GETTING TO KNOW YOUR B707-320C

A COCKPIT GUIDE AND FLYING NOTES FOR THE BOEING B707-320C

We've assembled this guide to quickly get you into the cockpit of your Boeing 707-320C and start enjoying the experience of flying this incredible aircraft. Please note that this is not an official pilot's operating handbook for the physical airframe.

Boeing developed the 707 line as a clean-sheet, self-funded, speculative venture. The testbed airframe, the 367-80 (nicknamed the "Dash 80") took its maiden flight on July 15, 1954. Demonstration flights, which famously included barrel rolls, wowed airline executives. The first production iteration, the 707-120, took its maiden flight on December 20, 1957, and it was introduced into service on October 26, 1958.

Boeing introduced the 707-320C, the final version of the 707 line, in the early 1960s. The -320C was a "convertible" (hence "C") variant, able to serve as a passenger carrier or to move cargo. The C was an enhanced iteration of the 707-320B, the most visually distinguishing feature of the C being the fuselage cargo door. The -320C also boasted an updated wing with three leading-edge flaps and improved take-off and landing performance.

The aircraft measures 152 feet, 11 inches in length, stands 42 feet tall, and has a wingspan of 145 feet, 9 inches. It is powered by four wing-mounted Pratt & Whitney JT3D-7 low-bypass turbofan engines. The jetliner can carry up to 210 passengers, has a range of 3,337 miles, and it cruises at 604 miles per hour.

The 707-320C was the most successful and the most numerous of the legendary 707 family. Airlines including Northwest, Pan Am, Air France, and Braniff flew the airframe. Produced until 1978, the 707-320C flew into the early 21st Century.

Boeing B707-320C
LEADING PARTICULARS

Principal dimensions

Length, overall	152ft.11in.
Width	12 ft.4 in.
Height (to top of fin)	42ft. 0 in.
Wing Span	145ft.9 in.
Gross wing area	3050 Sq. ft.
Tail plane Span	45ft. 9 in.
Engine (x4) Type	Pratt@Whitney JT3D-7 Turbofan

Tank capacities
Fuel tanks (Three tanks in each wing and one center tank):

TOTAL 23,855 US gallons

Weights

Gross	333,600lb
Empty	148,300lb

AILERONS

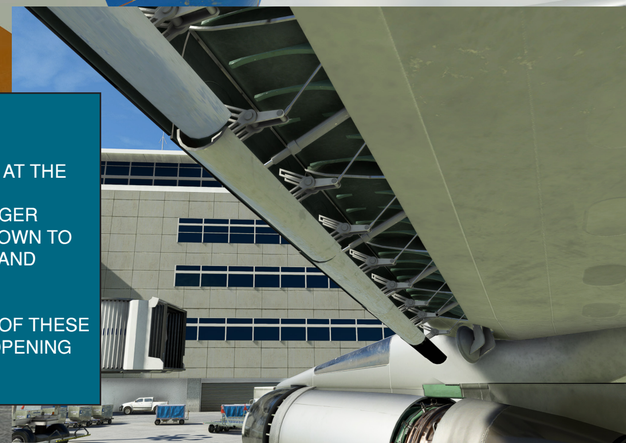
THE B707-320C HAS TWO AILERONS PER WING. THE TRAPEZOID-SHAPED ONES IN THE MID-WING OPERATE CONVENTIONALLY.

THE LONG OUTBOARD AILERONS ONLY COME INTO PLAY AT SLOW SPEEDS WHEN THE FLAPS ARE EXTENDED. AT ALL OTHER TIMES THEY ARE LOCKED OFF.

FLAPS

FLAPS ARE "SLOTTED" TYPE, THREE AT THE REAR OF EACH WING. THE LEADING EDGES OF THE WINGS CARRY KRUEGER FLAPS OR "SLATS" WHICH ROTATE DOWN TO PROVIDE EXTRA LIFT FOR TAKEOFF AND LANDINGS.

A UNIQUE VISUAL CHARACTERISTIC OF THESE IS THE WAY THEY CASCADE WHEN OPENING AND CLOSING.



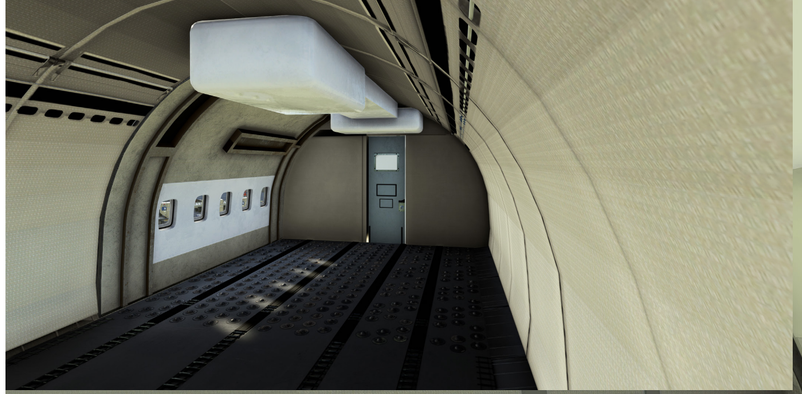
This is your chance to hop aboard, strap in and experience the thrill of taking command of a true aviation legend.

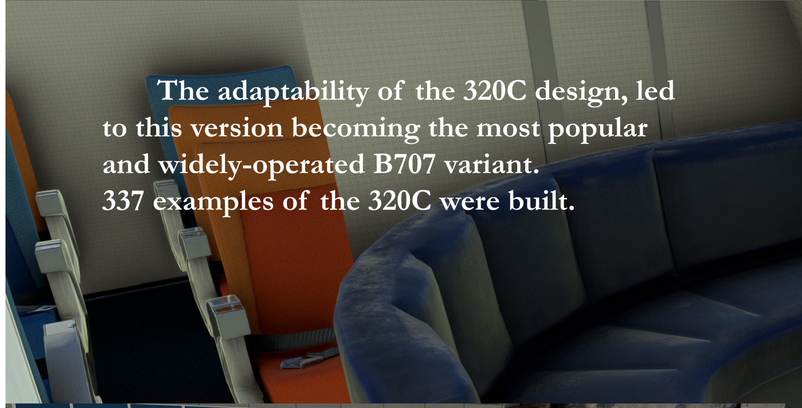
But before you do that, you'll need to study this cockpit guide and notes. For its time, the B707 is a complex aeroplane to manage with many systems to monitor. To operate it properly and get the most from it, you need to understand how these systems work and why. Engine starts and systems management is critical if you intend to fly long distances. The engines are started in a specific order because not all are fitted with the accessories required to power up hydraulics and air conditioning, generators and other equipment.

A good working knowledge of your cockpit and its various components will pay dividends when you begin any flight.
Planning is vital especially for fuel management and navigating busy airways.

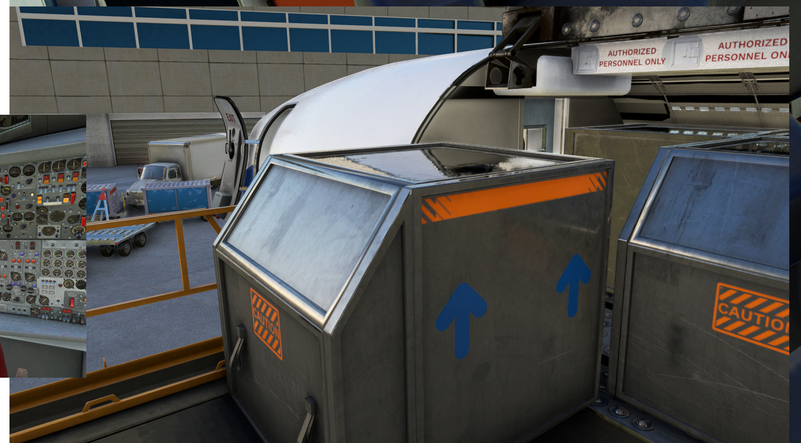
There is a set of interactive checklists provided in the simulator but we have also included much more extensive ones in printed form, here in this guide. Follow the checklists carefully and you will not have any problems starting and running your B707.

We are not going to use this guide to teach you how to fly but will point out some of the 707's unique features and foibles along the way. So, let's get started with a guide to the various cockpit panels.

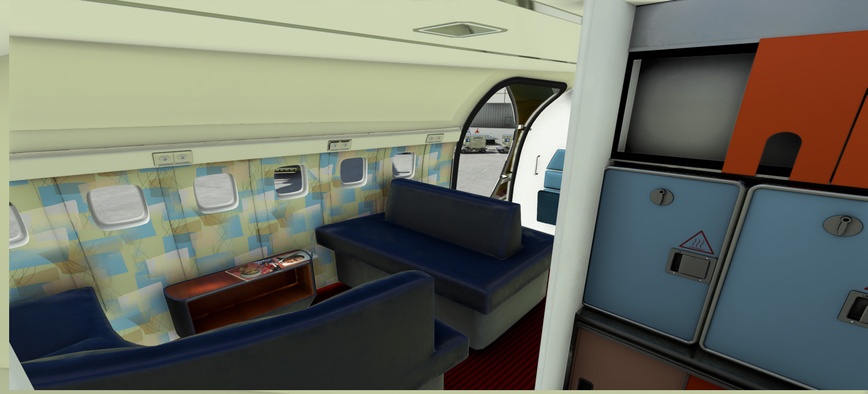




**The adaptability of the 320C design, led to this version becoming the most popular and widely-operated B707 variant.
337 examples of the 320C were built.**



Game changer.



Many airlines specified their own fit-outs and finishes. The modular design of the fuselage meant that numerous variations could be employed with different levels of passenger accommodation, mixed passenger and freight combinations and all-freight configurations possible.

PILOT INSTRUMENT PANEL

1. MACH indicator

2. AIRSPEED indicator

3. CLOCK

4. TURN/BANK indicator

5. Standby HORIZON indicator

This instrument is used in the event of loss of AC power. It is driven by DC or battery power.

6. HORIZONTAL SITUATION indicator

7. ALTIMETER

8. RADIO MAGNETIC indicator (RMI)

9. DME indicator

10. RADIO ALTIMETER

11. VERTICAL SPEED indicator

12. CONTROL SURFACES TRIM indicator

13. AHI,COMPASS,RMI SELECTOR

The instruments are repeated on the copilot panel and can be set independently. These switches allow selection of either instrument.

14. ALTIMETER CORRECTION SWITCHES

15. ALTIMETER CORRECTION SYSTEM TEST SWITCH

The switch is used ONLY on the ground to test the system. It is NEVER used in flight.

16. COMPASS SWITCH

The switch is used to select between NAV1 and NAV2 information when indicated on compass and RMI.

17. MARKER LIGHTS

18. EMERGENCY BRAKE LEVER

The lever modulates pneumatic pressure to the brakes as an alternative system in the event of hydraulic failure.

PILOT'S CENTER PANEL

19. STANDBY ALTIMETER
20. STANDBY HORIZON indicator
21. ENGINE PRESSURE RATIO (EPR) indicators X4
22. N1 indicators X4
23. EXHAUST GAS TEMPERATURE (EGT) indicators X 4
24. N2 TACHOMETERS X4
25. FUEL FLOW indicators X4
26. OIL PRESSURE WARNING LIGHTS (ENG 1 AND ENG 2)
27. MACH TRIM DISCONNECT WARNING AND TEST SWITCH
28. REVERSER WARNING LIGHTS X4
29. DOOR WARNING LIGHT
30. GEAR WARNING LIGHT
31. MASTER POWER WARNING
32. OUTBOARD FLAPS POSITION
33. INBOARD FLAPS POSITION
34. LEADING EDGE FLAPS INDICATORS
35. OIL PRESSURE WARNING LIGHTS (ENG 3 AND ENG 4)
36. LANDING GEAR LIGHTS
37. DOOR SWITCH
The switch is used to "OPEN" the forward passenger door and (when cargo version is selected) the cargo door. Any external diorama will also be toggled.
38. LANDING GEAR LEVER

NOTE: The co-pilot's panel is essentially the same as the pilot's except for the following additional instruments. These are:

39. OUTSIDE AIR TEMPERATURE
40. BRAKE PRESSURE indicator
41. RUDDER HYDRAULIC PRESSURE indicator
42. TRUE AIRSPEED Indicator
43. FLIGHT DIRECTOR MODE Indicators
44. WATER INJECTION PANEL

CO-PILOT'S INSTRUMENT PANEL

FOR A BETTER VIEW

THE LARGE CONTROL WHEELS AND COLUMN TEND TO MASK SOME OF THE CRITICAL INSTRUMENTS.

CLICK ON THE YOKES TO REMOVE THEM FOR BETTER INSTRUMENT VISIBILITY.

OVERHEAD PANEL

45 PANEL LIGHTS RHEOSTATS
46. WINDSHIELD WIPERS
47. ANTI-SKID CONTROL
48. SPOILER SWITCHES (overrides)
49. ENGINE NACELLES ANTI-ICE (VALVE SELECTORS AND WARNING LIGHTS)
50. ENGINE START PANEL
51. FLIGHT RECORDER SWITCH
52. EMERGENCY FLAPS
53. PEDESTAL LIGHTS
54. INS MODE SELECTOR
55. WING ANTI-ICE DUCT PANEL
56. YAW DAMPER
57. NO-SMOKING LIGHTS
58. SEAT-BELT LIGHTS
59. ADF RADIOS (ADF1 & ADF2)
60. PITOT SWITCHES
61. CO-PILOT LIGHTS
62. LANDING LIGHTS CONTROLS
63. RUNWAY TURN-OFF LIGHTS
64. NAVIGATION LIGHTS
65. BEACON LIGHTS
66. WING LIGHTS
67. WHEEL WELL LIGHTS

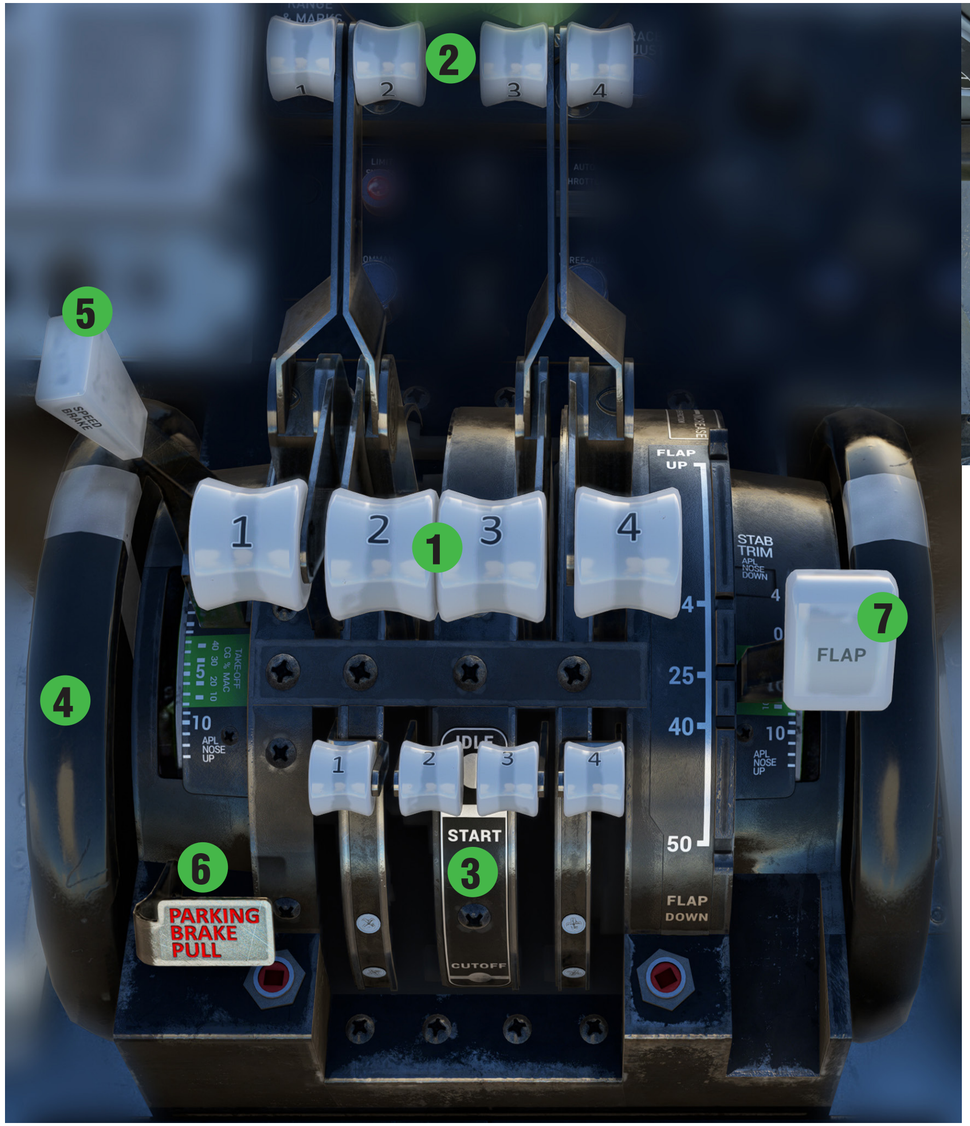
Not all B707 cockpits were the same. Airlines often specified their preferred layouts and equipment to assist their pilots with transition from other aircraft. The version type, such as this 320C, had specific equipment fitted to make the aircraft fit for purpose.

Engines, flight controls and navigation equipment evolved over the years and many items were retro-fitted to earlier cockpits to bring them up to date and to match the new systems installed.

In this simulation, we have chosen a typical cockpit which best reflects the 320C in its commercial service format with a couple of changes and additions to make life a little easier for the pilot.

For the solo pilot, we have a system of click-spots on the main areas so you can switch back and fore between stations and panels without worrying about cameras. Just click on a specific area you need to visit and you will automatically be taken there with a clear view of the items you need to operate. This makes things like starting engines, which involves visiting 4 key areas, much simpler.

Microsoft Flight Simulator



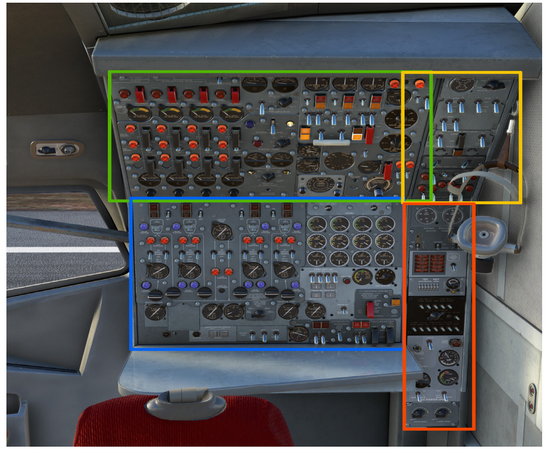
PEDESTAL

1. THROTTLES
2. REVERSERS
3. START LEVERS (Fuel cut-offs)
4. STABILIZER TRIM WHEEL
5. SPEED-BRAKE
6. PARKING-BRAKE
7. FLAPS LEVER
8. FMC *(A separate guide to the FMC is included with your simulator package)*
9. WEATHER RADAR (INOP)
10. INS *(A separate guide to the INS is included with your simulator package)*
11. COMMS & NAV RADIOS
12. AUTOPILOT *(A separate guide to the AUTOPILOT is included with your simulator package)*
13. AUDIO PANELS
14. RADIO LIGHT RHEOSTAT
15. RADIO PANEL FLOODLIGHT
16. RUDDER TRIM CONTROL
17. GEAR HORN CUTOUT

PEDESTAL CONT'D

18. STABILIZER TRIM LOCK
19. AILERON TRIM CONTROL

THE ENGINEER'S STATION



The Engineer's Station houses critical controls of the Boeing 707. The station is intuitively divided into discrete functional sections including those for fuel control, electrical system, hydraulic systems, and engine management.

We have divided the panels into four areas: ELECTRICAL PANEL, on the upper-left of the station, comprises all controls for electrical power in the aircraft, engine-driven generators, and overall efficacy of the aircraft's electrical systems.

The station also houses the AIR CONDITIONING, CABIN PRESSURE, and HEATING & VENTILATION PANELS.

ELECTRICAL PANEL

1. GENERATOR DISCONNECT X 4
2. GENERATOR OIL TEMP X 4.
3. BUS-TIE BREAKER SWITCH X 4
4. GENERATOR BREAKER SWITCH X 4
5. GENERATOR SWITCH X 4
6. GENERATOR OUTPUT INDICATOR X 4
7. GENERATOR FREQUENCY KNOB X 4
8. DC POWER CONTROL PANEL
9. EXTERNAL POWER CONTROL
10. ESSENTIAL POWER CONTROL

AIR-CON. & CAB.PRESS.

11. TURBO COMPRESSOR TACH.
(ONLY NO.2, 3 & 4 HAVE COMPRESSORS)
12. WING ISOLATION VALVES
13. AIR-CON UNIT SWITCHES
14. AIR SUPPLY DUCT PRESS.
15. CABIN DIFF.PRESS.
16. CABIN AIR DUCT PRESS.
17. CABIN PRESSURE ALTITUDE
18. CABIN PRESS. CONTROL
19. CABIN TEMP CONTROLS
20. OVERHEAT WARNING

VENT. & HEAT

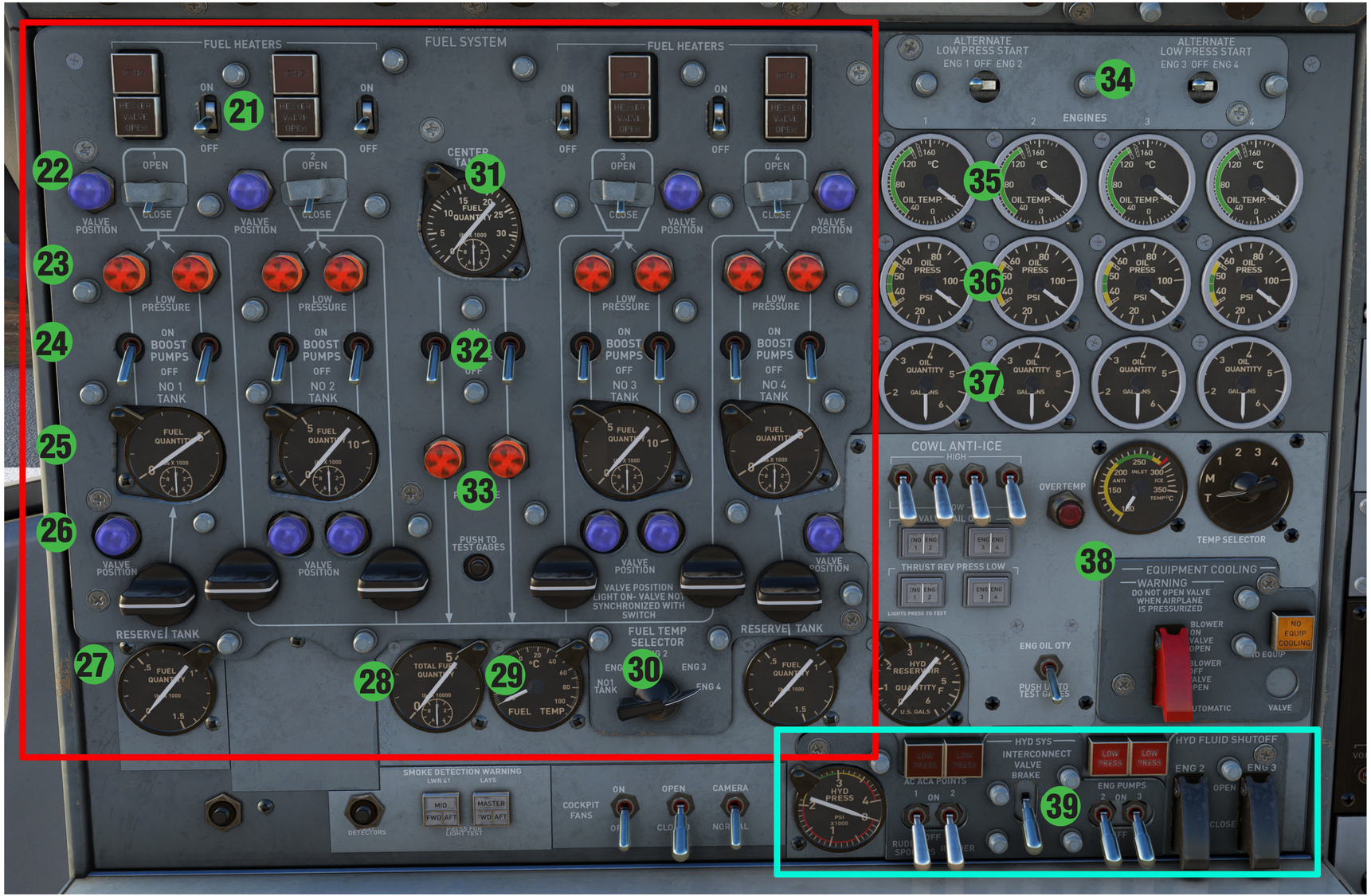
PLEASE NOTE: THIS PANEL SECTION, ALTHOUGH CLICKABLE, IS CURRENTLY INOP

FUEL PANEL

21. FUEL HEATERS X4
22. FUEL SHUT-OFF VALVE X4
23 . LOW BOOST PUMP PRESSURE X 4
24. BOOST-PUMP SWITCH X 4
25. FUEL TANK GAUGE X 4
26. VALVE CONTROLS & POSITION LIGHTS
27. RESERVE TANK QUANTITY
28. TOTAL FUEL QUANTITY
29. FUEL TEMPERATURE
30. FUEL TEMP SELECTOR
31. CENTER FUEL TANK
32. CENTER TANK BOOST PUMPS
33. LOW BOOST PRESSURE
34. LOW PRESSURE ENGINE STARTERS
35. ENGINE OIL TEMP.
36. ENGINE OIL PRESSURE
37. OIL QUANTITY
38. ANTI-ICE PANEL
39. HYDRAULICS PANEL

SUB PANEL

40. OXYGEN PRESSURES
41. OXYGEN REGULATOR
42 . DOOR WARNINGS
43. TRIP RECORDER
44. AUDIO PANEL
45. ON-BOARD APU PANEL
46. LIGHT RHEOSTATS



Flying the B707-320C

Although the Boeing 707 is a complex multi-jet airliner, it is not difficult to operate, providing you adhere strictly to the written procedures and check-lists. Modern airliners like Boeing's 787, for example, have "Fly-by-wire", computer-assisted controls and "glass" cockpits to aid the pilots. The 707 has none of these. It is jet-flight in its purest, early form and is all the more exciting and informative for it.

So, we are now going to take you through the basic procedures necessary to get you into the air and to fly the B707 like a pro!

GETTING POWER ON BOARD

Before we do anything else, we need to have electrical power available for essential services. First thing to do is turn on the on-board DC Battery using the switch on the DC Power Control Panel (8).

Now, there are several options for starting the B707. IF the aircraft is fitted with an on-board APU, you can use this as the primary starting unit. You can use an external power source APU provided by the airport services and this is connected to the aircraft by ground-crew. Finally, you have a choice between Low Power and High Power starts. More on that later. For the purposes of this demonstration, we are going to use the external APU power source. Switch ON the External Power switch (9) and check that the blue warning light glows to indicated power flow to the aircraft. A visual check outside should display the APU on the tarmac alongside the aircraft.

GETTING THEM STARTED

The start procedure for a B7-7-320 is engine 3 first, followed by 4 then 2 and lastly, 1. Remember there is no turbo compressor on engine 1. Which, incidentally is why the engine nacelle bearer is straight in profile as opposed to the curved ones on the other engines, which house the compressors.

Next turn ON the Generators for engines 3 and 1. (5) and the BUS-TIE Breakers (3), all 4. Switch the Power Selector on the External Power Panel (9) to EXT/APU.

At this point, turn to the OverHeadPanel and turn on your Navigation and Beacon lights (64) & (65).

OK, we are ready for an engine start. Head for the FUEL PANEL and turn ON the FUEL VALVE for Engine 3 (22). On the PEDESTAL move the START LEVER for Engine 3 (3) UP to the START position.

On the OHP, ENGINE START PANEL, open the safety cover for Engine3 and Switch DOWN and HOLD Engine 3 Starter. Hold the switch down in this position and check the engine gauges. When N2 reaches 35%, let go of the Starter switch and it will spring back to the neutral position. Close its cover. Check your gauges. N1 should be at 20% for idle, EGT should be around 600^{0}C, N2 should be around 60% and FuelFlow at around 2500PPH.

Follow the above procedure again for Engines 4, 2 and finally 1. Turn ON the Generators for Engines 2 and 4. Turn OFF the External Power Switch (9) and return the Power Selector from EXT/APU to GEN3. Immediately above the Generator Disconnect Switches (1) is the power switch for the Galley. Turn this ON. You should now have all four engines running which is perhaps, the most difficult part of operating the B707.

There are numerous other tasks to perform before you are ready to go so maybe this is a great time to introduce the CHECKLISTS.

Normally, these checklists would be carried out by different members of the crew. However, in the simulation it is more than likely that you will be flying solo. So, the checklists have been written with this in mind. Refer to the cockpit guide to locate the various items.

EXTERIOR SAFETY INSPECTION

Chocks	IN PLACE

COCKPIT SAFETY INSPECTION

Emergency Flap Switches	OFF
Landing Lights Switches	OFF
Landing Gear Lever	DOWN & IN
Radar Mode Selector	OFF
Transponder Mode Selector	STBY
Galley Power Switch	OFF
AC Aux Pump Switches	OFF
Fuel Dump Panel Cover	CLOSED

PRELIMINARY COCKPIT PREPARATION

(No power on airplane)

Parking Brakes - SET	
Radio Master Switches	OFF
External Power Switch	OFF
DC Load & Volts Selector	BATT
Battery Switch	ON
Power Selector	EXTERNAL POWER/ APU
Power/APU Switch	ON
Essential Power Source Selector	EXT PWR/APU
Air Conditioning Units	OFF
Radio Master Switches	ON
Panel Lights	TEST
Mach Trim	TEST & RE-ENGAGE
Rudder Switch	GUARD CLOSED
Spoiler Switches	GUARDS CLOSED
Fire Warning	TEST
Engine Fire Switches	IN
Transfer Switches	NORM
Engine Start Control Selectors	OFF
Wing Anti-Ice Switch	OFF
Ground Start Switch	GUARD CLOSED
Oxygen Switch	NORM
No Smoking & Seat Belts Switches	ON
Emergency Exit Lights	TEST & OFF
Yaw Damper Switch	ON
Window Heat Switches	LOW
Probe Heaters	ON
Wheel Well, Wing and Navigation Lights	ON
Thrust Reverser Operating Lights	EXTINGUISHED
Engine Instruments	CHECK

EPR indicators 1.0 and bugs move freely.
Nl RPM indicators zero.
EGT indicators normal.
Fuel flow indicators minimum indication.

Landing GEAR down lights	ILLUMINATED
Flap Lever & Indicators	IN AGREEMENT
Total Air Temperature Indicator	CHECK
Static Air Temperature Indicator	CHECK
Takeoff Warning Horn	CHECK
Crew Oxygen Shutoff Valve	OPEN
Panel Lights	TEST & SET

KW/KVAR meters zero.

Fuel System	TEST & SET
Fuel Quantities	CHECK ALL
All Forward Boost Pump Switches	OFF
Center Tank Left Boost Pump Switch	OFF
All Crossfeed Selectors	OPEN
Reserve Tank Fuel Transfer Selectors	OPEN
Fuel System (Cent) Reserve Tank Fuel Transfer Selectors	CLOSE
Fuel Heat Switches	OFF
Hydraulic Systems	TEST & SET
Hydraulic Reservoir Indicator	FULL
Engine 2 and 3 Pump Switches	ON
Hydraulic Fluid Shutoff Switches	GUARDS CLOSED & SAFETIED
YAW DAMPER	ENGAGED light illuminated
Engine Instruments	CHECK
N2 RPM and oil pressure indicators	ZERO
Oil temperature indicators	within normal range.
Equipment Cooling Blower Switch	NORM
Overboard Dump Switch	NORM
Engine Oil Quantity Indicators	CHECK
Pressurization System	TEST & SET
Rate Selector	SET
Altitude Selector	SET

Position selector to planned cruise altitude plus 2000 ft.

Barometric Correction Selector	29-92
Outflow Valve Balance Selector	NORMAL
Auto-Manual Mode Switch	AUTO
Safety Valve Override Switch	NORMAL
Takeoff-Landing Mode Switch	TAKEOFF
Cabin Air Thrust Valve Switch	NORMAL
Cabin Rate of Climb Indicator	ZERO
Cabin Altimeter	SET
Cabin Differential Pressure Indicator	ZERO
Engine Bleed Air Switches	OFF
Wing Valve Switches, L and R	OPEN
Air Compressor LOW OIL PRESS Lights	ILLUMINATED
Air Compressor RPM Indicators,Eng's 2, 3 & 4	20%
Ram Air Switch	GUARD CLOSED
Coolant Air System	CHECK
Valve Selector - INLET	
Oxygen Pressure Indicators	CHECK
Fuel System	SET FOR START
Galley Power Switch	OFF
Air Conditioning Unit Switches	OFF

ENGINE PRE-START
(EXTERNAL POWER SOURCE)

External Power Switch .....ON
Battery Switch.....ON
Power Selector..... EXTERNAL POWER/ APU
Power/APU Switch.....ON
Essential Power Source Selector.....EXT PWR/APU
Generator Switches.....ON 3 and 1
Bus-Tie Breakers.....ALL ON
Fuel Valve.....ENGINE 3 ON
Engine Start Lever.....ENGINE 3 TO START

ENGINE START
(EXTERNAL POWER SOURCE)
Engine Starter Engine 3 .....DOWN AND HOLD
N2 for Engine 3 .....35%
Engine Starter Engine 3 .....RELEASE
N1 for Engine 3 .....20%
N2 for Engine 3 .....60% at idle
Exhaust Gas Temp Engine 3 .....600°C
FuelFlow for Engine 3.....2500pph

REPEAT FOR ALL ENGINES IN ORDER 4,2,1

CHECK ALL TEMPS AND PRESSURES.
Start Levers .....IDLE
External Power Switch .....OFF
Power Selector.....GEN3
Power/APU Switch.....OFF
Galley Power.....ON

BEFORE TAXI
Flaps.....14
Probe Heaters .....ON
Flight Director.....SET FOR DEPARTURE
Flight Controls.....CHECKED
INS.....SET
Cockpit Door.....LOCKED
Taxi Clearance.....OBTAIN

TAXI
Parking Brake.....RELEASE
Exterior Lights.....SET
Retractable and Fixed landing
lights, Runway Turn off lights.....AS REQUIRED
Nacelle Anti-Ice.....ON (when the OAT on the ground and for takeoff, is 10°C or below. Otherwise OFF
Yaw Damper .....ON
Stabilizer Trim.....SET FOR TAKEOFF
Check engine indicators normal,warning lights extinguished.
Electrical System.....CHECK
Check generator drive oil temperature rise indicators in green band and generator drive LOW PRESSURE, CIRCUIT OPEN and essential power FAILURE warning lights extinguished.
Check KW loads on all 4 generators are approximately equal.
Fuel System.....SET FOR TAKEOFF
Hydraulic System.....CHECK
Air Conditioning and Pressurization Systems.....CHECK
Pressurization System.....SET FOR FLIGHT
Pressurization Mode Switch.....TAKEOFF
Altitude Alert.....SET
Transponder Mode Selector.....ON
Landing Lights.....ON

TAKEOFF

Flaps.....14
Throttles.....40%
Brakes.....RELEASE
Throttles .....PROGRESSIVELY TO MAX
V1 (LOAD DEPENDANT).....136 - 154 KIAS
Vr (LOAD DEPENDANT).....143 - 160 KIAS
V2 (LOAD DEPENDANT).....163 - 177 KIAS

AFTER TAKEOFF
Anti-Ice. .....AS REQUIRED
No Smoking & Seat Belts Switches.....OFF
Gear.....UP
Flaps.....UP
Hydraulics.....PRESS & QTY NORMAL
Air Cond & Press.....CHECKED & SET F/E

CLIMB
TO 5,000 ft.
Flaps.....RETRACT
Throttles.....TO GIVE 170KIAS MIN
RateOfClimb.....2,000ft. FT/MIN

FROM 5,000 TO 15,000 ft.

Throttles.....TO GIVE 275KIAS
RateOfClimb.....1,500ft. FT/MIN

FROM 15,000 TO 24,000 ft.

Throttles.....TO GIVE 290KIAS
RateOfClimb.....1,500ft. FT/MIN

MACH CLIMB

Throttles.....TO GIVE MACH 0.76
RateOfClimb.....1,000ft. FT/MIN
Autopilot .....AS DESIRED
Radios.....SET FOR VOR NAVIGATION
Flight Director.....SET FOR NAVIGATION
Climb Thrust.....MONITOR
Landing Lights.....OFF
Operating Systems.....MONITOR
Electrical System.....CHECK
Hydraulic System.....CHECK
Engine Operation - Nl & N2 indications within limits.
EGT indications stabilized & within limits
Fuel flow approximately equal
Engine oil pressure and temperature indications within limits.
Engine oil quantities sufficient for remainder of flight.
Air Conditioning and Pressurization Systems .....CHECK
The recommended maximum number of pressurization air sources vs altitude:
0-15,000 ft .....2 air compressors
15-32,000 ft .....3 air compressors
Above 32,000 ft 3 air compressors or 2 air bleeds for each inoperative air compressor.
Conditioned air duct pressure..... GREEN BAND
Crew cabin temperatures.....as desired
Coolant Air System.....CHECK
Coolant Air System.....CHECK
Main Cabin Heating Panels.....AS DESIRED
Gasper Fan Switch.....AS REQUIRED FOR VENTILATION
Oxygen Systems.....CHECK
Altimeters.....SET & CROSS-CHECK

CRUISE

Throttles.....TO GIVE 470KIAS/MACH 0.8
Ceiling.....39,000 ft
Autopilot..... SET FOR DESIRED NAVIGATION
Flight Director.....SET FOR DESIRED NAVIGATION
Fuel Management.....MONITOR
Operating Systems .....MONITOR
Cabin Temperature Zone Control.....AS DESIRED
Main Cabin Temperature Selector.....SET AS DESIRED
Cabin Air Temperature Indicator.....MONITOR

DESCENT/APPROACH

Pressurization .....SET
Cabin Air Thrust Valve Switch.....NORMAL/OFF
Pressurization Mode Switch .....LANDING
Anti-Ice .....AS REQUIRED.....OFF/ON
Coolant Air Valves (19,000 Feet) .....OPEN
Circuit Breakers.....CHECK
Seat Belts Switch.....ON
Landing Lights.....ON
Altimeters.....SET & CROSS-CHECK
EPR & Airspeed Bugs .....SET
Altitude Alert .....SET
Radio Altimeter.....SET
Minimum Decision Altitude.....SET
Flight Director (If Required).....SET FOR DESCENT
Autopilot (If Desired).....SET FOR DESCENT
Fuel System .....SET FOR LANDING
Hydraulic Systems .....PRESSURES &QUANTITY NORMAL
Speed Brake lever .....FULL FORWARD
ADF Radios .....SET FOR APPROACH
Autopilot.....SET FOR APPROACH
Flight Director.....SET FOR APPROACH
Radios.....TUNED AND SET
Main Tank Boost Pumps.....ON

TO 24,000 ft.

Throttles.....TO GIVE MACH 0.75
RateOfDescent.....800ft. FT/MIN

TO 10,000 ft.

Throttles.....TO GIVE 300 KIAS
RateOfDescent.....3000ft. FT/MIN

BELOW 10,000 ft.

Throttles.....AS REQUIRED FROM 240KIAS AND REDUCING
RateOfDescent.....AS REQUIRED.....ATC MONITORED

APPROACH

Vapp.....140 KIAS
Flaps.....14

LANDING

Speedbrake Lever.....FULL FORWARD
Spoiler Switches.....ON
Engine Start Control Selectors.....BOTH
No Smoking Switch.....ON
Gear.....DOWN, IN, 3 GREENS
Flaps.....50
Hydraulics.....PRESS & QTY NORMAL

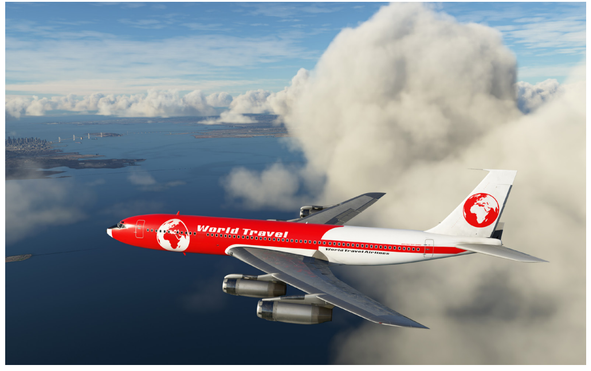
LANDING ROLL

Reversers.....ACTIVATE ON BRAKING TO 80 KIAS
Reversers.....STOW AT TAXI SPEED
Exterior Lights.....AS REQUIRED
Flaps.....UP
Speedbrake Lever.....FULL FORWARD
Anti-Ice Switches.....AS REQUIRED
Probe Heat Switches.....OFF
Radar Mode Selector.....STBY/OFF
Transponder Mode Selector .....STBY/OFF
Radios.....SET FOR GROUND OPERATION
Engine Start Control Selectors .....OFF
Power Selector.....EXTERNAL POWER
Galley Power Switch.....OFF

Boost Pumps.....ONE PER ENGINE
Hydraulic & Brake Pressure.....MONITOR
Outflow Valves.....CHECK OPEN
APU (If Required) .....START
APU Generator Switch.....AS DESIRED
APU Bleed.....AS DESIRED
Coolant Air Valves.....CHECK POSITION
Gasper Fan Switch .....ON

PARKING/SHUTDOWN

Fuel Boost Pumps..... OFF
AC Auxiliary Pumps.....OFF
Temperature Control Valves.....FULL CLOSED
Galley Power Switch.....(If required).....ON
Parking Brake .....SET
Air Conditioning Units .....OFF
Air Compressors .....STOP
Anti-ice .....OFF
Engine Start Levers (1, 2, 4).....CUTOFF
INS.....OFF
Essential Power Source selector.....EXT IAPU
External Power Switch .....ON
Engine Start Lever No. 3.....CUTOFF
Beacon Light Switch.....OFF
Emergency Exit Lights Switch.....ARMED/OFF
Seat Belts Switch.....OFF
Communications.....SET FOR RAMP OPERATIONS
Parking Brake....(when CHOCKS are in place) .....RELEASE



LET'S GO!

With all four engines running, the aircraft is ready to take to the sky.
The powerful engines will move the aircraft forward even when all are set at idle, so be prepared to use the foot brakes once you release the parking brake.
If you need a push-back, call it before you release the brakes. If you are clear to move forward under power, use a combination of wheel-steering and rudder to maneuver away from the apron and onto the taxiway.
As you are taxiing out to the runway, ensure that the flaps are set to 14. The leading-edge (Krueger) flaps should be extended at this setting. Follow the checklist procedures for all noted points and double check all points once at the holding area.
For take-off, DO NOT ram the throttles forward to maximum power! Gradually increase thrust, and as you do so, release the brakes. Jet aircraft accelerate progressively throughout the take-off roll, unlike propeller-driven aircraft. Your 708 will accelerate quickly once it has reached 80 knots indicated. You will quickly reach V1, your decision speed, as full power is applied. Vr, your rotate speed, is approximately 150 knots, at which point you need to gently pull back on the yoke to lift the nose wheel off the ground. As you pass into the 160s, the aircraft will lift off gracefully at a shallow angle. Continue accelerating to your V2 speed (170 knots) and continue climbing. Retract your landing gear and begin your climb out.
As you climb, raise the flaps and adjust your power to achieve a climb rate of 1,500 feet per minute and 275 knots indicated airspeed. This is a good time to review your checklists and check all cockpit systems.
You can now climb as high as the service ceiling of the 707-320C, 39,000 feet above sea level. Once at your cruising altitude, airspeed indicator should read 470 knots and your MACH meter should read 0.8.

Landing the Boeing 707-320C requires careful planning. Carefully review every point on the checklists.
Begin your approach at a safe distance from the airfield. Pay close attention to the air traffic control tower, which will vector you onto the correct flight path. Remember that the 707-320C is a large aircraft, and due to inertia, it takes much longer to change orientation and speed than with a smaller aircraft.

The aircraft is equipped with double-slotted trailing-edge flaps that are very effective at slowing the aircraft to proper approach speeds. Apply these carefully for precise speed control and maneuverability.

Landing is particularly challenging as you need to maintain proper heading, descent rate, and speed by adjusting throttles, flap deployment, and landing gear deployment.

Once on the ground, reduce power to idle and slow the aircraft to approximately 80 to 90 knots. Pull the reverser levers back and the engine reversers will deploy. This slows the aircraft quickly and are used for short field landings.

The Boeing 707-320C is fitted with an autopilot and an INS (inertial navigation system) (Currently the INS is unavailable but will be installed in later updates). Together, with the radios and the onboard FMC, you can plan and execute flights just any airfield that can accommodate the jet. While there are no modern features like fly-by-wire flight controls or flat-panel avionics, the 707-320C offers an exceptional, classic flight experience iconic of the very best of the early Jet Age.

Microsoft Flight Simulator