



OFFICER CANDIDATE SCHOOL

AI: USAF WEAPONS – I (Part 2)

Reference: Air Force Fact Sheets , AF Magazine (Almanac Issue), Airman Magazine (The Book)



OFFICER CANDIDATE SCHOOL USAF WEAPON SYSTEMS – I (Part 2)

CLASSES & COURSE TOPICS

USAF WEAPONS - Part 1

AIRCRAFT

Sec. 1: Bombers

Sec. 2: Fighter / Attack

Sec. 3: Special Operations

Sec. 4: ISR / BM / C3

Sec. 5: Aerial Targets / Decoys

Sec. 6: Tankers

Sec. 7: Helicopters

USAF WEAPONS - Part 2

Sec. 8: Transport/Cargo

Sec. 9: Trainers / Gliders

BOMBS / MISSILES

Sec. 10: Strategic Missiles

**Sec. 11: Tactical Weapon
Systems - Bombs**

**Sec. 12: Tactical Weapon
Systems - Missiles**

Sec. 13: Satellite Launch Sys

**Sec. 14: Satellites / Space
Programs**



USAF WEAPONS – I (Part 2)

AIRCRAFT: Sec.8-Transport-Cargo



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO

- 1. C-5B (Galaxy)**
- 2. C-5M (Super Galaxy)**
- 3. C-12 (Huron)**
- 4. C-17 (Globemaster III)**
- 5. C-20 (Gulfstream III)**
- 6. C-21 (Learjet)**
- 7. C-27 (Spartan)**

- 8. C-32 (Air Force Two)**
- 9. C-27 (Gulfstream V)**
- 10. C-38 (Courier)**
- 11. C-40 (Clipper)**
- 12. C-130 (Hercules)**
- 13. C-130J-30 (Super Hercules)**
- 14. VC-25 (Air Force One)**



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



C-5A/B/C 'Galaxy'

Primary function: Outsize cargo transport

Speed: 518 mph.

Range: 4,350 miles unrefueled w/ 120,000 lbs Payload

Ceiling: 45,000 Ft.

Max Payload: 272,000 Lbs. / 36 Pallets / 73 Pax

Crew: 7 (2 Pilots, 2 FEs, 3 LMs)



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



C-5M 'Super Galaxy'

Primary function: Outsize cargo transport

Speed: 518 mph.

Range: 5,250 miles unrefueled w/ 120,000 lbs Payload

Ceiling: 45,000 Ft.

Max Payload: 285,000 Lbs. / 36 Pallets / 73 Pax

Crew: 7 (2 Pilots, 2 FEs, 3 LMs)



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



C-12C/D/F/J 'Huron'

Primary function: Passenger/Cargo airlift; pilot seasoning.

Speed: 336 mph

Range: 1,026 miles

Ceiling: 25,000 Ft.

Crew: 2

Payload: 10 Pax (at max range)



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



C-17A 'Globemaster III'

Primary function: Cargo and troop transport.

Speed: 518 mph

Range: Unlimited with aerial refueling.

Ceiling: 45,000 Ft.

Max Payload: 170,900 Lbs. / 18 Pallets or 102 Troops

Crew: 3 (2-Pilots / 1 LM)



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



C-20B/H 'Gulfstream III / IV'

Primary function: Operational support airlift and special air missions (SAMs).

Speed: 576 mph.

Range: **C-20B** (4,250 miles) **C-20H** (4,850 miles)

Ceiling: 45,000 Ft.

Crew: 5

Payload: 12 Pax



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



C-21A 'Learjet'

Primary function: Passenger and cargo airlift.

Speed: 530 mph

Range: 2,306 miles (w/max 8 Pax), 1,643 miles (w/max Cargo)

Ceiling: 51,000 Ft.

Crew: 2



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



C-27J 'Spartan'

Primary function: Tactical airlift

Speed: 315 (Kcas)

Range: 1,100 miles (max payload)/3,200 miles (ferry)

Ceiling: 30,000 Ft.

Max Payload: 25,353 Lbs.

Crew: 4 (2 Pilots, 1-2 LM)



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



C-32A 'Air Force Two'

Primary function: High-priority personnel transport.

Speed: 530 mph.

Range: 6,329 miles

Ceiling: 42,000 Ft.

Max Payload: 45 Pax

Crew: 16 (Varies)



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



C-37A/B 'Gulfstream V'

Primary function: Special air missions

Speed: 600 mph

Range: 6,095 miles.

Ceiling: 51,000 Ft.

Max Payload: 12 Pax

Crew: 5



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



C-38A 'Courier'

Primary function: Special air missions

Speed: 540 mph

Range: 3,000 miles.

Ceiling: 33,000 Ft.

Max Payload: 8 Pax

Crew: 3



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



C-40B/C 'Clipper'

Primary function: High-priority personnel transport.

Speed: 530 mph

Range: 5,000 miles

Ceiling: 41,000 Ft.

Max Payload: 111 Pax

Crew: 7-8



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



C-130 E/H/J 'Hercules'

Primary function: Global airlift

Speed: C-130E (345 mph)/C-130H (430 mph)/C-130J (417 mph)

Range: C-130E (1,438m) /C-130H (1,496m) /C-130J (1,841m)

Ceiling: 33,000 / 35,000

Crew: 5 - C-130E/H 3 - C-130J

Payload: 34 – 36,500 lbs / 92 Troops / 16 CDS Bundles 74 Litters / 5 Pallets (or Combination)



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



C-130J-30 'Super Hercules'

Primary function: Global airlift

Speed: 410 mph

Range: 2,417 miles

Ceiling: 26,000

Crew: 3 (2 Pilots / 1 LM)

Payload: 36,000 lbs / 128 Troops / 24 CDS Bundles / 8 Pallets
(or Combination)



USAF WEAPONS – I (Part 2)

Section 8: TRANSPORT - CARGO



VC-25A 'Air Force One'

Primary function: Presidential air transport

Speed: 630 mph

Range: 7,800 miles unrefueled

Ceiling: 45,000 Ft.

Crew: 26



USAF WEAPONS – I (Part 2)

AIRCRAFT: Section 9- TRAINERS / GLIDERS



USAF WEAPONS – I (Part 2)

Section 9: TRAINERS / GLIDERS

1. T-1A (Jayhawk)
2. T-6A (Texan)
3. T-38C (Talon II)

U.S.A.F. Academy Aircraft

Fixed Wing Aircraft

4. DA-20 (Diamond)
5. T-41D (Mescalero)
6. T-51A/T-52A (Diamond)

Gliders

7. TG-10C (Kestrel)
8. TG-15A/B
9. UV-18B (Twin Otter)



USAF WEAPONS – I (Part 2)

Section 9: TRAINERS / GLIDERS



T-1A 'Jayhawk'

Primary function: Advanced trainer (Airlift/Tanker pilots)

Speed: 538 mph

Range: 2,557 miles

Crew: 3



USAF WEAPONS – I (Part 2)

Section 9: TRAINERS / GLIDERS



T-6A 'Texan'

Primary function: Undergraduate pilot training.

Speed: 320 mph

Range: 1,036 miles.

Crew: 2



USAF WEAPONS – I (Part 2)

Section 9: TRAINERS / GLIDERS



T-38A/C – AT-38B 'Talon'

Primary function: Advanced jet pilot training

Speed: 812 mph

Range: 1,093 miles

Crew: 2



USAF WEAPONS – I (Part 2)

Section 9: TRAINERS / GLIDERS



DA-20 'Diamond'

Primary function: USAFA (Initial Screening Trainer)

Speed: 164 kcas

Range: 623 miles

Ceiling: 13,120 Ft



USAF WEAPONS – I (Part 2)

Section 9: TRAINERS / GLIDERS



T-41D 'Mescalero'

Primary function: USAFA (Pilot / Nav Courses)

Speed: 182 mph

Range: 630 miles

Ceiling: 14,000 Ft



USAF WEAPONS – I (Part 2)

Section 9: TRAINERS / GLIDERS



T-51A / T-52A 'Cessna'

Primary function: USAFA (Pilot / Nav Courses)

Speed: 124 mph

Range: 450 miles

Ceiling: 12,600 Ft



USAF WEAPONS – I (Part 2)

Section 9: TRAINERS / GLIDERS



TG-10B/C 'Merline/Krestel'

Primary function: USAFA (Cadet Orientation / Soaring)

Speed: 146 mph "D" = 150 mph



USAF WEAPONS – I (Part 2)

Section 9: TRAINERS / GLIDERS



TG-15A/B 'Duo Discus/Duo 2B'

Primary function: USAFA (Cadet Orientation / Soaring)

TG-15A: 2 Seat / **TG-15B:** 1 Seat

Speed: 155 mph

Ceiling: 25,000 Ft



USAF WEAPONS – I (Part 2)

Section 9: TRAINERS / GLIDERS



UV-18B 'Twin Otter'

Primary function: USAFA (Parachute Jump Training)

Speed: 210 mph

Ceiling: 25,000 Ft

Range: 806 miles (w/2,500 lbs)

Crew: 2 + up to 20 PAX



USAF WEAPONS – I (Part 2)

Section 10: STRATEGIC MISSILES

- 1. AGM-86 (ACLM)**
- 2. AGM-129 (ADLM)**
- 3. LGM-30G (Minuteman III)**



USAF WEAPONS – I (Part 2)

Section 10: STRATEGIC MISSILES



AGM-86B/C/D 'ALCM'

Names: Air-launched Cruise Missile

Primary function: Air-to-ground strategic cruise missile

Speed: 550 mph

Range: 1,500 miles

Payload: Nuclear or conventional warhead.



USAF WEAPONS – I (Part 2)

Section 10: STRATEGIC MISSILES



AGM-129A 'ACM'

NAME: Advanced Cruise Missile

Primary function: Air-to-surface advanced cruise missile

Range: 2,000+ miles

Payload: WB80-1 nuclear warhead.



USAF WEAPONS – I (Part 2)

Section 10: STRATEGIC MISSILES

LGM-30 'Minuteman III'

Primary function: Intercontinental ballistic missile.

Trust 1st Stage: 202,600 lbs.

Speed: Approximately 15,000 mph
/ Mach 23 at burnout

Range: More than 6,000 miles

Ceiling: 700 Miles

Payload: 1 Mk-21 RV or 1-3 Mk-12/A12A MIRV warheads.





USAF WEAPONS – I (Part 2)

Section 11: TACTICAL WEAPON SYSTEMS – BOMBS

- 1. CBU-87/103 (Combined Efforts Munitions)**
- 2. CBU-89-104 (Gator)**
- 3. GBU-10 (Paveway II)**
- 4. GBU-12/49 (Paveway II)**
- 5. GBU-15**
- 6. GBU-24 (Paveway III)**
- 7. GBU-27 (Paveway III)**
- 8. GBU-28 (Bunker Buster)**

- 9. GBU-31/32/38 (JDAM)**
- 10. GBU-39 (SDB)**
- 11. GBU-43 (MOAB)**
- 12. GBU-54 (LJDAM)**
- 13. GBU-57 (MOB)**
- 14. Mk-82 (Snake-eye)**
- 15. Mk-84 (Mark 84)**
- 16. M-129**



USAF WEAPONS – I (Part 2)

Section 11: TACTICAL WEAPON SYSTEMS – BOMBS

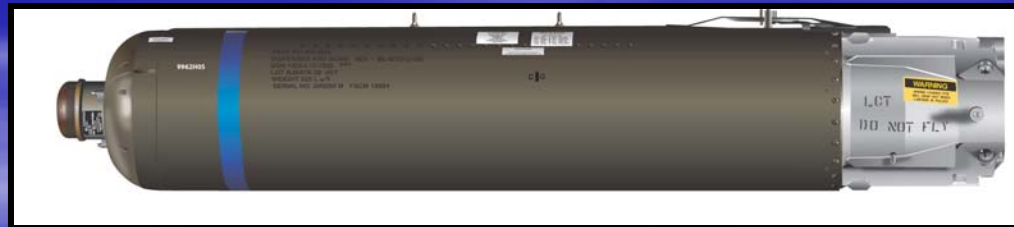
CBU-87/103 Combined Effects Munitions

CBU 89/104 Gator

CBU-105 Sensor Fused Weapon

Primary function: All-purpose, air-delivered cluster sys.

Combines with Wind Corrected Munitions tail kit to create CBU-103/104/105.





USAF WEAPONS – I (Part 2)

Section 11: TACTICAL WEAPON SYSTEMS – BOMBS

GBU-10 PAVEWAY II

Primary function: 2,000-lb. unpowered, laser-guided

Range: 6+ miles.



GBU-15

Primary function: 2,500-lb. unpowered, TV or infrared, GPS/INS-guided

Range: 5-15+ miles.



GBU-12 PAVEWAY II

Primary function: 500-lb. unpowered, laser-guided

Range: 6+ miles.



GBU-24 PAVEWAY III

Primary function: 2,200-lb. unpowered, low-level laser-guided

Range: 11+ miles.





USAF WEAPONS – I (Part 2)

Section 11: TACTICAL WEAPON SYSTEMS – BOMBS

GBU-27 PAVEWAY III

Primary function: 2,000-lb. unpowered, hard target laser-guided

Range: 11+ miles.



GBU-28 BUNKER BUSTER

Primary function: 5,000-lb. unpowered, hard target laser-guided

Range: 6+ miles.



GBU-31/32/38 JOINT DIRECT ATTACK MUNITION (JDAM)

Primary function: GPS/INS smart tailkit that fits on general-purpose unguided

Range: Up to 15 miles.



GBU-39 SMALL DIAMETER BOMB (SDB)

Primary function: GPS/INS smart-guided 250-lb.

Standoff Range: More than 46 miles





USAF WEAPONS – I (Part 2)

Section 11: TACTICAL WEAPON SYSTEMS – BOMBS

GBU-43 MASSIVE ORDINANCE AIR BLAST (MOAB)

Primary function: Massive precision guided munition Massive Bomb / 18,700 lb High-Explosive

Range: Dropped from C-130 Aircraft



GBU-57 MASSIVE ORDINANCE PENETRATOR (MOP)

Primary function: GPS-guided Massive Bomb, 5,300-lb. high explosive,

Weight: 30,000 lbs



GBU-54 LASER JOINT DIRECT ATTACK MUNITION

Primary function: GPS/INS smart-guided 550-lb. standoff

Range: Up to 17 miles





USAF WEAPONS – I (Part 2)

Section 11: TACTICAL WEAPON SYSTEMS – BOMBS

Mk-82 'Snakeye'

Primary function: 500-lb. free-fall, general-purpose

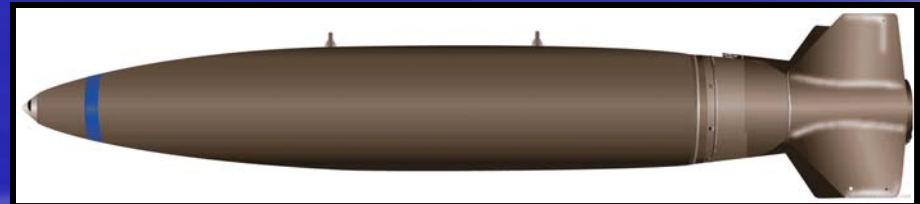
Range: Varies by method of employment.



Mk-84 'Mark-84'

Primary function: 2,000-lb. free-fall, general-purpose

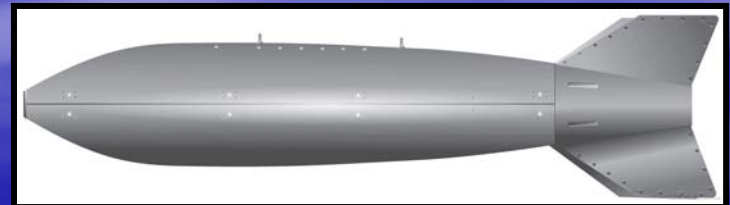
Range: Varies by method of employment.



M-129

Primary function: 200-lb. Leaflet/chaff bomb.

Max Load: 60,000 – 80,000 Leaflets





USAF WEAPONS – I (Part 2)

Section 12: TACTICAL WEAPON SYSTEMS – MISSILES

- 1. AGM-65 (Maverick)**
- 2. AGM-88 (HARM)**
- 3. AGM-130 (PSW)**
- 4. AGM-154 (JSOW)**
- 5. AGM-158 (JASSM)**
- 6. AIM-7 (Sparrow)**
- 7. AIM-9 (Sidewinder)**
- 8. AIM-120 (AMRAAM)**



USAF WEAPONS – I (Part 2)

Section 12: TACTICAL WEAPON SYSTEMS – MISSILES



AGM-88A/B/C HIGH-SPEED ANTI-RADIATION MISSILE (HARM)

Primary function: Air-to-surface anti-radiation missile.

Speed: Supersonic

Range: 30 miles.

AGM-65A/B/D/E/G/G2/H/K

Primary function: Tactical, air-to-surface guided missile.

Speed/Range: Classified.



USAF WEAPONS – I (Part 2)

Section 12: TACTICAL WEAPON SYSTEMS – MISSILES



AGM-130 POWERED STANDOFF WEAPON

Primary function: Precision, air-to-surface, all-weather, television/infrared and/or GPS/INS - guided, powered bomb.



AGM-154A JOINT STANDOFF WEAPON (JSOW)

Primary function: GPS/INS-guided air-to-surface unpowered glide weapon.
Range: 46 + miles.



USAF WEAPONS – I (Part 2)

Section 12: TACTICAL WEAPON SYSTEMS – MISSILES



AGM-158 JOINT AIR-TO-SURFACE STANDOFF MISSILE (JASSM)

Primary function: GPS/INS-guided air-to-surface powered missile

Range: 230+ miles.
575 miles ('-ER') 2013



AIM-7F/M SPARROW

Primary function: Radar-guided air-to-air missile

Range: 34+ miles



USAF WEAPONS – I (Part 2)

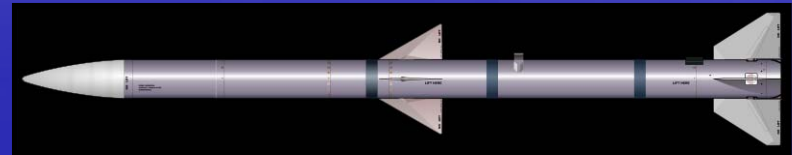
Section 12: TACTICAL WEAPON SYSTEMS – MISSILES



AIM-9M/X SIDEWINDER

Primary function: Heat-seeking air-to-air missile.

Range: 10+ miles



AIM-120A/B/C ADV. MED. RANGE AIR-TO-AIR MISSILE (AMRAAM)

Primary function: Medium-range, air-to-air tactical missile

Range: 23+ miles



USAF WEAPONS – I (Part 2)

Section 13: SATELLITE – LAUNCH VEHICLES

- 1. Delta IV**
- 2. Atlas V**



USAF WEAPONS – I (Part 2)

Section 13: SATELLITE – LAUNCH VEHICLES

DELTA - IV

Primary function:

Evolved expendable launch vehicle designed for optimum performance for a wide range of flight profiles.

Payload capability:

Up to 49,740 lbs (Low-Earth orbit)
Up to 28,620 lbs (Geo-transfer orbit).





USAF WEAPONS – I (Part 2)

Section 13: SATELLITE – LAUNCH VEHICLES

ATLAS - V

Primary function: Evolved expendable launch vehicle designed to improve space launch operability and standardization.

Payload capability:

40,780 lbs. (Low-earth orbit)

19,260 lbs. (Geo-transfer orbit)





USAF WEAPONS – I (Part 2)

Section 14: SATELLITES – SPACE PROGRAM

- 1. Advanced EHF (AEHFSS)**
- 2. Defense Meteorological (DMSP)**
- 3. Defense Satellite Communication System (DSCS)**
- 4. Defense Support System (DSP)**
- 5. Global Position Sys(GPS)**
- 6. Military Satellite Communication System (MILSTAR)**
- 7. Support Based Infrared System (SBIRS)**
- 8. Space Based Support Surveillance System (SBSS)**
- 9. Wideband Global Satcom (WGS)**



USAF WEAPONS – I (Part 2)

Section 14: SATELLITES – SPACE PROGRAM

Advanced EHF Satellite System (AEHFSS)

Primary function: Near-worldwide, secure, survivable satellite communications. (24 Hour/Day capability)

Weight: 13,400 lbs.

Power: Solar Arrays, generating 20,000+ watts/pwr

Orbit: GEO-Sync orbit at 22,000 miles.





USAF WEAPONS – I (Part 2)

Section 14: SATELLITES – SPACE PROGRAM



Defense Meteorological Satellite Program (DMSP)

Primary function: Collect terrestrial, space environment and Earth surface data.

Weight: 2,545 lbs./ Inc: 592-lb sensor payload

Power: 10 panels, generating 2,000 watts/pwr

Orbit: Approximately 525 miles.



USAF WEAPONS – I (Part 2)

Section 14: SATELLITES – SPACE PROGRAM

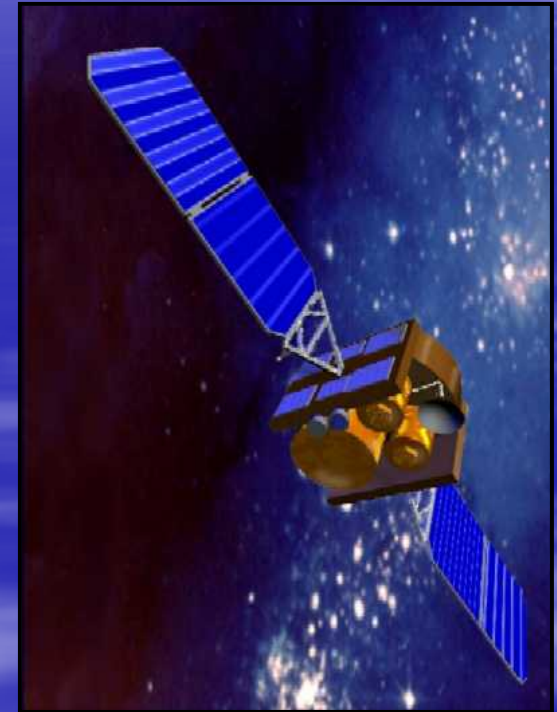
Defense Satellite Communications Systems (DSCS)

Primary function: Worldwide, long-haul communications.

Weight: Phase III — 2,716 lbs.

Power: Solar arrays = ave. of 1,500 watts.

Orbit: 22,230 miles.





USAF WEAPONS – I (Part 2)

Section 14: SATELLITES – SPACE PROGRAM

Defense Support Program (DSP)

Primary function: Strategic /
Tactical missile launch detect.

Weight: 5,250 lbs.

Power: Solar array generates
1,485 watts.

Orbit: Approximately 22,300 miles.





USAF WEAPONS – I (Part 2)

Section 14: SATELLITES – SPACE PROGRAM

Global Positioning System (GPS)

Primary function: Positioning, navigation, timing and velocity information worldwide.

Weight: Block IIA, 3,670 lbs.
Block IIR/M, 4,480 lbs;
Block IIF, 3,758 lbs.

Power: Solar panels generating 800 watts. Block IIF panels generate 2,450 watts.

Orbit: 11,000 miles.





USAF WEAPONS – I (Part 2)

Section 14: SATELLITES – SPACE PROGRAM

AMilstar Satellite Communications System (MILSTAR)

Primary function: Global military communications sys.

Power: Solar panels generating 8,000 watts.

Orbit: 22,250 miles.





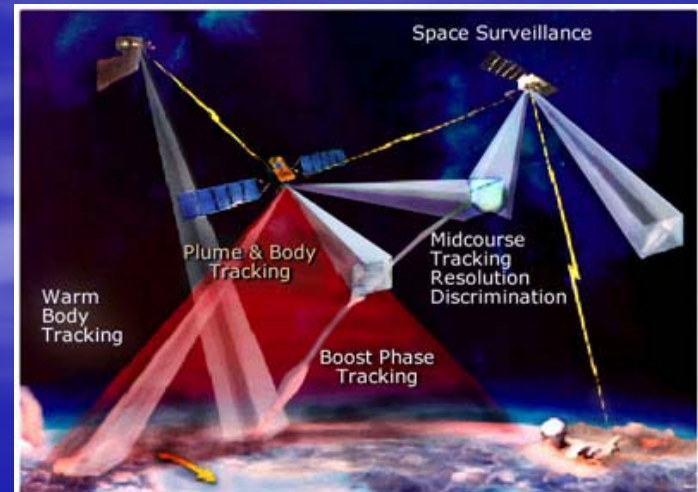
USAF WEAPONS – I (Part 2)

Section 14: SATELLITES – SPACE PROGRAM

Space Based Infrared Systems (SBIRS)

Primary function: The SBIRS constellation supports the warfighter in four distinct mission areas:

1. Missile Warning
2. Missile Defense
3. Technical Intelligence
4. Battle Space Awareness.





USAF WEAPONS – I (Part 2)

Section 14: SATELLITES – SPACE PROGRAM



Space Based Space Surveillance System (SBSS)

Primary function: Detect and Track Space objects

Power: Solar panels generating 750 watts.

Orbit: 390 miles.



USAF WEAPONS – I (Part 2)

Section 14: SATELLITES – SPACE PROGRAM



Wideband Global SATCOM Satellite (WGS)

Primary function: High-capacity military communications

Orbit: 22,300 miles. (GEO)



OFFICER CANDIDATE SCHOOL USAF WEAPON SYSTEMS - I (Part 2)

**END of
USAF WEAPONS - I
(Part 2) CLASS !
... Take 5 Min. Break!**