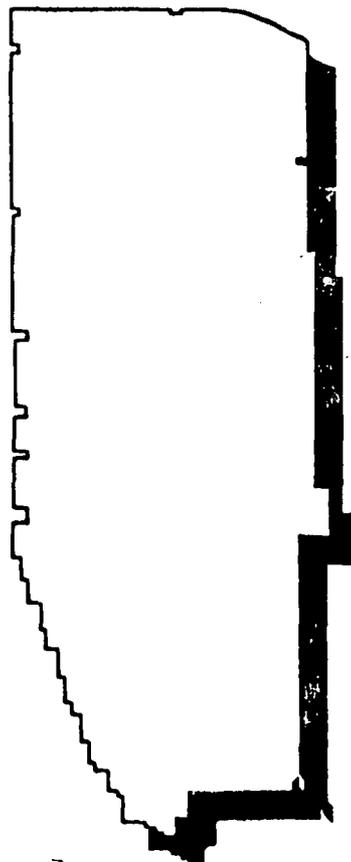




## ABOUT WHITE SANDS MISSILE RANGE



- **TRI-SERVICE RANGE (NAVY, ARMY, AIRFORCE)**
- **MANAGED BY THE ARMY (BRIGADIER GENERAL RICHARD W. WHARTON)**
- **LARGEST U.S. OVERLAND TEST RANGE**
  - APPROXIMATELY 40x100 MILES
  - ALTITUDE APPROXIMATELY 4,000 FT MSL
- **PRECISION FIXED AND MOBILE INSTRUMENTATION (RADAR, TELEMETRY, PHOTOGRAPHY, GPS, ETC.)**
- **USUALLY GOOD WEATHER (350 DAYS OF SUNSHINE)**
- **HISTORICAL SIGNIFICANCE (ATOMIC BOMB, V2 ROCKET, TALOS, STANDARD MISSILE)**
- **SAN ANDRES WILDLIFE REFUGES**
- **THREATENED, ENDANGERED & CANDIDATE SPECIES (35 SPECIES LISTED)**
- **HISTORICAL & ARCHEOLOGICAL SITES (OVER 1000)**

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# NAVY PROGRAMS

## **SURFACE/AIR MISSILES**

STANDARD MISSILE BLOCK III PSR  
STANDARD MISSILE BLOCK IIIA  
STANDARD MISSILE BLOCK IIIB  
STANDARD MISSILE BLOCK IV  
STANDARD MISSILE NAVY LEAP  
ROLLING AIRFRAME MISSILE (RAM)  
NATO SEA SPARROW MISSILE

## **SURFACE/SUBSURFACE**

SEALANCE  
VERTICAL LAUNCH ASROC

## **SURFACE GUN WEAPONS**

FUTURE GUN TECHNOLOGY  
GUNLINE

## **AIR/SURFACE WEAPONS**

STANDOFF LAND ATTACK MISSILE  
NAVAL AIR WEAPONS TEST  
NAVY AMRAAM

## **NAVY TARGETS**

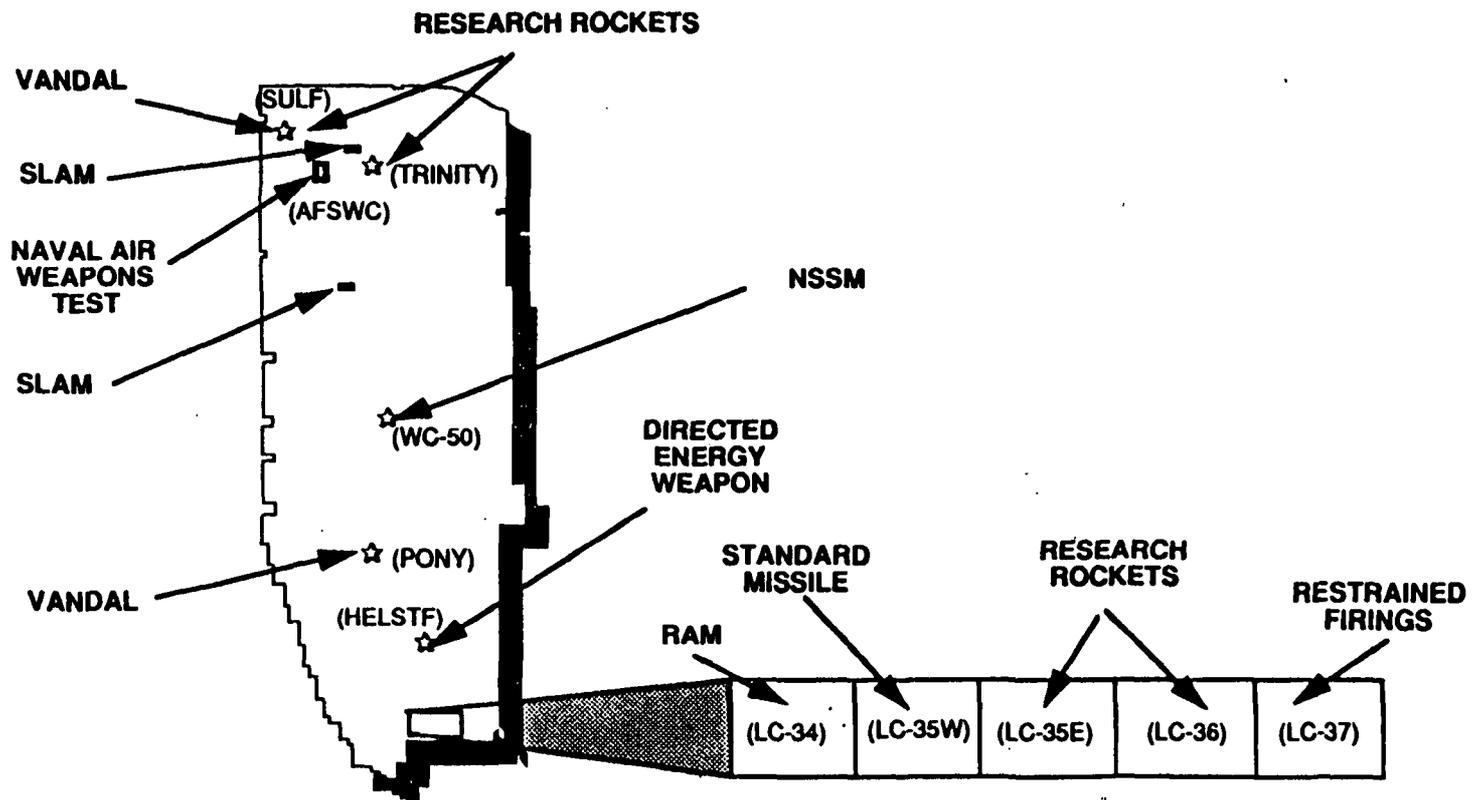
VANDAL  
AQM-37C(EP)  
HIGH ALTITUDE TARGET SYSTEM  
SPECIALIZED GROUND TGTS

## **SPACE ROCKETS**

NASA RESEARCH ROCKETS  
LEAP 1-4  
ERINT/PATRIOT TARGET  
HEDI KITE TARGET  
THAADS TARGET  
COMMERCIAL



# NOMTS TEST SITES





## **RESEARCH ROCKET PROGRAMS AT THE NAVAL ORDNANCE MISSILE TEST STATION**

**45 YEARS EXPERIENCE IN THE SOUNDING ROCKET BUSINESS, OVER 1070 LAUNCHES.**

**CUSTOMERS INCLUDE DEPARTMENT OF DEFENSE, NASA AND COMMERCIAL.**

**COMPLETE FACILITIES FOR PAYLOAD BUILD-UP AND INTEGRATION, ORDNANCE STORAGE,  
LAUNCH AND RECOVERY.**

**FULL CAPABILITY OF WHITE SANDS MISSILE RANGE FOR DATA COLLECTION.**

**PERFECT SAFETY AND SECURITY RECORD.**

**6 LAUNCHERS ARE AVAILABLE; 8 ROCKET TYPES HAVE BEEN FLOWN.**

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## RESEARCH ROCKETS BOOSTER CAPABILITY

BOOSTER	LAUNCH COMPLEX	LAUNCHER TYPE
BLACK BRANT	LC-35W; LC-36	TOWER (3FIN); TOWER 4 FIN, RAIL
TERRIER - BLACK BRANT	LC-35W; LC-36	TOWER (3FIN); TOWER 4 FIN, RAIL
NIKE - BLACK BRANT	LC-35W; LC-36	TOWER (3FIN); TOWER 4 FIN, RAIL
ARIES	LC-36 SULF	STOOL, ATHENA RAIL STOOL, STARBIRD RAIL (PROPOSED)
ORION	LC-36 SMR (PROPOSED)	RAIL
TARUS - ORION	LC-36 SMR (PROPOSED)	RAIL
NIKE - ORION	LC-36 SMR (PROPOSED)	RAIL

### PLANNED BOOSTER CAPABILITY

SERGEANT-M57	SULF LC-36	STOOL, STARBIRD RAIL (PROPOSED) STOOL, ATHENA RAIL
MIST	VARIOUS	VARIOUS



## CURRENT BOOST CAPABILITIES

PROPULSION	ALTITUDE (MILES)	PAYLOAD (LBS)	LAUNCHERS
BLACK BRANT (BB)	95/200	920/375	3,4 FIN TOWERS 7.5K RAIL
TERRIER / BLACK BRANT (TBB)	145/235	1050/560	3,4 FIN TOWERS 7.5K RAIL
NIKE / BLACK BRANT (NBB)	125/230	1020/490	3,4 FIN TOWERS 7.5 RAIL
ARIES (MM STAGE 2)	75/360	5200/1000	STOOL (NORTH, SOUTH)
ORION	24/100	290/50	4.3K RAIL (INACTIVE)
NIKE / ORION	90/130	300/70	7.5K RAIL
TAURUS / ORION	125/215	330/80	7.5K RAIL
SERGEANT/M57	TBD	TBD	STOOL (NORTH, SOUTH)

NOTES: 1) 40K (54 FT) RAIL LAUNCHER COMPATIBLE WITH BB, TBB, NBB, AND ARIES IS BEING INSTALLED IN EARLY 1992 AT LC-36. THIS LAUNCHER WILL PROVIDE INCREASED CAPABILITY FOR PLANNED BOOSTERS.

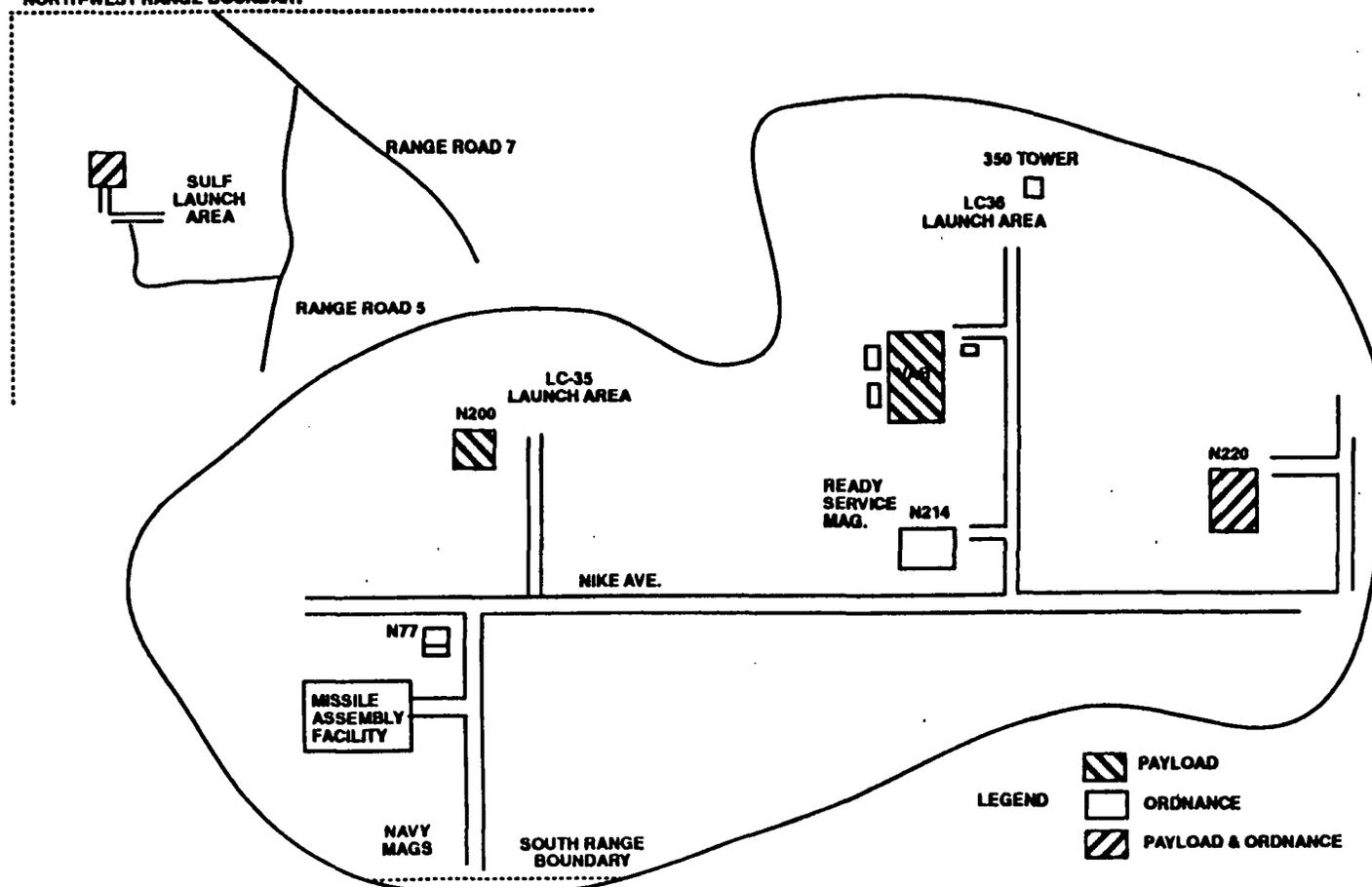
2) RAIL LENGTHS ARE 37 FT (7.5K LAUNCHER), 140 FT (3 FIN TOWER LAUNCHER) AND 160 FT (4 FIN TOWER LAUNCHER).

3) 50K STARBIRD LAUNCHER MAY BE INSTALLED AT SULF SITE IN 1992.



# RESEARCH ROCKETS ORDNANCE AND PAYLOAD ASSEMBLY AREAS

NORTH-WEST RANGE BOUNDARY



LEGEND  
PAYLOAD  
ORDNANCE  
PAYLOAD & ORDNANCE



## ORDNANCE AND PAYLOAD ASSEMBLY

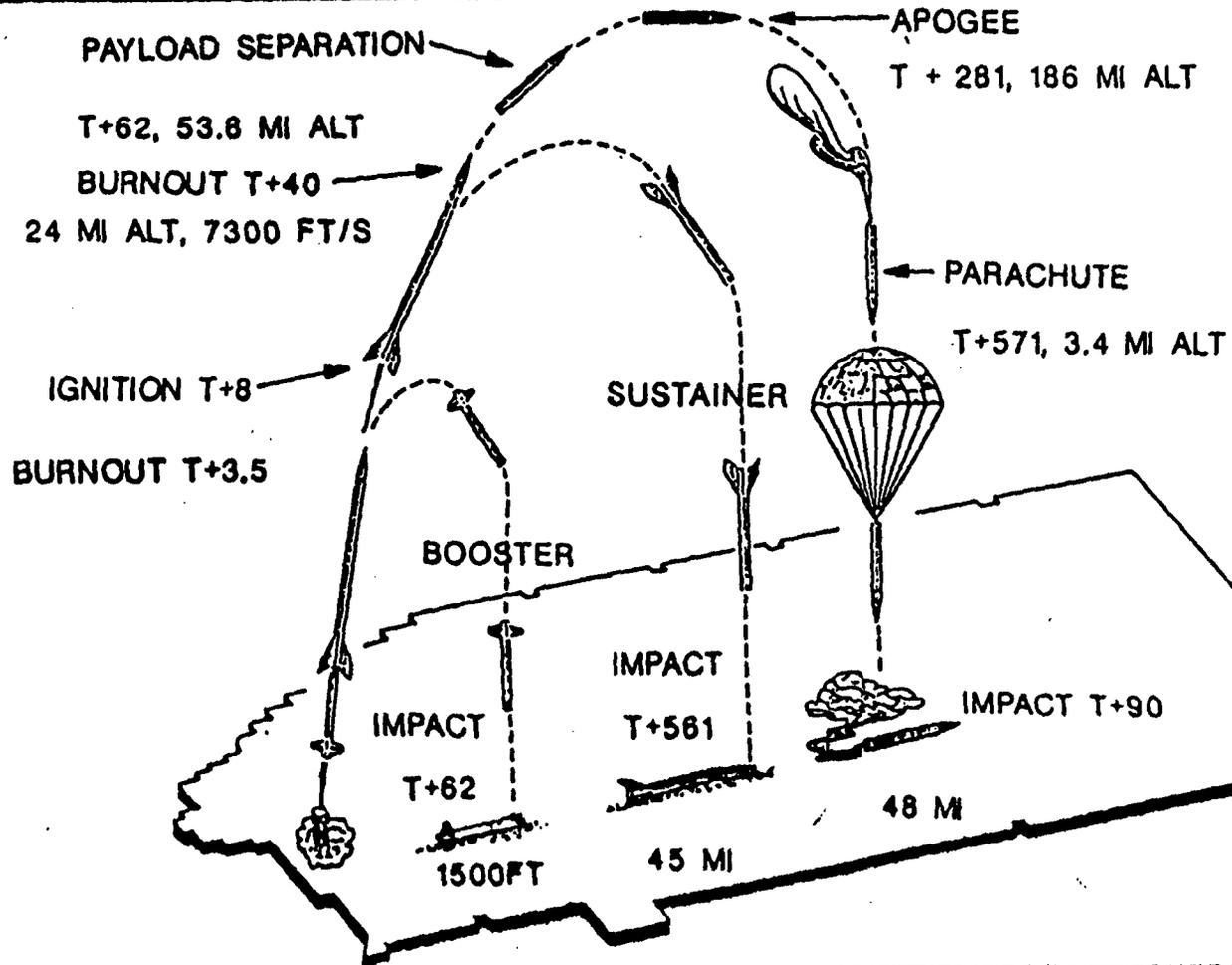
### ORDNANCE ASSEMBLY

BUILDING	DIMENSIONS	SQ. FT.	NEW	REMARKS
N-77-S	20X60	1,200	12,000	(DELETE IN 2ND QTR 92)
MAF	72X40	2,880	5,500	(ADD IN 2ND QTR 92)
N-220	29X70	2,030	4,000	
N-214	39X28	1,092	8,000	(READY IN SERVICE MAG)
SULF	28X60	1,680	11,000	
350 TOWER RUNWAY	66X15	990	4,500	(BACK UP)

### PAYLOAD ASSEMBLY

N-200	6,500 SQ. FT. (INCLUDES OFFICES, LABS, BUILDUP AREA) ALSO CONTAINS GROUND STATION, OPTICS LAB, UPLINK STATION
VAB - HIGH BAY 60X40 - 54' HOIST HEIGHT; LOW BAY 80X40-32' HOIST HEIGHT WITH 19'Wx32'H DOOR. ALSO CONTAINS GROUND STATION, VIBRATION, SPIN BALANCE, BENT	
N-220	2030 SQ. FT.
SULF	2760 SQ. FT.

# TYPICAL NIKE BLACK BRANT LAUNCH





## **NOMTS RESEARCH ROCKET SERVICES**

### **RANGE SPONSOR**

- REVIEW/FORWARD ALL RANGE DOCUMENTATION
- COORDINATE SERVICES/MEETINGS WITH NATIONAL RANGE
- SCHEDULE PRELAUNCH AND LAUNCH TESTS

### **FACILITIES AND EQUIPMENT**

- SCHEDULE USE OF NOMTS FACILITIES FOR ROCKET MOTOR AND PAYLOAD ASSEMBLY, PAD INTEGRATION, PRELAUNCH TESTS, LAUNCHES
- GROUND SAFETY AND SECURITY
- ENGINEERING AND FABRICATION SERVICES
- ORDNANCE STOWAGE
- CRANE, FORKLIFTS, AND OTHER HANDLING EQUIPMENT

### **MISSION MANAGEMENT**

- PROCURE CONSUMABLES, FACILITY MODIFICATION ITEMS, SPECIAL EQUIPMENT
  - BUDGET ESTIMATES, FUNDS DISPURSEMENT AND EXPENDITURE REPORTS
  - LOAD, COUNTDOWN AND LAUNCH OPERATIONS
  - TECHNICAL SUPPORT
  - PAO WITH WSMR
-



# NOMTS/WSMR/ARMTE

## NOMTS

TEST SUPPORT PLANNING  
RANGE SPONSOR  
MISSION SCHEDULING  
ORDNANCE HANDLING  
TARGET AUGUMENTATION  
TEST SITE PREPARATION  
SAFETY  
SECURITY

## NATIONAL RANGE

RANGE SUPPORT PLANNING  
SC/OD DOCUMENTATION  
RANGE SCHEDULING  
FLIGHT SAFETY  
SAFETY ENGINEERING  
DATA REDUCTION & ANALYSIS

### MISSION SUPPORT

MISSION CONTROL  
REAL TIME SYSTEMS  
INSTRUMENTATION  
TELEMETRY  
RADAR (BEACON CKS)  
TRACKING CAMERAS  
NON-TRACK CAMERAS  
VIDEO  
COMMUNICATIONS  
FREQUENCY SURVEILLANCE  
AREA SURVEILLANCE  
ROADBLOCKS  
RECOVERY/EOD

## ARMTE

CHEMISTRY LAB  
X-RAY LAB  
DYNAMIC ENVIRONMENT LAB  
SHOCK/VIBRATION/NOISE  
COMBINED CLIMATIC  
MICROBIOLOGICAL  
ELECTROMAGNETIC

## OTHER

ASL - METEOROLOGY  
DMA - GEODETIC SURVEY  
DOD-AFC - FREQ. COORDINATOR  
EL-PM - MASTER PLANNING  
EL-N - ENVIRONMENTAL OFFICE  
EL-LM - TRANSPORTATION  
MICOM - CALIBRATION LAB  
MICOM - TARGETS  
ASQNC-TWS - COMMUNICATIONS  
HAFB - 6583 TEST SQUADRON



## **NASA FACILITIES**

**PAYLOAD SPIN BALANCING AND VIBRATION**

**REAL TIME METEOROLOGICAL LAUNCH ANALYSIS (REAL TIME AT WALLOPS)**

**STAR COLLIMATION AND SUN SENSOR CALIBRATION (LOCKHEED)**

**PSL/NMSU CONTRACTOR SUPPORT (VIA NASA OR PSL)**

- TELEMETRY
- BLACK BRANT IGNITOR HOUSING FTS MODS
- ORSA ACCEPTANCE TESTING
- RANGE PRECISION ACQUISITION SYSTEM DISPLAY AT LC36

**STADS CONTRACTOR SUPPORT**

- LAUNCH PAD PREPARATIONS
  - LAUNCH OPERATIONS
-



## COMMERCIAL SPACE LAUNCH HISTORY

### **SPACE SERVICES INCORPORATED, HOUSTON, TX**

- THREE LAUNCHES - MAR 89; NOV 89; MAY 90
- PURPOSE: MATERIALS DEVELOPMENT IN MICROGRAVITY
- PAYLOAD USERS: U ALABAMA (HUNTSVILLE)
- BOOSTERS: TERRIER BLACK BRANT

### **SPACE SERVICES DIVISION/ENGINEERING ECONOMIC RESEARCH INC, SEABROOK, MD**

- LAUNCH PLANNED FOR 13 NOV 91
- PURPOSE: MATERIALS DEVELOPMENT IN MICROGRAVITY
- PAYLOAD USERS: U ALABAMA (HUNTSVILLE)
- BOOSTERS: TERRIER BLACK BRANT

### **SPACE DATA DIVISION/ORBITAL SCIENCES CORPORATION, CHANDLER, AZ**

- FOUR LAUNCHES OF LIGHTWEIGHT EXO-ATMOSPHERIC PROJECTILE (LEAP) IN FY 92
  - PURPOSE: LEAP INTERCEPT OF THRUSTING TARGET
  - PAYLOAD USER: SDIO
-



## **COMMERCIAL SPACE LAUNCH ACT LAUNCH UNIQUE REQUIREMENTS**

### **FOR USE OF NOMTS FACILITIES/SERVICES**

- DOT LICENSE
- MEMORANDUM OF AGREEMENT WITH NAVY
- INSURANCE IN PLACE BEFORE WORK BEGINS (LEVELS PRESCRIBED IN NAVY MOA)

### **FOR USE OF OTHER WSMR FACILITIES/SERVICES**

- NATIONAL RANGE VIA OPERATIONS REQUIREMENT DOCUMENT THRU NOMTS
  - ARMTE VIA LETTER THRU NOMTS
  - NASA VIA MOA/NEGOTIATION DIRECT WITH NASA
-



## **CUSTOMER RESPONSIBILITIES**

### **DETAILS ARE DISCUSSED AT KICKOFF MEETING**

- **OBTAIN DOT LICENSE, NAVY MOA AND INSURANCE**
  - **ESTABLISH AGREEMENTS FOR NASA FACILITIES/SERVICES**
  - **PROVIDE FUNDING**
  - **PREPARE NOMTS AND RANGE DOCUMENTATION**
  - **DEFINE ALL OPERATIONS HAZARDS AND HERO SUSCEPTIBILITY DATA**
  - **PROVIDE CERTIFIED ORDNANCE HANDLING EQUIPMENT (NWS EARLE, NJ), ORDNANCE HANDLERS, AND SSOPs**
  - **PROVIDE RANGE TECHNICAL DATA FOR FLIGHT TRAJECTORIES, FAILURE MODES AND EFFECTS, IMPACT FOOTPRINTS/PROBABILITIES, FTS QUALIFICATION AND OTHER DATA**
  - **IDENTIFY ENVIRONMENTAL HAZARDS THROUGH FORMAL DOCUMENT WITH RANGE AND STATE (IF NEEDED)**
  - **DEFINE ASSEMBLY/PAD SUPPORT INTERFACE REQUIREMENTS (POWER, CLEAN ROOM, HVAC, ETC) IN FLIGHT REQUIREMENTS PLAN**
  - **IDENTIFY PROPRIETARY INFORMATION**
  - **OBTAIN RADIO FREQUENCY ASSIGNMENTS (RFAs)**
-



## **POTENTIAL LONG LEAD TIMES**

**ENVIRONMENTAL APPROVAL**

**MASTER PLANNING BOARD APPROVAL**

**FLIGHT TERMINATION SYSTEM QUALIFICATION**

**FLIGHT SAFETY DATA. EXOTIC PERFORMANCE ENVELOPES MAY REQUIRE DEVELOPMENT OF SPECIAL FLIGHT SAFETY ANALYSIS SOFTWARE/HARDWARE TOOLS**

**PROGRAM INTRODUCTION/STATEMENT OF CAPABILITY DOCUMENTS APPROVAL**

**TRANSMITTER TYPE ACCEPTANCE/RFA PROCESS**

**DOT LICENSE, MOA, INSURANCE PROCESS**

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