





## Contents

Introduction.....	3
Requirements.....	3
Aircraft List.....	4
F-86A-5 Sabre.....	5
F-86D-40 Sabre Dog.....	6
F-86D-45 Sabre Dog.....	7
F-86E-10 Sabre.....	8
F-86F-25 Sabre.....	9
F-86F-25 Sabre (6-3' wing).....	10
F-86F-40 Sabre.....	11
F-86K Sabre Dog.....	12
FJ-3M Fury.....	13
CAC Avon Sabre Mk 31.....	14
CAC Avon Sabre Mk 32.....	15
MiG-15.....	16
MiG-15(bis).....	17
MiG-15SB Fagot.....	18
MiG-17A Fresco-A.....	19
MiG-17F Fresco-C.....	20
MiG-17PF Fresco-D/E.....	21
Tu-4 Bull.....	22
Cockpits.....	23
F-86.....	23
MiG-15/17.....	24
Flight Modelling.....	25
Engine Management.....	25
G-Suits.....	25
Supersonic Flight.....	25
Aerial Refuelling.....	27
Drag Chutes.....	28
Fuel Dumping.....	28
Radar Warning Receivers.....	28
Missile Systems.....	29
AIM-9B/D.....	29
K-13A.....	30
K-5M.....	30
R-55.....	30
Raduga KS-1 Komet (NATO: AS-1 Kennel).....	30
Credits.....	31



## Introduction

This guide is only applicable to Version 1.20 of the IL-2 1956 Package.

Initially this project began as a few of us playing with Twister's X-4 mod, using a poorly skinned hacked model that was glued onto the side of a scavenged Sabre that CirX had laying out back. Since then it has evolved into a completely new add-on for IL-2 that goes beyond adding new aircraft. As it stands this project has been one of the largest community modding projects ever undertaken in IL-2 (with exception to UP) and has involved numerous modders, who have contributed in multiple ways.

The aim of the project is to introduce modern aerial warfare concepts into IL-2. As a start, we have chosen the 1950s to early 1960s, which saw a large shift in aircraft design, weapon types and tactics used. In that short time, aircraft went from being subsonic to exceeding Mach 2, guns were put out of favour and missiles became the new deadly threat in the sky. Engine design also rapidly changed, with a tripling in power seen in some models (e.g. Rolls Royce Avon), the advent of the afterburner and most of all, a huge increase in reliability! This period also saw numerous forgotten conflicts, including the Taiwan Strait Crisis, Malaysian Emergency/Indonesian Insurgency, the Second Indo-Pakistani War and of course, the start of the well-known Vietnam conflict.

In this first release of IL-2 1956 there will be no working radar. We hope to implement this feature in later patches. Due to the time constraints we are unable to do this at the moment. The AI has been modified and is still a work in progress as are various other parts of this pack. There will be bugs in the first release but we hope that they can be identified and fixed as soon as possible.

This guide will help you get to grips with the new aircraft included in our package and also with the various new additions that are included such as supersonic flight and missile systems. The data such as engine power is not meant to be an exact true life value but rather a guide to give you the general idea of how powerful that engine is. As this package is updated with further patches and content we will also update this guide to keep you up to date on the latest information. We hope that by digesting all this knowledge it will assist you on your way to becoming a fighter pilot Ace.

## Requirements

In order to run IL-2 1956 you will need the following:

- A copy of IL-2 Sturmovik 1946 patched up to 4.101m
- SAS ModAct 2.72 or later version

For ModAct users you will also need the following:

- Latest version of AI, Engines, Hotkeys and Carriers Mod

*Please note that the package will probably work on 4.10m as well but we will only be supporting 4.101m. This package is not compatible with 4.11m. DBW 1.7 users will already have this package and do not need to install this.*



## Aircraft List

### North American Aviation:

F-86A-5 Sabre  
F-86D-40 Sabre Dog  
F-86D-45 Sabre Dog  
F-86E-10 Sabre  
F-86F-25 Sabre  
F-86F-25 Sabre (6-3' wing)  
F-86F-40 Sabre  
F-86K Sabre Dog  
FJ-3M Fury

### Commonwealth Aircraft Corporation:

CA-27 Avon Sabre Mk 31  
CA-27 Avon Sabre Mk 32

### Douglas Aircraft Company:

A-1H Skyraider 'Buddy Tanker' (AI only)

### Mikoyan Gurevich Design Bureau:

MiG-15  
MiG-15(bis)  
MiG-15SB Fagot  
MiG-17A Fresco-A  
MiG-17F Fresco-C  
MiG-17PF/M Fresco-D/E

### Tupolev Design Bureau:

Tu-4 Bull





## F-86A-5 Sabre

(Also known as CL-13 Sabre Mk 1)



### At a Glance:

Engine: 1x General Electric J-47-GE-13

Power: 24 kN (5,400 lbf)

### Armament:

- 6x 12.7mm M3 Browning
- 2x 500lbs
- 2x 750lbs
- 2x M117
- 2x 1000lbs
- 2x M64A1

### Advantages:

- Excellent Manoeuvrability

### Disadvantages:

- Weak Armament
- Underpowered

### Pilot Notes:

- It is possible to fly past Mach 1 although the pitch control at high speed is diminished.



## F-86D-40 Sabre Dog



### At a Glance:

Engine: 1x General Electric J-47-GE-17B

Power: 24.6 kN (5,425 lbf) dry

33 kN (7,500 lbf) with AB

#### Advantages:

- Powerful Armament
- Excellent Manoeuvrability
- Excellent High Speed Characteristics
- Fast Rate of Climb

#### Armament:

- 24x 2.75" Mk 4 'Mighty Mouse' Rockets

#### Disadvantages:

- No Ground Attack Capability
- Lack of Guns
- Complicated Radar System

### Pilot Notes:

- Non 6-3' slatted wings.
- Clamshell canopy.
- Uses All Flying Tail with zero degree of incidence for improved transonic flight stability.
- It is possible to fly past Mach 1.
- Rocket tray must be extended using the bomb bay door key to fire rockets.
- Rockets may be fired in groups of 6, 12 or 24 (default is 12). This may be changed via the 'Weapon Salvo Size' key.
- Delay between rocket salvos may be controlled using the 'Set Weapon Delay' key.



## F-86D-45 Sabre Dog



### At a Glance:

Engine: 1x General Electric J-47-GE-33

Power: 25 kN (5,550 lbf) dry

34.6 kN (7,650 lbf) with AB

#### Advantages:

- Excellent Manoeuvrability
- Excellent High Speed Characteristics
- Fast Rate of Climb
- Can operate from Short Runways

#### Armament:

- 24x 2.75" Mk 4 'Mighty Mouse' Rockets

#### Disadvantages:

- No Ground Attack Capability
- Lack of Guns
- Complicated Radar System

### Pilot Notes:

- As part of Operation PULLOUT, all F-86Ds in service were upgraded to this model standard in 1954. The modifications included updated avionics, a more powerful engine and installation of a drag chute.
- Drag chute can be deployed via the 'Deploy Drag Chute' key. At speeds higher than 600kmh TAS the chute will tear loose. Chute may be released by pressing the key again.
- Non 6-3' slatted wings.
- Clamshell canopy.
- Uses All Flying Tail with zero degree of incidence for improved transonic flight stability.
- It is possible to fly past Mach 1.
- Rocket tray must be extended using the bomb bay door key to fire rockets.
- Rockets may be fired in groups of 6, 12 or 24 (default is 12). This may be changed via the 'Weapon Salvo Size' key.
- Delay between rocket salvos may be controlled using the 'Set Weapon Delay' key.



## F-86E-10 Sabre

(Also known as CL-13 Sabre Mk 2/4)



### At a Glance:

Engine: 1x General Electric J-47-GE-13

Power: 24 kN (5,400 lbf)

### Armament:

- 6x 12.7mm M3 Browning
- 2x 500lbs
- 2x 750lbs
- 2x M117
- 2x 1000lbs
- 2x M64A1

### Advantages:

- Excellent Manoeuvrability
- Excellent High Speed Characteristics

### Disadvantages:

- Weak Armament
- Underpowered

### Pilot Notes:

- Introduction of an All-Flying Tail, high speed control is significantly improved.
- It is possible to fly past Mach 1.





## F-86F-25 Sabre

(Also known as CL-13 Sabre Mk 4)



### At a Glance:

Engine: 1x General Electric J-47-GE-27

Power: 26 kN (5,900 lbf)

### Armament:

- 6x 12.7mm M3 Browning
- 2x 75 gal. Napalm
- Up to 4x 500lbs
- 2x 750lbs
- 2x M117
- 2x 1000lbs
- 2x M64A1
- Up to 16x HVAR

### Advantages:

- Excellent Manoeuvrability
- Excellent High Speed Characteristics

### Disadvantages:

- Weak Armament

### Pilot Notes:

- Introduction of J-47-GE-27 engine with an increase in power.
- Uses All Flying Tail for improved transonic flight stability.
- It is possible to fly past Mach 1.



## F-86F-25 Sabre (6-3' wing)

(Also known as CL-13 Sabre Mk 5)



### At a Glance:

Engine: 1x General Electric J-47-GE-27

Power: 26 kN (5,900 lbf)

### Armament:

- 6x 12.7mm M3 Browning
- 2x 75 gal. Napalm
- Up to 4x 500lbs
- 2x 750lbs
- 2x M117
- 2x 1000lbs
- 2x M64A1
- 1x Mk 12 Nuke
- 1x Mk 7 Nuke
- Up to 16x HVAR

### Advantages:

- Excellent Manoeuvrability
- Excellent High Speed Characteristics

### Disadvantages:

- Weak Armament

### Pilot Notes:

- Introduction of a 6-3 wing, landing speed increased due to wing with no leading edge slats.
- Uses All Flying Tail for improved transonic flight stability.
- It is possible to fly past Mach 1.



## F-86F-40 Sabre

(Also known as CL-13 Sabre Mk 5)



### At a Glance:

Engine: 1x General Electric J-47-GE-27

Power: 26 kN (5,900 lbf)

### Armament:

- 6x 12.7mm M3 Browning
- 2x 75 gal. Napalm
- Up to 4x Mk82
- 2x M117
- 2x Mk83
- Up to 16x HVAR
- 2x AIM-9B

### Advantages:

- Excellent Manoeuvrability
- Excellent High Speed Characteristics

### Disadvantages:

- Weak Armament

### Pilot Notes:

- Introduction of larger slatted wing, landing speed reduced but top speed decreased.
- This aircraft is capable of carrying AIM-9B missiles.
- Uses All Flying Tail for improved transonic flight stability.
- It is possible to fly past Mach 1.



## F-86K Sabre Dog



### At a Glance:

Engine: 1x General Electric J-47-GE-17B

Power: 24.6 kN (5,425 lbf) dry

33 kN (7,500 lbf) with AB

Advantages:

- Powerful Armament
- Excellent Manoeuvrability
- Excellent High Speed Characteristics

Armament:

- 4x 20mm M-24A1
- 2x AIM-9B

Disadvantages:

- No Ground Attack Capability
- Complicated Radar System

### Pilot Notes:

- Drag chute can be deployed via the 'Deploy Drag Chute' key. At speeds higher than 600kmh TAS the chute will tear loose. Chute may be released by pressing the key again.
- Uses the larger slatted wing of the F-40.
- This aircraft is capable of carrying AIM-9B missiles.
- Clamshell canopy.
- Change in angle of incidence on horizontal stab.
- Uses All Flying Tail with zero degree of incidence for improved transonic flight stability.
- It is possible to fly past Mach 1.



## FJ-3M Fury



### At a Glance:

Engine: 1x Wright J65-W-4B  
Power: 34 kN (7,650 lbf)

### Armament:

- 4x 20mm Colt Mk 12
- 2x 75 gal. Napalm
- Up to 4x 500lbs
- 2x M117
- 2x 1000lbs
- 2x M64A1
- 2x LAU-10 Rocket Pods (4x Zuni Rockets each)
- 2x AIM-9B
- 2x AIM-9D

### Advantages:

- Powerful Armament
- Excellent Manoeuvrability
- Excellent High Speed Characteristics

### Disadvantages:

- Heavy Weight

### Pilot Notes:

- Change in angle of incidence on horizontal stab.
- This aircraft is capable of carrying AIM-9B and AIM-9D missiles as a test platform.
- One of the most powerful but also heaviest Sabre variation.
- It is possible to fly past Mach 1.
- Can conduct Aerial Refuelling with A-1H Skyraider.
- Uses All Flying Tail with zero degree of incidence for improved transonic flight stability.





## CAC Avon Sabre Mk 31



### At a Glance:

Engine: 1x Avon Mk 20  
Power: 33 kN (7,400 lbf)

### Armament:

- 2x 30mm ADEN cannons
- 2x 75 gal. Napalm
- 2x 500lbs
- 2x 1000lbs
- Up to 16x RP-3 Mk.5 25lb Rockets
- Up to 16x RP-3 Mk. 5 60lb Rockets
- 24x SURA-D HE
- 24x SURA-D AP

### Advantages:

- Powerful Armament
- Powerful Engine
- Excellent Manoeuvrability
- Excellent High Speed Characteristics

### Disadvantages:

- Engine Surging Problems

### Pilot Notes:

- Avon Mk 20 engine is prone to engine surges; to avoid surging the engine use the throttle smoothly and gently.
- Continuous gun fire will surge the engine due to gun smoke.
- 30mm ADEN cannons are widely regarded as the one of the most powerful guns.
- Uses 6-3 wing and All Flying Tail for improved transonic flight stability.
- It is possible to fly past mach 1.



## CAC Avon Sabre Mk 32



### At a Glance:

Engine: 1x Avon Mk 26  
Power: 33.4 kN (7,500 lbf)

### Armament:

- 2x 30mm ADEN cannons
- 2x 75 gal. Napalm
- Up to 4x 500lbs
- 2x 1000lbs
- Up to 16x RP-3 Mk.5 25lb Rockets
- Up to 16x RP-3 Mk.5 60lb Rockets
- 24x SURA-D HE
- 24x SURA-D AP
- 2x AIM-9B

### Advantages:

- Powerful Armament
- Powerful Engine
- Excellent Manoeuvrability
- Excellent High Speed Characteristics

### Disadvantages:

### Pilot Notes:

- New engine, Avon Mk 26 which has a revised throttle system that makes throttle adjustments less likely to surge the engine.
- Features F-30 wing, reinforced for additional stores pylons.
- When guns are fired the engine automatically powers down by 5% to stop engine surging from gun smoke.
- 30mm ADEN cannons are widely regarded as the one of the most powerful guns.
- Uses 6-3 wing and All Flying Tail for improved transonic flight stability.
- It is possible to fly past Mach 1.



## MiG-15

(Also known as Lim-1, Aero S-102)



### At a Glance:

Engine: 1x Klimov RD-45 turbojet

Power: 26.5 kN (5,950 lbf)

#### Advantages:

- Powerful Armament
- Rate of Climb
- Service Ceiling

#### Armament:

- 1x 37mm N-37
- 2x 23mm NS-23

#### Disadvantages:

- Insufficient Manoeuvrability
- Poor Manufacturing Quality, asymmetrical airframes

### Pilot Notes:

- Drop tanks are the only additional ordnance this bird can carry.
- Aircraft features passive steering. In order to steer aircraft on the ground you must use toe brakes.
- At transonic speeds when approaching mach 1 the controls become unresponsive and the aircraft will start pitching up and the ailerons and rudder will start fluttering.
- At lower altitudes in transonic flight, this aircraft may experience the 'Valkhenza' effect, caused by manufacturing asymmetries in the airframe. As the aircraft approaches the sound barrier, it may suddenly enter a violent pitch down roll, which must be instantly countered with reduced power, airbrakes and counter-stick. Otherwise aircraft will disintegrate or crash.



## MiG-15(bis)

(Also known as Lim-2, Aero S-103, Shenyang J-2)



### At a Glance:

Engine: 1x Klimov VK-1 turbojet

Power: 26.5 kN (5,950 lbf)

#### Advantages:

- Powerful Armament
- Rate of Climb
- Service Ceiling

#### Armament:

- 1x 37mm N-37
- 2x 23mm NR-23

#### Disadvantages:

- Insufficient Manoeuvrability

### Pilot Notes:

- Updated 'second edition' of the MiG-15 featuring upgraded NR-23 cannon with higher rate of fire, repositioned landing light, new air brake, improved avionics and improved manufacturing quality.
- Drop tanks are the only additional ordnance this bird can carry.
- Aircraft features passive steering. In order to steer aircraft on the ground you must use toe brakes.
- At transonic speeds when approaching mach 1 the controls become unresponsive and the aircraft will start pitching up and the ailerons and rudder will start fluttering.
- 'Valkhenza' effect is still present in some aircraft but due to improved manufacturing quality, it is less common or severe.



## MiG-15SB Fagot

(Also known as Lim-2, Aero S-103, Shenyang J-2)



### At a Glance:

Engine: 1x Klimov VK-1 turbojet

Power: 26.5 kN (5,950 lbf)

### Armament:

- 1x 37mm N-37
- 2x 23mm NR-23
- Up to 4x FAB-100
- Up to 4x FAB-250 M46
- Up to 4x SR-55 Rocket Pods (10x LR-55 Rockets each)
- Up to 4x LR-130 Rockets

### Advantages:

- Powerful Armament
- Rate of Climb
- Service Ceiling

### Disadvantages:

- Insufficient Manoeuvrability

### Pilot Notes:

- Late model MiG-15(bis), which has been upgraded to carry extra ordnance for ground attack and bomber interdiction.
- Rockets may be fired individually, in pairs or all at once (by using 'Weapon Salvo Size' key). If a 'Salvo' loadout is selected, you can fire 25%, 50% or all rockets at a time.
- From 1952 onwards, the Sirena-2 radar warning receiver was tested out on late model MiG-15(bis) aircraft operating in the USSR and in North Korea. To use it, select either of these nationalities in a mission dated in 1952. When an enemy with a radar-ranging gunsight (e.g. F-86) is on your six, an alarm will sound.
- According to documentation, the 'Valkhenza' effect was virtually eliminated from the late production MiG-15(bis).





## MiG-17A Fresco-A



### At a Glance:

Engine: 1x Klimov VK-1A turbojet  
Power: 26.5 kN (5,950 lbf)

### Armament:

- 1x 37mm N-37
- 2x 23mm NR-23
- Up to 4x FAB-100
- 2x FAB-250 M46
- 2x MARS-2 Rocket Pods (16x S-5 rockets each)
- Up to 4x ORO-57 Rocket Pods (8x S-5 rockets each)

### Advantages:

- Powerful Armament
- Rate of Climb
- Service Ceiling

### Disadvantages:

- Poor Fuel Consumption

### Pilot Notes:

- To increase the combat capabilities of the MiG-17, numerous aircraft underwent conversions to carry ground attack ordnance. These aircraft were redesignated "MiG-17AS".
- More stable at high transonic speeds than the MiG-15, though control responsiveness is still diminished.
- At transonic speeds the aircraft will start pitching up and the ailerons and rudder will start fluttering.
- It is possible to fly past mach 1.
- This version utilises a smaller airbrake much like that of the MiG-15.



## MiG-17F Fresco-C

(Also known as Lim-5, Shenyang J-5)



### At a Glance:

Engine: 1x Klimov VK-1F afterburning turbojet  
Power: 33.1 kN (7,440 lbf)

#### Armament:

- 1x 37mm N-37
- 2x 23mm NR-23
- Up to 4x FAB-100
- 2x FAB-250 M46
- 2x MARS-2 Rocket Pods (16x S-5 rockets each)
- Up to 4x ORO-57 Rocket Pods (8x S-5 rockets each)
- 2x K-13A

#### Advantages:

- Powerful Armament
- Rate of Climb
- Service Ceiling

#### Disadvantages:

- Poor Fuel Consumption

### Pilot Notes:

- Updated version of the MiG-17A, featuring a new afterburning engine, larger airbrakes and improved avionics.
- This aircraft is capable of carrying K-13A missiles (reverse engineered copies of the AIM-9B).
- To increase the combat capabilities of the MiG-17F, numerous aircraft underwent conversions to carry ground attack ordnance. These aircraft were redesignated "MiG-17AS".
- From 1952 onwards, the Sirena-2 radar warning receiver system was installed in many MiG-17As that were in service with the VVS. Some of these aircraft were later used by the NVA during the Vietnam War. To use this system, you must be flying as VVS or NVA in a post-1952 mission
- More stable at high transonic speeds than the MiG-15, though control responsiveness is still diminished.
- At transonic speeds the aircraft will start pitching up and the ailerons and rudder will start fluttering.
- It is possible to fly past mach 1.



## MiG-17PF Fresco-D/E

(Also known as Lim-5P, Shenyang J-5A)



### At a Glance:

Engine: 1x Klimov VK-1F afterburning turbojet  
Power: 33.1 kN (7,440 lbf)

### Armament:

- 3x 23mm NR-23
- Up to 4x ORO-57 Rocket Pods (8x S-5 rockets each)
- 4x K-5M (optional flares)
- 4x R-55 (optional flares)

### Advantages:

- Powerful Armament
- Rate of Climb
- Service Ceiling

### Disadvantages:

- Poor Fuel Consumption
- Complicated Radar System
- Obstructed Pilot View

### Pilot Notes:

- This aircraft is capable of carrying K-5M (beam rider) or R-55 (heat seeking variant of K-5M) missiles.
- These two missiles also have the option of carrying flares for night time use.
- More stable at high transonic speeds than the MiG-15, though control responsiveness is still diminished.
- When carrying missiles this aircraft does not have any guns.
- At transonic speeds the aircraft will start pitching up and the ailerons and rudder will start fluttering.
- It is possible to fly past mach 1.
- This version utilises a larger airbrake than that of the MiG-17A.



## Tu-4 Bull



### At a Glance:

Engine: 4x Shvetsov Ash-73TK  
Power: 2,400hp each

### Armament:

- 10x 23mm NS-23 (gunners)
- 48x FAB-50
- 48x FAB-100
- 24x FAB-250
- 24x FAB-250 M46
- 14x FAB-500
- 8x FAB-1000
- 1x RDS-4T Nuclear Bomb
- 2x KS-1 Komet

### Advantages:

- Quite fast and manoeuvrable for its size
- Wide range of payload
- Long range

### Disadvantages:

- Heavier than its counterpart

### Pilot Notes:

- The Tu-4 is a reverse-engineered version of the B-29, however it is a bit heavier than its counterpart due to slightly different materials.
- The Tu-4K was a dedicated anti-shipping version of the Tu-4, armed with 2x KS-1 anti-shipping cruise missiles. Using the onboard radar, a Tu-4K could detect and attack an aircraft carrier from 150km away (though leaving it vulnerable to enemy fighter attack).



## Cockpits

### F-86



- |                               |  |
|-------------------------------|--|
| 1) Accelerometer              | 16) Turn & Bank Indicator              |
| 2) Hydraulic Pressure (PSI)   | 17) Variometer                         |
| 3) Oil Pressure (PSI)         | 18) Fuel Level Indicator               |
| 4) Exhaust Temperature (°C)   | 19) Cabin Pressure                     |
| 5) Fuel Pressure (PSI)        | 20) Gunsight Caged/Uncaged Switch      |
| 6) Radio Compass              | 21) Wingspan Selection                 |
| 7) Airspeed Indicator (KIAS)  | 22) Landing Gear Indicator Lights      |
| 8) Compass                    | 23) Landing Gear Up/Down Lever         |
| 9) Artificial Horizon         | 24) Alternate On Warning Light         |
| 10) RPM Indicator (%)         | 25) Take-off Trim Light                |
| 11) Mach Number               | 26) Canopy Open/Closed Switch          |
| 12) Altimeter                 | 27) Fuel Pressure Warning Light        |
| 13) Fuel Flow Indicator (PPH) | 28) Reflector Sight Brightness, On/Off |
| 14) Voltmeter                 | 29) Guns Safety Switch                 |
| 15) Clock                     |  |

**Notes:** Gunsight mode can be changed to one of these three modes: Caged/Uncaged/Off. Caged mode is when the reticle is radar ranging but locked in movement. Uncaged mode is when the reticle is free to move and automatically track targets like a gyro sight. To change the mode press “Toggle Sight Mode (Auto)” key located in the Gunsight/Bombsight Controls section. Wingspan and distance can be changed manually on the gyro sight via the Gunsight/Bombsight controls.



## MiG-15/17



- |                               |   |
|-------------------------------|---|
| 1) Oxygen Pressure            | 12) Engine Temperature (°C)             |
| 2) Airspeed Indicator         | 13) Ammeter                             |
| 3) Artificial Horizon         | 14) Landing Gear Indicator Lights       |
| 4) Variometer                 | 15) Radar Altimeter                     |
| 5) Compass                    | 16) Clock                               |
| 6) RPM Indicator              | 17) Oil Temp and Pressure/Fuel Pressure |
| 7) Landing Gear Up/Down Lever | 18) Fuel Flow Indicator                 |
| 8) Altimeter                  | 19) Cabin Pressure Altimeter            |
| 9) Turn & Bank Indicator      | 20) Gunsight Mode Switch                |
| 10) Fuel Level Indicator      | 21) Wingspan Selection                  |
| 11) Compass                   | 22) Fuel Pressure Warning Light         |

**Notes:** Gunsight mode can be changed to one of these three modes: Fixed Only, Fixed + Gyro, Gyro Only. Fixed only mode is when you have the normal locked sight. To change the mode press “Toggle Sight Mode (Auto)” key located in the Gunsight/Bombsight Controls section. Wingspan and distance can be changed on the gyro sight via the Gunsight/Bombsight controls. The Iron sight can be activated by pressing the “Tinted Reticle Dimmer” key located in the Misc controls section.



## Flight Modelling

### Engine Management

Jet engines require a lot more care to operate than your average piston engine and are prone to a phenomenon known as 'engine surge' or 'compressor stall', caused by a sudden change in intake pressure or air/fuel ratio. The roll of the environment on engine behaviour is hard to model but player factors have been modelled. Hence all Sabres and MiGs are now prone to compressor stalls due to improper throttle use, which may result in cumulative damage to the turbines, flameout or in the worst case, sudden engine failure or fire. If you are aggressive with the throttle and you surge the engine you will be told via the HUD log on the right.

### G-Suits

To assist in dogfighting G-suits have been modelled and they only apply to the aircraft in this package. The NATO G-suits are more effective and help with both positive G and negative G whereas the Soviet G-suits which were very primitive and were only effective against positive G, however they were still inferior to the NATO G-suits.

### Supersonic Flight

All of the jet aircraft in this pack are capable of breaking the sound barrier; transonic flight behaviour and the sound barrier have been modelled. All MiG and Sabres will experience transonic buffeting as they approach the sound barrier and depending on numerous factors, may break the sound barrier. Transonic buffeting means that the aircraft will start shaking violently and also other controls may not function as well as they would under normal flight conditions. As all of this is modelled it is quite hard to break the sound barrier at low altitude due to the large amount of drag when you arrive at the transonic stage. Once the aircraft passes through the sound barrier the shaking will stop and the aircraft will act as normal.

On breaking the sound barrier you will be alerted via the HUD log that you have exceeded Mach 1 and there is also a sound effect which will play most of the time. This sound can be heard from quite a long distance away so if you may want to think twice before breaking the sound barrier whilst close to enemies as it will alert them to your presence. If you break the sound barrier at lower altitude it will also be possible for a vapour cone to appear. This is modelled by chance with a higher chance of it appearing at lower altitudes due to the increase in humidity. At higher altitudes it is almost impossible for it to appear due to low humidity.

For those who want to produce such an effect as seen on the next page try and break the sound barrier at altitudes lower than 5,000m. Start at 10,000m and dive at a 45 degree angle on around 80% throttle so that you don't break the sound barrier earlier, when your mach gauge reads around 0.9 mach or if the TAS gauge reads around 1100 kmh go into external view and increase the power to 100% and you should break the sound barrier with this vapour cone effect. If you are still too high when you reach around 0.9 mach try to level off a bit or power down slowly so you can break the barrier at lower altitude.





## Aerial Refuelling

In IL-2 1956 it is possible to conduct aerial refuelling with the FJ-3M Fury. It can join up to the A-1H Skyraider which acts as a tanker. In order to do this you must be higher than 1000m.



To connect yourself with the tanker you must be doing the following:

- The probe on your wing must be quite close to the drogue.
- You must not be faster or slower than the tanker by more than 10 kmh.

If you are doing those two things then when you press the “Attach/Detach Aircraft” button (which you must set yourself) you will automatically be connected to the tanker and immediately you should see the fuel going up on the fuel gauge.





## Drag Chutes

A new feature introduced in Jet Era v1.2 (in conjunction with the AI, Engines Hotkeys mod) is drag chutes. Making their first appearance in game on the F-86D-45 and F-86K, drag chutes allow for a significant reduction in landing length. In addition, the drag chute can function to help escape certain stall and spin scenarios.

To deploy the drag chute, press the 'Deploy Drag Chute' key. Within a few seconds it will release and inflate, creating a significant drag force. If the chute is deployed above 600kmh TAS, it will tear off its latch. In addition, at speeds below 20kmh ground speed the chute will collapse. To release the chute, press the chute key again. All chutes are single use and hence are recommended only for landings or emergencies.

## Fuel Dumping

The F-86 family is equipped with a fuel dumping system, to help reduce aircraft weight prior to landing. To enable this system press the 'Fuel Dump' key. To close the fuel valve press the key again. Current this system will only empty the main rear tank. Fuel dumping will automatically stop when the tank is empty.

## Radar Warning Receivers

As part of our work towards making radar a reality in IL-2, Jet War v1.2 sees the premier of radar warning systems. In this release we have included one of the earliest systems, the SPO-2 Sirena-2 Radar Warning Receiver. Designed to detect the signal from USAF radar ranging gunsights, this system took USAF pilots by surprise at the closing stage of the Korean War as MiG-15 pilots seemed to have eyes on the back of their heads and break formation well before the USAF pilots had a chance to line up a shot.

We have modelled this primitive system for players only. Please read individual aircraft pilot notes for more details, as the system was only equipped on aircraft of specific certain nationalities after 1952 (hence in all missions of an earlier date in-game, they will not work). When an enemy aircraft carrying a radar ranging sight is on your six, an alarm will sound to advise you to break.



## Missile Systems

We have taken the modelling of missiles into great detail and each missile has numerous parameters such as: Max G Force (for lock and flight), Tracking Angle, Control Surface Speed (how fast the missile can change direction) to name a few. The missiles are also capable of tracking the sun or ground clutter accidentally depending on the situation. Various failures have also been modelled such as: Warhead failure, Engine failure, Crazy Ivan, Reflection tracking, premature detonation etc... They also suffer the same drag effects as the aircraft do in flight, including differences in drag when it is at the transonic and supersonic stages.

The following missiles are available: AIM-9B, AIM-9D, K-13A, K-5M, R-55 and KS-1.

By default when you spawn the missile system is disengaged. To turn it on you must whilst in the air press your "Wheel Brakes" key which will change the mode from Off/On/Auto. In Auto mode it will automatically turn on when you are close to an enemy target. You will hear a seeking tone when the mode is on, sometimes due to the way IL-2 works the seeking tone doesn't come on, if so just toggle between the modes until it does.

### AIM-9B/D

This AIM-9B is available on the following aircraft: F-86F-40, F-86K, FJ-3M and Sabre Mk 32. The AIM-9D is only available on the FJ-3M Fury.

This AIM-9B/D is heat seeking and the seeker head on the B variant is affected when you pull over 2G, on the D variant the G limit is increased to 6G. This means that you cannot be pulling over those G limits when you are firing the missile or it will be a dud, even if you have a lock tone.



In the F-86 cockpits you will see this box. The blue light labelled TGT will come on when you have a locked target. The red light labelled G LIMIT will come on when you are pulling over the 2G maximum launch limit for the AIM-9B. The box is only programmed for use with the AIM-9B and as such the G limit will not change to 6G when you use the AIM-9D.

When a target is locked the tone changes into a growl and it will also be indicated on this box shown in the picture above. As long as the blue light

is on and the G limit light is off you are good to fire.

Since this missile is heat seeking it can only track jets from behind and not from head on. It can track piston engine aircraft from all directions.



## K-13A

The K-13A is available on the MiG-17F only. It is essentially a replica on the AIM-9B made with reverse engineering techniques so therefore all the AIM-9B characteristics and information also applies to this missile. There is no missile control box in the MiG-17 cockpit so you will have to pay attention to how hard you are pulling so that you don't go over the G limit for launch. The seeking and lock tones are the same as the AIM-9B/D.

## K-5M

The K-5M is available on the MiG-17PF only. It is a beam riding missile that basically circles around a radar beam towards the target. Again there is no missile control box in the MiG-17 cockpit so you must listen to the tone to find out whether it's locked or not. This missile does not have a launch G limit so you can launch it at any time. Since the missile is constantly circling the beam it loses energy very quickly and is not very accurate at getting direct hits on the target. Instead it has a larger warhead to compensate which usually does enough damage to the target to make it fall out of the sky. The K-5M is best used against bombers.

## R-55

The R-55 is available on the MiG-17PF only. It is a variation of the K-5M but does not rely on radar. Instead it is heat seeking much like the K-13A. The seeker head is not affected by G force and so you can fire it at targets at any time. There is no missile control box in the MiG-17 cockpit so you will have to listen out for the lock tone. The seeking and lock tones are the same as the K-5M.

## Raduga KS-1 Komet (NATO: AS-1 Kennel)

Using the aerodynamic of the MiG-15 as a basis, the remarkably similar looking KS-1 became the USSR's first anti-ship cruise missile. Packing 1000kg of explosives, this missile had enough force to severely damage an aircraft carrier. Its operation is as follows:

- 1) A naval target is detected and identified on the aircraft's radar (automatic)
- 2) Aircraft orients towards target and closes its range to within 150km.
- 3) Aircraft locks target (automatic)
- 4) Press fire key. Missile jet engine is started and warmed up.
- 5) After engine warmup, missile is released and uses semi-active radar guidance.
- 6) When within a certain range, missile will enter a powered descent and switch to active radar guidance (independent of aircraft radar).
- 7) Aircraft will hit target at water level at full speed, causing devastating damage.

Due to its size the KS-1 can be targeted by heat-seeking missiles and shipboard anti-aircraft guns (currently missile damage model is incomplete, to be fixed in later patch).



## Credits

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