



## **OFFICER CANDIDATE SCHOOL**

### **AI: USAF WEAPONS – I (Part 1)**

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



# OFFICER CANDIDATE SCHOOL

## USAF WEAPON SYSTEMS - I (Part 1)

### CLASSES & COURSE TOPICS

#### USAF WEAPONS - Part 1

##### *AIRCRAFT*

**Section 1: Bombers**

**Section 2: Fighter / Attack**

**Section 3: Special Operations**

**Section 4: ISR / BM / C3**

**Sec. 5: Aerial Targets / Decoys**

**Section 6: Tankers**

**Section 7: Helicopters**

#### USAF WEAPONS - Part 2

**Section 8: Transport/Cargo**

**Section 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 1)

## AIRCRAFT: Part 1- BOMBERS



# USAF WEAPONS – I (Part I)

## Section 1: BOMBERS

1. **B-1B (Lancer)**
2. **B-2A (Spirit)**
3. **B-52H (Stratofortress)**



# USAF WEAPONS – I (Part I)

## Section 1: BOMBERS



### B-1B 'Lancer' (Bone)

**Primary Function:** Long-range Multi-role, heavy bomber

**Speed:** 900+ MPH

**Ceiling:** 50,000 Ft.

**Armament:** GBU-31 / 38 JDAM, Mk-65 / 82 / 84, CBU-87 / 89 / 97 / 103/104, AGM-154A/158A

**Crew:** 4





# USAF WEAPONS – I (Part I)

## Section 1: BOMBERS



### B-2A 'Spirit'

**Primary Function:** Multi-role heavy bomber

**Speed:** High Subsonic

**Range:** Intercontinental, unrefueled

**Ceiling:** Unknown

**Armament:** GBU-28/31/38 JDAM, Mk-65/82/84, CBU-87 / 89 / 97 / 103 / 104, AGM-154A / 158A, Nuclear

**Crew:** 2



# USAF WEAPONS – I (Part I)

## Section 1: BOMBERS



### B-52H 'Stratofortress' (Buff)

**Primary Function:** Multi-role heavy bomber

**Speed:** High Subsonic

**Range:** Intercontinental, unrefueled

**Ceiling:** 50,000 Ft.

**Armament:** GBU-28 / 31 / 38 JDAM, Mk-65 / 82 / 84, CBU-87 / 89 / 97 / 103 / 104, AGM-154A / 158A, Nuclear

**Crew:** 2



## USAF WEAPONS – I (Part 1)

# AIRCRAFT: Section 2- FIGHTERS & ATTACK AIRCRAFT





# **USAF WEAPONS – I (Part 1)**

## **Section 2: FIGHTERS / ATTACK**

- 1. O/A-10 Thunderbolt II**
- 2. F-15C/D Eagle**
- 3. F-15E Strike Eagle**
- 4. F-16C/D Fighting Falcon**
- 5. F-22A Raptor**
- 6. F-35A Lightning II**



# USAF WEAPONS – I (Part 1)

## Section 2: FIGHTERS / ATTACK



### O/A-10A/C 'Thunderbolt II' (Warthog)

**Primary Function:** Close air support / Airborne Forward Air Controller

**Speed:** 420 MPH    **Range:** 800 Miles    **Ceiling:** 50,000 Ft.

**Armament:** 30 mm seven barrel Gatling gun; up to 16,000 pounds of mixed ordnance, including 500 pound Mk-82 and 2,000 pound Mk-84 series low/high drag bombs, incendiary cluster bombs, combined effects munitions, AGM-65 missiles and laser-guided/electro-optically guided bombs; M-129 leaflet bombs, infrared countermeasure flares; electronic countermeasure chaff; jammer pods; 2.75-inch rockets; illumination flares and AIM-9

**Crew:** 1



# USAF WEAPONS – I (Part 1)

## Section 2: FIGHTERS / ATTACK

### F-15 C/D 'Eagle'

**Primary Function:** Air Superiority Fighter

**Speed:** 1,875 MPH **Range:** 3,450 Miles  
unrefueled

**Ceiling:** 65,000 Ft.

**Armament:** 30 mm seven (All models) one internally mounted M-61A1

20 mm cannon with 940 rounds of ammunition and any combination of AIM-9L/M/X Sidewinder and four AIM-7F/M Sparrow air-to-air missiles, or eight AIM-120 AMRAAMs air-to-air missiles, carried externally.

**Crew:** 1 "C" Model / 2 "D" Model





# USAF WEAPONS – I (Part 1)

## Section 2: FIGHTERS / ATTACK



### F-15E 'Strike Eagle'

**Primary Function:** Dual Role Fighter

**Speed:** 1,875 MPH

**Range:** 3,450 Miles unrefueled

**Ceiling:** 50,000 Ft.

**Armament:** Mk-82 / 82, M129, CBU-87 / 89 / 97, GBU-10 / 12 / 15 / 24 / 27 / 31 / 38 / 39, AGM-65, AGM-130 / 154, nuclear weapons.

**Crew:** 2



# USAF WEAPONS – I (Part 1)

## Section 2: FIGHTERS / ATTACK



### F-16C/D 'Fighting Falcon' (Viper)

**Primary Function:** Multirole Fighter

**Speed:** 1,500 MPH    **Range:** 2,000 Miles unrefueled    **Ceiling:** 50,000 Ft.

**Armament:** M-61A1 20 mm cannon with 500 rounds; external stations carry up to six air-to-air missiles, conventional air-to-air and air-to-surface munitions and electronic countermeasure pods. M129, MK-82 / 84, GBU-0 / 12 / 24 / 27 / 31 / 38, CBU-87 / 89 / 97 / 103 / 104 / 105 / 107, GM- 65 / 88 / 154 / 158, nuclear weapons.

**Crew:** 1 "C" Model / 1-2 "D" Model





# USAF WEAPONS – I (Part 1)

## Section 2: FIGHTERS / ATTACK



### F-22A 'Raptor'

**Primary Function:** Multirole Fighter

**Speed:** Above Mach 2

**Range:** 2,000+ Miles, 1,250 Miles (w/out Ext Tanks unrefueled)

**Ceiling:** Above 50,000 Ft.

**Armament:** M-61A1 20mm cannon, AIM-120C AMRAAM, AIM-9, GBU-32 JDAMS.

**Crew:** 1



# USAF WEAPONS – I (Part 1)

## Section 2: FIGHTERS / ATTACK



### F-35A 'Lightning II' (Joint Strike Fighter)

**Primary Function:** Multirole Fighter

**Speed:** 1,200 MPH

**Range:** 1,200 MPH unrefueled, 610 Miles (Combat)

**Ceiling:** Above 50,000 Ft.

**Armament:** GAU 22/A cannon, 2-AIM-120C, 2-2,000 lb GBU-31 JDAMs

**Crew:** 1 "A" Model



## USAF WEAPONS – I (Part 1)

# AIRCRAFT: Section 3- SPECIAL OPS AIRCRAFT



# **USAF WEAPONS – I (Part 1)**

## **Section 3: SPECIAL OPERATIONS**

- 1. AC-130H/U Gunship**
- 2. MC-130E/H Combat Talon**
- 3. MC-130J Commando II**
- 4. MC-130P Combat Shadow**
- 5. MC-130W Combat/Dragon Spear**
- 6. CV-22B Osprey**



# USAF WEAPONS – I (Part 1)

## Section 3: SPECIAL OPERATIONS



### AC-130H/U 'Gunship'

**Primary Function:** Close Air Support, Air Interdiction, Force Protection

**Speed:** 300 MPH    **Range:** 1,500 Miles unrefueled    **Ceiling:** 33,000 Ft.

**Armament:** AC-130H (Spectre): 20 mm Vulcan cannons, 40 mm Bofors cannon and 105 mm Howitzer.

AC-130U (Spooky): 30 mm Bushmaster cannon replacing 25 mm Gatling gun, 40 mm Bofors cannon and 105 mm cannon.

**Crew:** 14 "H" / 13 "U"





# USAF WEAPONS – I (Part 1)

## Section 3: SPECIAL OPERATIONS



### MC-130E/H 'Combat Talon'

**Primary Function:** Special Ops Forces long-range infiltration, exfiltration, re-supply

**Speed:** 300 MPH

**Range:** 2,700 Miles unrefueled

**Ceiling:** 30,000 Ft.

**Crew:** 9 "E" / 7 "H"



# USAF WEAPONS – I (Part 1)

## Section 3: SPECIAL OPERATIONS



### MC-130J 'Commando II'

**Primary Function:** Air refueling of SOF helicopter/tilt rotor aircraft, infiltration, exfiltration, & resupply of SOF by airdrop or airland.

**Speed:** 362 KCAS

**Range:** 3,000 Miles unrefueled

**Ceiling:** 28,000 Ft. (w/42,000 Lbs Payload)

**Crew:** 5 (2 Pilots, 1 CSO, 2 LMs)



# USAF WEAPONS – I (Part 1)

## Section 3: SPECIAL OPERATIONS



### MC-130P 'Combat Shadow'

**Primary Function:** Special Ops Forces Air-refueling-Helicopter

**Speed:** 289 MPH

**Range:** 4,000 Miles unrefueled

**Ceiling:** 33,000 Ft.

**Crew:** 8



# USAF WEAPONS – I (Part 1)

## Section 3: SPECIAL OPERATIONS



### MC-130W 'Combat/Dragon Spear'

- Primary Function:** Armed overwatch, CAS on Station over friendly positions
- Speed:** 300 MPH
- Range:** 2,700 Nautical Miles unrefueled
- Ceiling:** 33,000 Ft.
- Crew:** 7 (2 Pilots, 2 Navs, 1 FE, 2 LMs)
- PSP Crew:** 7 (2 Pilots, 2 CSOs, 1 FE, 2 LM/Gunners)
- Armament (PSP-Precision Strike Package):** 30mm modified MK-44 cannon;  
SOPGM (Viper Strike/Griffin)





# USAF WEAPONS – I (Part 1)

## Section 3: SPECIAL OPERATIONS



### CV-22B 'Osprey'

**Primary Function:** Special operations forces long-range infiltration, exfiltration and resupply

**Speed:** 277 MPH

**Range:** 500 Miles Combat Radius

**Ceiling:** 25,000 Ft.

**Payload:** 10,000 Lbs / 24 Troops (Seated) – 32 Troops (Floor Loaded)

**Crew:** 4 (2 Pilots / 2 FE's)





## USAF WEAPONS – I (Part 1)

# AIRCRAFT: Section 4- ISR / BM / C3 AIRCRAFT



# **USAF WEAPONS – I (Part 1)**

## **Section 4: ISR / BM / C3**

- 1. E-3B/C Sentry (AWACS)**
- 2. E-4B NOAC**
- 3. E-8C Joint STARS**
- 4. E-9A Widget**
- 5. EC-130H Compass Call**
- 6. EC-130J Commando Solo II**
- 7. MC-12W Liberty**
- 8. MQ-1A Predator (UCAV)**
- 9. MQ-1B Predator (UAS)**
- 10. MQ-1C Avenger (UAS)**
- 11. MQ-9 Reaper (UAS)**
- 12. OC-135B Open Skies**

- 13. RC-26B Condor**
- 14. RC-135S Cobra Ball**
- 15. RC-135U Combat Sent**
- 16. RC-135V/W Rivet Joint**
- 17. RQ-4B Global Hawk (UAS)**
- 18. RQ-11B Raven (UAS)**
- 19. RQ-170 Sentinel (UAS)**
- 20. Scan Eagle (Group II) (UAS)**
- 21. WASP III (Micro UAS)**
- 22. U-2S Dragon Lady**
- 23. WC-130J Hercules**
- 24. WC-135C/W Constant Phoenix**



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3

### E-3B/C 'Sentry' (AWACS)

**Primary function:** Airborne battle management, surveillance, command, control and communications.

**Speed:** 360 mph.

**Range:** 8+ Hours unrefueled

**Ceiling:** 38,000 Ft.

**Crew:** 17-23





# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### E-4B 'NAOC'

#### National Airborne Operations Center

**Primary function:** Airborne operations center.

**Range:** 6,900+ miles. (up to 72 Hrs-Refueled)

**Ceiling:** Above 40,000 Ft.

**Crew:** Up to 112 (Incl. PAX)



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### E-8C 'Joint STARS'

**Primary function:** Airborne battle management, Ground Surveillance.

**Speed:** 449-587 mph

**Range:** 20 Hours w/ 1 Rerefueling

**Ceiling:** 42,000 Ft.

**Crew:** 21-34





# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### E-9A 'Widget'

**Primary function:** Airborne telemetry support.

**Speed:** 280 mph

**Range:** 1,000 miles unrefueled

**Crew:** 4



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### EC-130H 'Compass Call'

**Primary function:** Electronic warfare (Suppression of enemy air defenses and offensive counter information).

**Speed:** 300 mph.

**Range:** 2,295 miles unrefueled

**Ceiling:** 25,000 Ft.

**Crew:** 13 (4 Flight Crew / 9 Mission Crew)



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### EC-130J 'Commando Solo II'

**Primary function:** Psychological Warfare

**Speed:** 393 mph.

**Range:** 4,140 miles

**Ceiling:** 28,000 Ft.

**Crew:** 9 (3 Flight Crew / 6 Mission Crew)



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### MC-12W 'Liberty'

**Primary function:** Manned ISR (Direct-Ground Forces)

**Speed:** 359 mph

**Range:** 350 = 1,700 miles

350ER = 2,700 miles (7.5 Hrs)

**Ceiling:** 35,000 Ft.

**Crew:** 4 (2-Pilots / 2-Sensor Operators)



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### MQ-1A 'Predator' (UCAV)

**Primary function:** Reconnaissance and target acquisition.

**Speed:** 84-140 mph.

**Dimensions:** Wingspan 48 ft., length 27 ft., height 7 ft.

**Endurance:** 24 hours.

**Crew:** 4 on the ground.





# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### MQ-1B 'Predator' (UAS)

**Primary function:** Armed reconnaissance, airborne surveillance and target acquisition.

**Speed:** Up to 135 mph.

**Range:** 460 miles. (16 Hrs on Sta)

**Ceiling:** 25,000 Ft.

**Armament:** AGM-114 Hellfire missiles.

**Crew:** 2 (Pilot + Sensor Opr -on the ground)



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### MQ-1C 'Avenger' (UAS)

**Primary function:** Armed reconnaissance, airborne, deep surveillance and target acquisition.

**Speed:** 400+ mph.

**Range:** 460 miles. (20 Hrs on Sta)

**Ceiling:** 50,000 Ft.+

**Payload:** 6,000 lbs.

**Crew:** 2 (Pilot + Sensor Opr -on the ground)



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### MQ-9 'Reaper'

**Primary function:** Unmanned hunter/killer weapon system.

**Speed:** 230 mph (14+ Hrs on Sta)

**Range:** 3,682 miles.

**Ceiling:** 33,000+ Ft.

**Armament:** AGM-114 Hellfire missiles; GBU-12, 38 JDAM.

**Crew:** 2 (Pilot + Sensor Opr -on the ground)



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### OC-135B 'Open Skies'

**Primary function:** Unarmed observation / Support Open Skies Treaty

**Speed:** More than 500 mph

**Range:** 3,900 miles unrefueled

**Ceiling:** 50,000 Ft.

**Crew:** 7



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### RC-26B 'Condor'

**Primary function:** Counterdrug – airborne / day-night; C2

**Speed:** 334 mph

**Range:** 2,070 miles

**Ceiling:** 25,000 Ft.

**Crew:** 2





# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### RC-135S 'Cobra Ball' / RC-135U Combat Sent / RS 135V/W Rivet Joint

#### Primary function:

RC-135U — electronic reconnaissance and surveillance.

RC-135V/W — reconnaissance.

#### Speed:

RC-135U --- 403 mph;

RC-135V/W -- 500 mph.

**Ceiling:** 35,000 Ft.

**Crew:** up to 27



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### RQ-4B 'Global Hawk' (UAS)

**Primary function:** High-altitude, long-endurance unmanned aerial reconnaissance system.

**Speed:** 356 mph

**Range:** 10,932 miles

**Ceiling:** 60,000+ Ft.

**Endurance:** 35 hours

**Crew:** 3 (1 LRE Pilots, 1 MCE Pilot, 1 MCE Sensor Opr)



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### RQ-11B 'Raven' (UAS)

**Primary function:** Low-altitude, Reconnaissance & Surveillance system.

**Speed:** 30-60 mph

**Range:** 4.9 – 7.45 miles

**Ceiling:** 100 - 500 Ft.

**Endurance:** 60-90 min.



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### RQ-170 'Sentinel' (UAS)

**Primary function:** High-altitude, Low observable Reconnaissance & Surveillance system.

**Speed:** Unknown

**Range:** Unknown

**Ceiling:** 50,000 Ft.

**Endurance:** Unknown





# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3

### SCAN EAGLE (Group II UAS)

**Primary function:** Reconnaissance,  
Surveillance & Target Acquisition System.

**Speed:** 55-80 mph

**Range:** Unknown

**Operating Altitude:** 16,000 Ft.

**Endurance:** 20+ hours







# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### WASP III (Micro UAS)

**Primary function:** Low observable Reconnaissance, Surveillance System.

**Speed:** 20-40 mph

**Range:** Unknown

**Operating Altitude:** 150 – 500+ Ft.



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### U-2S 'Dragon Lady'

**Primary function:** High-altitude reconnaissance.

**Speed:** 475 mph.

**Range:** 7,000 miles

**Endurance:** 10+ hours

**Ceiling:** above 70,000 Ft.

**Crew:** (1) - U-2S / (2) - TU-2S



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### WC-130J 'Hercules'

**Primary function:** Weather reconnaissance

**Speed:** 350 mph

**Range:** 4,000 miles unrefueled

**Ceiling:** 30,500 Ft.

**Crew:** 5



# USAF WEAPONS – I (Part 1)

## Section 4: ISR / BM / C3



### WC-135C/W 'Constant Phoenix'

**Primary function:** Air sampling and collection operations.

**Speed:** 403 mph

**Range:** 4,000 miles unrefueled

**Crew:** Varies with mission.



## USAF WEAPONS – I (Part 1)

# AIRCRAFT: Section 5- AERIAL TARGETS / DECOYS





# **USAF WEAPONS – I (Part 1)**

## **Section 5: AERIAL TARGETS/DECOYS**

- 1. BQM-167 Subscale Aerial Target**
- 2. QF-4 Drone Aerial Target**



# USAF WEAPONS – I (Part 1)

## Section 5: AERIAL TARGETS/DECOYS



### BQM-167 'Subscale Aerial Target'

**Primary function:** Aerial target

**Speed:** 691 mph.

**Crew:** None



# USAF WEAPONS – I (Part 1)

## Section 5: AERIAL TARGETS/DECOYS



### QF-4 'Drone Aerial Target'

**Primary function:** Full-scale, high-performance aerial target for live air-to-air and surface-to-air missile tests.

**Speed:** 1,250 mph.

**Endurance:** 2 Hours

**Crew:** None



## USAF WEAPONS – I (Part 1)

# AIRCRAFT: Section 6- TANKERS



# **USAF WEAPONS – I (Part 1)**

## **Section 6: TANKERS**

- 1. HC-130N/P KING**
- 2. KC-10A EXTENDER**
- 3. KC-135R/T STRATOTANKER**





# USAF WEAPONS – I (Part 1)

## Section 6: TANKERS



### HC-130N/P 'King'

**Primary Function:** Multirole Rescue Platform

**Speed:** 289 MPH

**Range:** 4,000+ Miles unrefueled

**Ceiling:** 33,000 Ft.

**Armament:** ADS

**Crew:** 10



# USAF WEAPONS – I (Part 1)

## Section 6: TANKERS



### KC-10A 'Extender'

**Primary Function:** Aerial tanker/Transport

**Speed:** 619 MPH

**Range:** 4,400 Miles w/Cargo -- 11,500 Miles w/out Cargo; unrefueled

**Ceiling:** 42,000 Ft.

**Armament:** None

**Crew:** 4



# USAF WEAPONS – I (Part 1)

## Section 6: TANKERS



### KC-135R/T 'Stratotanker'

**Primary Function:** Aerial tanker/Transport

**Speed:** 530 MPH

**Range:** 1,500 Miles w/Cargo -- 11,500 Miles w/out Cargo; unrefueled

**Ceiling:** 50,000 Ft.

**Armament:** None

**Crew:** 3



## USAF WEAPONS – I (Part 1)

# AIRCRAFT: Section 7- HELICOPTERS



# **USAF WEAPONS – I (Part 1)**

## **Section 7: HELICOPTERS**

- 1. HH-60G Pave Hawk**
- 2. UH-1H/N/V Iroquois – ‘Huey’**





# USAF WEAPONS – I (Part 1)

## Section 7: HELICOPTERS



### HH-60G 'Pave Hawk'

**Primary Function:** Combat Search & Rescue

**Speed:** 300 MPH

**Range:** 478 Miles unrefueled

**Ceiling:** 14,200 Ft

**Armament:** Combination of two 7.62 mm miniguns or .50 caliber machine guns.

**Crew:** 4



# USAF WEAPONS – I (Part 1)

## Section 7: HELICOPTERS



### UH-1H/N/V 'Iroquois' (Huey)

**Primary Function:** Support for VIPs, missile sites, ranges and search and rescue.

**Speed:** 115 MPH

**Range:** 300 Miles

**Ceiling:** 15,000 /13,000 Ft

**Armament: OPT:** 2 7.62 mm miniguns, 2 40mm grenade launchers, 2 7-tube Rocket Launchers

**Crew:** 2-3



OFFICER CANDIDATE SCHOOL  
USAF WEAPON SYSTEMS - I (Part 1)

**END of**  
**USAF WEAPONS - I**  
**(Part 1) CLASS !**  
**... Take 5-10 Min. Break!**