Chengdu J-10

From Wikipedia, the free encyclopedia

|  |  |
| --- | --- |
| **J-10 Vigorous Dragon F-10 Vanguard** | |
|  | |
| A J-10A of the [People's Liberation Army Air Force](https://en.wikipedia.org/wiki/People%27s_Liberation_Army_Air_Force) seen at the [Zhuhai Airshow](https://en.wikipedia.org/wiki/Zhuhai_Airshow) | |
| **Role** | [Multirole combat aircraft](https://en.wikipedia.org/wiki/Multirole_combat_aircraft) |
| **National origin** | China |
| **Manufacturer** | [Chengdu Aircraft Industry Group](https://en.wikipedia.org/wiki/Chengdu_Aircraft_Industry_Group) |
| **Design group** | [Chengdu Aircraft Design Institute](https://en.wikipedia.org/wiki/Chengdu_Aircraft_Design_Institute) |
| **First flight** | 23 March 1998 |
| **Introduction** | 2006 |
| **Status** | In service |
| **Primary user** | [People's Liberation Army Air Force](https://en.wikipedia.org/wiki/People%27s_Liberation_Army_Air_Force) |
| **Produced** | 2002 – present |
| **Number built** | ~400 |
| **Program cost** | 500 million [RMB](https://en.wikipedia.org/wiki/RMB) allocated in 1982 (Project #10) |
| **Unit cost** | 190 million [RMB](https://en.wikipedia.org/wiki/RMB) (27.84 million [USD](https://en.wikipedia.org/wiki/United_States_dollar); 2010) |
| **Developed from** | [Chengdu J-9](https://en.wikipedia.org/wiki/Chengdu_J-9) |

The **Chengdu J-10** ([simplified Chinese](https://en.wikipedia.org/wiki/Simplified_Chinese_characters): 歼-10; [traditional Chinese](https://en.wikipedia.org/wiki/Traditional_Chinese_characters): 殲-10, NATO Code: **Firebird**) is a lightweight [multirole](https://en.wikipedia.org/wiki/Multirole_combat_aircraft) [fighter aircraft](https://en.wikipedia.org/wiki/Fighter_aircraft) capable of all-weather operation, configured with a [delta wing](https://en.wikipedia.org/wiki/Delta_wing) and [canard](https://en.wikipedia.org/wiki/Canard_(aeronautics)) design, with [fly-by-wire](https://en.wikipedia.org/wiki/Fly-by-wire) flight controls, and produced by the [People's Republic of China](https://en.wikipedia.org/wiki/People%27s_Republic_of_China)'s [Chengdu Aircraft Corporation (CAC)](https://en.wikipedia.org/wiki/Chengdu_Aircraft_Industry_Group) for the [People's Liberation Army Air Force](https://en.wikipedia.org/wiki/People%27s_Liberation_Army_Air_Force) (PLAAF).

Development

The program was authorized by [Deng Xiaoping](https://en.wikipedia.org/wiki/Deng_Xiaoping) who allocated [¥](https://en.wikipedia.org/wiki/Renminbi) 0.5 billion to develop an indigenous aircraft. Work on Project #10 started several years later in January 1988, as a response to the [Mikoyan MiG-29](https://en.wikipedia.org/wiki/Mikoyan_MiG-29) and [Sukhoi Su-27](https://en.wikipedia.org/wiki/Sukhoi_Su-27) then being introduced by the [USSR](https://en.wikipedia.org/wiki/USSR), and [F-15](https://en.wikipedia.org/wiki/F-15), [F-16](https://en.wikipedia.org/wiki/F-16) already in service in the United States. Development was delegated to the 611 Institute, also known as the Chengdu Aircraft Design Institute and [Song Wencong](https://en.wikipedia.org/wiki/Song_Wencong) was nominated as the chief designer, as he had previously been the chief designer of the [J-7III](https://en.wikipedia.org/wiki/Chengdu_J-7). The aircraft was initially designed as a specialized fighter, but later became a multirole aircraft capable of both [air-to-air combat](https://en.wikipedia.org/wiki/Air-to-air_combat) and [ground attack](https://en.wikipedia.org/wiki/Ground_attack) missions.

The J-10 resembles the [IAI Lavi](https://en.wikipedia.org/wiki/IAI_Lavi) The general designer [Song Wencong](https://en.wikipedia.org/wiki/Song_Wencong) said that J-10 was a development of the indigenous [J-9](https://en.wikipedia.org/wiki/Chengdu_J-9) which preceded the Lavi. This was echoed by a PLAAF's major Zhang Weigang in a 2012 interview.

In 2006, the Russian Siberian Aeronautical Research Institute (SibNIA) confirmed its participation in the J-10 program; SibNIA claimed to have only observed and instructed as "scientific guides", while its engineers also believed the J-10 was "more or less a version" of the Lavi design, incorporating "a melting pot of foreign technology and acquired design methods".

The J-10 was officially unveiled by the [Chinese government](https://en.wikipedia.org/wiki/Government_of_the_People%27s_Republic_of_China) in January 2007, when photographs were published by [Xinhua News Agency](https://en.wikipedia.org/wiki/Xinhua_News_Agency). The aircraft's existence was known long before the announcement, although concrete details remained scarce due to secrecy. A J-10 prototype was speculated to have possibly crashed during flight testing. Xinhua News Agency and the [PLA Daily](https://en.wikipedia.org/wiki/PLA_Daily) denied such rumors, and listed this as one of the test pilots' accomplishments.

The prototype "J-10 01" was rolled out in November 1997 and first flown on 23 March 1998 in a twenty-minute flight.

[AVIC](https://en.wikipedia.org/wiki/Aviation_Industry_Corporation_of_China) plans to market an upgraded J-10 for export, most likely the J-10B, once development is complete. Several countries have shown interest.

In 2015, China Military Online published an analysis advocating Argentina's adoption of the J-10, claiming that while the operational range of current versions could not yet allow it to reach the [Falkland Islands](https://en.wikipedia.org/wiki/Falkland_Islands), the aircraft, particularly its radar, were superior to the Typhoon and that tanker aircraft could place the islands within range. China has been promoting the J-10 to the Argentine republic and during a February 2015 visit to China by [President Kirchner](https://en.wikipedia.org/wiki/Cristina_Fern%C3%A1ndez_de_Kirchner) established a joint fighter aircraft working group.

Operational history

**China**

[August 1st aerobatics team](https://en.wikipedia.org/wiki/August_1st_(aerobatic_team))

The first aircraft were delivered to the 13th Test [Regiment](https://en.wikipedia.org/wiki/Regiment) on 23 February 2003. The aircraft was declared 'operational' in December of the same year, after 18 years in development. The first operational regiment was the [131st Regiment](https://en.wikipedia.org/w/index.php?title=131st_Regiment&action=edit&redlink=1) of the [44th Division](https://en.wikipedia.org/w/index.php?title=44th_Division_(People%27s_Liberation_Army)&action=edit&redlink=1).

**Pakistan**

In February 2006, then-[President of Pakistan](https://en.wikipedia.org/wiki/President_of_Pakistan) [Pervez Musharraf](https://en.wikipedia.org/wiki/Pervez_Musharraf), toured the J-10 and [JF-17](https://en.wikipedia.org/wiki/JF-17) production facilities on a trip to China during which the [Pakistan Air Force](https://en.wikipedia.org/wiki/Pakistan_Air_Force) (PAF) was offered the J-10, and the purchase of 36 FC-20s, a Pakistan-specific J-10B variant, was approved in April 2006. In November 2009, Pakistan signed a deal with China to buy 36 J-10B fighters in a deal worth around $1.4 billion.

In July 2011, [Daily Jang](https://en.wikipedia.org/wiki/Daily_Jang) reported that China will give a squadron of the advanced J-10B fighter aircraft to Pakistan. According to the report, “the offer was made by senior Chinese military leaders to visiting Pakistan Army's Chief of General Staff, Lt Gen [Waheed Arshad](https://en.wikipedia.org/wiki/Waheed_Arshad)". In March 2012, talks were held between the two countries to discuss the delivery of latest J-10B fighter jets to Pakistan. However, this has been cancelled as of 2016. Pakistan Air Force is focusing on JF-17 Block 3 and in future it is looking to procure the export version of J-31, the FC-31 stealth fighter. 40 jets are to be procured initially.

**Iran**

Since 2007, there have been rumors that Iran is interested in purchasing J-10 from China, however China denied such deal.

Design

J-10 was designed and developed by the Chengdu Aircraft Design Institute (CADI), a subsidiary of [Chengdu Aircraft Corporation](https://en.wikipedia.org/wiki/Chengdu_Aircraft_Industry_Corporation).

**Airframe**

The airframe is constructed from metal alloys and [composite materials](https://en.wikipedia.org/wiki/Composite_material) for high strength and low weight, the [airframe](https://en.wikipedia.org/wiki/Airframe)'s aerodynamic layout adopts a "tail-less canard delta" [wing configuration](https://en.wikipedia.org/wiki/Wing_configuration). A large [delta wing](https://en.wikipedia.org/wiki/Delta_wing) is mid-mounted towards the rear of the [fuselage](https://en.wikipedia.org/wiki/Fuselage), while a pair of [canards (or fore planes)](https://en.wikipedia.org/wiki/Canard_(aeronautics)) are mounted higher up and towards the front of the fuselage, behind and below the [cockpit](https://en.wikipedia.org/wiki/Cockpit_(aviation)). This configuration provides very high agility, especially at low speeds, and also reduces stall speed, allowing for a lower airspeed during instrument approaches. A large [vertical tail](https://en.wikipedia.org/wiki/Vertical_tail) is present on top of the fuselage and small ventral fins underneath the fuselage provide further stability.

A rectangular air [intake ramp](https://en.wikipedia.org/wiki/Intake_ramp) and a [Splitter plate](https://en.wikipedia.org/wiki/Splitter_plate_(aeronautics)) (only on J-10A) are located underneath the fuselage, providing the air supply to the engine. Also under the fuselage and wings are 11 [hardpoints](https://en.wikipedia.org/wiki/Hardpoint), used for carrying various types of weaponry and [drop-tanks](https://en.wikipedia.org/wiki/Droptank) containing extra fuel.

The retractable [undercarriage](https://en.wikipedia.org/wiki/Landing_gear) comprises a steerable pair of nose-wheels underneath the air intake and two main gear wheels towards the rear of the fuselage.



PLAAF Chengdu J-10AY

The cockpit is covered by a two-piece [bubble canopy](https://en.wikipedia.org/wiki/Bubble_canopy) providing [360 degrees](https://en.wikipedia.org/wiki/360_degrees) of visual coverage for the pilot. The canopy lifts upwards to permit cockpit entry and exit. The Controls take the form of a conventional [center stick](https://en.wikipedia.org/wiki/Centre_stick) and a throttle stick located to the left of the pilot. These also incorporate "hands on throttle and stick" ([HOTAS](https://en.wikipedia.org/wiki/HOTAS)) controls. A zero-zero [ejection seat](https://en.wikipedia.org/wiki/Ejection_seat) is provided for the pilot, permitting safe ejection in an emergency even at zero altitude and zero speed.

Due to the J-10's [aerodynamically unstable](https://en.wikipedia.org/wiki/Relaxed_stability) design, a digital quadruplex-redundant [fly-by-wire](https://en.wikipedia.org/wiki/Fly-by-wire) (FBW) [flight control system](https://en.wikipedia.org/wiki/Flight_control_system) (FCS) aids the pilot in flying the aircraft. The FCS typically monitors pilot control inputs, preventing the pilot from accidentally exiting the flight envelope from applying too much control input during high performance flight situations. This is critical in canard wing aircraft, as they are capable of turning in a much tighter radius than conventional aircraft. The massive control surfaces are capable of moving so far that they can completely destroy the aircraft in flight at high airspeeds if not kept in check by the FCS.

**Avionics**

The cockpit has three [liquid crystal](https://en.wikipedia.org/wiki/Liquid_crystal_display) (LCD) [Multi-function displays](https://en.wikipedia.org/wiki/Multi-function_display) (MFD) along with a Chinese developed holographic [head-up display](https://en.wikipedia.org/wiki/Head-up_display) (HUD), all of which are fully compatible with a domestic Chinese advanced [helmet mounted sight (HMS)](https://en.wikipedia.org/wiki/Helmet-mounted_display), claimed by Chinese to be superior to the HMS on the [Sukhoi Su-27](https://en.wikipedia.org/wiki/Sukhoi_Su-27) sold to China.

**Radar**

According to [Chengdu Aircraft Industry Corporation](https://en.wikipedia.org/wiki/Chengdu_Aircraft_Industry_Corporation) officials the J-10 uses a multi-mode fire-control radar designed in China. The radar has a mechanically scanned [planar array](https://en.wikipedia.org/wiki/Planar_array) antenna and is capable of tracking 10 targets. Of the 10 targets tracked, 2 can be engaged simultaneously with [semi-active radar homing](https://en.wikipedia.org/wiki/Semi-active_radar_homing) missiles or 4 can be engaged with [active radar homing](https://en.wikipedia.org/wiki/Active_radar_homing) missiles.

For J-10B, the nose cone is modified to accommodate an [active phased array airborne radar](https://en.wikipedia.org/wiki/Active_electronically_scanned_array) (AESA) radar. The general designer of AESA for J-10B is Mr. Zhang Kunhui (张昆辉, 1963 -), the head of 607 Research Institute in [Neijiang](https://en.wikipedia.org/wiki/Neijiang), [Sichuan](https://en.wikipedia.org/wiki/Sichuan). Mr. Zhang Kunhui became the deputy head of 607th Research Institute in 1997, and four years later in 2001, he became the head of the institute, when the AESA program for J-10B started. The primary contractor of this AESA is the Radar and Electronic Equipment Research Academy of [Aviation Industry Corporation of China](https://en.wikipedia.org/wiki/Aviation_Industry_Corporation_of_China) located in [Sichuan](https://en.wikipedia.org/wiki/Sichuan), formed in March 2004 by combining the 607th Research Institute and 171st Factory together with Mr. Zhang Kunhui was named as the head of the research academy. According to Chinese governmental media, the AESA for J-10B took 8 years to develop, finally completed in 2008, and Chinese fighter radars hence achieved a quantum leap in that it went from mechanically scanned planar slotted array directly into AESA, skipping the passive [phased array](https://en.wikipedia.org/wiki/Phased_array) [PESA radar](https://en.wikipedia.org/wiki/Passive_electronically_scanned_array). Many suspected the radar is a PESA, but during its brief debuts in the 7th China International Defense Electronics Exhibition (CIDEX) in May 2010 and the 6th International Conference on Radar held in Beijing in Sept 2011, Chinese official sources have claimed it is an AESA.

**Propulsion**



A J-10 powered by an AL-31FN turbofan engine

The J-10A is powered by a single Russian [Lyulka-Saturn AL-31FN](https://en.wikipedia.org/wiki/AL-31) [turbofan](https://en.wikipedia.org/wiki/Turbofan) engine giving a maximum static thrust of 12,500 [kgf](https://en.wikipedia.org/wiki/Kilogram-force) (123 [kN](https://en.wikipedia.org/wiki/Newton_(unit))). The AL-31FN is based on the AL-31F which was designed for a twin engine aircraft such as the [Su-27](https://en.wikipedia.org/wiki/Su-27), to fit the smaller J-10 the engine parts have been moved and re-designed to fit the smaller engine bay in the J-10.

The J-10 was intended to be powered by the Chinese [WS-10 Taihang](https://en.wikipedia.org/wiki/WS-10) [turbofan](https://en.wikipedia.org/wiki/Turbofan), but development difficulties forced the J-10A to use a Russian engine instead. Future J-10 will likely be equipped with an improved WS-10 type engine designed specifically for it, as the Chinese aeroengine industry matures and political/military pressure to indigenize increases.

In April 2014, China have entered into a contract with NPO Saturn to purchase the upgraded AL-31FN Series 3 that provides 13,700 kgf thrust and a 2,250-hour service life for future deliveries. Prior, the AL-31FN Series 3 had accumulated 750 hours of test operation on the J-10 aircraft in a test program.

**Weaponry and external loads**

The aircraft's internal armament consists of a [Gryazev-Shipunov GSh-23](https://en.wikipedia.org/wiki/Gryazev-Shipunov_GSh-23) [twin-barrel](https://en.wikipedia.org/wiki/Gast_gun) [cannon](https://en.wikipedia.org/wiki/Autocannon), located underneath the port side of the intake. Other weaponry and equipment is mounted externally on 11 [hardpoints](https://en.wikipedia.org/wiki/Hardpoint), to which 6,000 kg (13,228 lb.) of either missiles and bombs, [drop-tanks](https://en.wikipedia.org/wiki/Droptank) containing fuel, or other equipment such as avionics pods can be attached.

Air-to-air missiles deployed may include short-range [air-to-air missiles](https://en.wikipedia.org/wiki/Air-to-air_missile) such as the [PL-8](https://en.wikipedia.org/wiki/PL-8_missile) and [PL-9](https://en.wikipedia.org/wiki/PL-9), medium-range radar-guided air-to-air missiles such as the [PL-11](https://en.wikipedia.org/wiki/HQ-61#PL-11) and [PL-12](https://en.wikipedia.org/wiki/PL-12), unguided and precision guided munitions such as laser-guided bombs, [anti-ship missiles](https://en.wikipedia.org/wiki/Anti-ship_missile) such as the [YJ-9](https://en.wikipedia.org/wiki/YJ-9)K and [anti-radiation missiles](https://en.wikipedia.org/wiki/Anti-radiation_missiles) such as the [PJ-9](https://en.wikipedia.org/w/index.php?title=PJ-9&action=edit&redlink=1).

Variants



J-10AY of the August 1st aerobatics team



J-10B, featuring a diverterless supersonic inlet.

* **J-10A**: Single seat multi-role variant. The export designation is **F-10A**.
* **J-10B**: An upgraded J-10, initially identified as "Super-10". It features a lighter and stealthier [diverterless supersonic inlet](https://en.wikipedia.org/wiki/Diverterless_supersonic_inlet), a longer nose radome possibly housing inactive radar, an electro-optic targeting sensor ([IRST](https://en.wikipedia.org/wiki/Infra-red_search_and_track), and laser rangefinder,) and a new electronic warning or countermeasures pod atop the vertical stabilizer. The aircraft is powered by the [AL-31FN M1](https://en.wikipedia.org/wiki/Saturn_AL-31); one unit was flown with a [WS-10A](https://en.wikipedia.org/wiki/WS-10A) in July 2011 but that engine was not selected for the initial production batch. The aircraft's first flight occurred no later than December 2008.
* **J-10C**: Upgraded from J-10B, J-10C has DSI and improved nose cone to reduce drag. Is equipped with enhanced 4th generation electronics including [AESA radar](https://en.wikipedia.org/wiki/Active_electronically_scanned_array) and more composite material. J-10C is believed to have semi-stealth capability and new [FWS-10B](https://en.wikipedia.org/wiki/Shenyang_WS-10) engine which has passed the PLA test according to Chinese media.
* **FC-20**: Single seat multi-role fighter jet, the export version of the J-10.
* **J-10SY**: Dual tandem seat combat capable trainer for the J-10A/B.

Operators

[**People's Republic of China**](https://en.wikipedia.org/wiki/China)



* [People's Liberation Army Air Force](https://en.wikipedia.org/wiki/People%27s_Liberation_Army_Air_Force): 240+ As of February 2014
* [People's Liberation Army Naval Air Force](https://en.wikipedia.org/wiki/People%27s_Liberation_Army_Naval_Air_Force): 24+ As of February 2014

Accidents and incidents

On 15 November 2014, a J-10B crashed in [Pi County](https://en.wikipedia.org/wiki/Pi_County) (Pixian) near Chengdu city in Sichuan province with the pilot ejecting safely. Coming down in an artificial lake near a newly built residential compound, the accident injured at least seven on the ground. The aircraft was painted yellow, indicating it was either a new aircraft or a prototype.

On 17 December 2015, a PLANAF J-10 crashed in Zhejiang Province, the crew of two ejected.

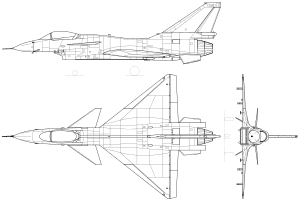
On 1 October 2016,a PLAAF J-10 from 24th Division crashed near Yangcun.

On 13 November 2016, the first J-10 female pilot, Captain [Yu Xu](https://en.wikipedia.org/wiki/Yu_Xu), was killed in an aerobatics display Hebei province whilst performing with the 1st Aerobatics Team.

Specifications (J-10A)



J-10SY of the August 1st aerobatics team



**General characteristics**

* **Crew:** 1
* **Length:** 15.49 m (50.82 ft)
* [**Wingspan**](https://en.wikipedia.org/wiki/Wingspan)**:** 9.75 m (31.99 ft)
* **Height:** 5.43 m (17.81 ft)
* **Wing area:** 39 m² (356.3 ft²)
* [**Empty weight**](https://en.wikipedia.org/wiki/Manufacturer%27s_empty_weight)**:** 9,750 kg (21,495 lb.)
* **Useful load:** 6,000 kg (13,200lb)
* **Loaded weight:** 12,400 kg (28,600 lb.)
* [**Max. takeoff weight**](https://en.wikipedia.org/wiki/Maximum_takeoff_weight)**:** 19,277 kg  (42,500 lb.)
* [**Powerplant**](https://en.wikipedia.org/wiki/Aircraft_engine)**:** 1 × [Saturn-Lyulka AL-31](https://en.wikipedia.org/wiki/Lyulka_AL-31)FN or [WS-10A](https://en.wikipedia.org/wiki/WS-10A) [turbofan](https://en.wikipedia.org/wiki/Turbofan)
  + **Dry thrust:** 79.43 kN / 89.17 kN (17,860 lbf / 19,000 lbf)
  + **Thrust with**[**afterburner**](https://en.wikipedia.org/wiki/Afterburner)**:** 125 kN / 130 kN (27,999 lbf / 29,000 lbf)

**Performance**

* [**Maximum speed**](https://en.wikipedia.org/wiki/V_speeds#Regulatory_V-speeds)**:** [Mach](https://en.wikipedia.org/wiki/Mach_number) 2.2 at altitude, Mach 1.2 at sea level
* [**Combat radius**](https://en.wikipedia.org/wiki/Combat_radius)**:** 550 km (342 mi)
* [**Ferry range**](https://en.wikipedia.org/wiki/Range_(aeronautics))**:** 1,850 km (1,150 mi)
* [**Service ceiling**](https://en.wikipedia.org/wiki/Ceiling_(aeronautics))**:** 18,000 m (59,055 ft)
* [**Wing loading**](https://en.wikipedia.org/wiki/Wing_loading)**:** 381 kg/m² (78 lb./ft²)
* [**Thrust/weight**](https://en.wikipedia.org/wiki/Thrust-to-weight_ratio)**:** 1.15 (with [AL-31FN3](https://en.wikipedia.org/wiki/Saturn_AL-31)); 1.16 (with [WS-10B](https://en.wikipedia.org/wiki/WS-10G))
* **Maximum *g*-load:** +9/–3 *g*

**Armament**

* **Guns:** 1× [Gryazev-Shipunov GSh-23](https://en.wikipedia.org/wiki/Gryazev-Shipunov_GSh-23)
* [**Hardpoints**](https://en.wikipedia.org/wiki/Hardpoint)**:** 11 in total (6× under-wing, 5× under-fuselage) with a capacity of 7,000 kg (15,400 lb.) external fuel and ordnance

**Rockets:** 90 mm unguided rocket pods

**Missiles:**

* + [**Air-to-air missiles**](https://en.wikipedia.org/wiki/Air-to-air_missile):  
    [PL-8](https://en.wikipedia.org/wiki/PL-8_missile)  
    [PL-9](https://en.wikipedia.org/wiki/PL-9)  
    [PL-11](https://en.wikipedia.org/w/index.php?title=PL-11_AAM&action=edit&redlink=1)  
    [PL-12](https://en.wikipedia.org/wiki/PL-12)
  + [**Air-to-surface missiles**](https://en.wikipedia.org/wiki/Air-to-surface_missile):  
    [PJ-9](https://en.wikipedia.org/w/index.php?title=PJ-9&action=edit&redlink=1)  
    [YJ-9K](https://en.wikipedia.org/w/index.php?title=YJ-9K&action=edit&redlink=1)

**Bombs:**  
Laser-guided bombs: ([LT-2](https://en.wikipedia.org/wiki/LT_PGB#Variants))  
Glide bombs: ([LS-6](https://en.wikipedia.org/wiki/LS_PGB), [GB3](https://en.wikipedia.org/w/index.php?title=GB_PGB&action=edit&redlink=1), [GB2A](https://en.wikipedia.org/w/index.php?title=GB_PGB&action=edit&redlink=1), [GB3A](https://en.wikipedia.org/w/index.php?title=GB_PGB&action=edit&redlink=1))  
Satellite-guided bombs: ([FT-1](https://en.wikipedia.org/wiki/FT_PGB))  
Unguided bombs: 250 kg, 500 kg

**Others:**

* + Up to 3 external fuel [drop-tanks](https://en.wikipedia.org/wiki/Drop-tank) (1× under-fuselage, 2× under-wing) for extended range and loitering time

**Avionics**

* Type 1473H [pulse-doppler](https://en.wikipedia.org/wiki/Pulse-doppler) fire control radar
* Externally mounted avionics pods:
  + Type Hongguang-I [infra-red search and track](https://en.wikipedia.org/wiki/Infra-red_search_and_track) pod
  + BM/KG300G self-protection jamming pod
  + [KZ900 electronic reconnaissance pod](https://en.wikipedia.org/wiki/KZ900)
  + [Blue Sky navigation/attack pod](https://en.wikipedia.org/wiki/Blue_Sky_navigation_pod)
  + [FILAT (Forward-looking Infra-red Laser Attack Targeting) pod](https://en.wikipedia.org/wiki/FILAT)

See also

[***Aviation portal***](https://en.wikipedia.org/wiki/Portal:Aviation)



**Related development**

* [Chengdu J-9](https://en.wikipedia.org/wiki/Chengdu_J-9)

**Aircraft of comparable role, configuration and era**

* [General Dynamics F-16 Fighting Falcon](https://en.wikipedia.org/wiki/General_Dynamics_F-16_Fighting_Falcon)
* [Saab JAS 39 Gripen](https://en.wikipedia.org/wiki/Saab_JAS_39_Gripen)
* [Boeing F/A-18E/F Super Hornet](https://en.wikipedia.org/wiki/Boeing_F/A-18E/F_Super_Hornet)
* [Dassault Rafale](https://en.wikipedia.org/wiki/Dassault_Rafale)
* [Eurofighter Typhoon](https://en.wikipedia.org/wiki/Eurofighter_Typhoon)
* [Mikoyan MiG-29](https://en.wikipedia.org/wiki/Mikoyan_MiG-29)

**Related lists**

* [List of fighter aircraft](https://en.wikipedia.org/wiki/List_of_fighter_aircraft)
* [List of Chinese aircraft](https://en.wikipedia.org/wiki/List_of_Chinese_aircraft)