

## WORK TO BE COMPLETED IN LAB

*The following is the data of all AirForce Weapons which Pakistan Airforce has with Air to Air Missiles, Air to Surface Missiles & Unguided Bombs & Rockets which are of course used on all the Fighter Jets which Pakistan Possesses. The Data is given with its name, Range in kilometers, Technology used, Place of Origin (local or imported), and Possible Quantity in Inventory.*

- You have to make 3 Sheets (Landscape Mode) in Microsoft Excel for all the Inventory with each Sheet Pertaining to Air to Air Missiles, Air to Surface & Unguided Bombs & Rockets.
- Each Sheet will have a Proper heading and Columns as below
  - (a) Name of Missile
  - (b) Range in km
  - (c) Range in miles (use Excel Calculator Formula to Calculate that from cell (b))
  - (d) Place of Origin Country
  - (e) Technology Used (Homing IR, Homing AESA, Glide or Laser)
  - (f) Next Make as many Columns as Jet fighters totally available in data given and write YES or NO which it supports i.e. JF-17, F-16, Mirage V, Mirage III etc.
  - (g) Quantity (Estimated)
  - (h) Any Text or Details to be Added
- The Whole Data has to be managed in tabular Form & Proper cell Data type has to be allocated such as String or Integer Data Type
- At the End of Each Sheet, make a Total of all Air to Air missiles, Air to Surface & Rockets Pakistan has. *(Use Cell formulas for this)*
- Also Find out the Percentage of Locally produced Inventory as compared to Imported Missiles with respect to Total Quantity of weapons. *(Use Cell formulas for this)*

### Lab Week # 3 (Microsoft Word Lab Work) (Section C)

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### Air-to-Air Missiles

Missile	Origin/Type	Range (km)	Platforms	Notes/Estimated Inventory
AIM-120C-5 AMRAAM	USA (Active Radar Homing)	100+	F-16A/B/C/D	~500 units acquired in 2010; used in 2019 Balakot skirmish.
AIM-120C-8 AMRAAM	USA (Active Radar Homing)	120+	F-16A/B/C/D	Export variant of AIM-120D; ~hundreds pending delivery under 2025 FMS contract for F-16 upgrades.
PL-15E	China (Active Radar Homing)	145 (export)	JF-17 Block III, J-10C	~200-300; first combat use May 2025 (debris recovered in India); equips ~65-70 fighters.
PL-12 / SD-10A	China (Active Radar Homing)	70-100	JF-17, J-10C, Mirage III/V	~400+; medium-range backup to PL-15E.
PL-10 / PL-10E	China (Infrared Homing)	20-40	JF-17 Block III, J-10C	~300+; high off-boresight short-range; integrated on AESA-equipped jets.
AIM-9L/M Sidewinder	USA (Infrared Homing)	18-35	F-16, Mirage III/V	~500+; legacy short-range; ongoing sustainment.
Faaz-1	Pakistan (Active Radar Homing, indigenous)	100+	JF-17, J-10C (planned)	Under development by GIDS/AWC; initial batches ~50-100 for testing/export potential.
Faaz-2	Pakistan (Active Radar Homing, indigenous)	150+	JF-17, J-10C (planned)	Advanced variant; ~dozens in trials; dual-pulse motor for extended range.

**Air-to-Surface Missiles and Guided Bombs** These enable precision strikes, including suppression of enemy air defenses (SEAD).

Weapon	Origin/Type	Range (km)	Platforms	Notes/Estimated Inventory
CM-400AKG	China (Active Radar Homing ASM)	100-240	JF-17, J-10C	~100+; supersonic anti-ship/ground; used in SEAD roles during 2025 clashes.
C-802 / AKG-500	China (Anti-Ship ASM)	120-180	JF-17, Mirage V	~150+; coastal defense integration; export variant of C-802.
Ra'ad-I (Hatf-8)	Pakistan (Air-Launched Cruise Missile, nuclear-capable)	350	Mirage III, JF-17	~50-100; tested 2016; dual conventional/nuclear warheads; low-observable design.
Ra'ad-II	Pakistan (Air-Launched)	600	Mirage III, JF-17	~20-50; enhanced stealth; operational since ~2020;

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	Cruise Missile, nuclear-capable)			complements Babur ground- launched variant.
Taimur	Pakistan (Air- Launched Cruise Missile)	290	JF-17, J- 10C	~50+; GIDS-developed; GPS/INS guidance for high-value targets.
H-2 SOW	Pakistan (Glide Bomb)	60	JF-17, Mirage V	~200+ kits; satellite-guided; converts Mk-84 bombs.
H-4 SOW	Pakistan (Glide Bomb)	120	JF-17, J- 10C	~150+ kits; extended-range variant; used in standoff strikes.
Takbir-1 REK	Pakistan (Range Extension Kit for Bombs)	80-100	Multiple	~300+; GPS-guided kit for 500/1000-lb bombs; indigenous by GIDS.
Takbir-2 REK	Pakistan (Range Extension Kit for Bombs)	170-220	Multiple	~100+; longer-range kit; enhances unguided bomb precision.
GBU- 10/12 Paveway II	USA (Laser- Guided Bomb)	8-16 (glide)	F-16, Mirage V	~200+; 2000/500-lb variants; FMS- sourced; depleted in counter- insurgency but replenished.
Al-Battar	Pakistan (Laser- Guided Kit)	10-20	JF-17, Mirage	~150+; indigenous LGB kit for Mk- 82/83 bombs.
Hafr	Pakistan (Anti- Runway Bomb)	20-30	JF-17	~100+; NESCOM-developed; penetrates runways for airbase denial.

**Unguided Bombs and Rockets (Selected)** The PAF retains a stockpile of conventional free-fall munitions for saturation strikes, often paired with glide kits for versatility.

Weapon	Type	Weight (kg)	Platforms	Notes/Estimated Inventory
Mk-82	General Purpose Bomb	227	All fighters	~1,000+; baseline for REK/LGB conversions.
Mk-84	General Purpose Bomb	907	F-16, Mirage V	~500+; heavy penetrator; used with H-series kits.
Mk-83	General Purpose Bomb	454	JF-17, J-10C	~800+; mid-weight option.
SNEB 68	Rocket Pod (2.75")	18 (per rocket)	Mirage III/V	~2,000+ rounds; unguided; anti- personnel/vehicles.
Hydra 70	Rocket (2.75")	20 (per rocket)	F-16, AH-1Z (if acquired)	~1,500+; U.S.-sourced; multipurpose.