

# Learjet - LJ35A - Beginner Guide

## Introduction

This document should serve as a reasonable tutorial for the aircraft, hopefully with interesting tips along the way. It is made to look like a Standard Operating Procedure.

## Tips

## Altimeter

The altimeter has two knobs that you can rotate, press and long-press. the BARO knob and the ALT knob.

- Press the ALT knob to switch between thousands of hundreds of feet when rotating the knob.
- Press 1 second on the BARO knob to set the altimeter to standard pressure.
- Press 4 seconds on the BARO knob to switch between hPa/inches of Hg units.
- Press 8 seconds on the BARO knob to switch between ft to meters.

Unfortunately, in MSFS, you need to wiggle your mouse a bit to prevent the simulator to make the mouse disappear which would prevent to register a long press.

## Wheel steering

The yoke of the airplane has a button that you keep pressed to engage wheel steering. This button is particularly important At take-off. Pilots should hold this button to control yaw while accelerating until the airspeed comes alive at which point pilots release the button and use the rudder to control yaw.

With the Flysimare version of the learjet, the best is to map a button on your control to this wheel steering. This is a little convoluted as you need to bind a 'press' event and a 'release' event. Choose a button on your joystick and assign a key press to **G LIMITER ON**. Assign the same button to **G LIMITER OFF**, but on **RELEASE**.

# Autopilot

## Speed selection and Vertical Speed selection

The yoke has a switch you can move up or down to select either the speed or the vertical speed, however they're a little annoying to use in the simulator. Instead you can make sure none of the autopilot button controlling pitch are engaged, then pitch for speed. When you have the desired speed engage the SPD button on the autopilot.

Same idea works for Vertical Speed with the VS button.

## Autopilot mach speed mode

The autopilot SPD button should switch between IAS and MACH mode while repeatedly pressed, but if you are simulating the Flysimware version, you need to left click and while the left button is down, right click the SPD button to enable MACH mode. You want to do that when you reach ~30k ft.

# Throttle

Depending on the phase of flight you look at different numbers when tweaking the amount of throttle you select. With this plane you usually take off at 200knots. Then you climb at 250 knots setting throttle using ITT (aiming 800 degrees), at cruise you set your throttle for a fuew flow of 600lb/hr.

# Fuel

Until the wings are full, there is no point in putting fuel in the tip tanks as they feed the wings by gravity. You can only feed or use gas in the trunk (rear fuselage tank) only using fuel pumps.

# Normal Procedures

These procedures are designed to get you up and running efficiently while staying realistic. They describes all the steps required for a full normal flight.

# Sustained Power State With GPU available

Open the door and connect the external power.

1. On
2. Confirm 28V

“ **Caution** If all you get is 24V, the GPU is not working as it should.

3. ON
4. ON
5. ON
6. ON
7. ON
8. PWR
9. STANDBY
10. A/R
11. UNCAGE
12. ON
13. Set 8
14. SET
15. OFF

Then remove all the exterior items Chocks, Engine Cover, Pitot Cover, Front Cover, finally Open the shades. Then set fuel on the tablet.

1. OBTAIN
2. SET
3. OBTAIN
4. CONFIGURE
5. SET
6. SET
7. SET

Set the cruise altitude on the cabin pressure controller:



# Take-off numbers

This is the time to load the cargo and then welcome your passengers. In the simulator this means configuring the payload in the tablet.

Now is the time to compute and set the speed bugs. We will determine N1, V1, Vr, V2, flap retraction and field length. Voyager recommends the use of the [voyager flight computer](#) to determine these numbers. Set the N1 on the N1 reminder and V1 and Vr as well as your departure speed restriction or 250 knots on the speed bugs.



Set the pitch trim in a takeoff position according to the center of gravity value that you can get from the tablet:

Center of gravity -- %MAC

%MAC	5	8	12	16	20	24	28	30
Pitch trim	7.6	7.5	7.4	7.3	7.2	6.1	5.0	5.0



# Exterior Walkaround

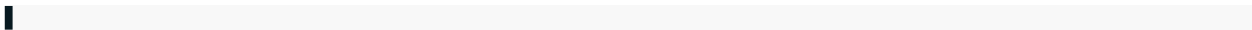
Run walkaround checklist.

## Start

- 1. LOCKED
- 2. ON
- 3. OFF

Run the before starting engine checklist.

Now it's time to start the engine. It's a good idea to brief the process before starting it because it goes quite fast.



**Note** In the simulator flipping from fuel cut-off to idle is achieved by clicking the latch on the throttle.



Here is a recommended briefing for voyager pilots:

First we will flip the Start/Gen switch, then verify there is a light indicating starter is on, then N1 will rise. At 13% N1 you will move the throttle from cut-off to idle. As soon as you're in idle, ITT will rise quickly. Within 10s you should see N1 rise, oil pressure coming up and 1% N2 increase per second. When the starter lights goes off at 50% N2, you can flip the Start/Gen switch to the GEN position. If at any time the ITT is approaching the redline with no sign of stopping cut-off the fuel flow and leave the starter for 15s. If the engine does not continue acceleration when the starter stops, cut-off the fuel flow and the starter. If you see no N1 rotation or no oil pressure within 10s of light-off, cut-off fuel and starter. Finally if N2 looks erratic from the start, close starter and cut-off fuel.

Light up the beacon light and start the engine 1:

1. START
2. IDLE  
Starter light goes off
3. GEN

Repeat for engine 2.

Disconnect the GPU. Flip the seat belt sign, flip on the taxi lights. Run the before taxi checklist. Additionally click the steer lock button on the pedestal. On your way to the runway, flip the cabin

air switch. Run the taxi checklist and brief takeoff.

Line-up on the runway:

1. RELEASED
2. ON
3. ARM
4. ON
5. ON
6. ON
7. ON
8. NORMAL
9. CHECK ON

You should have the nose wheel steer lock on at this point. Take off you mash the nose wheel steer button of the yoke. This disables the lock, but keeps the nose wheel steering active as long as the button is pressed. You release the button at the first indication of airspeed. At this time you also call "airspeed alive".

Rotate to 15 degrees, positive rate, gear up, YD on. V2+30, flaps up. reduce throttle to keep under 200 knots.

Run the after take off checklist:

1. UP
2. ENGAGED
3. DISARM
4. UP
5. OFF
6. CHECK
7. OFF
8. CHECK
9. CROSS CHECK

## Climb

Pitch to 250knots then engage the AP in SPD mode. Set the throttle based on ITT which you try to keep at 800 degrees.

Climb check happens at FL180

1. OFF
2. OFF
3. STD
4. NORM

5.

CLOSED

- At FL270, you should be around Mach 0.7 then switch the AP to MACH mode and keep mach number at 0.7.
- At FL350 disable the AC
- At FL410 wear your oxygen mask.

## Cruise

At cruise altitude keep power the same until you reach M0.78. Then set throttle according to fuel flow. Aim for 600lbs/hr.

For max-range, aim for M0.74.

If you have fuel in the fuselage tank, use fuel pumps to transfer it when the tip tanks are empty.

## Descent

30 minutes before TOD:

1. ON

Estimate landing weight and compute Vapp with the voyager flight computer.

Set the cabin controller to the field elevation.

## Approach

Unless restrictions exist, fly arrivals at 250kts. A few miles before IAF:

1. 180kts
2. 8  
Glide slope one dot above
3. 20
4. DOWN
5. ARM
6. ON
7. ON

Run the before landing checklist:



1. RETRACTED
2. 8° or 20°
3. DOWN
4. AS REQ'D
5. ON, LIGHTS OUT
6. OFF
7. ARM
8. DOWN & INDICATED
9. CHECK
10. ON
11. DISENGAGE
12. OFF DURING FLARE

## Land

When crossing the FAF

1. 40
2. JOIN
- At 500ft:
3. DISENGAGE

Open spoilers after landing then deploy reversers until you reach 60knots. At 45 knots engage nose wheel steering.

Run after landing checklist:

1. OFF
2. OFF
3. DISARM
4. OFF
5. Anti-Ice Systems:
  1. OFF
  2. Defog, Windshield, Nacelle,
6. AS REQ'D
7. AS DESIRED
8. CUTOFF
9. RETRACT
10. UP
11. CHECK
12. OFF
13. STBY or OFF

After taxi, run the shutdown checklist:

1. SET
2. OFF
3. DISARM
4. OFF
5. CAGE
6. OFF
7. CUTOFF
8. OFF
9. OFF
10. OFF
11. CLOSED
12. OFF
13. OFF
14. INSTALL

## External Links

- [FlySimWare LearJet 35A for MSFS2020: Full Flight Tutorial](#)
- [The Best Classic Business Jet | Lear 35A | Early Access | MSFS](#)
- <https://www.avsim.com/forums/topic/557412-learjet-operation-explained-from-a-rw-lear-pilots-perspective>

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