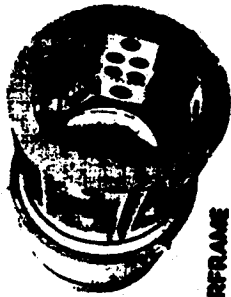


FUNCTIONAL
MOCK UP



BELL ENGINE

LOCKHEED AIRCRAFT CORPORATION
MISSILE SYSTEMS DIVISION



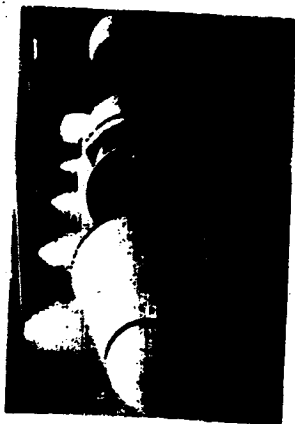
AIRFRAME



PROPULSION
CHECK OUT



~~CONFIDENTIAL~~



MOCK UP



P566 S 6/9/58
WD-58-06185

~~CONFIDENTIAL~~

LOCKHEED AIRCRAFT CORPORATION

~~CONFIDENTIAL~~

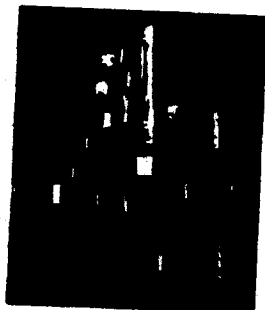
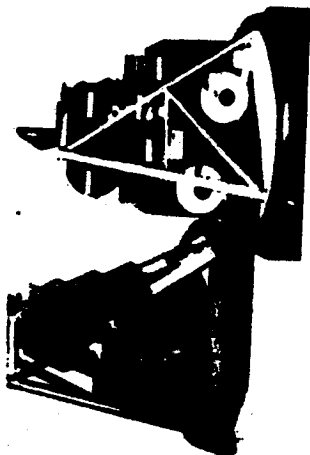
MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

~~SECRET~~

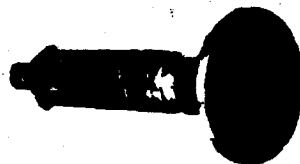
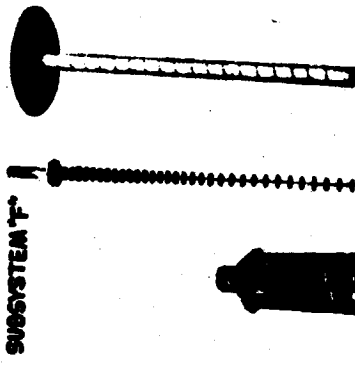


~~SECRET~~

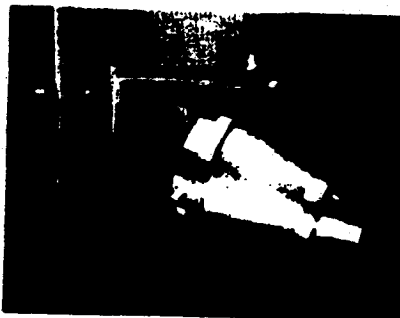


SUBSYSTEM 'E'

SUBSYSTEM 'F'



SUBSYSTEM 'G'



LOCKHEED AIRCRAFT CORPORATION

~~SECRET~~

PS67 S 6/2/58
WD-58-03455

LOCKHEED AIRCRAFT CORPORATION

~~SECRET~~

MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.



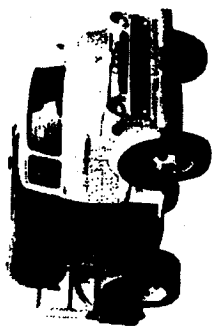
FUEL DUMP TRAILER



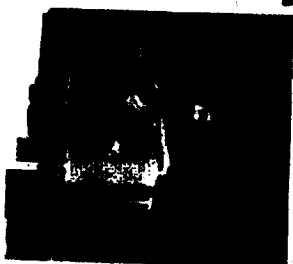
ACID DUMP TRAILER



ENGINE THRUST
CHAMBER FLUSHING



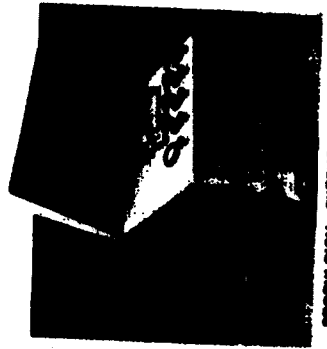
FUEL TRUCK



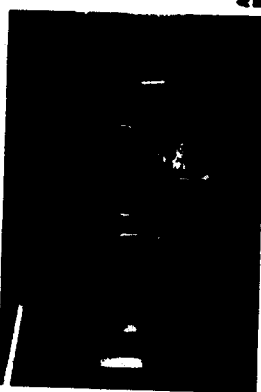
ENGINE FLUSHING TRAILER



URM LOADER



PROPULSION CHECKOUT CONSOLE
MODIFIED BELL UNIT



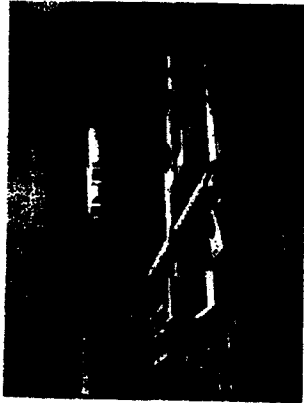
ACID TRAILER AND
FLUSHING TRUCK

P. 568 GSE 6/3/58
WD-88-03488

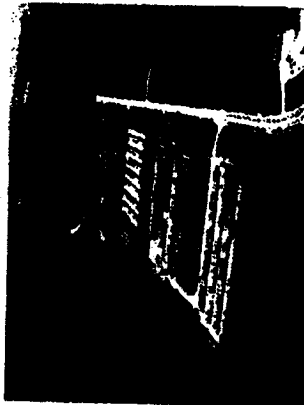
LOCKHEED AIRCRAFT CORPORATION
MISSILE SYSTEMS DIVISION



**VAN NUYS
AIRFRAME FABRICATION**



**SUNNYVALE
COMPONENT ASSEMBLY**



**PALO ALTO
PROJECT MGMT. SYSTEM DESIGN
VEHICLE MOD. & CHECKOUT**



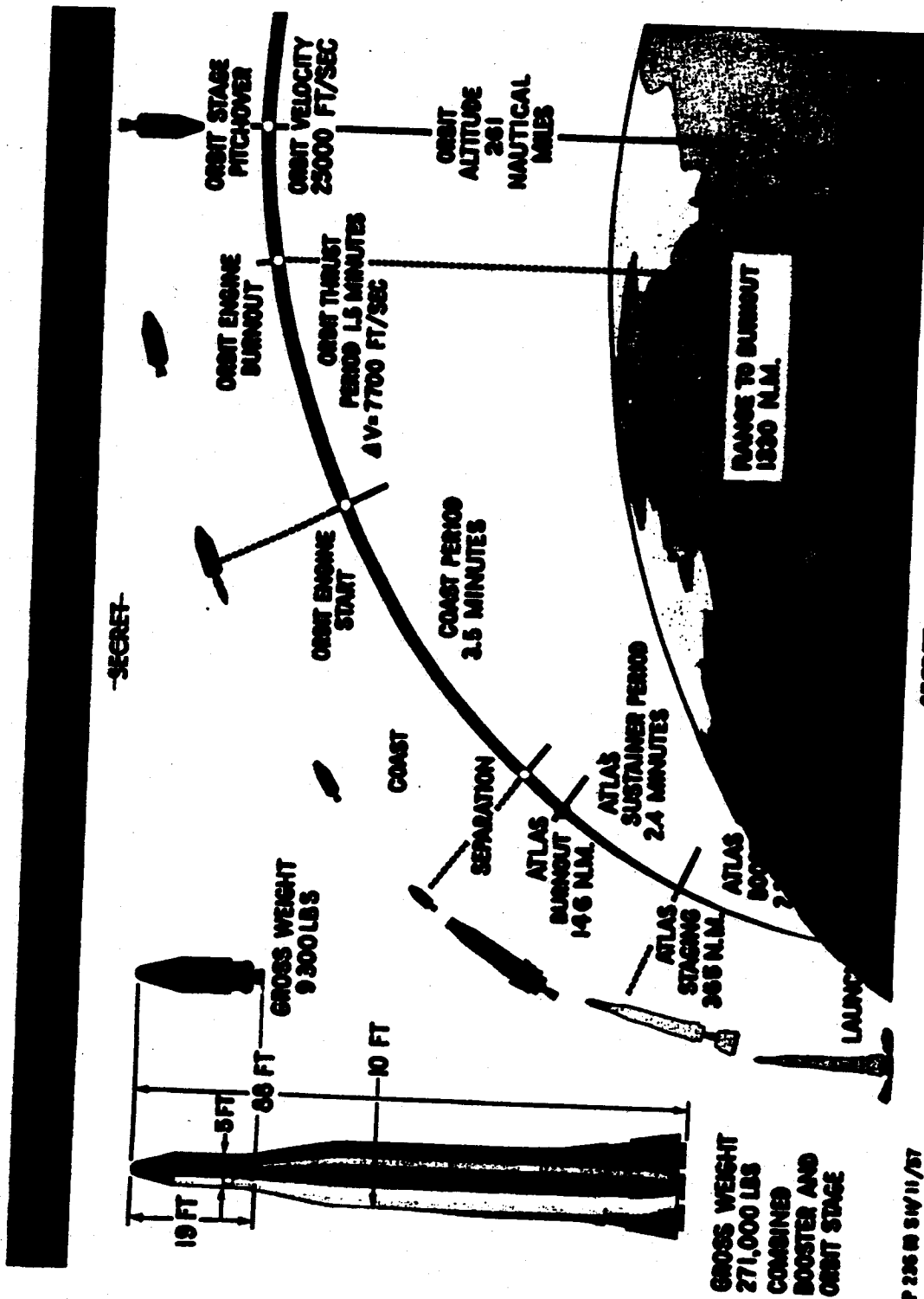
**SANTA CRUZ
HAZARDOUS TEST FACILITY**

**P 565 30 6/3/58
WD-56 09455**

NOTE: BURBANK C-1 - COMPONENT MFG. & TEST

LOCKHEED AIRCRAFT CORPORATION
MISSILE SYSTEMS DIVISION

~~SECRET~~



~~SECRET~~

~~SECRET~~

LOCKHEED AIRCRAFT CORPORATION
MISSILE SYSTEMS DIVISION

P 208 00 514 11/57

LOCKHEED AIRCRAFT CORPORATION

~~SECRET~~

MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

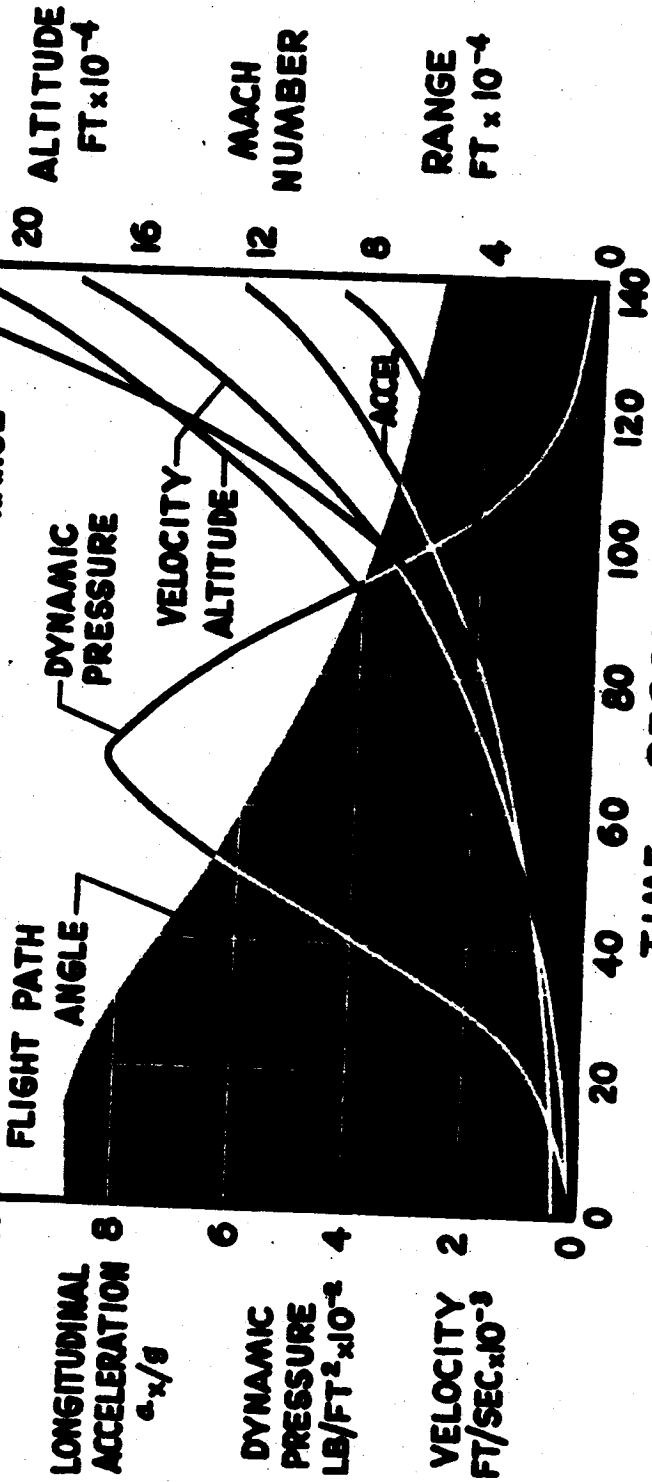
~~SECRET~~

BOOSTER STAGE

GROSS WT @ LAUNCH 271,163 LB BOOSTER PAYLOAD 9,300 LB

273,000 @ BURNOUT

RANGE



P 229 (U) 89-A 3/27/56
WD-56-01388

LOCKHEED AIRCRAFT CORPORATION
MARIETTA, GEORGIA

~~SECRET~~

~~SECRET~~

LOCKHEED AIRCRAFT CORPORATION

~~SECRET~~

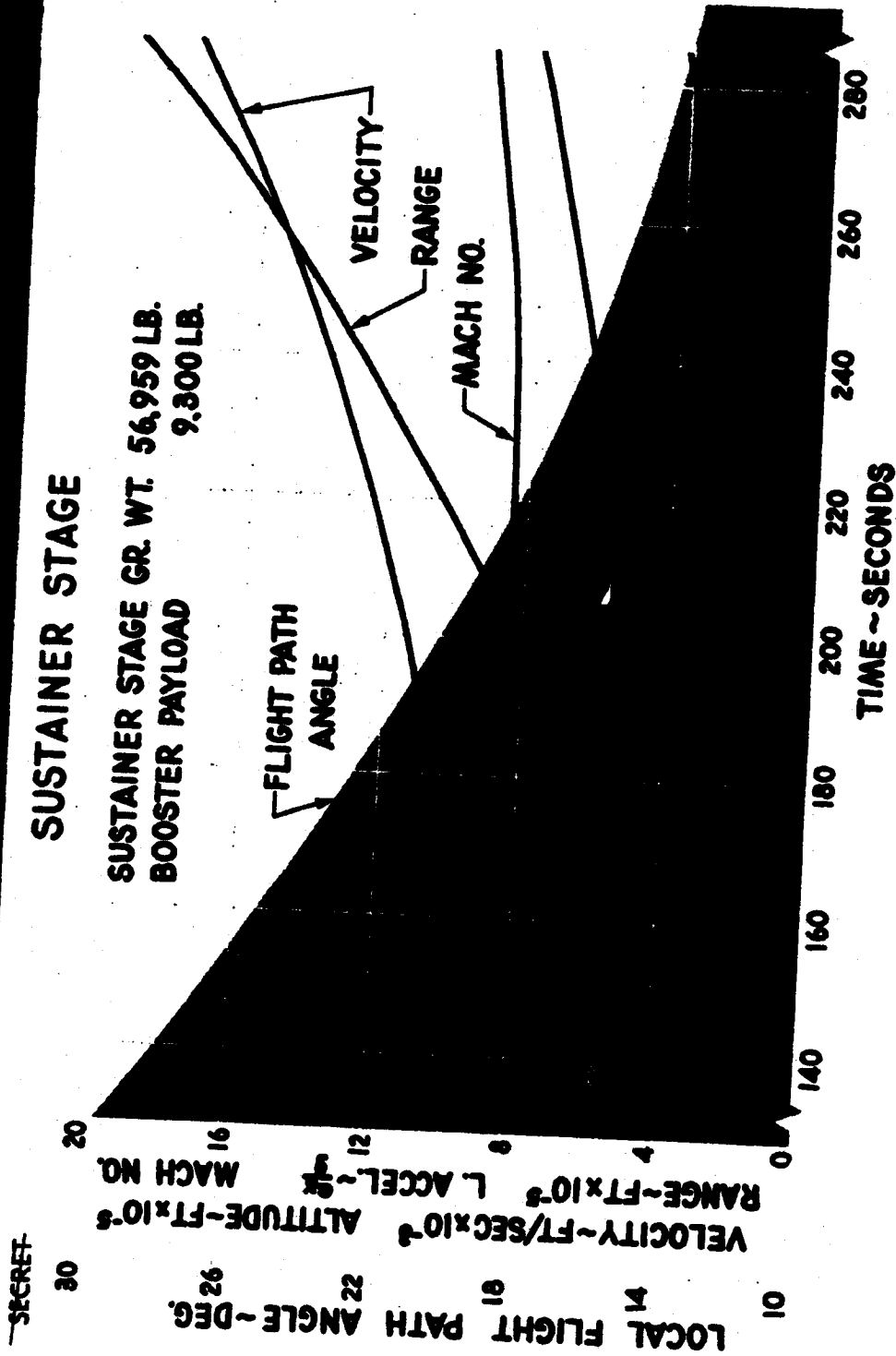
MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

~~SECRET~~

SUSTAINER STAGE

**SUSTAINER STAGE GR. WT. 56,959 LB.
BOOSTER PAYLOAD 9,300 LB.**



~~SECRET~~

P228 (1) 867A 3/20/58
WD-58-01886

LOCKHEED AIRCRAFT CORPORATION

~~SECRET~~

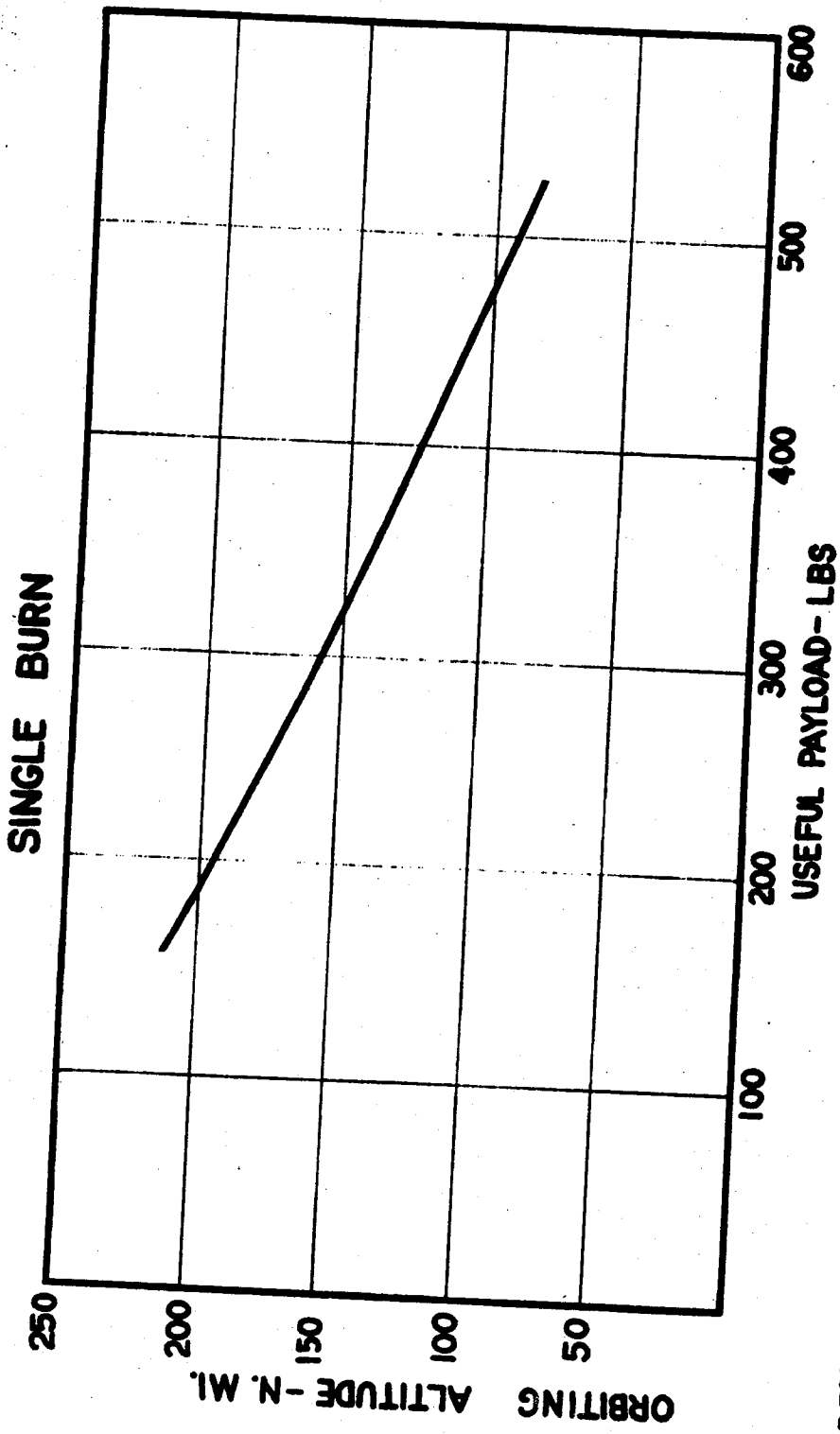
MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

~~SECRET~~

ALTITUDE VS. PAYLOAD-SENTRY/THOR

~~SECRET~~



~~SECRET~~

9/8/58

P 792
WD-58-08183

LOCKHEED AIRCRAFT CORPORATION

~~SECRET~~

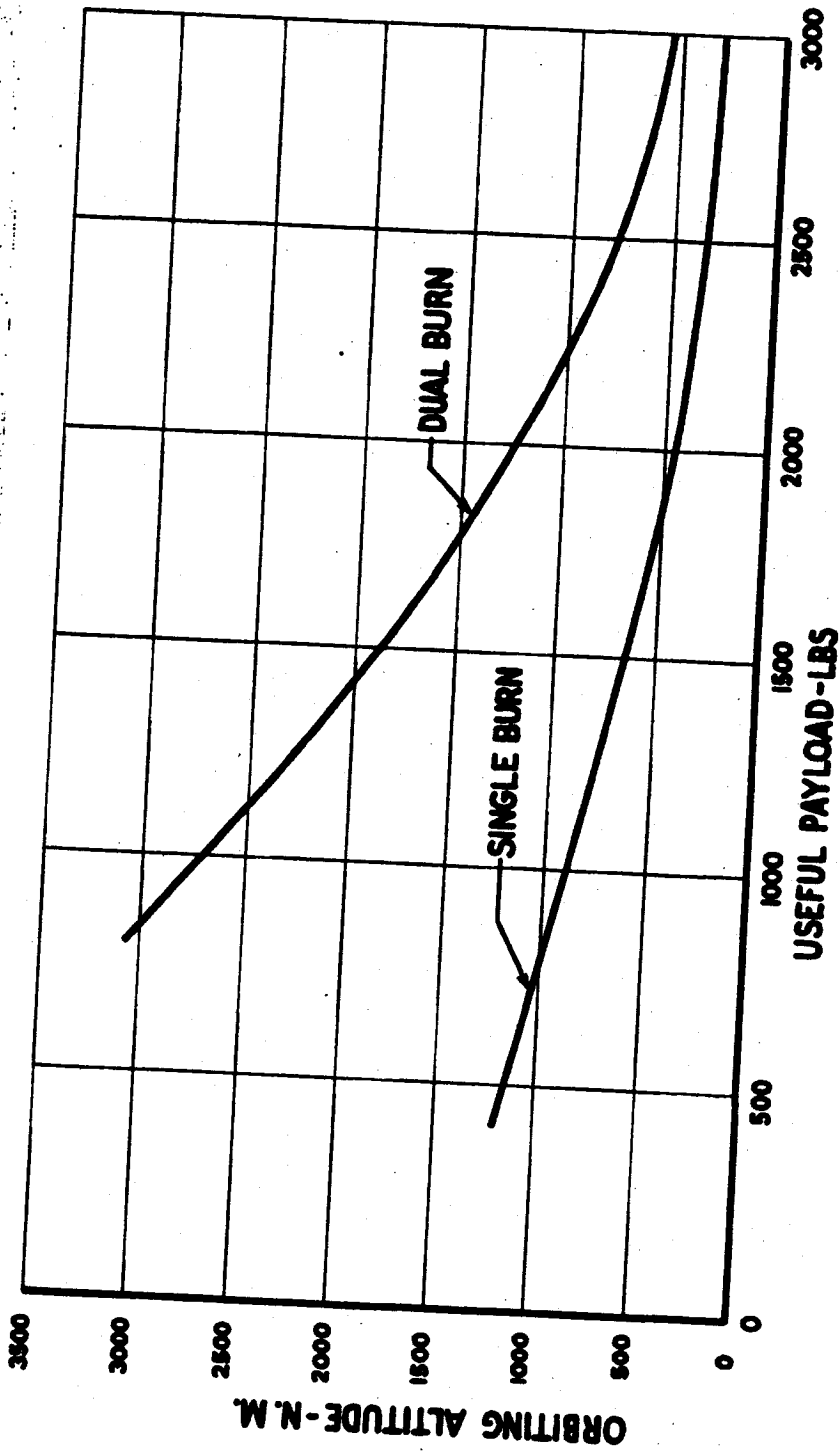
MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

~~SECRET~~

ALTITUDE VS PAYLOAD - SENTRY/ATLAS

~~SECRET~~



UNCLASSIFIED

~~SECRET~~

8/8/58

P 791
WD-39-05183

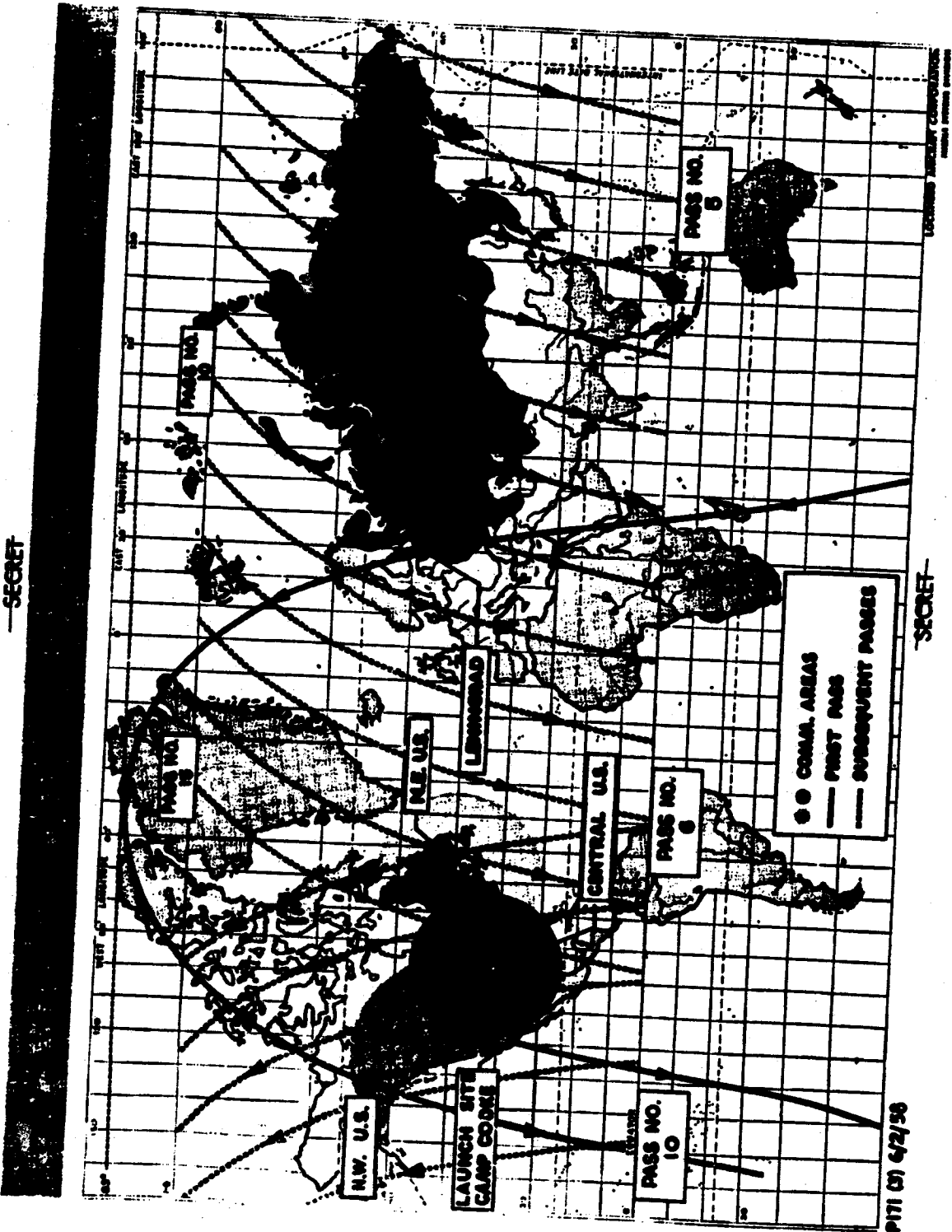
LOCKHEED AIRCRAFT CORPORATION

~~SECRET~~

MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

~~SECRET~~



~~SECRET~~

~~SECRET~~

LOCKHEED AIRCRAFT CORPORATION

~~SECRET~~

MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

~~SECRET~~

VISUAL RECONNAISSANCE MODEL

ENGINE GIMBAL LIMITS 5°
SQUARE PATTERN
ENGINE-BELL AIRCRAFT
THRUST 15,000LB ALT
180 263 SEC.

NOZZLE EXPANSION RATIO 15:1
N₂ GAS STORAGE FLASK
3000 PSI

VISUAL RECONNAISSANCE SYSTEM
CAMERA PACKAGE (EKC)
PHOTO, PROCESS, STORAGE,
ELECTRONIC READOUT

CAMERA LENS SHIELD

NOSE (JETTISONS)

ATTITUDE ROLL AND
REDIRECTION CONTROL
GAS JETS (6)

AUXILIARY POWER
SOURCE (BATTERIES)

FUEL TANK
JP-4 60 PSI

OXIDIZER
TANK (IRFNA)
60 PSI

He GAS STORAGE FLASK (2)
PROPELLANT TANK
PRESSURIZATION 3000 PSI

SUBSYSTEM ELECTRONICS COMPARTMENT
AND CAMERA SUPPORT STRUCTURE
(GUIDANCE, CONTROL, ETC.)

REMOVABLE NOSE FAIRING

~~SECRET~~

~~SECRET~~

P232 (2) 86A 5/20/68
WD-58-00776

LOCKHEED AIRCRAFT CORPORATION
MISSILE SYSTEMS DIVISION

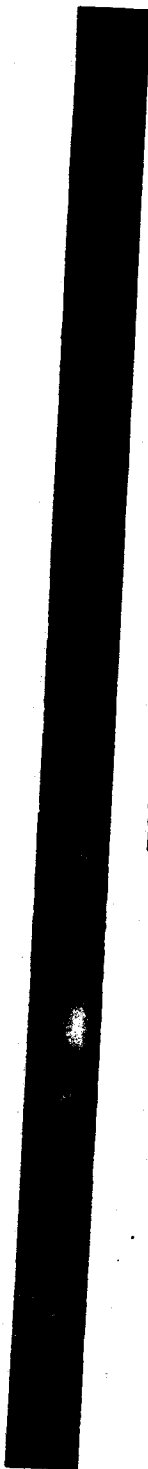
LOCKHEED AIRCRAFT CORPORATION

~~SECRET~~

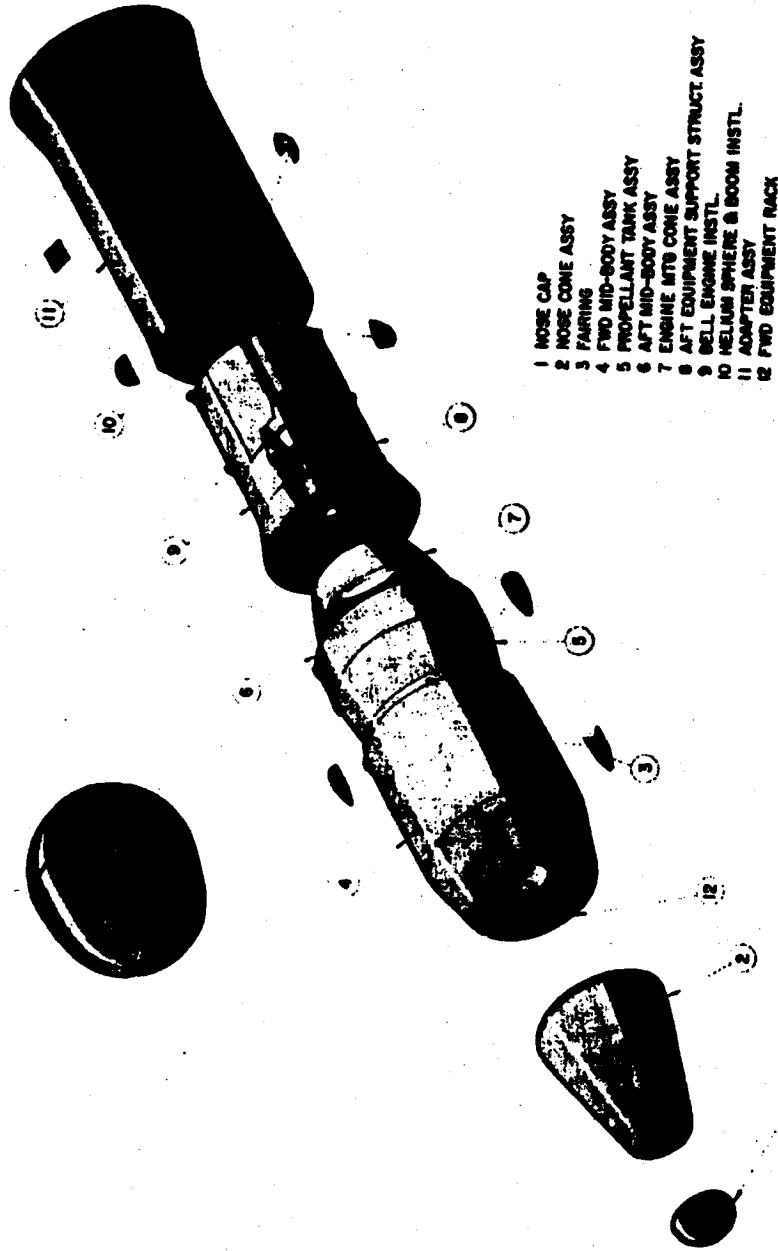
MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Law, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~



~~CONFIDENTIAL~~



LOCKHEED AIRCRAFT CORPORATION
MISSILE SYSTEMS DIVISION

~~CONFIDENTIAL~~

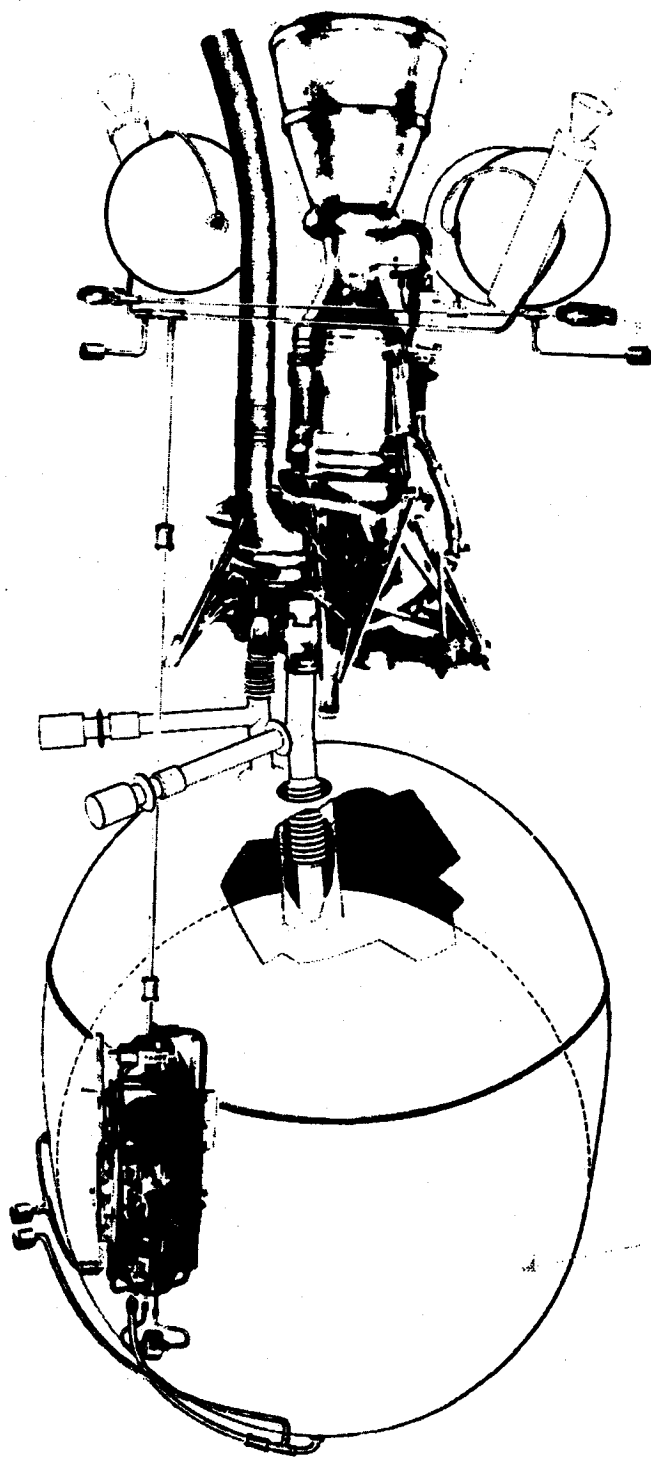
P 468 (1) 887A 6/13/58
WD-58 -03455

LOCKHEED AIRCRAFT CORPORATION

~~CONFIDENTIAL~~

MISSILE SYSTEMS DIVISION

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.



ULLAGE ROCKETS

CONTROL JETS
NITROGEN SUPPLY

JP4

IRFNA

P-422 (2) 85°8' 3/21/58
WD-58-01388