U.S. ARMY SPACE AND

STRATEGIC DEFENSE COMMAND

P-052295-M01.pp

DCN 383

USASSDC MISSIONS

P-052594-M17.pp (5142)

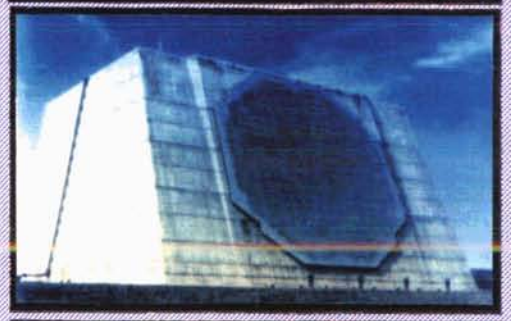
- SERVE AS ARMY COMPONENT OF US SPACE COMMAND
  - OPERATE DSCS GROUND STATIONS
  - ARMY PROPONENT FOR SPACE PRODUCTS
  - EXECUTE ARMY TENCAP PROGRAM
  - OPERATE GROUND BASED COMPONENT OF NATIONAL MISSILE DEFENSE WHEN DEPLOYED
- SERVE AS DEPARTMENT OF ARMY TMD AND NMD FOCAL POINT AND ADVOCATE
- EXECUTE BALLISTIC MISSILE DEFENSE ORGANIZATION RESEARCH AND TECHNOLOGY MISSIONS
  - ARMY FOCAL POINT FOR MISSILE DEFENSE TECHNOLOGY
  - RESPONSIVE PROGRAM SUPPORT AND INFRASTRUCTURE
- OPERATE NATIONAL RANGE AT KWAJALEIN ATOLL
- OPERATE LASER R&D FACILITY AT HELSTF

COMMAND PRIORITIES

PROVIDE AMERICA'S WARFIGHTERS OVER-MATCHING CAPABILITIES TO DOMINATE ALL DIMENSIONS OF THE BATTLEFIELD

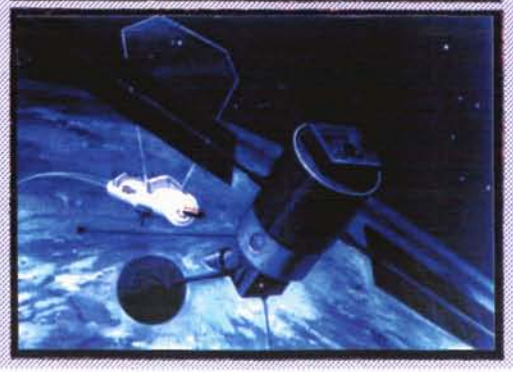
THEATER MISSILE DEFENSE

- PROTECT FRIENDLY FORCES AGAINST THEATER BALLISTIC MISSILES



NATIONAL MISSILE DEFENSE

- DEFEND THE UNITED STATES FROM MISSILE ATTACK



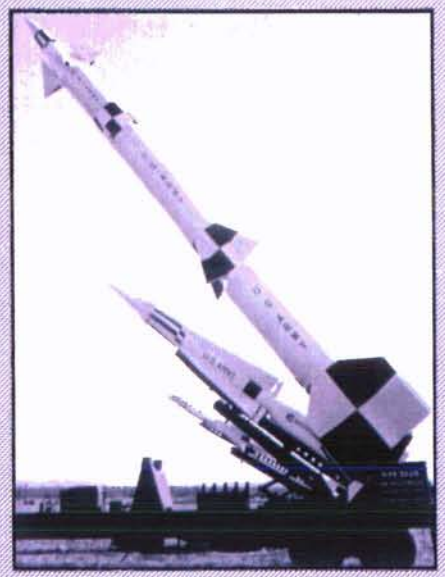
SPACE

- RESPONSIVE, RELIABLE SPACE CAPABILITIES AND PRODUCTS FOR BATTLEFIELD OVER-MATCH

U.S. ARMY'S HISTORIC COMMITMENT TO MISSILE DEFENSE

P-081994-M14.pp (5156)

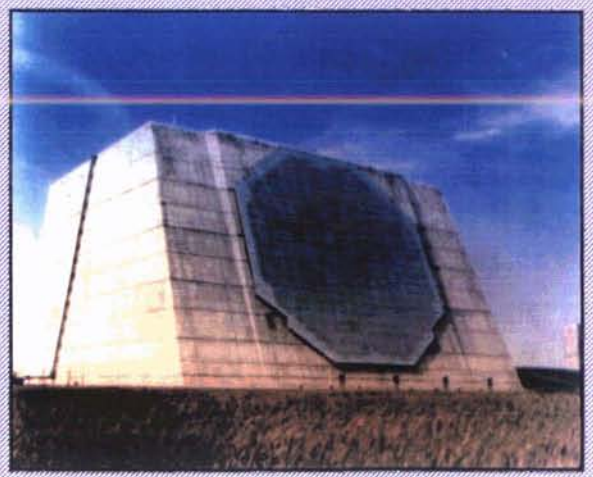
1958-1963



NIKE-ZEUS

1963-1967

NIKE-X



1967-1974

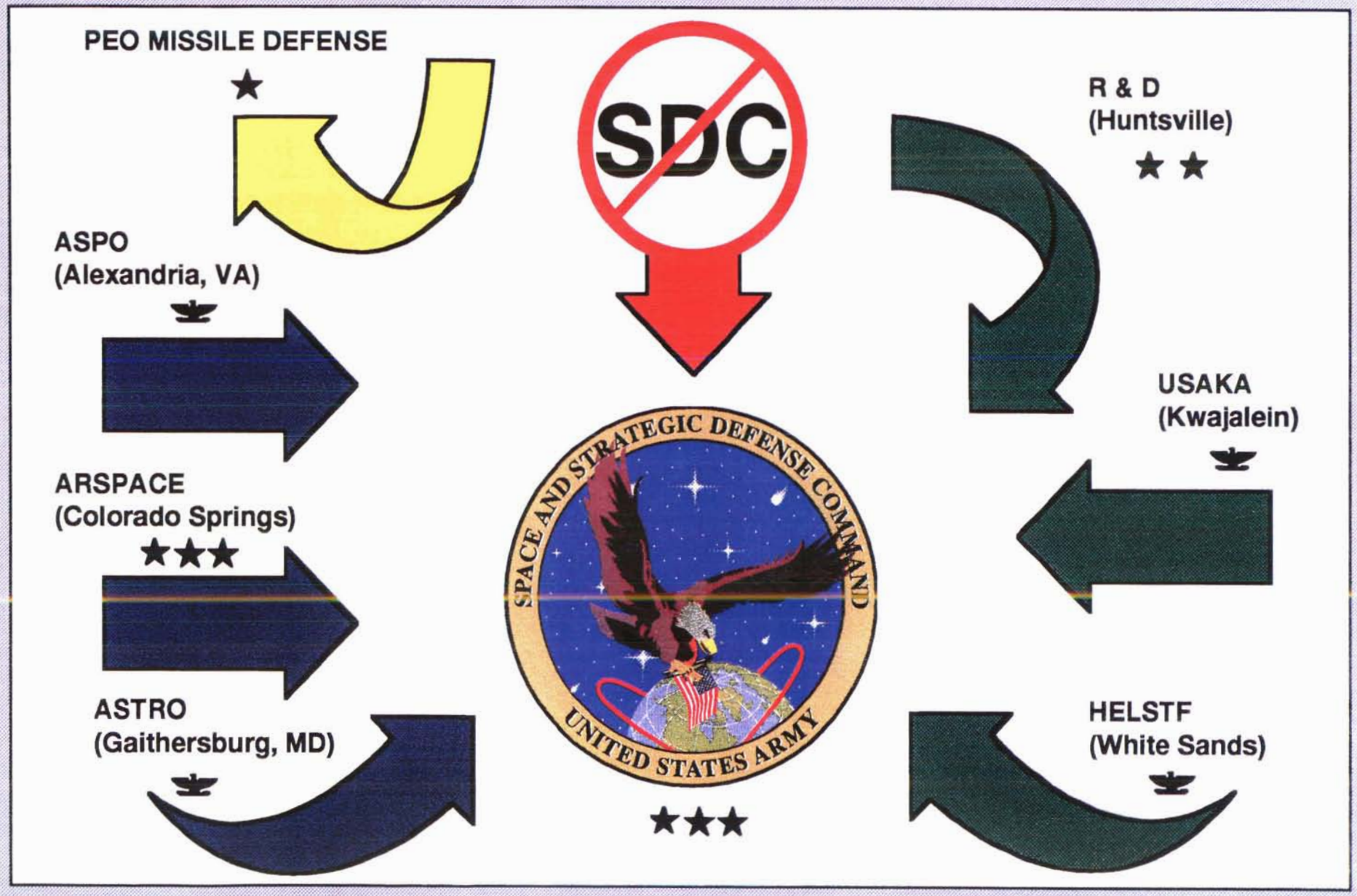
SENTINEL AND SAFEGUARD COMMANDS

1974-1983

SITE DEFENSE LOaD SENTRY

ORGANIZED FOR THE FUTURE

P-081994-M04.pp (5160)



USASSDC ORGANIZATION

P-011195-M15.pp (5138)

WASHINGTON, DC
USASSDC HEADQUARTERS

MISSILE DEFENSE AND SPACE TECHNOLOGY CENTER

MISSILE DEFENSE BATTLE INTEGRATION CENTER

VIRTUAL BATTLEFIELD

ARSPACE

ARMY SPACE PROGRAM OFFICE

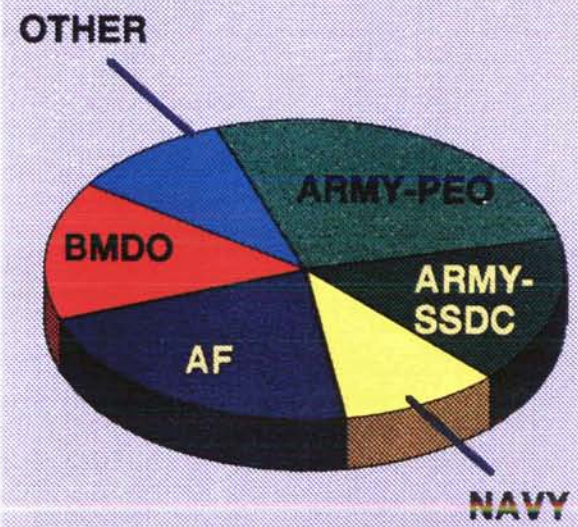
USAKA
MISSILE TEST RANGE

HELSTF
LASER LABORATORY

BALLISTIC MISSILE DEFENSE ORGANIZATION BUDGETS

P-112294-M17.pp (5142)

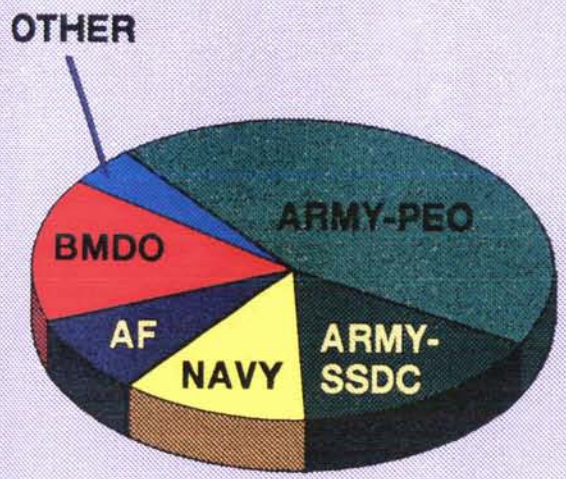
FY93 TOTAL 3.67B



SSDC $677.6M

PEO MD $1060.1M

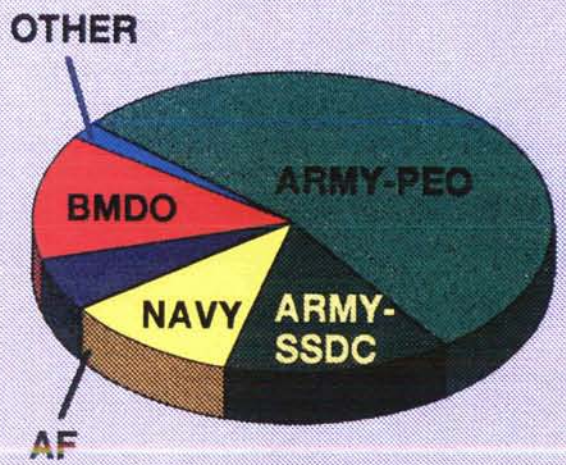
FY94 TOTAL 2.73B



SSDC $442.8M

PEO MD $1210.1M

FY95 TOTAL 2.74B



SSDC $383.4M

PEO MD $1478.0M

AS OF 31 JAN 95

CUSTOMER REQUIREMENTS

BMDO

- DEDICATED QUICK RESPONSE TEAM
- FULL SPECTRUM OF TECHNOLOGY EXPERTISE IN MISSILE DEFENSE
- SPECIALIZED TECHNICAL SUPPORT (TARGETS, ENVIRONMENTAL...)
- EXPERT ON TREATY COMPLIANCE

PEO-MD

- QUALIFIED, HIGHLY EXPERIENCED TECHNICAL SUPPORT
- FLEXIBLE, QUICK RESPONSE
- PROGRAM PLANNING SUPPORT
- INDEPENDENT TECHNICAL ASSESSMENTS

CORE COMPETENCIES FOR MISSILE DEFENSE AND SPACE TECHNOLOGY

P-041795-M04.pp (5156)

TECHNOLOGY DEVELOPMENT AND DEMONSTRATION

- SENSORS
- WEAPONS
- COMMAND, CONTROL & DATA FUSION
- ADVANCED TECHNOLOGY
- SPACE APPLICATIONS

SYSTEMS ENGINEERING, ANALYSIS, SIMULATION, AND INTEGRATION

- REQUIREMENTS DEFINITION
- CONCEPT DEVELOPMENT
- TECHNOLOGY INSERTION
- FUTURE & GROWTH NEEDS
- JOINT PERSPECTIVE
- SIMULATION & MODELS

PROTECT THE FORCE AND THE HOMELAND

FOCUS

THEATER
NATIONAL
CRUISE MISSILE
SPACE

AQUISITION MANAGEMENT EXCELLENCE

- STREAMLINED PROCESSES
- TARGETS, TESTS, AND EVALUATION
- RANGES AND TEST FACILITIES & PLATFORMS
- P3I INSERTION
- GOVERNMENT-INDUSTRY-ACADEMIA JOINT VENTURES
- COST ANALYSIS

PM/MATRIX SUPPORT RELATIONSHIP

(AS DEFINED BY DoD AND ARMY REGULATIONS AND POLICIES)

P-060695-M02.pp

1. BASED ON MUTUALLY SUPPORTIVE PARTNERSHIP
2. CORE SPACES ON PMs TDA
3. MATRIX SPACES ON COMMAND TDA
4. FOR DIRECT SUPPORT, PM IN RATING CHAIN
5. PM DEFINES TASKS AND NEGOTIATES WITH COMMAND TO DETERMINE MANPOWER LEVELS
6. NO MATRIX PERSONNEL MOVEMENT WITHOUT PROPER COORDINATION
7. PM RATES PERFORMANCE OF FUNCTIONAL SUPPORT ORGANIZATION QUARTERLY

MILESTONE INDEPENDENT

MGMT & ADMIN SUPPORT PROG RESPONSIBILITIES →

PROG PLAN
FINAN MGT
COST ANAL
ACQ MGT
PROG EVAL
KEY TECH

OPERATIONL CONTROL OVER FUNCTIONAL SUPPORT PERSONNEL

DIRECT/INDIRECT SUPPORT MATRIX - REIMBURSABLE (COLLOCATED OR NON-COLLOCATED)

MILESTONE DEPENDENT

SYSTEMS ENGINEERING
PRODUCT ASSURANCE
TEST PLANNING & EXECUTION
COMFIGURATION MANAGEMENT
LOGISTICS
SECURITY ASSISTANCE (SOME PMs)

INSTALLATION AND MISSION SUPPORT MATRIX - NON -REIMBURSABLE

PROCUREMENT
LEGAL
DFAS
LOGISTICS ASSISTANCE REPS (LARS)
OTHER REQUIRED FUNCTIONAL SUPPORT

SUMMARY OF SSDC MATRIX SUPPORT

P-052395-M12.pp

	COLLOCATED			NON COLLOCATED
	TECHNICAL	CLERICAL	MILITARY	TECHNICAL
ARROW	12	2	1	0
GBR	30	5	1	1 (ILE)
JTAGS	6	1	1	0
NMD	58	1	1	2 (PAI)
PATRIOT	11	0	1	2 (WD)
THAAD	42	8	3	1 (TTE)
TSO	27	1	2	0
	186	18	10	6

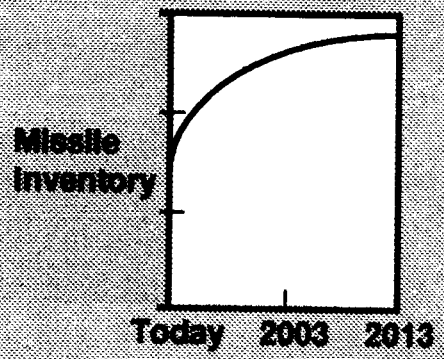
TOTAL COLLOCATED = 214

NON COLLOCATED = 6

THREAT TRENDS AND ISSUES

P-082294-M09 (5156)

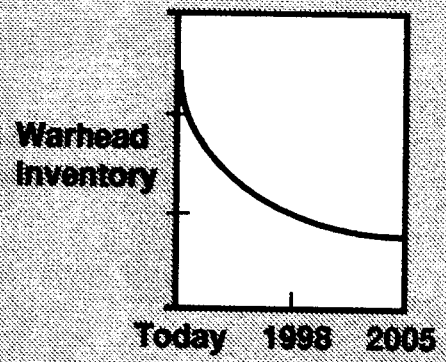
THEATER



TRENDS
- Longer Range
- Higher Speed
- More Accuracy
- More Survivable
- More Flexible

ISSUES
- Long Range Acquisition
- Agile, Smart Interceptor
- Improved Launch Detection & Warning
- Improved Lethality

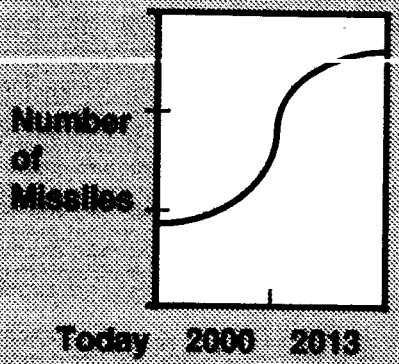
STRATEGIC



TRENDS
- More Capable
- More Accurate
- More Powerful
- More Survivable
- More Flexible

ISSUES
- Lethality
- Proliferation Expanding
- Stressing Levels Increasing

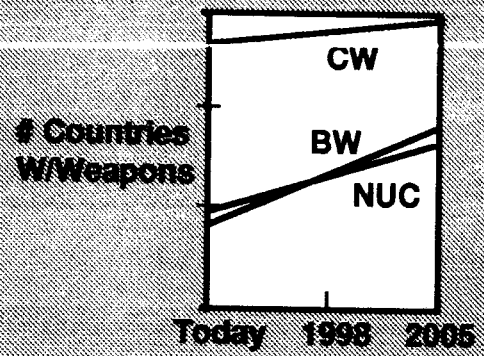
CRUISE



TRENDS
- Longer Range
- Higher Speed
- More Accurate
- More Survivable
- More Flexible

ISSUES
- Detection and Track Capability
- Enhanced Sensor Coverage

WEAPONS OF MASS DESTRUCTION



TRENDS
- Increased Proliferation
- CC&D
- CW and BW over Nuclear

ISSUES
- Pk of Submunition
- Early Intercept
- Warhead Classification and Discrimination

TECHNOLOGY BASE FOR EXO-ATMOSPHERIC NON-NUCLEAR KILL

P-081994-M05.pp (5156)

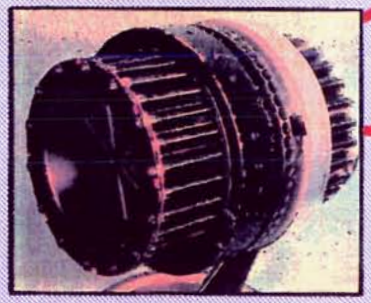
HOE

FIRST NNK RV INTERCEPT

ERIS

EXO INTERCEPT

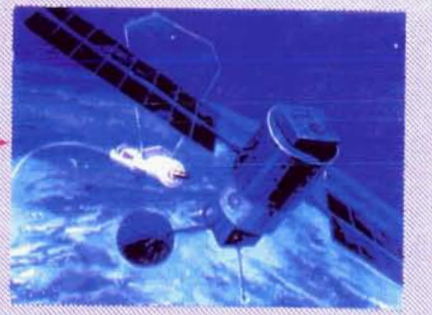
HIT



EXO-LEAP NAVY UPPER TIER

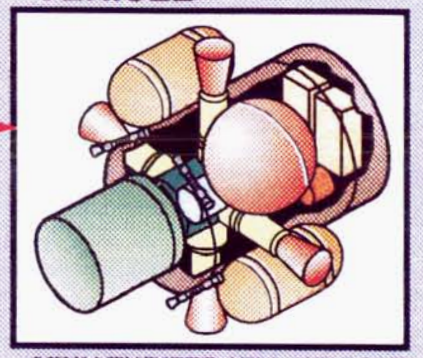
NEXT GENERATION

USAF ASAT



SATELLITE HIT-TO-KILL

NMD EXO-KILL VEHICLE



MINIATURIZED KILL VEHICLE

1984 | 1990 | 1994 | 1997 | 2000+

- LIGHTWEIGHT/HIGH STRENGTH MATERIALS
- CARBON/CARBON NOZZLES
- GEL PROPELLANTS
- HOMING SENSOR
- NUCLEAR HARDENING
- NON NUCLEAR KILL

- MINIATURIZED LIGHTWEIGHT COMPONENTS
- ADVANCED PROPELLANTS
- TWO COLOR SEEKERS

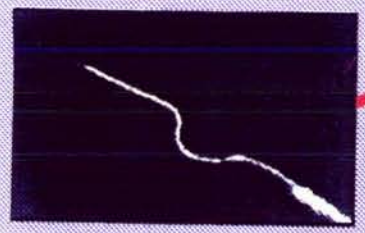
- LONG RANGE DETECTION/DISCRIMINATION
- THROTTLEABLE AXIAL PROPULSION
- IMPROVED FOCAL PLANE ARRAYS

- COMPONENT MINIATURIZATION

TECHNOLOGY BASE FOR HIGH ENDO-ATMOSPHERIC NON-NUCLEAR KILL

P-081994-M06.pp (5156)

UPSTAGE



HIGH-G MANEUVERS
400 gs

HEDI

FIRST SUCCESSFUL HIGH
ENDO AERO OPTIC TEST

THAAD

1971
- RING LASER GYRO
- LIFTING BODY KV
- HIBEX BOOSTER

1985
- WINDOW COOLING
- WINDOW MATERIALS
- ADVANCED PROPELLANTS
- TWO COLOR SEEKERS

1990
- LONG RANGE DETECTION/DISCRIMINATION
- THROTTLEABLE AXIAL PROPULSION
- IMPROVED FOCAL PLANE ARRAYS

1994

1997
- GEL PROPELLANTS
- MINIATURIZED LIGHTWEIGHT COMPONENTS

2000+
- COMPONENT MINIATURIZATION

TECHNOLOGY BASE FOR LOW ENDO-ATMOSPHERIC NON-NUCLEAR KILL

P-081994-M07.pp (5156)

FLAGE

HIT-TO-KILL AGAINST LOW FLYING TGTS

ENDO-LEAP

MINIATURIZED KILL VEHICLES

ERINT

HIT-TO-KILL OF TBMs AND AIRCRAFT

ATMOSPHERIC INTERCEPTOR TECHNOLOGY

COUNTER MANEUVERING TBMs

PAC-3

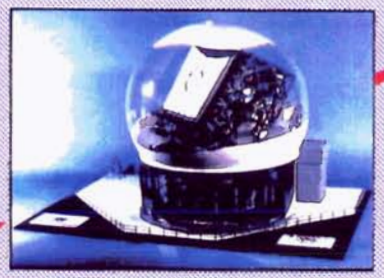
BOOST PHASE INTERCEPTOR

1986	1992	1994	1997	2000+
• MINIATURIZED IMUs • LIGHTWEIGHT/ HIGH STRENGTH COMPOSITES • LATERAL THRUSTERS • OPTICAL SEEKERS	• SOLID DIVERT PROPULSION • LIQUID DIVERT PROPULSION • LWIR SEEKERS • INTERFEROMETRIC • GYROSCOPE	• DUAL MODE RADIO FREQUENCY/ ELECTRO-OPTICAL SEEKER • FAST DIVERT THRUSTERS • HIT-TO-KILL AGAINST CHEMICAL/BIOLOGICAL WARHEADS		• COMPONENT MINIATURIZATION

TECHNOLOGY BASE FOR GROUND BASED RADAR

P-081994-M08.pp (5156)

ADVANCED TERMINAL RADAR



ADVANCED DUAL-FIELD OF VIEW RADAR

SOLID STATE TMD-RADAR

LONG RANGE NMD-RADAR

1982 | 1986 | 1994 | 1997 | 2000+

- X-BAND SOLID STATE RADAR TECHNOLOGY
- ADV MULTI-TARGET RADAR TECHNOLOGY
- REAL-TIME SIGNAL PROCESSING

- REAL-TIME HIGH ENDO DISCRIMINATION
- RADIATION HARDENING
- MMW IMAGING RADAR TECHNOLOGY
- IMAGING ALGORITHMS

- HIGH RESOLUTION POINTING TRACKING
- IMPROVED POWER SOURCES

TECHNOLOGY BASE FOR PRECISION OPTICAL SENSORS

P-081994-M09.pp (5156)

DESIGNATED OPTICAL TRACKER (DOT)

OPTICAL SENSORS FOR TRACKING ICBMs

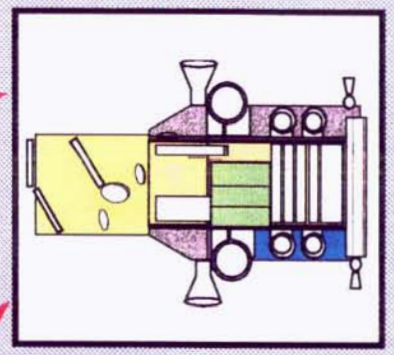
AOA/AST

AIRBORNE PLATFORM OPTICAL SENSORS

GSTS

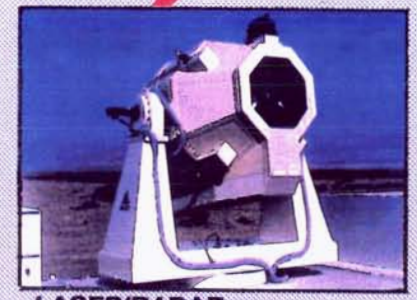
GROUND LAUNCHED OPTICAL SENSORS

ADVANCED INTERCEPTOR



ON-BOARD DISCRIMINATION

ROBS



LASER/RADAR

1975	1987	1990	1994	2000+
• OPTICAL TRACKING TECHNOLOGY • DATA PROCESSING • MIRROR TECHNOLOGY • TARGET MEASUREMENTS	• DISCRIMINATION TECHNOLOGY • NUCLEAR HARDNESS • LASER DISCRIMINATION • LASER IMAGING • DISCRIMINATION ALGORITHMS	• REAL-TIME SIGNAL PROCESSING • OPTICS TECHNOLOGY • LASER SIGNATURE CODES	• LADAR TECHNOLOGY • MOSAIC • SCANNING/STARRING SENSOR SYSTEMS	• ADVANCED DETECTOR TECHNOLOGY • ON-BOARD DISCRIMINATION

MEASUREMENT PLATFORMS

P-052594-M35.pp (5142)

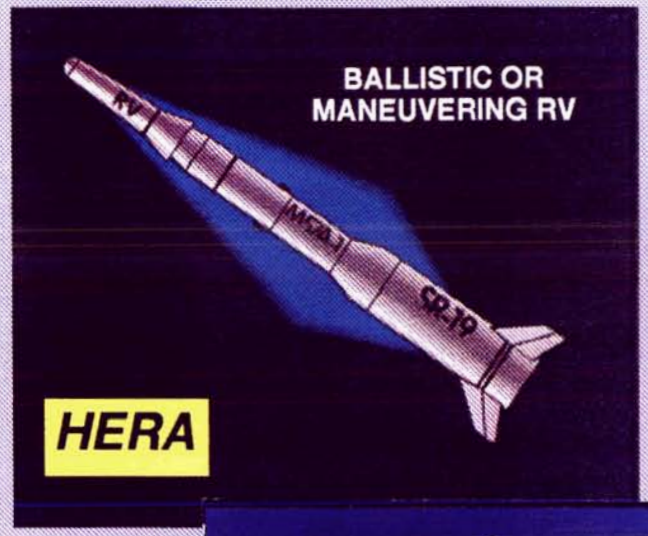
AIRBORNE SURVEILLANCE TESTBED

COBRA JUDY

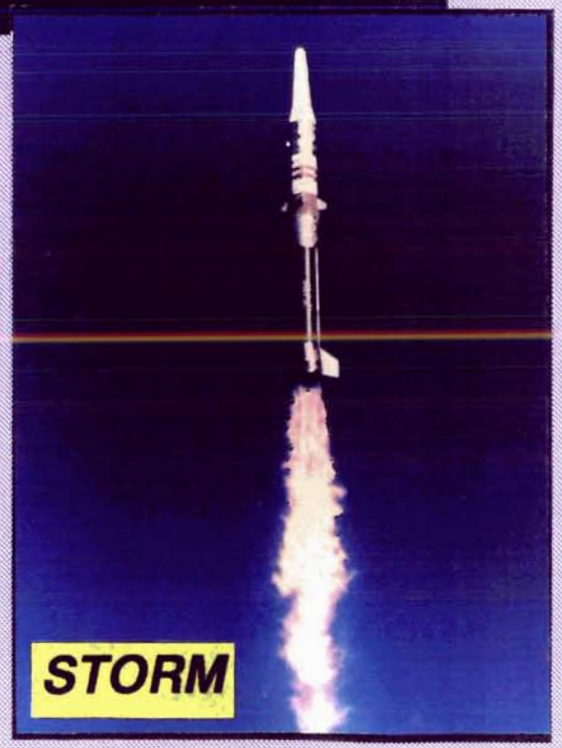
COBRA EYE

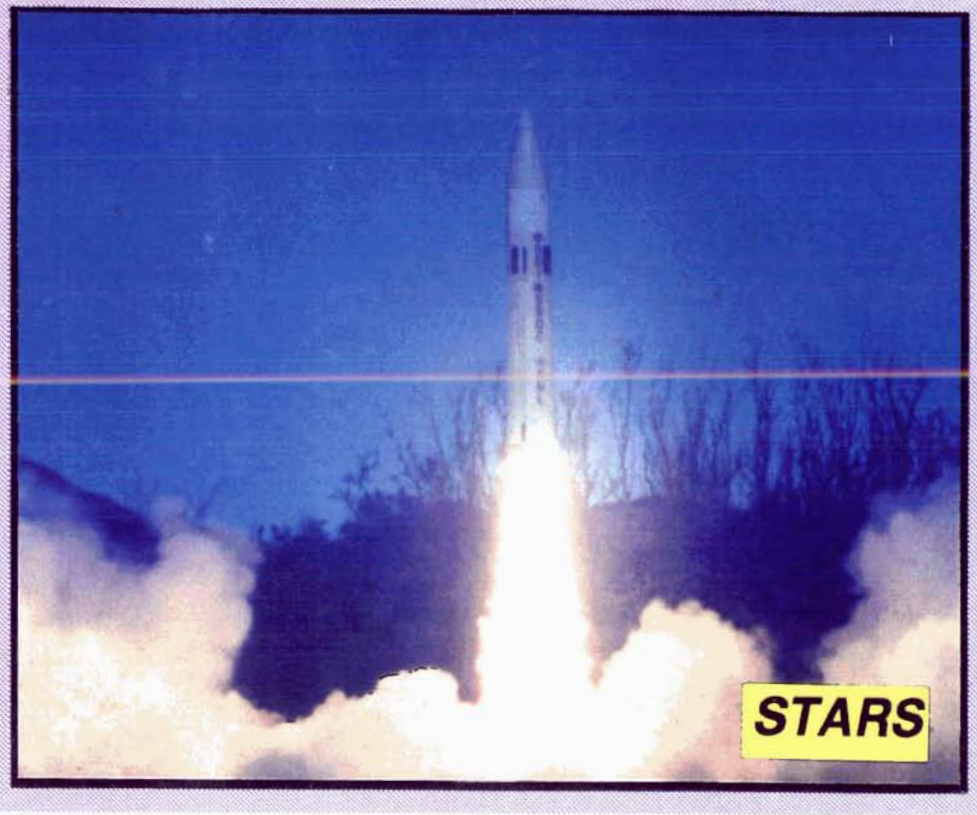
HALO

TARGET PROGRAMS



- CENTRALIZED EXECUTION OF BMDO TARGETS PROGRAM
- PROVIDES REALISTIC, RELIABLE TARGETS
  - THEATER MISSILE DEFENSE
  - NATIONAL MISSILE DEFENSE



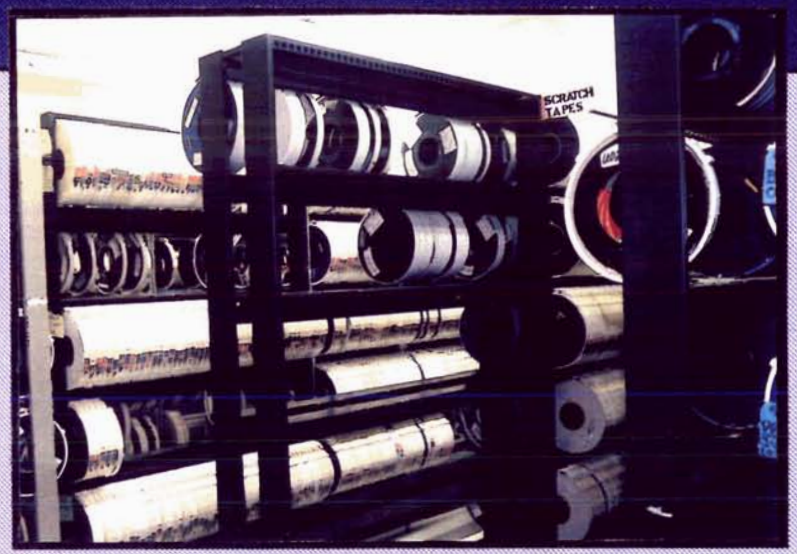


SIMULATIONS AND TESTBEDS

P-080494-M16.pp (5142)

ADVANCED RESEARCH CENTER

MISSILE DEFENSE DATA CENTER



SIMULATION CENTER

TESTBEDS

- EXTENDED AIR DEFENSE
- SURVEILLANCE
- TMD GBR
- KEW DIGITAL EMULATION CENTER
- BM/C3

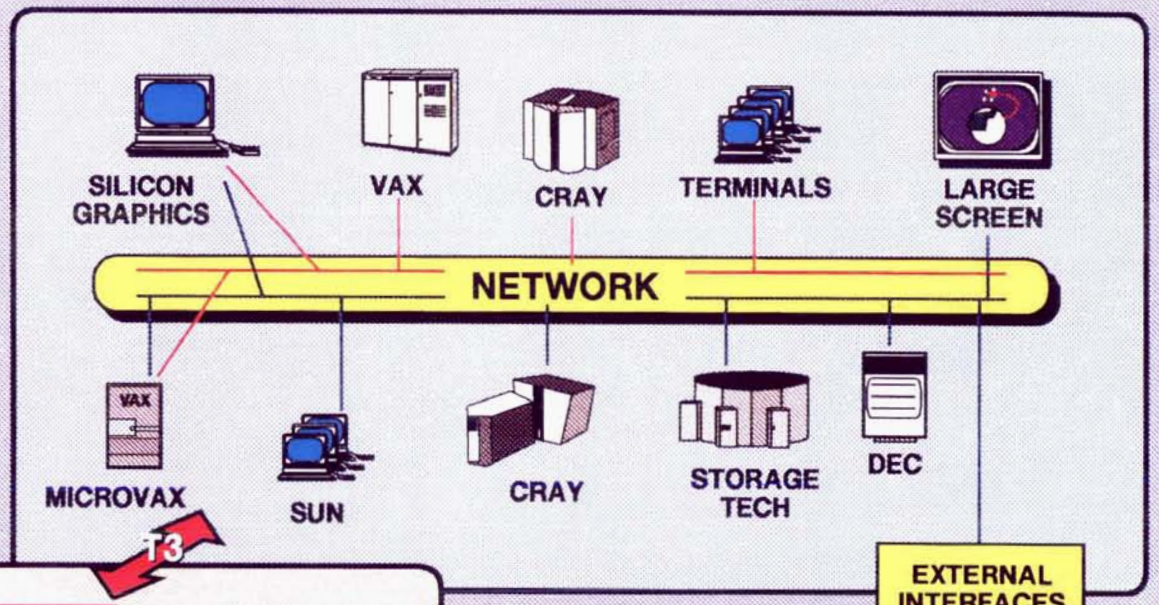
ADVANCED RESEARCH CENTER/ SIMULATION CENTER

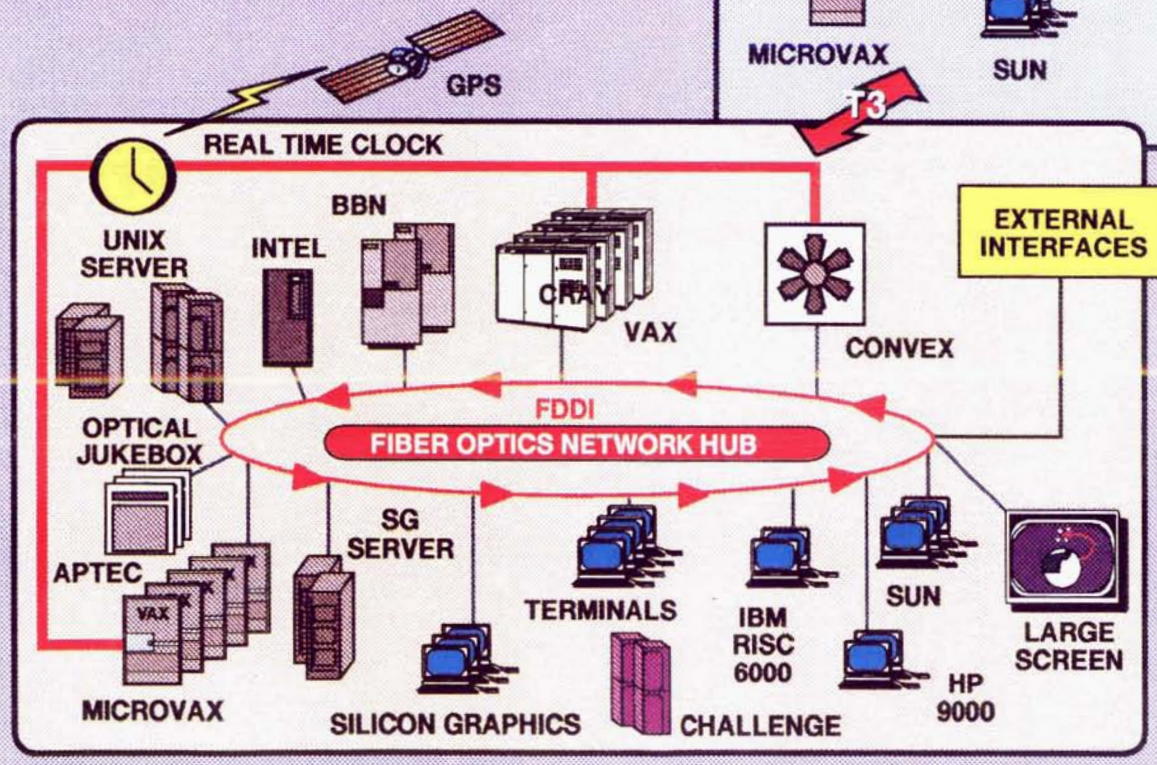
P-060695-M01.pp

SIMULATION CENTER

SUPERCOMPUTING FACILITY

- 3 CRAYS





ADVANCED RESEARCH CENTER

DISTRIBUTED COMPUTING/ NETWORKING FACILITY

- OVER 100 COMPUTERS

SUMMARY

P-032995-M01.pp (5158)

- WORLD CLASS TECHNOLOGY SUPPORTING NATION'S TMD, NMD, AND SPACE PROGRAMS
- INSEPARABLY RELATED TO PEO MD
- SPECIAL FACILITIES REQUIREMENTS
  - ADVANCED RESEARCH CENTER (ARC)
  - SIMULATION CENTER (SC)
  - SPECIAL COMPARTMENTAL INFORMATION FACILITY (SCIF)
  - TECHNICAL LIBRARY

TECHNOLOGY TO DEFEND FREEDOM