APPLICATION OF PERCHERON TO APP-A AND B PAYLOADS

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This [illegible] proposal
delivered by a
competitor on 18 Nov 67 / [illegible] 711-08

PRESENTATION OUTLINE

- STUDY OBJECTIVE
- STUDY GROUND RULES
- SUMMARY OF RESULTS
- SPACECRAFT/EXPERIMENTS COMPATIBILITY
  - BASELINE CAPABILITIES
  - OPTIONAL CAPABILITIES
  - ADDITIONAL CAPABILITIES REQUIRED
- EXPERIMENT GROUPINGS
  - CRITERIA
  - CONFIGURATIONS
  - POWER, WEIGHT REQUIREMENTS
- BOOSTER REQUIREMENTS/CAPABILITY
- ADDITIONAL STUDY ITEMS
  - PROPOSAL

DETERMINE PERCHERON CAPABILITIES AND ESTABLISH THE ADDITIONAL FEATURES REQUIRED TO ACHIEVE THE APP-A EXPERIMENT MISSIONS.

STUDY GROUND RULES

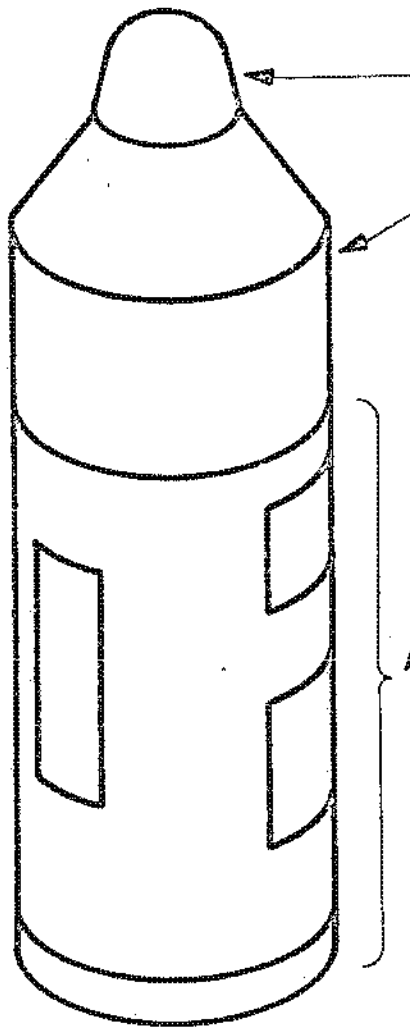
- USE EXISTING PERCHERON HARDWARE
- WHERE SUBSTITUTIONS OR ADDITIONS ARE REQUIRED, USE FLIGHT PROVEN AND AVAILABLE HARDWARE
- EXPERIMENT REQUIREMENTS ARE DEFINED BY NASA DOCUMENTS
- NO RESTRICTIONS ON LAUNCH VEHICLE

SUMMARY OF RESULTS

- ALL APP-A EXPERIMENTS CAN BE CARRIED IN TWO PERCHERON SPACECRAFT
  - MULTIPLE FLIGHTS PROVIDE EXPERIMENT FLEXIBILITY
  - FLIGHT DURATION OF 14 DAYS PRACTICAL
  - PHYSICAL RECOVERY OF DATA - 125 LBS
  - WORLD LAND PHOTO COVERAGE ACHIEVABLE
  - LAUNCH WITHIN CAPABILITY OF SLV3A/AGENA
  - SOME MANNED FUNCTIONS NOT PERFORMED
  - APP-B EXPERIMENTS REQUIRING LARGE ANTENNAS OR POINTING ACCURACIES BETTER THAN 0.5^{0} REQUIRE FURTHER STUDY

PERCHERON SPACECRAFT

(SUMMARY)



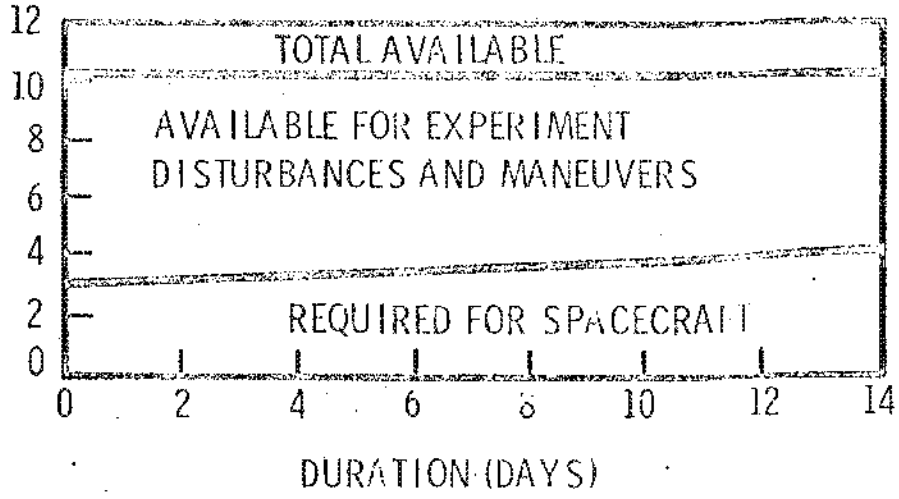
- EARTH ORBIT (POLAR - 100 TO 300 N. M.)
- OPTIONAL DATA RETURN UP TO 2 FT^3 AN
- PAYLOAD CAPABILITY
  - 200 FT^3
  - 1800 LBS
  - ENVIRONMENTAL CONTROL
- FLIGHT PROVEN HARDWARE AND SOFTW.
  - COMMAND AND TRACKING
  - TELEMETRY
  - STABILIZATION
  - ORBIT ADJUST
  - ENVIRONMENTAL CONTROL
  - STRUCTURE AND SEPARATION
  - COMMAND AND CONTROL COMPUTEI
- TERMINATED HARDWARE AVAILABLE

SPACECRAFT/EXPERIMENTS COMPATIBILITY SUMMARY

- PHYSICAL LIMITS
  - PAYLOAD SECTION LENGTH LIMITED
  - 125 LBS. MAX. PHYSICAL DATA RETURN
  - NO WEIGHT LIMIT FOR THIS APPLICATION
- ATTITUDE CONTROL
  - ACCURACY AND RATE REQ'S WITHIN CAPABILITY
  - CAN MANEUVER IN PITCH, ROLL, AND YAW
- POWER - ADDITIONAL BATTERIES IN PAYLOAD SECT. TO PROVIDE 14 DAY MISSION
- COMMAND
  - EXPERIMENT REQUIREMENTS CAPABILITY APPEARS ADEQUATE
- TELEMETRY
  - ADDITIONAL TRANSMITTERS AND MULTIPLEXERS FOR SOME EXPERIMENTS
  - CHANGE TO PCM TLM FOR SOME EXPERIMENT GROUPS
- ENVIRONMENTAL CONTROL
  - EXPERIENCE INDICATES THAT EXPERIMENT REQUIREMENTS CAN BE MET
- ORBIT ADJUST - ADEQUATE CAPABILITY EXISTS
- TRACKING - ADEQUATE EPHEMERIS DATA CAN BE OBTAINED

STABILIZATION SUBSYSTEM

- BASELINE CAPABILITIES
  - POINTING - ± 0.5 DEG
  - STABILITY - ± 0.03 DEG/SEC
  - MANEUVERING - YAW 0^0 OR 180^0
    PITCH 0^0 OR -58^0
  - CONTROL IMPULSE



- OPTIONAL CAPABILITIES
  - ROLL MANEUVER CAPABILITY
  - REDUCED POWER TO EXTEND LIFE
- ADDITIONAL REQUIREMENTS
  - TARGET TRACKING REQUIRES SINGLE AXIS SENSOR GIMBAL
  - S0-47 EXCLUDED BECAUSE OF STAR TRACKING REQUIREMENT

COMMAND SUBSYSTEM

O BASELINE CAPABILITIES

- 8 REAL TIME COMMANDS OVER TRACKING STATIONS
- 60 STORED COMMANDS FOR REMOTE EXECUTION
  - 1/10 SECOND EXECUTION GRANULARITY
  - STORAGE FOR 350, 37 BIT WORDS
- TIMING SIGNALS – 1.25, 10, 20, 250, 500 AND 25,000 PPS
- EXPERIMENT COMMAND REQUIREMENTS NOT DETAILED BUT BASELINE APPEARS ADEQUATE

O OPTIONAL CAPABILITIES

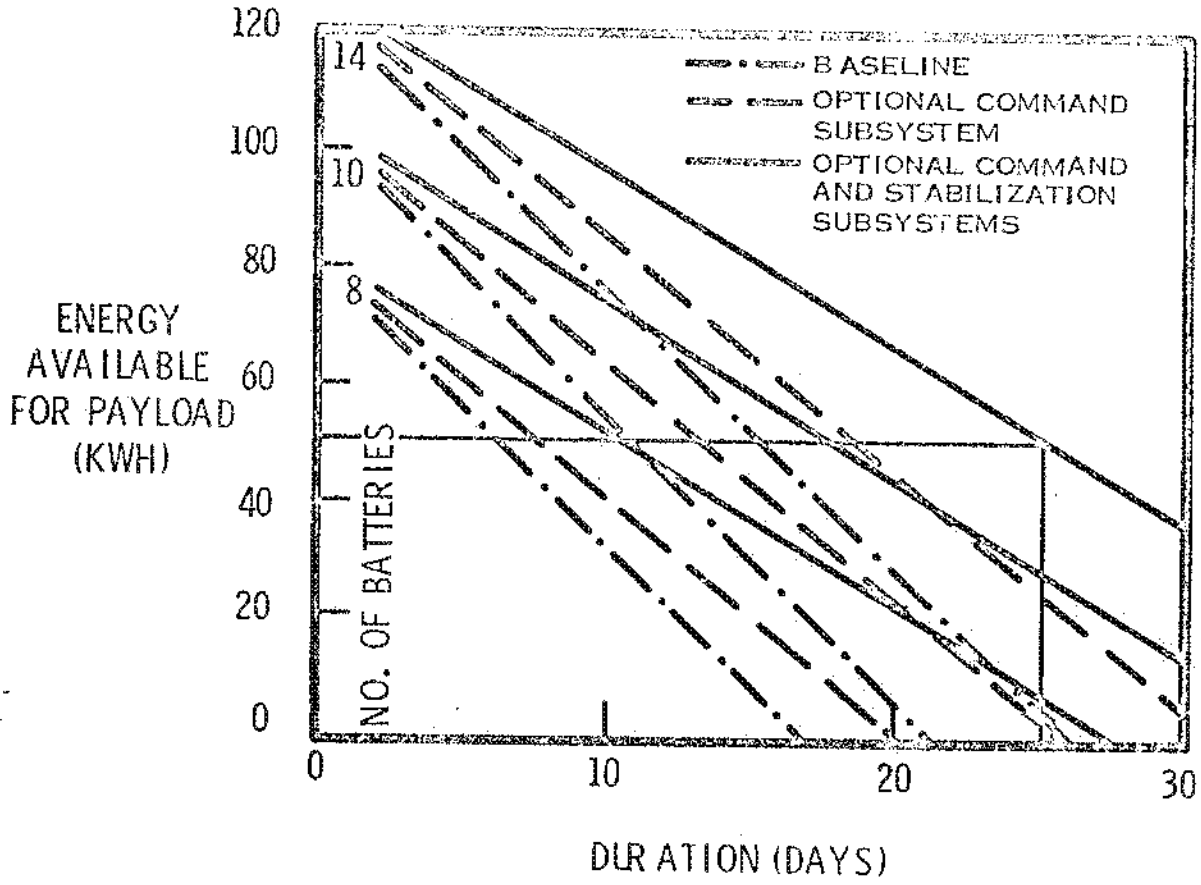
LOWER POWER COMMAND SUBSYSTEM EXTENDS LIFE

- 23 REAL TIME COMMANDS OVER TRACKING STATIONS
- 50 STORED COMMANDS FOR REMOTE EXECUTION
  - STORAGE FOR 30, 39 BIT WORDS
- TIMING SIGNALS – 21 BIT SIGNAL EVERY 0.2 SEC

O ADDITIONAL REQUIREMENTS

- TIMING SIGNALS
  - SO 44A – 2,400 PPS
  - SO 49 – 40,000 PPS
  - SO 57 – 50, 111 AND 800 PPS
  - SO 40, 44B, 44C, 46 AND 48 NOT DEFINED

- BASELINE CHARACTERISTICS
  - SOURCE - BATTERIES
  - VOLTAGE - 28 ± 3 VDC
  - AVAILABLE ENERGY - 10,400 WH/BATTERY
- ADDITIONAL REQUIREMENTS
  - 115 VAC NEEDED FOR S044B AND S044C



- BASELINE CAPABILITIES

  REAL TIME ANALOG MULTIPLEXED CHANNELS AVAILABLE FOR EXPERIMENTS

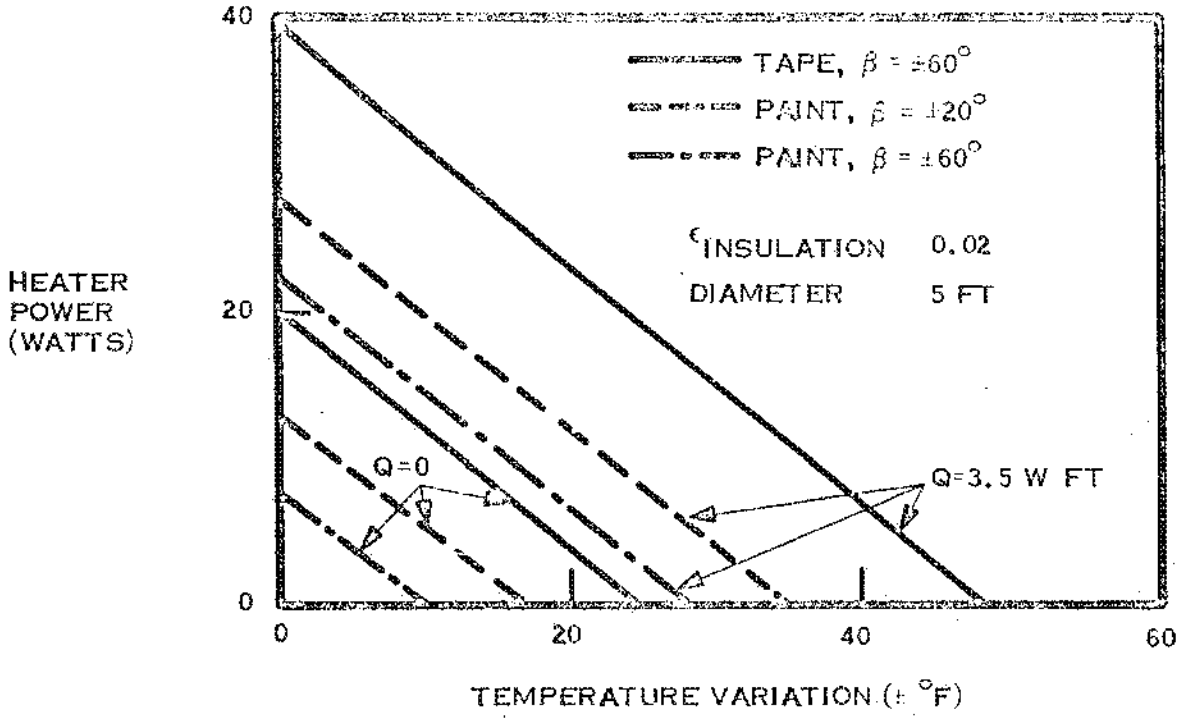
CHANNELS	SAMPLE RATE (SPS)
50	1/3
30	2.5
30	5

- ADDITIONAL REQUIREMENTS

EQUIPMENT	EXPERIMENT	REQUIRED FOR
ANALOG RECORDER	S039, 40	REMOTE DATA ACQUISITION
S-BAND TRANSMITTER, AND ANTENNA	S040	680 KHZ CHANNEL
8 BIT PCM UNIT	S041, 46, 47, 49	1% ACCURACY DATA
DIGITAL RECORDER	S041, 43, 44, 45, 47, 49, 50, 57	REMOTE DATA ACQUISITION
10 BIT PCM UNIT	S043, 44, 45, 50	0.1 % ACCURACY DATA

Environmental Control S/S

- BASELINE CONFIGURATION
  - PAYLOAD REQUIREMENTS
    - GROUND CONDITIONING - INTERNAL AIRFLOW
    - POWERED FLIGHT HEAT AND VIBRATION PROTECTION FROM MOUNT DESIGN
    - ORBITAL TEMPERATURE CONTROL BY PASSIVE MEANS -- PAINT, SERIES EMITTANCE TAPE, MOUNTS, LOCATION, INSULATION AND HEATERS
  - TEMPERATURE CONTROL CAPABILITY WITHIN PAYLOAD SECTION

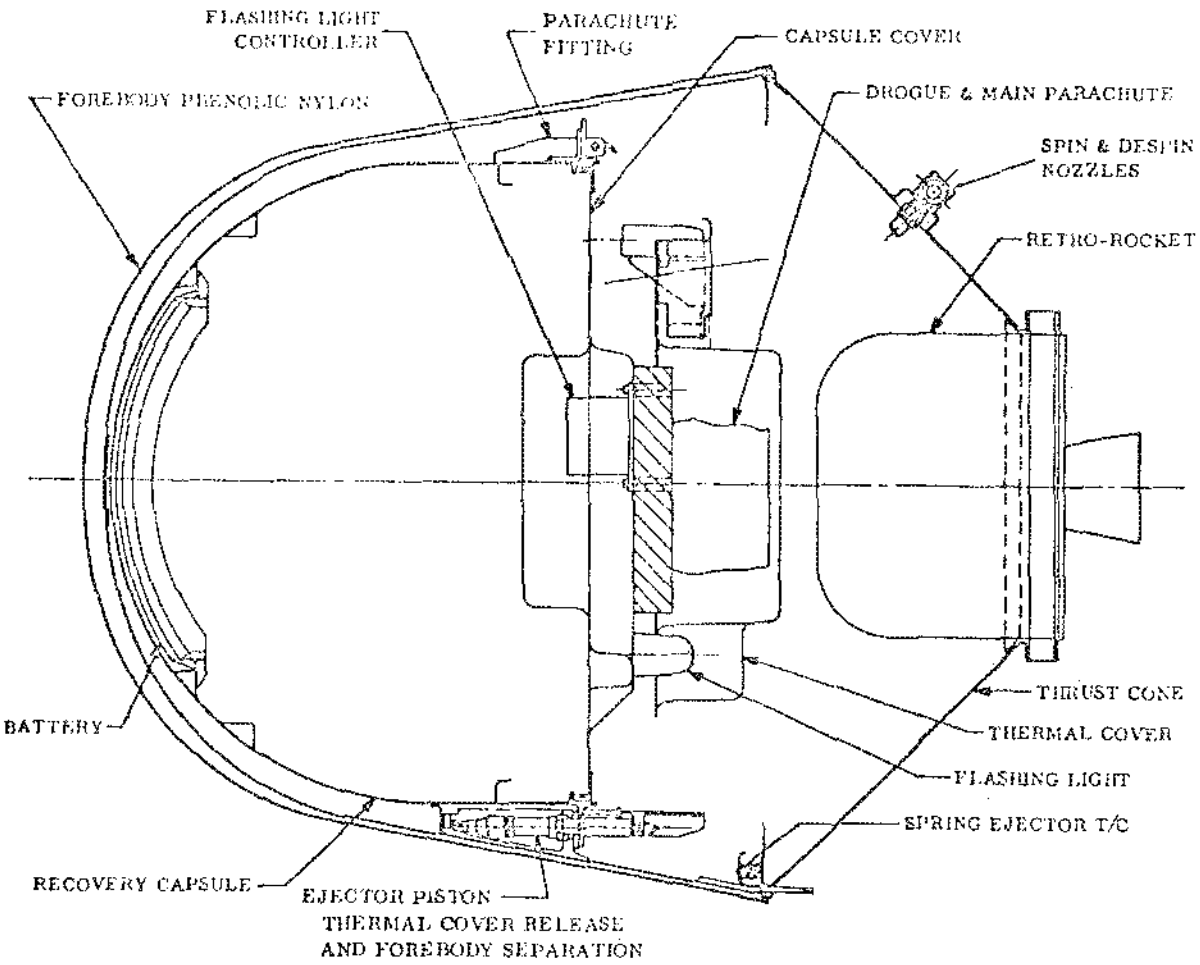


- BASELINE SECTIONS
  - EQUIPMENT SECTION
  - BOOSTER ADAPTER
  - RV ADAPTER (SMALL RV)
- ADDITIONAL REQUIREMENTS
  - PAYLOAD SECTION
    - 5 FT. DIAMETER, 11 FT. LENGTH - 90% WIND CAPABILITY
    - VIEW PORTS AS REQUIRED
    - EXPERIMENT MOUNTS
    - DEPLOYMENT AND SCAN MECHANISM FOR S044C
  - RV ADAPTER (LARGE RV)
    - HOUSE 70 MM CAMERA FOR S043, 45, 46, 49, 50 & 57

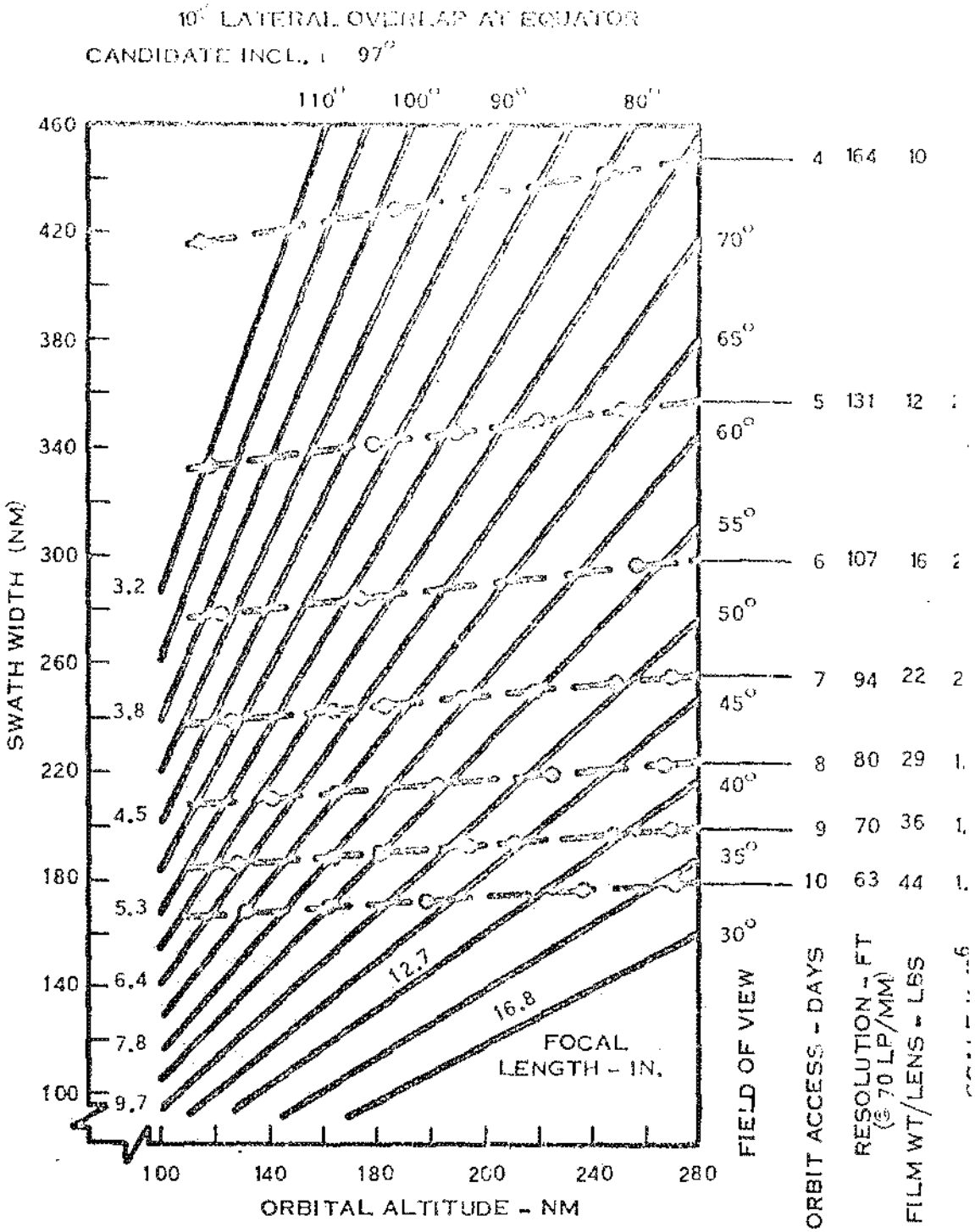
- PROPOSED RV CONFIGURATION
  - SMALL RV
    - MAXIMUM VOLUME = 1 CUBIC FOOT
    - MAXIMUM WEIGHT = 90 POUNDS (75 LBS DATA)
    - SATISFIES DATA RECOVERY REQUIREMENTS FOR S043, 45, 46, 50 AND 57
  - LARGE RV
    - MAXIMUM VOLUME = 2 CUBIC FEET
    - MAXIMUM WEIGHT = 150 LBS. (125 LBS DATA)
    - PROVIDES CAPABILITY FOR S042
      - 1700 FRAMES THIN BASE PER CAMERA (10,200 TOTAL)
      - 100% GEOMETRIC LAND MASS AT 2.0×10^6:1

TYPICAL RE-ENTRY VEHICLE

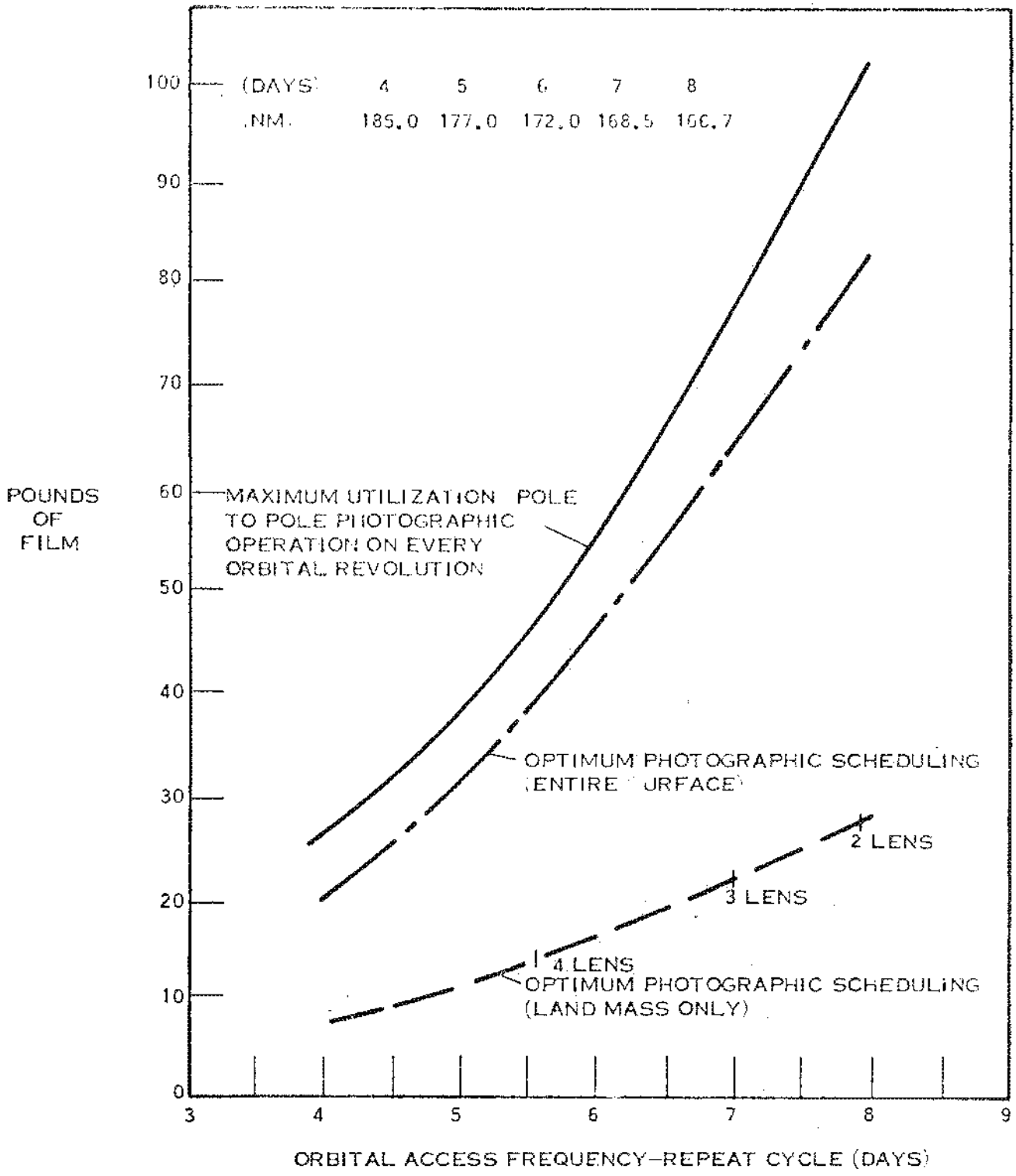
INBOARD PROFILE



- PAYLOAD CAPABILITY
  - VOLUME - 1 TO 2 FT^3
  - WEIGHT - 90 TO 150 LBS.



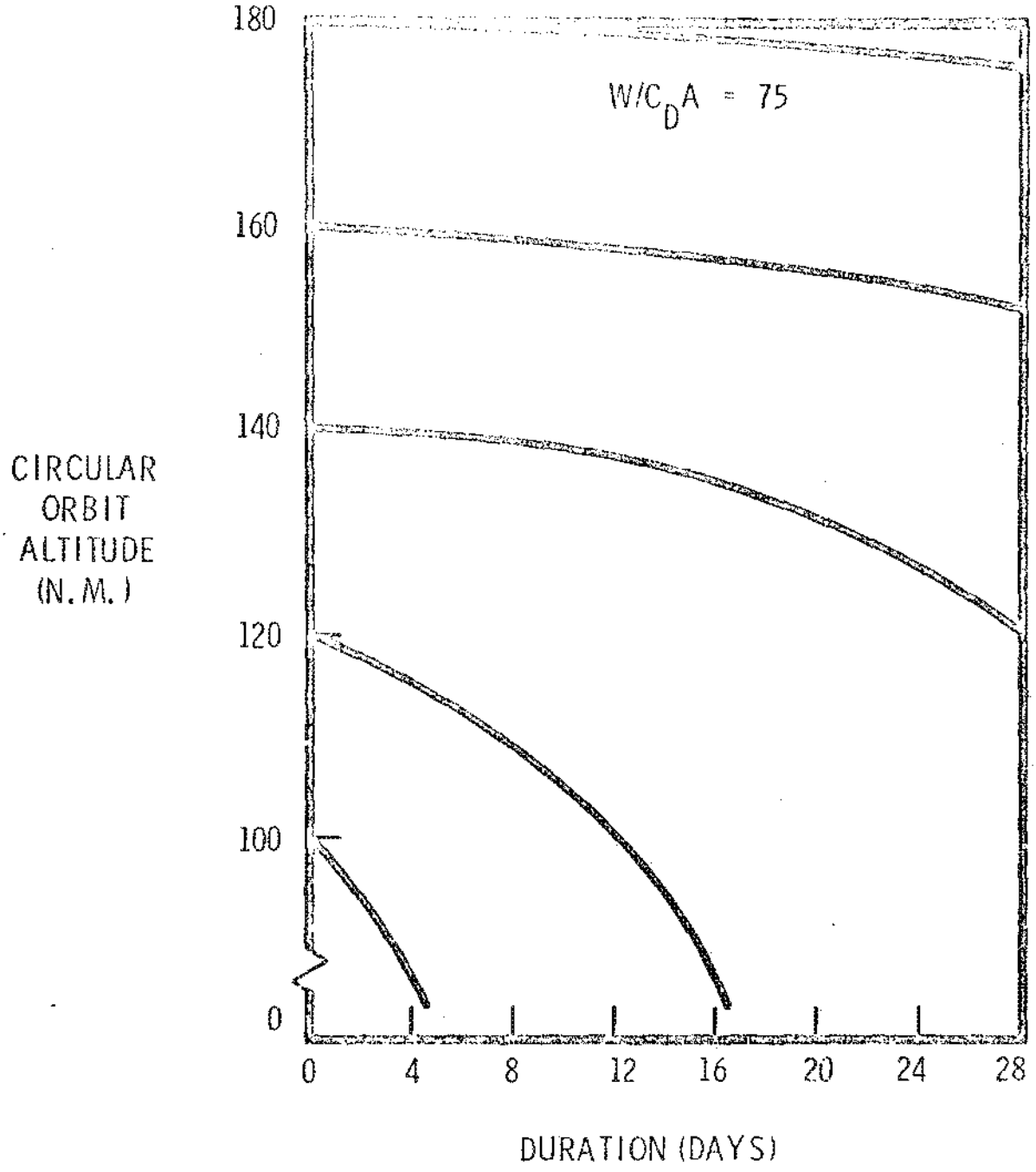
10 LATERAL OVERLAP AT EQUATOR
10 IN. TRACK OVERLAP
97°



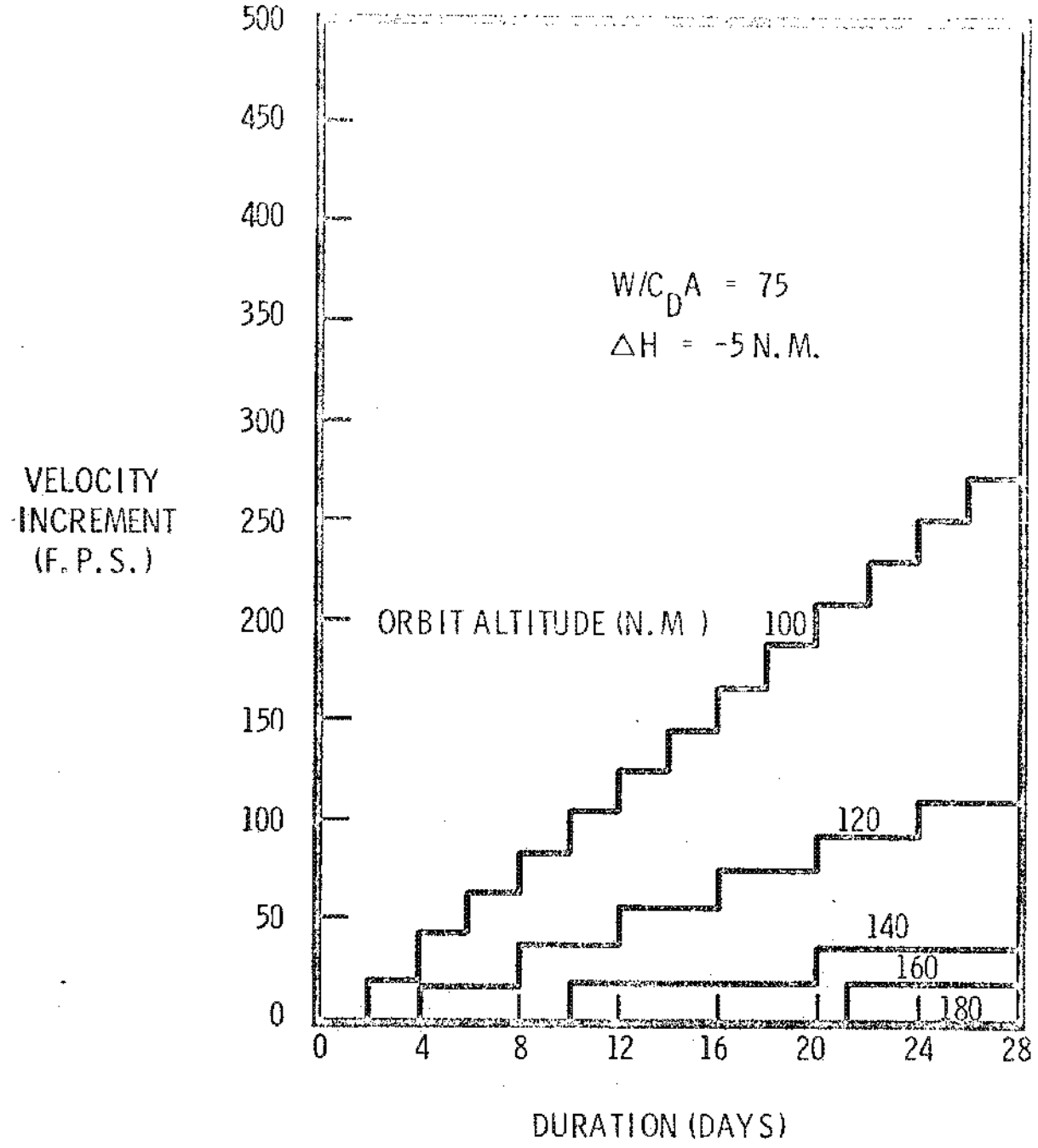
[illegible] SUBSYSTEM

- BASELINE CAPABILITIES
  - THRUST PROVIDED BY TWO INDEPENDENT 50 POUND THRUST ENGINES
  - RESTARTABLE
  - AVAILABLE IMPULSE OF 80,000 POUND-SEC
  - CHANGE IN VELOCITY OF APPROXIMATELY 550 FT. PER SEC. (BASED ON 5650 LBS)
  - AXIAL IMPULSE FOR
    - ORBIT TRANSFER
    - DRAG MAKE-UP
    - SPACECRAFT DEORBIT

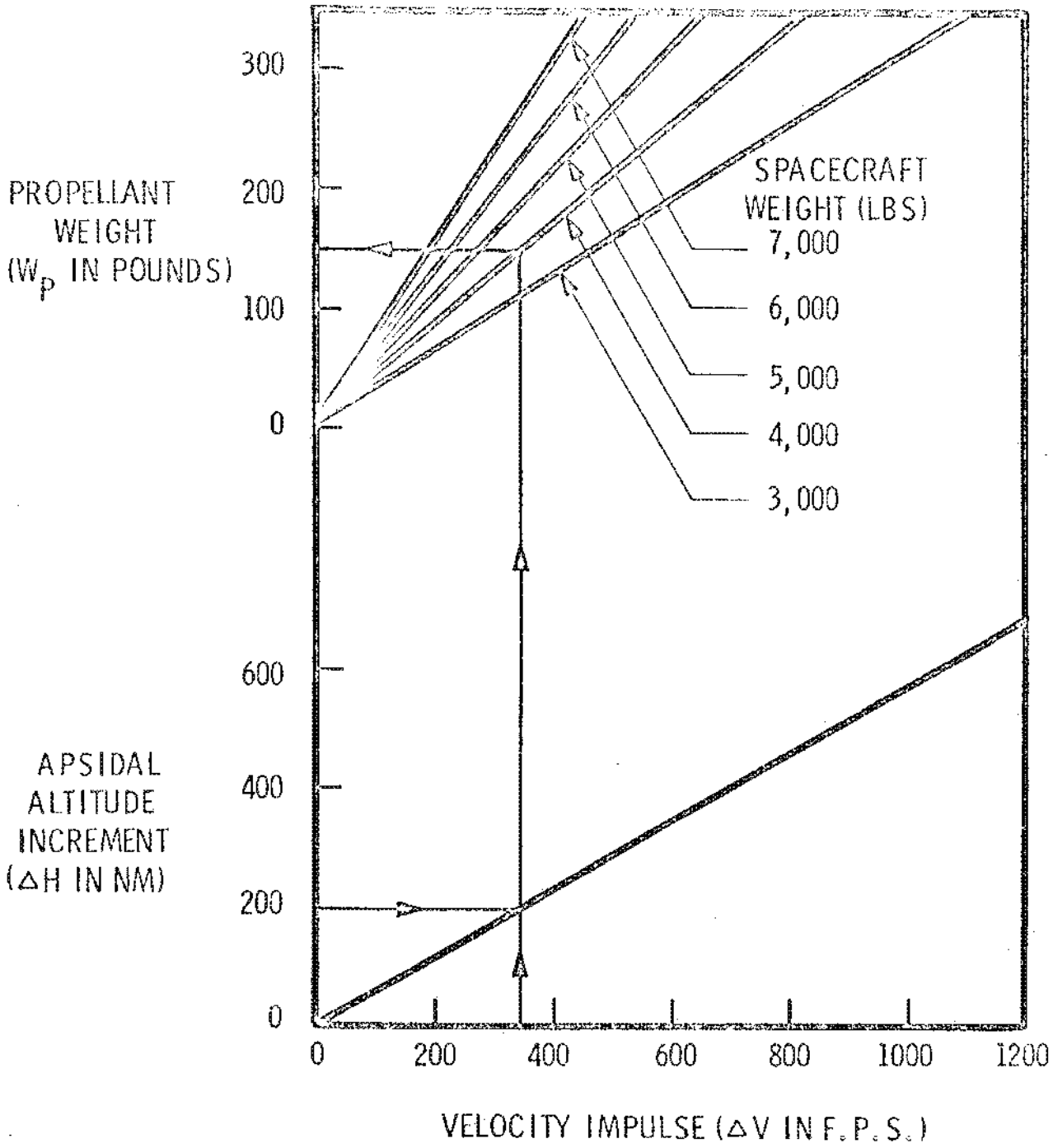
TYPICAL CIRCULAR ORBIT DECAY



PROPULSION REQUIREMENTS FOR ORBIT PLANE COMPENSATION



PROPELLANT REQUIRED TO ADJUST ALTITUDE



- EXPERIMENT GROUPING CRITERIA
  - MAXIMUM DENSITY PACKAGING
  - TIME OF YEAR REQUIREMENTS
  - ALTITUDE REQUIREMENTS
  - OBSERVED SPECTRUM
  - CORRELATION OF DATA
  - OTHER
- MULTIPLE FLIGHTS OFFERS FLEXIBILITY
  - REDUCED EXPERIMENT COMPROMISES
  - MULTIPLE FLIGHTS OF SAME EXPERIMENT
- MISSION DURATION CAPABILITY
  - MINIMUM - 14 DAYS
  - MAXIMUM - REQUIRES STUDY

PERCHERON - "APP A" EXP. GROUPS

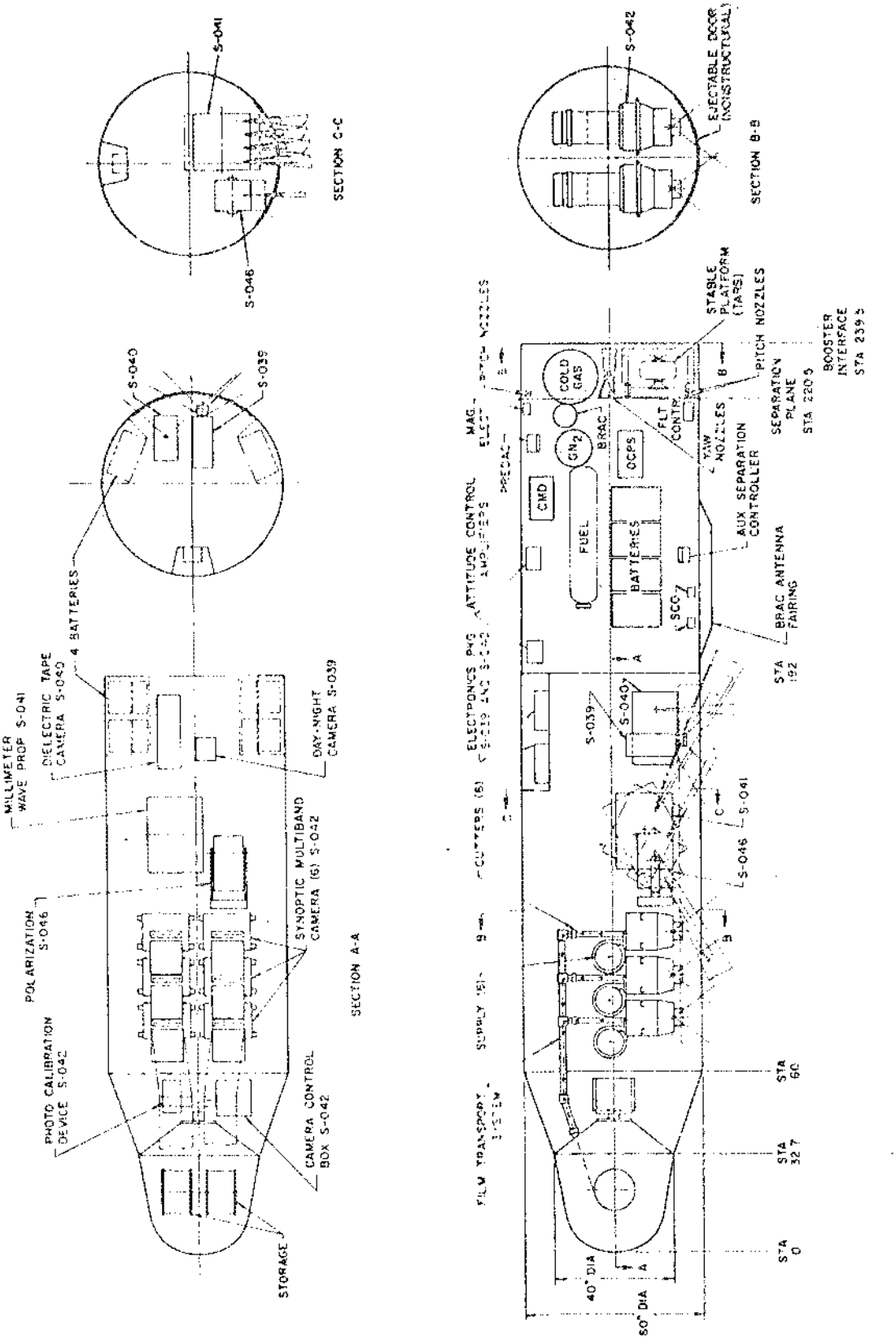
MAXIMUM DENSITY PACKAGING

EXP NO.	TIME OF YEAR PREFERRED	ALTI-TUDE (NM)	TYPE TLM DATA	KWH (14 DAYS)	EXP WT (LBS)	EXP SPECTRUM	SPAC CRAF WT (LBS.
039	AUTUMN EQUINOX	100—300	A OR D	10.25	75	VIS	
040	NOT SUMMER	150—250	A	0.6	83	VIS	
041	WINTER SOLSTICE	175—225	A OR D	4.5	1200	μ WAVE	
042	ANY TIME	100—150	A	3.0	1400	VIS	
046	AUTUMN EQUINOX	100—150	D	4.0	51	VIS	
				22.35	1809		5650
043	WINTER SOLSTICE	100—150	D	26.8	40	IR	
044	ANY TIME	100—300	D	16.6	260	μ WAVE	
045	WINTER SOLSTICE	100—150	D	0.04	30	IR	
048	SUMMER	125—175	A OR D	3.3	35	μ WAVE	
049	AUTUMN EQUINOX	100—150	D	1.6	36	IR	
050	WINTER SOLSTICE	175—225	D	1.7	90	IR	
057	AUTUMN EQUINOX	100—150	D	1.6	18	IR	
				51.64	509		4700

[redacted]

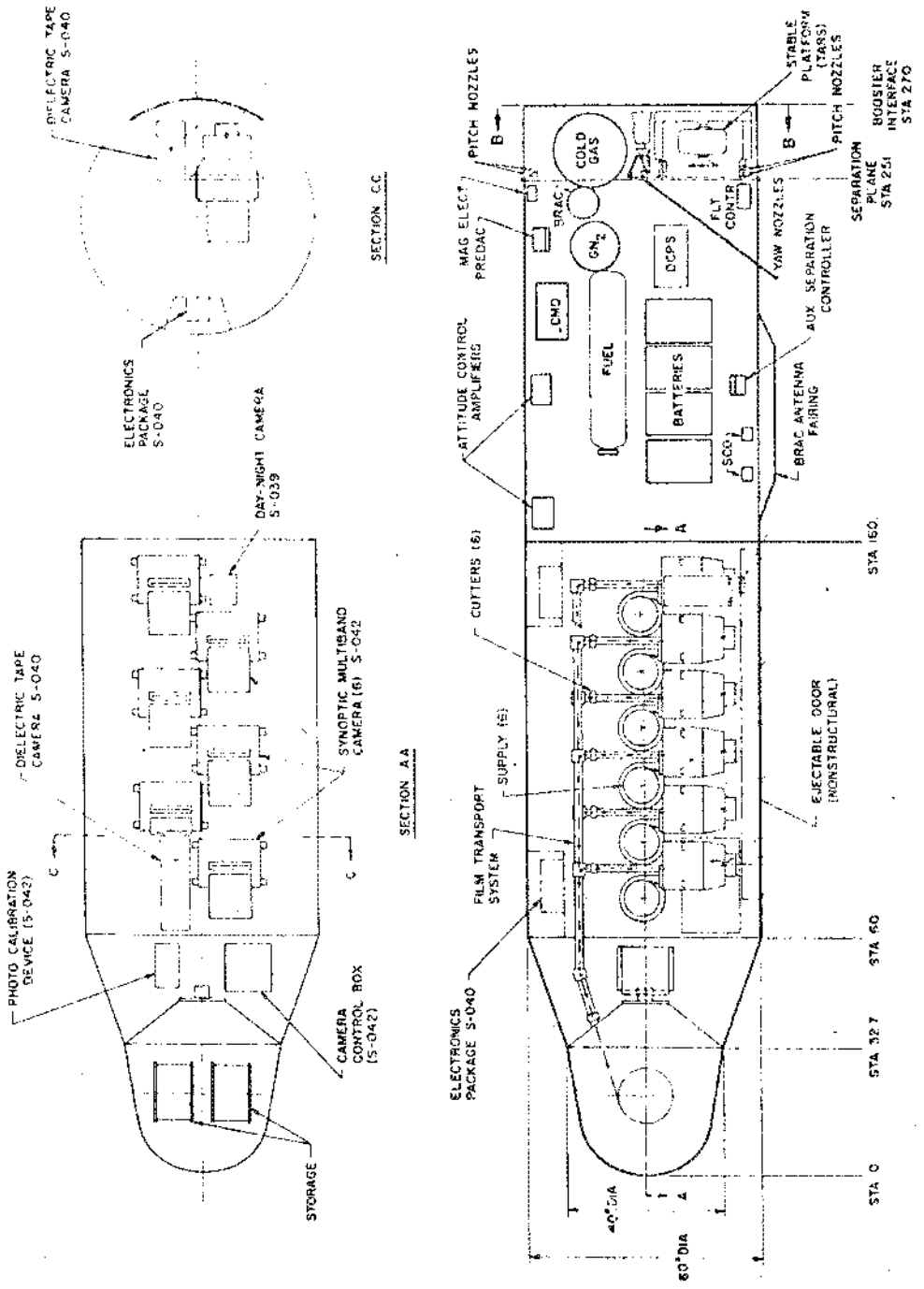
MAXIMUM DENSITY PACKAGING

SUB GROUP A



MAXIMUM DENSITY PACKAGING

ALTERNATE SUB-GROUP A



PERCHERON - "APP A" EXP. GROUPS

EXPERIMENT SPECTRUM

EXP NO.	TIME OF YEAR PREFERRED	ALTI-TUDE (NM)	TYPE TLM DATA	KWH (14 DAYS)	EXP WT (LBS)	EXP SPECTRUM	SPACE-CRAFT WT (LBS)
S039	AUTUMN EQUINOX	100—300	A OR D	10.25	75	VIS	
S046	↑	100—150	D	4.0	51	VIS	
S041★	↕	175—225	A OR D	4.5	200	μ WAVE	
S044★	↓	100—300	D	16.6	260	μ WAVE	
S040★★	AUTUMN EQUINOX	100—150	D	0.6	83	VIS	
				35.95	669		4550
S045	AUTUMN EQUINOX	150—250	D	0.04	30	IR	
S049	AUTUMN EQUINOX	100—150	D	1.6	36	IR	
S057	AUTUMN EQUINOX	100—150	D	1.6	18	IR	
S043	WINTER SOLSTICE	100—150	D	26.8	40	IR	
S050	WINTER SOLSTICE	175—225	D	1.7	90	IR	
				31.74	214		3750
S042★	SUMMER	100—150	A	3.0	1400	VIS	
S048	SUMMER	125—175	A OR D	3.3	35	μ WAVE	
				6.3	1435		5100

★ ANY TIME OF YEAR
★★ NOT SUMMER

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PERCHERON - "APP A" EXP. GROUPS

TIME OF YEAR/ALTITUDE

EXP NO.	TIME OF YEAR PREFERRED	ALTITUDE (NM)	TYPE TLM DATA	KWH (14 DAYS)	EXP WT (LBS)	EXP SPECTRUM	SPACECRAFT WT (LBS)
S039	AUTUMN EQUINOX	100—300	A OR D	10.25	75	VIS	
S040	⇕	150—250	A	0.6	83	VIS	
S046	⇕	100—150	D	4.0	51	VIS	
S049	⇕	100—150	D	1.6	36	IR	
S057	AUTUMN EQUINOX	100—150	D	1.6	18	IR	
				18.05	263		3750
S041★	WINTER SOLSTICE	175—225	A OR D	4.5	200	μ WAVE	
S043	⇕	100—150	D	26.8	40	IR	
S044★	⇕	100—300	D	16.6	260	μ WAVE	
S045★★	⇕	100—150	D	0.04	30	IR	
S050	WINTER SOLSTICE	175—225	D	1.7	90	IR	
				49.64	620		4600
S042★	SUMMER	100—150	A	3.0	1400	VIS	
S048	SUMMER	125—175	A OR D	3.3	35	μ WAVE	
				6.3	1435		5100

★ ANY TIME OF YEAR
★★ NOT SUMMER

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USING PERCHERON FOR APP-B

- NEED CAMERA OPERATIONAL REQUIREMENTS TO DEFINE TOTAL FILM WEIGHT
- ADDITIONAL STUDY REQUIRED FOR PACKAGING
- POINTING ACCURACY REQUIREMENTS BETTER THAN 0.5 DEGREE EXCEEDS STABILIZATION SUBSYSTEM CAPABILITY
- APP-B EXPERIMENTS CAN BE GROUPED WITHIN PERCHERON WEIGHT, POWER AND DATA RETURN CAPABILITY

(ASSUMES A 14 DAY MISSION)

EXPERIMENT OR EQUIPMENT	ESTIMATED TOTAL WEIGHT	ESTIMATED TOTAL POWER	ESTIMATED DIMENSIONS	ESTIMATED DATA RATE	POINTING ACCURACY REQUIRED
METRIC CAMERAS	1000 LBS	100 W	50 CU FT	16 LBS FILM PER DAY DEPENDING ON COVERAGE	$\pm 0.5^{\circ}$ 0.05°/SEC
HIGH RESOLUTION PANORAMIC CAMERAS	1400 LBS	200 W	50-500 CU FT	1.0 LBS FILM PER 1000 NM GROUND TRACK	$\pm 0.5^{\circ}$ 0.05°/SEC
SYNOPTIC MULTIBAND CAMERAS	800 LBS	200 W	50 CU FT	1.5 LB ORBIT FILM (LAND COVERAGE)	0.1° -0.5° WITH IMAGE MOTION COMPENSATION
HIGH RESOLUTION RADAR IMAGER (COHERENT)	RADAR WITH ANTENNA & RECORDER 210 LBS	550 W	13 CU FT	~ 5 LB/ ORBIT FILM (100% LAND COVERAGE)	0.05° YAW, 1° PITCH AND ROLL
RADAR ALTIMETER/SCATTEROMETER	RADAR & RECORDER 50 LBS	220 W	18 CU FT ANTENNA LENGTH 27 FT	4.4×10^{8} BITS PER ORBIT	$\pm 3^{\circ}$ IN ALL AXES
UV-IMAGER SPECTROMETER	TO BE DETERMINED $<$ 100 LBS	$<$ 50 W	2.0 CU FT	1500 BITS/ SEC	1° FIELD OF VIEW
ABSORPTION SPECTROSCOPY	35 LBS	40 W	2-8 CU FT	$.3 \times 10^{3}$ BITS/SEC 500 FRAMES IF 35MM FILM/ORBIT	$< 10^{\circ}$ MIN
MAGNETOMETER	50 LBS	50 W	4.0 CU FT Y_4 OUTSIDE 10'-20' BOOM (OR SUB-CRAFT)	10^{6} BITS PER DAY	PREORIENTATION -RB MAG

SPACECRAFT/EXPERIMENT WEIGHT SUMMARY

GROUP	SPACECRAFT WEIGHT (LBS)	EXPERIMENT WEIGHT (LBS)	TOTAL WEIGHT (LBS)
○ MAXIMUM DENSITY			
▫ GROUP 1	3,840	1,809	5,650
▫ GROUP 2	4,190	509	4,700
○ SEASON AND ALTITUDE			
▫ GROUP 1	3,490	263	3,750
▫ GROUP 2	3,980	620	4,600
▫ GROUP 3	3,660	1,435	5,100
○ EXPERIMENT SPECTRUM			
▫ GROUP 1	3,880	669	4,550
▫ GROUP 2	3,540	214	3,750
▫ GROUP 3	3,660	1,435	5,100

INCLINATION = 90°

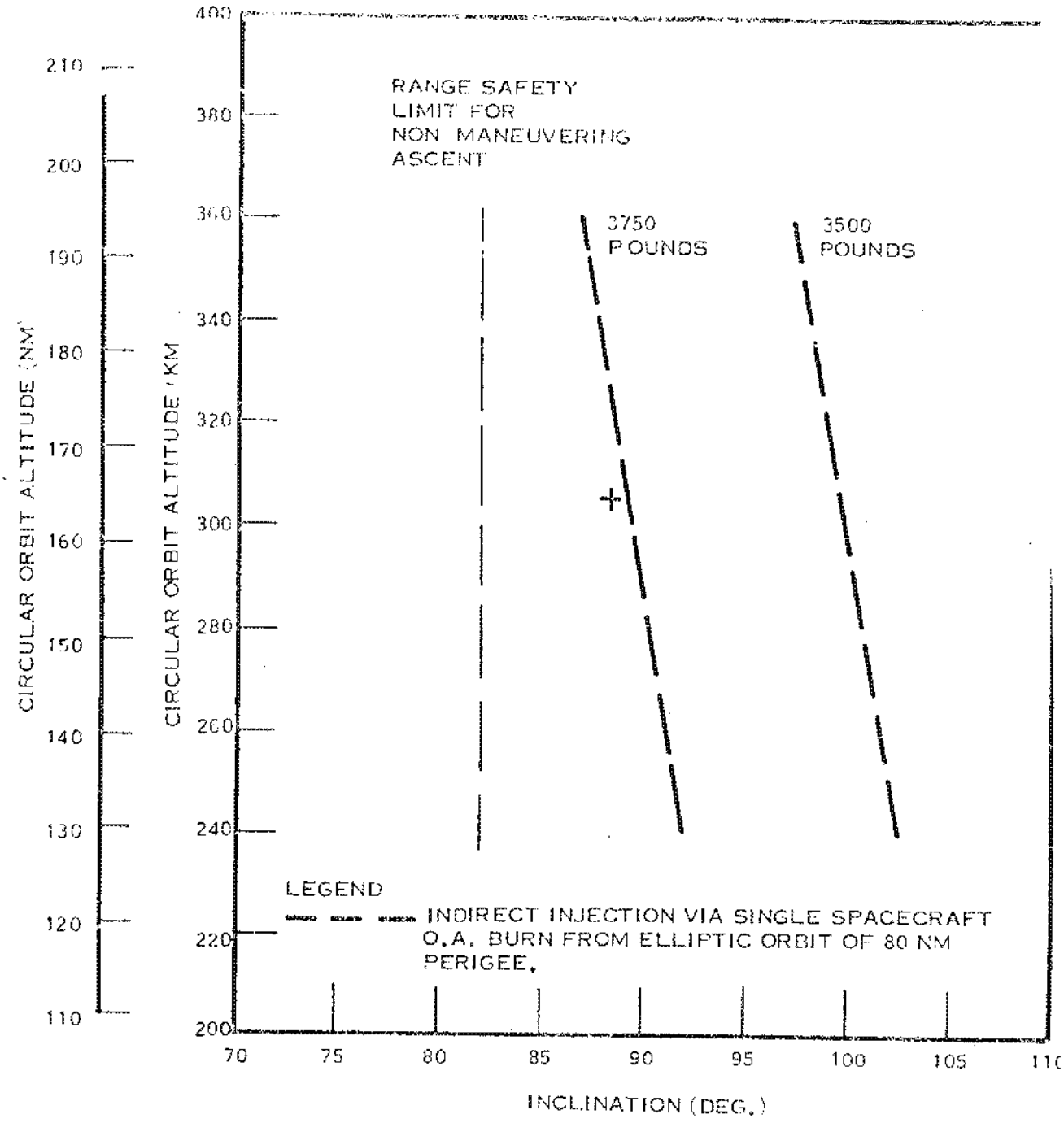
CIRCULAR ORBIT

BOOSTER	INJECTION WEIGHT CAPABILITY - LBS 125 NM	180 NM
ATLAS SLV-3A	*3800	*3700
TITAN III B (NO AGENA)	*4550	*4400
SLV3/AGENA (DIRECT)	5300	4100
(2ND BURN)	5700	5500
SLV3A/AGENA (DIRECT)	6000	4950
(2ND BURN)	6500	6300
TITAN III B/AGENA (DIRECT)	6600	5450
(2ND BURN)	6950	6800

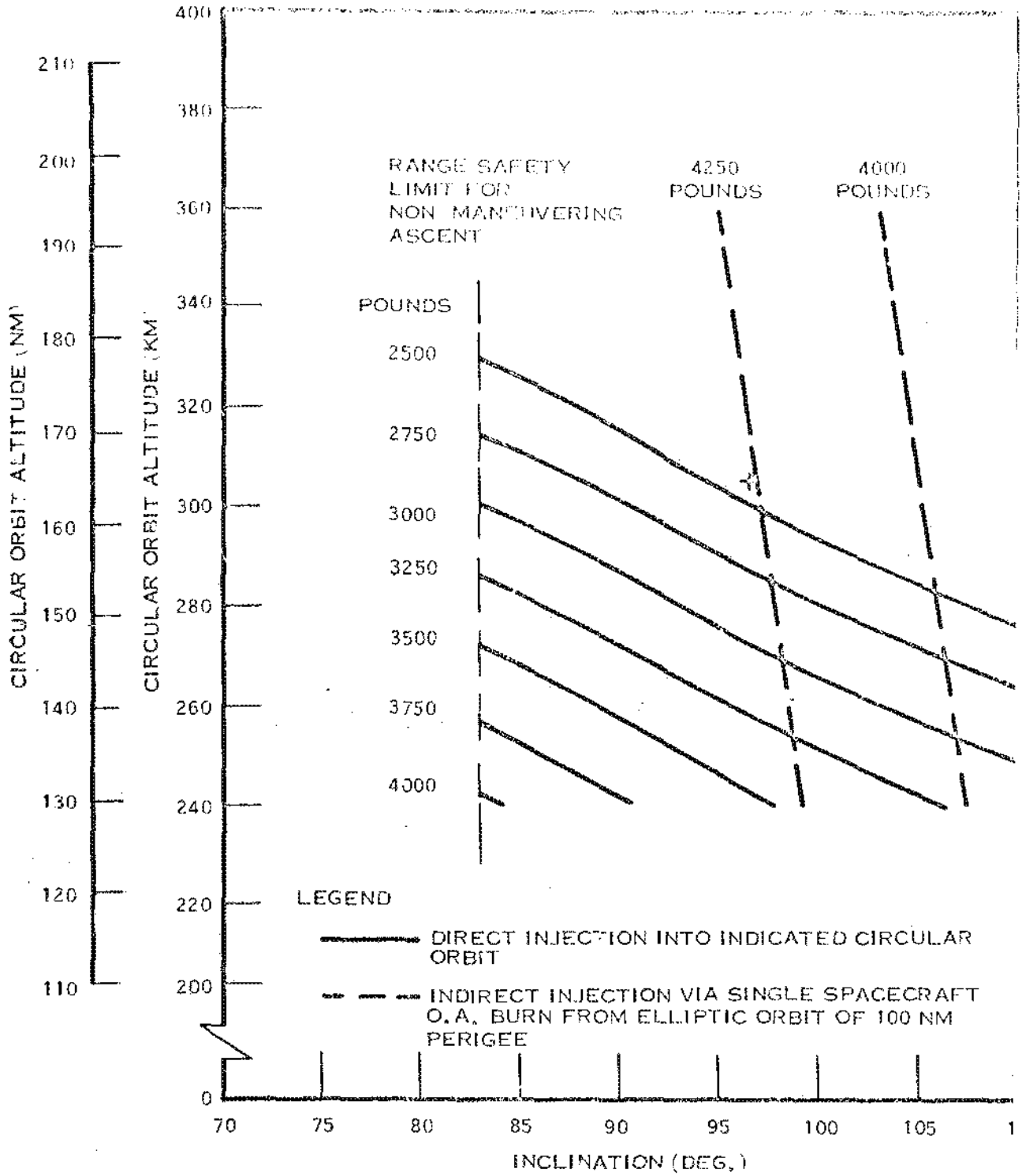
* REQUIRES INJECTION INTO ORBIT HAVING 80 NM PERIGEE AND CIRCULARIZATION USING PERCHERON PROPULSION SYSTEM.

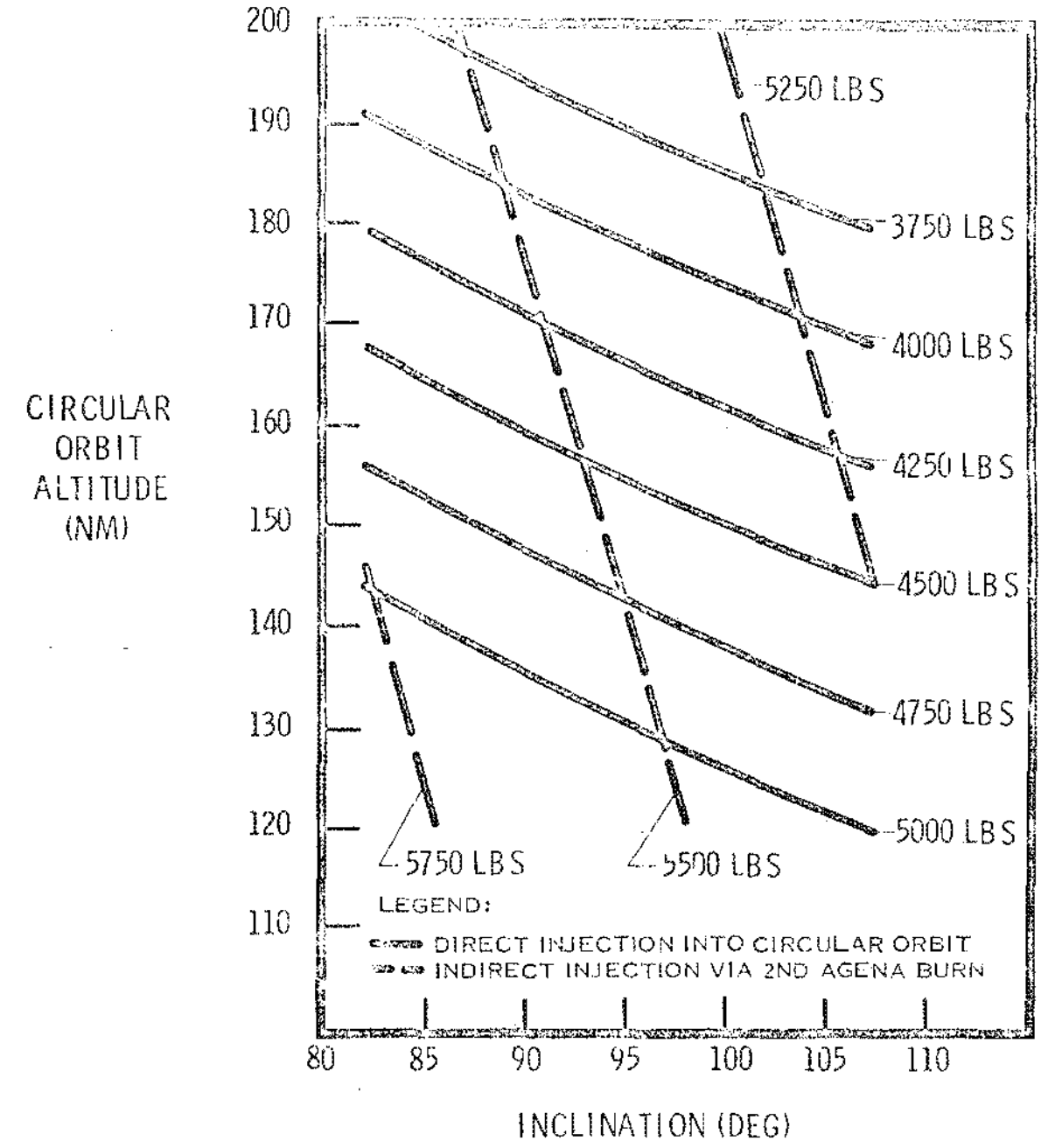
ATLAS (SLV-3A)

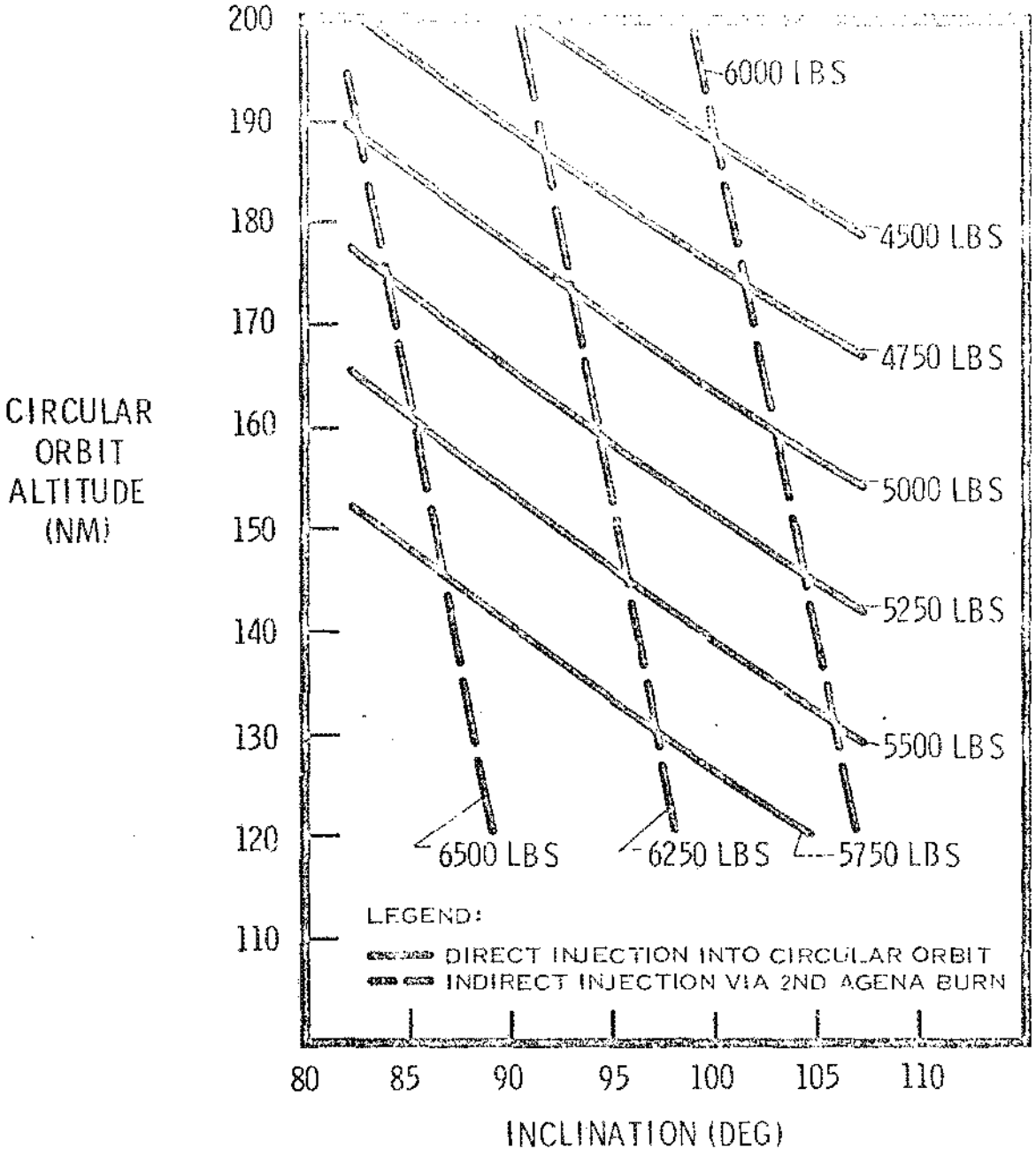
PAYLOAD CAPABILITY (INCLUDING ADAPTER WT.)



PAYLOAD CAPABILITY (INCLUDING ADAPTER WT.)

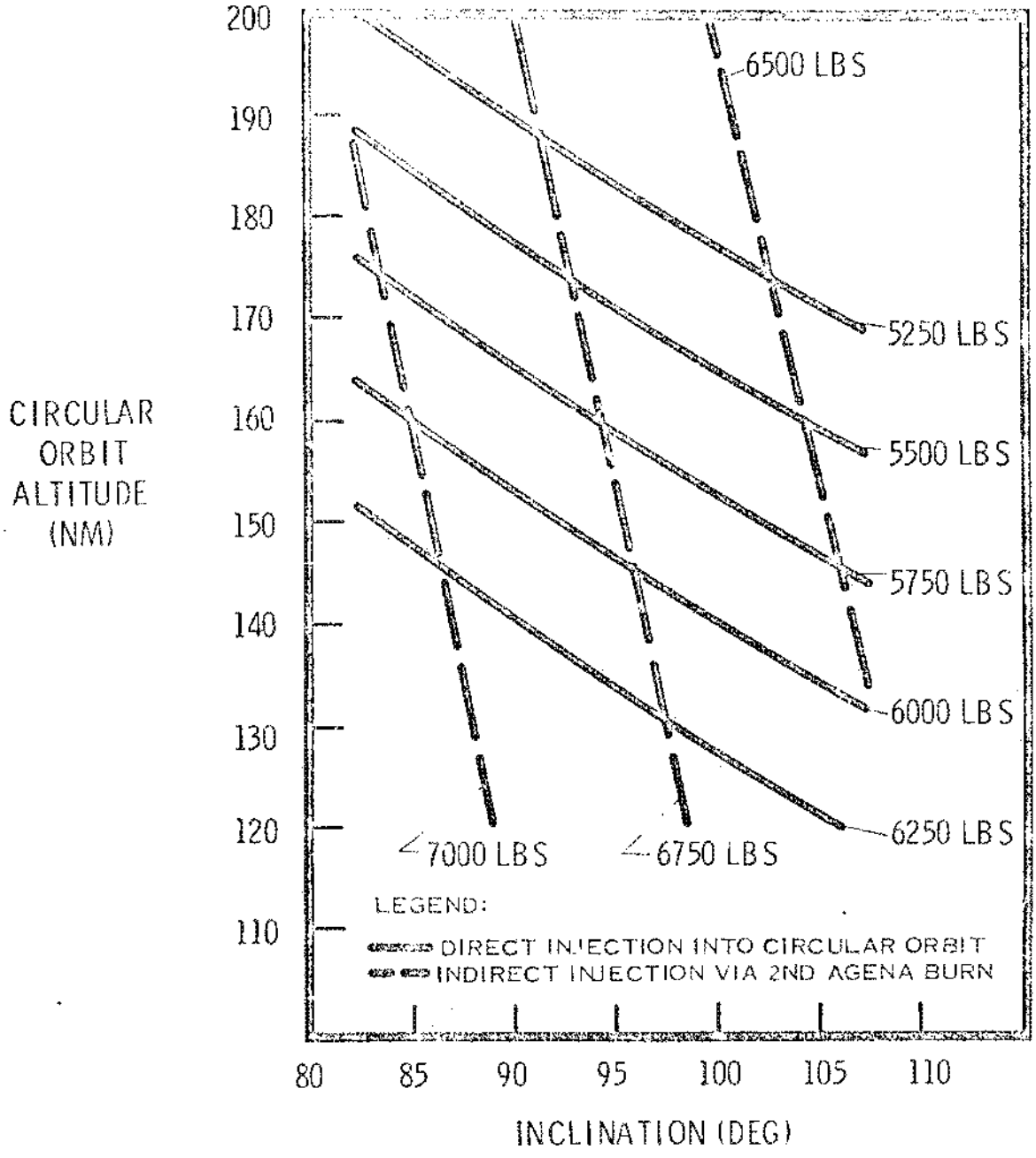






PAYLOAD CAPABILITY

TITAN-AGENA (SLV-5/S-01)



PROPOSED
ACTION

CANDIDATE LIMB-SPECTRAL PHOTOGRAPHIC MISSION

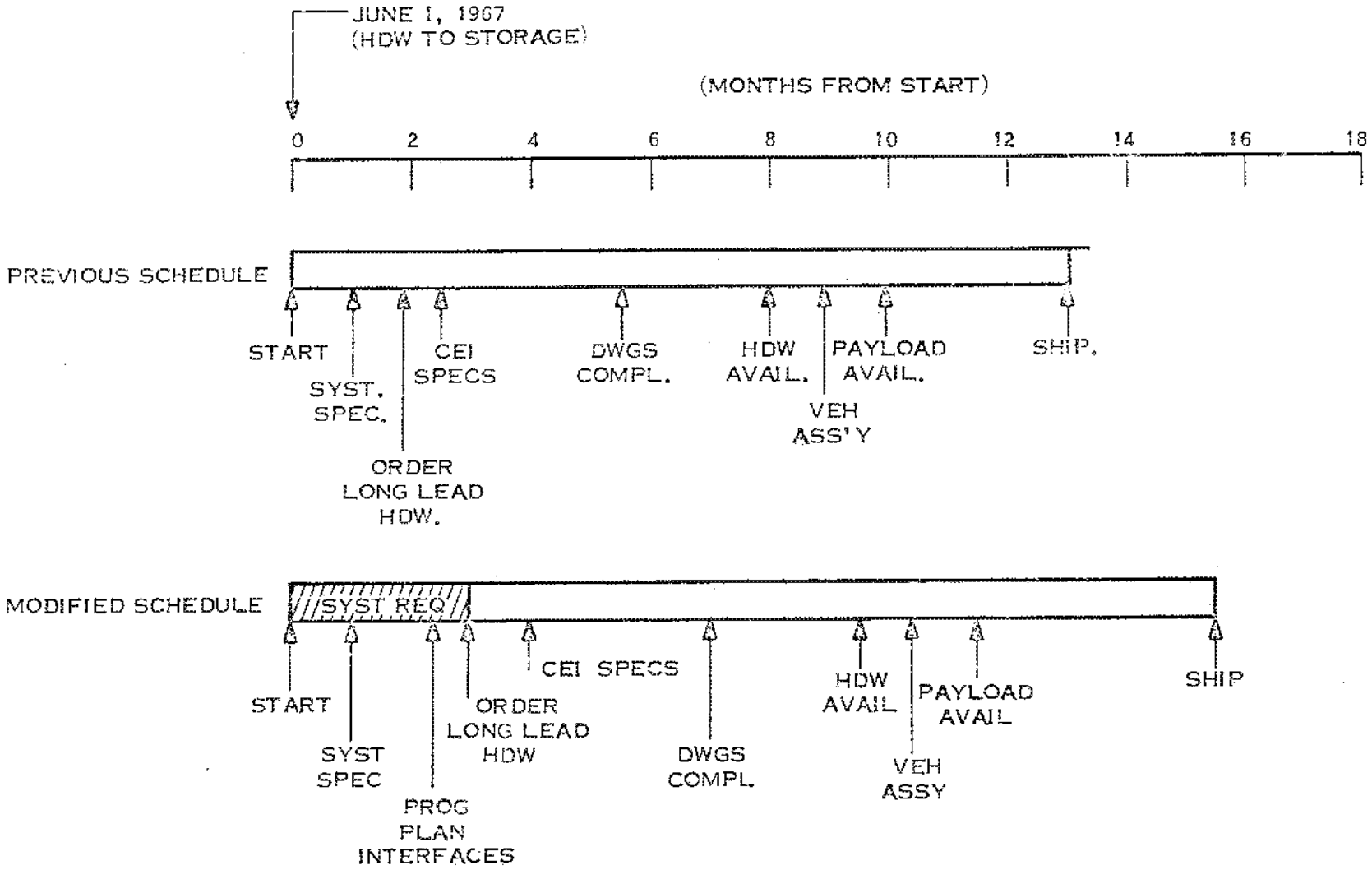
- OBJECTIVE - INITIATE SYSTEM DEFINITION, SYSTEM REQUIREMENTS AND PRELIMINARY DESIGN PHASE FOR SUBSEQUENT HARDWARE IMPLEMENTATION.
- SCOPE
  - SYSTEM REQUIREMENTS
  - PAYLOAD INTERFACES
  - EV INTERFACES
  - MISSION PROFILE
  - OPERATIONAL REQUIREMENTS
  - EXTENDED LIFE/DORMANCY RELIABILITY REQUIREMENTS
  - COMPUTER PROGRAM REQUIREMENTS
  - ALTERNATE COMMAND SUBSYSTEM AVAILABILITY
- END ITEMS
  - TECHNICAL REPORT
  - PRELIMINARY INTERFACE AGREEMENTS AND DRAWINGS
  - PRELIMINARY SYSTEM SPECIFICATION
  - PROGRAM SOFTWARE REQUIREMENTS DOCUMENT
  - ALTERNATE COMMAND S/S SPEC, COST AND SCHEDULE
- COST
  - 92 K
- SCHEDULE
  - 3 MONTHS

CANDIDATE MULTISPECTRAL PHOTOGRAPHIC MISSION

- OBJECTIVE - DEFINE PROGRAM PLAN FOR IMPLEMENTATION OF CANDIDATE MULTISPECTRAL PHOTOGRAPHIC MISSION
- SCOPE
  - DEFINITIZED COST AND SCHEDULE
  - WORK STATEMENT
  - MANAGEMENT, TECHNICAL, MANUFACTURING AND PROCESSING PLANS
- END ITEMS

  DOCUMENTATION OF ABOVE ITEMS
- COST - 60 K
- SCHEDULE - 2 1/2 MONTHS

PROGRAM SCHEDULE



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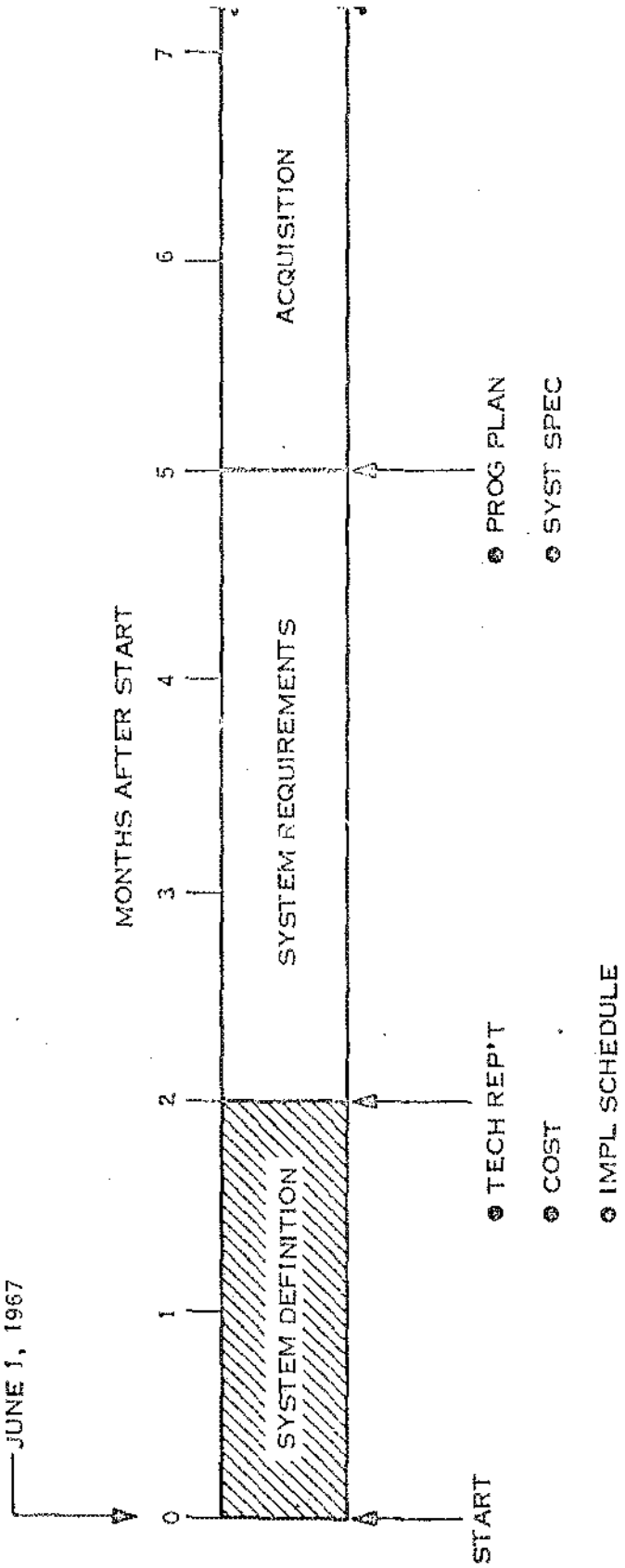
PROGRAM SCHEDULE

MULTI-EXPERIMENT MISSION



PERSPERON STORAGE

(TIME PERIOD ≈ 2 YEARS)

- STORE IN PRESENT SHIPPING CONTAINER
- KEEP IN CLEAN ROOM (CLASS 100,000, $70^0 \pm 20^0$F, RH > 15%)
- SPECIAL REQUIREMENTS
  - LOW PRESSURE GN_2 IN PNEUMATICS, PERIODIC CHECKS
  - SPRING, GASKET, AND SHOCK MOUNT LOADS REMOVED
- CONFIDENCE TEST PRIOR TO REACTIVATION
  - SYSTEM LEVEL ELECTRICAL TEST
  - GYRO DRIFT, RUNDOWN AND COMPENSATION
  - PNEUMATIC LEAK TESTS
  - ESTIMATE 3% REWORK OF ELECTRONICS

- OBJECTIVE - INITIATE MISSION AND SYSTEM DEFINITION PHASE FOR SUBSEQUENT SYSTEM REQUIREMENTS DEFINITION
- SCOPE
  - MISSION ANALYSIS
  - OPERATIONS ANALYSIS
  - SYSTEM TRADE-OFFS AND REQUIREMENTS
  - PAYLOAD INTERFACES
  - SUBSYSTEM TRADE-OFFS AND DEFINITION
  - RELIABILITY ANALYSIS
  - AGE REQUIREMENTS
- END ITEMS
  - TECHNICAL REPORT
  - IMPLEMENTATION SCHEDULE
  - IMPLEMENTATION COST
- COST
  - 98 K ("A")
  - 150 K ("B")
- SCHEDULE
  - 3 MONTHS EACH

SUMMARY OF PROPOSED WORK

- CANDIDATE MULTISPECTRAL MISSION (COSTS INCLUDED IN $4.98 IN PROPOSAL)
  - SYSTEM REQUIREMENTS, INTERFACES — 92 K
  - PROGRAM PLAN — 60 K
- MULTIEXPERIMENT MISSION
  - APP A SYSTEM DEFINITION — 98 K
  - APP B SYSTEM DEFINITION — 150 K

- DOD WILL RELEASE HARDWARE AT NO COST TO NASA
  - FROM LT. COL. H. ORTHMAN, PCO
- AGE – 1 SET AT VFAB TERMINATE 30 JUNE 67
- SPACECRAFT – 4 SETS AT VFAB TERMINATE 30 JUNE 67
  - 5 SETS AT GE TERMINATED 20 JAN 67
  - 3 SETS SPARES AT GE TERMINATED 20 JAN
  - DISPOSITION: HARDWARE AT GE TO BE RELEASED TO GOV'T SCREENING 1 MAY 67. WITHOUT "NASA HOLD" THESE WILL BE DESTROYED OR TRANSFERRED. AGE IN PROCESS OF TERMINATION FOR TRANSFER TO OTHER PROGRAMS.

RAPID NASA ACTION REQUIRED TO

HOLD DESIRED EQUIPMENT

SUGGESTED NASA ACTION

- TELECON DOD (LT. COL. HORTHMAN, PROCUREMENT CONTRACTING OFFICER) AREA 213 643-0560
  - INDICATE INTEREST IN HOLDING
    - PERCHERON AGE . . . . . 1 SET AT VAFB
    - PERCHERON SPACECRAFT . . . . . 2-5 SETS AT GE-KOPP
  - OBTAIN HIS AGREEMENT TO HOLD AFTER 1 MAY 67
  - PROVIDE DOD WITH NASA CONTRACT NUMBER
  - CONFIRM TELECON WITH TWX
  - GE WILL THEN RECEIVE "HOLD" ORDER FROM DOD
- DEVELOP HARDWARE ACQUISITION PLAN TOGETHER WITH GE
- INITIATE STORAGE/MAINTENANCE CONTRACT WITH GE
  - DEVELOP STORAGE/MAINTENANCE PLAN
  - AGE AT VAFB RETURNED TO GE-KOPP
  - AGE AND VEHICLE MAINTAINED OPERABLE
    - ALL EQUIPMENT STORED IN CONTROLLED ENVIRONMENT
    - PERIODIC FUNCTIONAL CHECKS

ORAGE COST $8200.00/MO UNTIL NASA DECIDES TO INITIATE PROGRAM