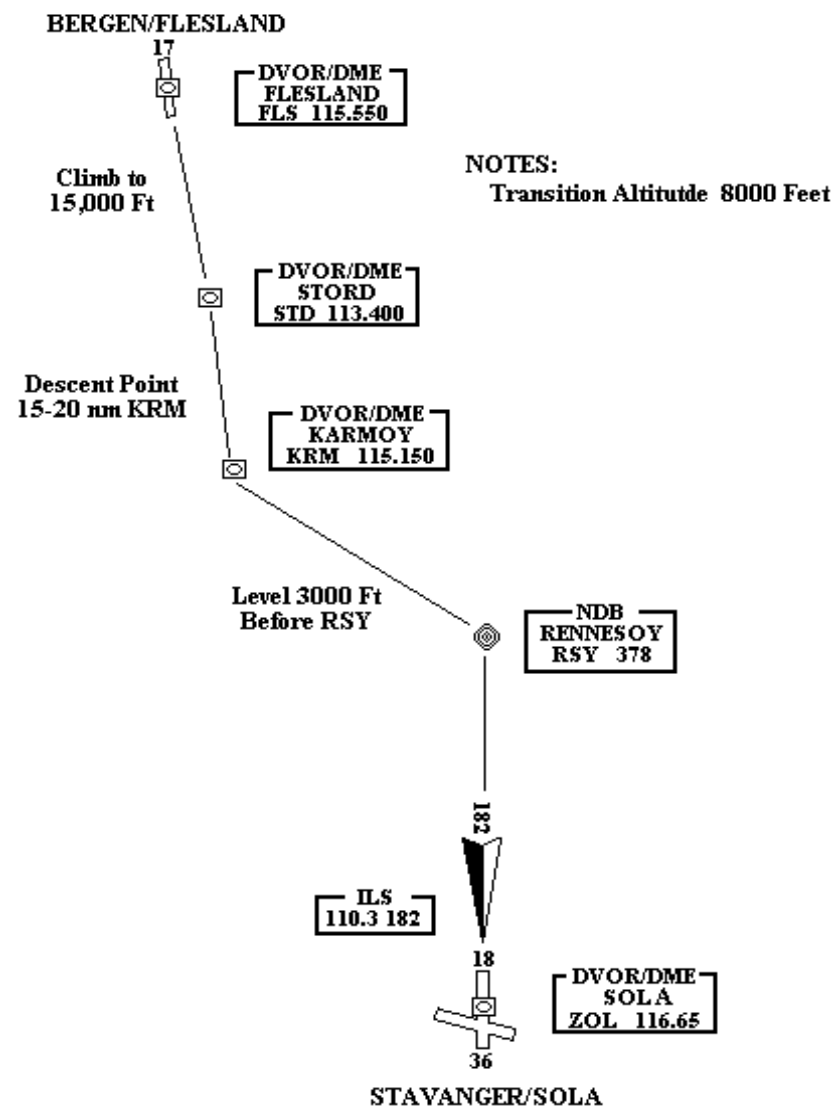


# Fokker 50 Flight Deck Manual

## APPENDIX “A”

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### INTRODUCTION FLIGHT - ENBR/ENZV



NOTE: MAP NOT TO SCALE

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## **ENTERING THE AIRCRAFT: Use Prestart Checklist**

Once inside the F50 cockpit you will notice that all the instruments and systems are off. Your first job will be to get power on the systems and prepare all the systems for normal operation. This is done by going through the "PRESTART" checklist. You can select the checklist panel window with "shift-4", or you can just hit the "spacebar" and your First Officer will start reading the checklist for you.

In this introduction flight I will walk you through all checklists.

**EXTERNAL POWER:** On the overhead panel electrical panel (shift-3) there is one push-button lighted with the legend "AVAIL" indicating that external power is available. Press it and the panel will light up. Electrical power is now being supplied to the system.

**BATTERIES:** Flip on the battery switch (same panel as above). You will notice that the "CHARGE" buttons with "OFF" lights go out as you flip the battery switch on. The batteries are now being charged from the external power source.

**GROUND HANDLING SWITCH:** Not simulated.

**CIRCUIT BREAKERS:** Not simulated.

**GEAR PINS and PITOT COVERS:** Not simulated.

**LOOSE OBJECTS and EQUIPMENT:** ...Check your computer desk ...@

**LANDING GEAR:** Check landing gear lever is down, and three green lights indicating landing gear is down and locked.

**FRESH AIR SCOOPS:** Not simulated.

**GPWS:** Test button not simulated.

**EVAC SIGNAL SYSTEM:** Not simulated.

**FLIGHT RECORDER:** Not simulated.

**COCKPIT VOICE RECORDER:** Not simulated.

**HEADING MODE SWITCH:** Not simulated.

**ENGINE FIRE PANEL:** check no "amber" warning annunciators are lit on both engine fire panels and both handles are in the neutral position (vertical).

**BLEED AIR:** Check that both bleed air shut-off valves on the overhead air conditioning panel are in the "OFF" position (the two push-buttons just below the "BLEED" legend on the air conditioning panel).

**AIR CONDITIONING:** Set the desired air temperature on the flight deck with the rotary flight deck heater switch. Please reference the system description part of this manual for details about how the rotary switch works. turn on the re - circulation fans.

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Welcome to the introduction flight in the Fokker 50. For this flight we are going to fly a short leg from Flesland Airport (ENBR) in Bergen, Norway to Sola Airport (ENZV) in Stavanger, Norway. We will be taking off from Flesland Airport runway 17 and land at Sola Airport runway 18.

## **PREPARATIONS:**

As preparations for this introduction flight I recommend that you first, before loading the panel, delete the "Fokker50.ini" file from your gauges folder in the FS2000 folder. Deleting this file makes sure all internal variables in the panel are reset. The panel will automatically generate a new Fokker50.ini file for you.

Next, load the panel in FS2000, then I want you to position your aircraft at one of the gates at Flesland Airport. You can use the slew mode to do this (press the "Y" key, then navigate with the arrow keys).

I recommend you have the Checklist handy so you can use them to follow along with this tutorial, it will help you get used to and understanding how they are used.

Also use the map included in this tutorial for reference and information.

Set the fuel quantity in the Aircraft -> Fuel dialog box to 100 percent for both main tanks once you started up FS2000.

## **NOTES:**

*This panel for the Fokker 50 has several separate panel windows. You can switch between them using either the "shift - 1/2/3/4/5/6" key combination, or you can use the panel window icon bar ("shift-7"). I will refer to the "shift - X" key combination throughout this text for various panel Windows described.*

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**EMERGENCY LIGHTS:** Set the emergency lights rotary switch to “ARMED” (just above the cabin pressure gauge on the left-hand side of the overhead panel). The “NOT ARMED” warning light should go out. This system will, among other things, activate the emergency evacuation lights inside the cabin in the event of an emergency evacuation of the aircraft.

**PRESSURIZATION:** Check that the cabin pressure as indicated by the cabin pressure gauge (gauge with three hands to the far left on the overhead panel) is the same as the aircraft altitude. At Flesland your altitude on the ground is about 170 feet. For this flight we will leave the pressurization system in automatic mode. If you press the push-button under the “PRESS CONTROL” legend the “MAN” light in the push-button will come on indicating the pressurization system is under manual control. Press it off back to automatic mode. Leave the landing altitude (lower center overhead panel gauge) to zero.

**EXTERNAL LIGHTS:** On the overhead external light panel turn on the logo light and the navigation lights, and make sure all other lights are set to the “OFF” position. Note that the anti-collision amber warning light should be on indicating that the anti-collision lights are off.

**SEAT BELT – NO SMOKING:** Set the seat belt to “ON” and the no smoking sign to “ON”. As all domestic flights in Norway, this will be a non-smoking flight.

**AVIONICS AND RADAR:** On the pedestal turn on both the ADF radios, turn the knob two notches to “ADF”. Turn on both the COM radios. Turn on both the transponders, turn the knob two notches to “SBY” putting the transponder in standby mode. Turn on both nav units on the glareshield (press the “NAV1” or “NAV2” buttons (on EFIS control panel on the glareshield) to select nav unit.

**AREA NAV:** Not simulated.

**TEST PANEL:** Not simulated.

\*\*\*PRESTART is now finished. The Prestart checklist may be performed with only one crew member in the cockpit.

**CREW AT STATIONS:** Use Crew at Stations Checklist

**COCKPIT VOICE RECORDER:** Not simulated.

**OXYGEN MASK AND SUPPLY:** Not simulated.

**PARKING BRAKES:** Make sure the parking brake is set (control-.) Check that the normal brake pressure gauge (on the main panel next to the clock/timer) indicates minimum 100 PSI.

**HYDRAULICS:** On the overhead hydraulics panel check that no amber warning annunciators are on. Also check minimum 70% quantity. Note that this variable may vary depending on the aircraft model you are using. Check electrical pump is off.

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Now you need to contact your ground crew to have them push you out from the gate and to aid you with the startup of the engines. Bring up the push and start panel window (shift-5). A push back distance of between 20 and 30 meters should be OK. Select push back straight/left/right depending on what gate you are parked at.

Your First Officer will now handle the communication with the ground crew. When the ground crew asks you to release the brakes, release the brakes and they will start pushing the aircraft. And when they are done, they will ask you to set the parking brake again.

Your First Officer will now tell the ground crew that we are ready to start the engines.

## STARTING THE ENGINES

The first thing we do when starting the engines is turn on the fuel booster pumps on the overhead fuel panel. Turn on all four of them.

Then turn on the master engine starter push-button (top middle push-button, “START” legend underneath) on the overhead engine panel. Also, turn on both engine igniter push buttons (on both sides of the engine starter push-button). The igniter push buttons do not have to be on in order to start the engines. The auto-ignition system will automatically start igniting the engines when it's needed. But for the first engine start of the day is normal to put on the manual igniters (secondary igniter system) and have them operate together with the automatic igniters (primary igniter system).

As a precaution before engine startup, check that the fuel control handles on the pedestal (on both sides of the throttle handles) are in the closed position (fully aft). Also check that your throttle is in the neutral position.

As your First Officer indicated we will start the right hand side engine first. Turn the engine starter rotary switch to the “R” position. This switch is spring loaded back to the center position. Engine number two should now start spooling up.

When the engine has reached about 20% Nh (third engine gauge from the top) push the fuel control handle for the right hand side engine to the “START” position. The engine should now light up. when the Nh readout has stabilized at around 66% move the fuel control handle all the way forward to the “OPEN” position. Your FO will make a callout at the 20% Nh and 66% Nh. Note that the engine parameters mentioned here may vary depending on your aircraft model.

Check that the engine generator has come online (lower right hand corner of the overhead electrical panel). Now repeat the engine startup process for the left hand side engine. When you have started both engines, it's time to go through the next checklist.

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**AFTER ENGINE START:** Use After Start Checklist

**EXTERNAL POWER:** Confirm that the external power supply has been removed.

**STARTER PUSH BUTTON:** Turn off the master engine start button. This will also turn off the engine igniter push buttons.

**ICE PROTECTION:** Turn on both window heater push buttons, and all five probe heater push buttons on the overhead engine anti-ice panel.

**BLEED AIR:** Turn on both the bleed air push buttons on the overhead air conditioning panel. Also turn on the pack push-buttons to open the valve that lets bleed air into the air conditioning system for the engine.

**ALERT LIGHTS:** Confirm that no white or amber annunciator lights on the overhead panel are lit now. The Fokker Company built the F50 cockpit using the “dark cockpit” concept where under normal operations no light should be lit.

**PROPELLER OVERSPEED:** Not simulated.  
**CLEAR SIGNAL:** Not simulated.

**FLAPS:** Set flaps 15.

**CABIN REPORT:** Everything Ok in the back, again, simulated by family member ☺

**TAXI:** Use Taxi Checklist

Engines are humming, you have received your taxi clearance and instructions from the ground controller, and you are ready to taxi out to the active runway.

Before we start rolling you need to go through your taxi checklist.

**FLIGHT INSTRUMENTS:** Have a quick look over all your flight instruments checking that everything looks ok.

**NAV AIDS and ASEL:** On this flight we will be flying via the Stord VOR. Tune 113.40 MHz into NAV2 unit standby frequency, then switch it to the active frequency. Our next way point will be the Karmoy VOR at 115.15 MHz. Put this frequency into the NAV1 unit. And when we get closer to Sola Airport we are going to fly by Rennesoy ADF at 378 KHz. tune this into the left hand side ADF unit on the pedestal.

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**PRIMARY FLIGHT DISPLAY AND NAVIGATION DISPLAY:** Check that both the “TV” screens in front of you are on, and display the artificial horizon and compass rose respectively.

**ALTIMETER:** Set current barometer setting on the altimeter (shift-B). Check that the readout corresponds with the actual altitude of the aircraft, which at Flesland Airport should be about 170 feet.

**CREW PAPERS and AIRCRAFT LOG:** ...did you bring a valid license?...☹

**PRE-FLIGHT INSPECTION (walk around):** ...computer has been inspected and found to be in order...☺

**FUEL QUANTITY:** Check that the fuel quantity readouts on the overhead fuel panel corresponds with the fuel quantity totalizer on the main panel (lower right hand corner). Even though this is just a short leg we will fly with full fuel tanks. Maximum fuel capacity is 4080 kgs in the two main tanks plus 80 kgs in the collector tanks, totaling 4160 kgs (5138 litres, 9180 lbs).

**TAKEOFF DATA:** Set the takeoff weight on the aircraft weight indicator (just below the four small engine oil indicators) to 19 tons. Looking at the speed table for takeoff this give us, at flaps 15, a V1 and Vr speed of 98 knots and V2 of 100 kts. Set the bug on the airspeed indicator to 98 kts and 100 kts. Set takeoff mode “TO” active on the engine rating panel (below all the engine instruments). reference the engine rating chart and find the target torque setting we need for this takeoff. I have 14 degrees celsius (this may vary depending on your weather settings) and runway elevation is about 200 feet. This gives me a target torque setting of 86.8%. Check that the target torque as indicated by the torque bugs on the torque gauge (top middle engine instrument) comply with the setting found in the chart.

Our initial checklists are now complete.

**READY FOR PUSH and START:** Use Always Before Push Back/Tow Checklist

**CABIN REPORT:** Your flight attendants inform you that the cabin is ready for push/tow. Ask a family member to simulate this...☺

**ANTI COLLISION LIGHTS:** Turn on the anti-collision light on the overhead external lights panel.

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**FLIGHT MODE PANEL and FLIGHT MODE ANNUNCIATORS:** Our cruise level for this flight will be FL150. Tune 15000 feet into the flight mode panel on the glareshield. With the autopilot heading select switch select heading 175 degrees. The readout in the lower left hand side corner of the EHSI indicates the heading selected. Select "HDG" and "ASEL" mode on the flight mode panel, but do not turn on the autopilot master push-button. Also, select "IAS" mode and set IAS hold speed to 160kts with the wheel on the AP controller (on the pedestal). 160kts is the normal climb speed for the Fokker 50. Confirm that the "HDG" and "ASEL" annunciators are active on the EADI.

After warning the cabin that we are ready to taxi, we continue.

**CABIN WARNED:** Not simulated.

**TRANSPONDER:** Set the transponder code given to you by ground control into the transponder 1. For this flight you can just set any code. Turn the transponder 1 on by turning the knob to "ALT". The transponder is now on and will also report height back to Air Traffic Control whenever the transponder is "pinged". Also check that transponder 1 is the active one. It should say "ACT" in the display. If not, activate transponder 1 by pressing the black "1" button.

**EXTERNAL LIGHTS:** Put on the taxi lights and the strobe lights.

**FLIGHT CONTROLS:** Check that the flight controls lock handle on the pedestal is in the down position, unlocking the flight controls. Also check that your yoke/joystick has full free unobstructed travel in all directions.

**GROUND IDLE STOP:** Not simulated.

Ok, now that we are actually ready to start rolling, advance the throttles slightly and out we go. For this flight we will be taking off from runway 17 for a straight out departure going south to Sola Airport. Taxi out north to the start of runway 17. For "pro's", the latter part of the taxi checklist may be preformed while rolling out to the runway.

## TAKEOFF

When you have reached the holding point for runway 17 take a last look over all your flight instruments and make sure everything looks OK (check "TO" mode active, flap 15). When you have received your takeoff clearance from the tower, roll onto the runway and line up. Turn on the landing lights. Start the elapsed timer to keep track of flight time. Please reference the system description part of this manual for more details on how to operate the clock/timer.

As you remember, our V1 and Vr speed is 98 kts. However, note that it depends on the aircraft model you are using if the aircraft will actually lift off at this speed. Also, the back pressure you need to put on your yoke/joystick may vary depending on the aircraft model.

We are now ready for takeoff. Slowly advance the throttles fully forward. The engine electronic system will now take over control of engine thrust for you. Keep the aircraft on the centerline as you roll down the runway.

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## CRUISE

When the aircraft reaches the cruise level it will level off and the autopilot will go from "ASEL" mode to "ALT" mode. "IAS" mode light will also go out.

When you are about 5 NM from the Stord VOR, switch to the NAV1 unit (press "NAV1" on the glareshield) where we have Karmoy VOR tuned. Check the bearing to Karmoy VOR against the AP heading, and make corrections to the AP heading if necessary. You can check the distance to the tuned stations on the DME unit in the lower left hand side corner of the main panel. Please reference the system description part of the manual for more details on how to operate the DME unit.

On the RMI select switches click either ADF1 or ADF2 to have a needle point at the Rennesoy ADF.

At about 15-20 nm north of Karmoy VOR it is time for us to start thinking about our descent.

## DESCENT: Use Descent Checklist

**AREA NAV:** Not simulated.

**ICE PROTECTION:** If you are flying during winter time, turn on the engine anti-ice push-buttons on the overhead engine anti-ice panel.

**FUEL QUANTITY:** Check that 30 nm minimum fuel reserve is there. Also check that we have enough fuel to reach our alternate destination (going back to Flesland). Should be OK.

**LANDING WEIGHT and DATA:** Check that landing weight is within limits for the runway we are using. Sola Airport runway 18 has 2556m (8285 ft) available for landing so that should be more than enough for any landing weight of the F50. Then we need to check our approach and landing speed. From the approach and landing speed chart we find that at 18 tons and 35 degrees of flaps down we need 100 kts on approach and 95 kts over the runway threshold for the landing. Set the bugs on the airspeed indicator to 95 and 100 kts.

**LOOSE OBJECTS:** ...check your cockpit...@

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At about 10 nm from Karmoy VOR we will start our descent. Select IAS mode and set IAS hold speed to 215kts (max descent speed). Pull the throttles all the way back. The AP will now establish the aircraft in the most efficient descent profile. Tune 3000 ft on flight mode panel and then select “ASEL” mode to make the AP level off the aircraft at 3000ft. Turn towards the Rennesoy ADF. You can disconnect the heading hold mode and steer manually towards Rennesoy, or you can change the heading with the heading select switch on the flight mode panel. Now it's time to go through the “APPROACH” checklist.

**SEATBELT/NO SMOKING SWITCHES:** On.

**PRESSURIZATION:** Check that the landing altitude (lower center overhead panel gauge) is set to 0.

**GROUND IDLE STOP:** Not simulated.

Checklist completed to transition level. When going down through 8500 ft, continue with the checklist.

**ALTIMETERS:** Set the local pressure setting (shift-B).

**NAVIGATION AIDS:** Tune the ILS frequency for runway 18 into the NAV1 unit: 110.30 MHz, and the Sola VOR into NAV2 unit: 116.85 MHz. Activate NAV2 on the DME unit. Set course, with the course selector switch on the flight mode panel, for VOR1 to 182 degrees (the approach course). Have the NAV1 unit active on the EHSI to give you ILS guidance when you have intercepted the ILS.

Checklist completed to landing gear. At 4-5000 feet continue with the “Approach” Checklist.

**LANDING GEAR:** Select landing gear down. Also, turn on the landing lights.

**ENGINE RATING PANEL:** Select the “TO” mode on the engine rating panel.

**CABIN WARNED:** This is usually done by turning off and on the seatbelt sign once.

You are now ready to land.

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Monitor the engine instruments, especially the torque gauge. If takeoff power isn't set (as indicated by the bug) before reaching 65 kts you must abort the takeoff. Your FO will make a callout when takeoff power is set.

You're First Officer will callout V1 and Vr for you. Gently pull back on the stick to a 5-10 degree nose up attitude. Once airborne and a positive rate of climb has been established, your FO will call this, and you must select gear up.

Establish a climb of about 1800 fpm. At around 1000 feet start picking up your flaps in stages while maintaining the rate of climb. Turn off the logo lights.

When landing gear and flaps are up, select autopilot push-button on. The autopilot will now take-over horizontal and lateral control of the aircraft. The AP will now steer the aircraft up in a climb maintaining the normal climb speed of 160kts, and then level off at FL150. Heading is 175 degrees.

Select “CLB” mode on the engine rating panel. This will reduce the power output slightly, and the prop speed (Np) should drop to around 85% for climb mode (this may vary depending on your aircraft mode).

Now that you are established on the climb it's time to go through the “CLIMB” checklist.

#### **CLIMB CHECKLIST**

**EXTERNAL LIGHTS:** Turn off the landing lights and taxi lights.

**SEATBELT SWITCH:** Turn the seatbelt sign off.

**ALTIMETERS:** Set altimeter to 1013 hPa when passing the transition altitude at 8500 feet.

Now that you are established in the climb on our way to our cruise altitude of 15000 feet, it's time to check the navigation. We are flying 175 degrees south, and this should point us almost directly to the Stord VOR. Press “NAV2” on the glareshield to have the NAV2 unit active. Turn the nav unit knob to “BRG” and check the bearing to the VOR station. If it differs from our AP heading of 175, change the AP heading in order to have the aircraft go directly to the VOR station. You can also press the “VOR2” push-button on the RMI select switches out on the far left of the main panel. You will have an RMI needle pointing directly to the Stord VOR straight forward.

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## LANDING

You should be leveling off at 3000 feet before passing the Rennesoy ADF. As you reach the Rennesoy ADF turn towards the Sola VOR heading 182. Descent to 2000 feet, select 2000 feet on the AP altitude and select “ASEL” mode. As you descent to 2000 feet you should have intercepted the ILS. Turn off the autopilot and follow the ILS down for a manual approach. Slow the aircraft down to about 100 kts. You may add 5-10 kts if you feel like it, but don’t go below 100 kts. Put out your flaps in stages until you have the flaps fully extended. The flaps should be fully extended before you reach the outer marker about 5 nm from the Sola VOR. And remember to slow the aircraft down to 95kts just before you cross the runway threshold.

Have a good landing !!

**TAXING TO RAMP:** Use After Landing Checklist

Ok, so now you have landed, rolled out, vacated the runway, and you have received your taxi instructions. Turn on your taxi lights. as you taxi to your assigned gate (just pick any) it’s time to go through the checklist.

ENGINE RATING PANEL: Set “TO” mode.

FLIGHT CONTROLS: Pull the flight controls lock handle up, locking the light controls.

TRANSPONDER and RADAR: Set the transponder to standby, “SBY” mode.

AREA NAV: Not simulated.

FLAPS: Select flaps up.

EXTERNAL LIGHTS: Turn off strobe lights.

ENGINE ANTI-ICE: Off.

**PARKING:** Use Parking Checklist

Now find your gate and park it! When you have come to a full stop, turn off your engines by pulling the fuel control handles on the pedestal all the way back to the “SHUT” position. It’s now time for the final checklist.

PARKING BRAKE: On.

SEATBELT SWITCH: Off, so that your passengers may get up and try to squeeze into the aisle all at the same time...@

ANTI-COLLISION LIGHT: Off, when both propellers have stopped turning.

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EXTERNAL POWER: On.

EXTERNAL LIGHTS: Turn off the landing lights and taxi lights.

ICE PROTECTION: turn off all push-buttons on the overhead probe heat panel and window heater panel.

AIR CONDITIONING: Set both rotary switches to the "OFF" position and turn off all push-button on the overhead air conditioning panel.

FUEL PUMPS: turn off all four fuel pump push-button on the overhead fuel panel.

EFIS: Turn off the signal generators (SG) on the overhead Avionics panel.

EVACUATION SIGNAL SYSTEM: Not simulated.

EMERGENCY LIGHTS: turn the emergency lights rotary switch to the "OFF" position.

BATTERIES SWITCH: Off.

FUELING INFO: Not simulated.  
AIRCRAFT LOG: Not simulated.

FLIGHT DECK LIGHTS: Turn off the flight deck lights on the pedestal if you have these turned on.

GROUND HANDLING SWITCH: Not simulated.

CONGRADULATIONS! You have made it! You have now completed a full leg as flown by real pilots on the Fokker 50. I hope you have enjoyed this flight.

Best Regards,

Espen



# Fokker 50 Flight Deck Manual

## APPENDIX “B”

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<b>3</b>	<b>EXPANDED CHECKLIST</b>	<b>00.03.30</b>

11.	FLIGHT RECORDER N/A	SET
12.	COCKPIT VOICE RECORDER N/A	CHKD
13.	HEADING MODE SWITCHES N/A	SLAVED
14.	ENGINE FIRE PANEL Check L and R fire handle to be fully in/latched Check AGENT LOW lights to be out	CHKD
15.	BLEED AIR All bleed air buttons off	OFF
16.	AIR CONDITIONING Set air conditioning as req for cockpit/cabin	SET
17.	EMERGENCY LIGHTS Set EMER LIGHT selector to Arm Check NOT ARMED light to be out	ARMED
18.	PRESSURIZATIONS Set rate limit selector on mark Set landing ALT selector to destination elevation Set BAR selector to forecasted destination QNH Set manual rate control full decrease	SET
19.	EXTERNAL LIGHTS NAV light as required LOGO lights as required	SET
20.	SEAT BELT – NO SMOKING	ON/AUTO ON
21.	AVIONICS AND RADAR EFIS,VHF NAVS,RADAR,VHF COMS, ADFS TRANSPONDERS	SET & STBY ON STBY
22.	AREA NAV N/A	CHKD/SET
23.	TEST PANEL N/A	CHKD/SET
24.	TRIM TABS Check aileron and rudder trim to neutral and elevator trim in green band	SET

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#### CREW AT THE STATIONS

- |    |  |                                 |
|----|--|---------------------------------|
| 1. | CVR/QAR<br>N/A   | ON                              |
| 2. | OXYGEN MASK & SUPPLY<br>N/A  | CHKD                            |
| 3. | PARKING BRAKES<br>Parking Brake<br>Normal brake pressure   | ON & CHKD<br>ON<br>Min 1000 PSI |
| 4. | HYDRAULICS<br>Check minimum 70 % quantity<br>If quantity between 85 –70% make a log entry<br>Check electrical pump off   | CHKD                            |
| 5. | PFD AND ND<br>Check warning flags out of view<br>Check compass systems to be synchronized<br>Maximum difference between systems is 4 deg (HSI/RMI)   | CHKD                            |
| 6. | ALTIMETERS<br>Set altimeters to actual QNH<br>Check altimeters readings to correspond to elevation of actual aircraft position<br>Set altimeter but to 400 AGL or appropriate height/alt given under engine failure procedure in CLP/SID   | Hpa – Feet                      |
| 7. | CREW PAPERS & AIRCRAFT LOG<br>Check following documents on board:<br>weather reports, flight plan, notams<br>Check pilots have the required license, passport, visa, certificates of vaccination and route documentation on board<br>Check the aircraft log that no remaining remarks affects the subsequent flight, and that maintenace release is given and PFI departure check is performed as required | CHKD                            |
| 8. | PFI or SC<br>Pilot walk around   | PERFORMED                       |
| 9. | FUEL QUANTITY<br>Check fuel quantities as indicated on L and R fuel quantity displays and fuel quantity totalizer with the quantities in the fueling order and flight plan fuel  | CHKD                            |

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#### EXPANDED CHECKLIST

The expanded checklist goes into detail of the actions required for each checklist item. At the end of this appendix is the short version of the checklists.

##### \*PRE START\*

- |     |  |          |
|-----|--|----------|
| 1.  | EXTERNAL POWER<br>Check external power is on   | ON       |
| 2.  | BATTERIES SWITCH   | ON       |
| 3.  | GROUND HANDLING SWITCH<br>N/A  | ON       |
| 4.  | CIRCUIT BREAKERS<br>N/A  | CHKD     |
| 5.  | GEAR PINS & PITOT COVERS<br>Check that all the three landing gear pins and the four pitot covers are on board  | ON BOARD |
| 6.  | LOOSE OBJECTS & EQUIPMENT<br>Before first flight: check flight deck equipment according to "0" marked items on aircraft equipment checklist<br>Before every takeoff: Check flight deck for loose objects | CHKD     |
| 7.  | LANDING GEAR<br>Check landing gear selector down<br>Check 4 green lights on landing gear indicator   | CHKD     |
| 8.  | FRESH AIR SCOOPS<br>N/A  | SHUT     |
| 9.  | GPWS<br>Depress GPWS test button and check:<br>GS light on<br>Aural warning "Glide Slope"<br>GPWS light on<br>Aural warning "Whoop-Whoop, Pull Up"   | TEST     |
| 10. | EVAC SIGNAL SYSTEM<br>N/A  | ARMED    |

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<b>5</b>	<b>EXPANDED CHECKLIST</b>	<b>00.03.30</b>

**10. TAKEOFF DATA SET/CHKD**

Check takeoff weight to be within limits for actual runway conditions and decided config  
Set Takeoff weight on aircraft weight indicator  
Check speed for actual weight (nearest 0.5t) and config according to takeoff data speed booklet  
Set speed bug at V2  
Set Engine Rate Panel to TO (Takeoff)  
calculate torque setting for takeoff

**ALWAYS BEFORE PUSH BACK/TOW**

- |    |   |      |
|----|---|------|
| 1. | <b>CABIN REPORT</b><br>Cabin ready for push/tow | RCVD |
| 2. | <b>ANTI COLLISION LIGHT</b>                     | ON   |

**AFTER START**

- |    |  |                 |
|----|--|-----------------|
| 1. | <b>EXTERNAL POWER</b><br>Confirm ground power is disconnected  | REMOVED         |
| 2. | <b>START PUSH BUTTON</b>   | OFF             |
| 3. | <b>ICE PROTECTION</b><br>Anti-ice normal:<br>Window Heat<br>Probe Heat push buttons  | SET<br>LO<br>ON |
| 4. | <b>BLEED AIR</b><br>Both bleed air push buttons on   | ON              |
| 5. | <b>ALERT LIGHTS</b><br>Check all CAP lights out<br>Check all amber and applicable white local lights on overhead panel to be out           | OUTS            |
| 6. | <b>PROPELLER OVERSPEED</b><br>N/A  | TESTED          |
| 7. | <b>CLEAR SIGNAL AND LIGHTS</b><br>Acknowledge clear signal from ground crew by switching on taxi lights before parking brakes are released | RCVD & ON       |
| 8. | <b>FLAPS</b><br>Set flaps at 5 or 15, which ever has been used for calculated take off weight  | SET & CHKD      |

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**CLIMB**

- |    |  |                   |
|----|--|-------------------|
| 1. | <b>EXTERNAL LIGHTS</b><br>Taxi lights<br>Landing lights                          | SET<br>OFF<br>OFF |
| 2. | <b>SEATBELT SWITCH</b><br>Set as required  | SET               |
| 3. | <b>ALTIMETERS</b><br>Set altimeters to 1013 Hpa when passing transition altitude | 1013 Hpa          |

**DESCENT**

- |    |   |      |
|----|---|------|
| 1. | <b>AREA NAV</b><br>N/A  | SET  |
| 2. | <b>ICE PROTECTION</b><br>Set as required  | SET  |
| 3. | <b>FUEL QUANTITY</b><br>Check 30 nm fuel min. with remaining fuel   | CHKD |
| 4. | <b>LANDING WEIGHT &amp; DATA</b><br>Check landing weight to be within limits for actual runway and conditions<br>Check Vth for actual weight (nearest 0.5t) and config according to speed booklet<br>Set bugs to Vth for planned flap setting | CHKD |
| 5. | <b>LOOSE OBJECTS</b>  | CHKD |

**APPROACH**

- |    |  |      |
|----|--|------|
| 1. | <b>SEAT BELT &amp; NO SMOKING</b><br>Set seatbelt switch on On. This item shall normally be performed approx 10 mins before landing in order to give F/A's adequate time to finish sales, check cabin and secure their equip<br>Check No Smoking sign On | ON   |
| 2. | <b>PRESSURIZATION</b><br>Check that the cabin will depressurize before landing according to estimated remaining airborne time<br>Check field elevation QNH corresponding to actual landing field   | CHKD |

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<b>8</b>	<b>INTRODUCTION FLIGHT</b>	<b>00.03.30</b>

- |   |   |             |
|---|---|-------------|
| 3.  | GROUND IDLE STOP<br>N/A   | OFF         |
| -- CHECKLIST COMPLETED TO TRANSITION LEVEL -- |   |             |
| 4.  | ALTIMETERS<br>Set altimeter to QNH  | Hpa – feet  |
| 5.  | NAV AIDS<br>Check that the ADFs and VHF NAVs are tuned correctly to proper stations for the landing runway/airport<br>Check that the readings correspond to your expected position in the approach to the runway<br>Select appropriate VOR/ADF settings on RMI<br>Set radio altimeter to 0 or CAT II DH | SET & CHKD  |
| -- CHECKLIST COMPLETED TO LANDING GEAR --     |   |             |
| 6.  | LANDING GEAR<br>Check 4 green lights on<br>Check ASEL set to go-around altitude   | DOWN/LOCKED |
| 7.  | ENGINE RATING PANEL   | GA          |
| 8.  | CABIN   | WARNED      |

#### AFTER LANDING

- |    |   |            |
|----|---|------------|
| 1. | ENGINE RATING PANEL   | TO         |
| 2. | FLIGHT CONTROLS   | LOCKED     |
| 3. | TRANSPONDER & RADAR<br>Set transponder to standby<br>Set Radar to off | STBY/OFF   |
| 4. | AREA NAV<br>N/A   | OFF        |
| 5. | FLAPS<br>Check Flaps up   | UP         |
| 6. | EXTERNAL LIGHTS<br>Strobe lights                                      | SET<br>OFF |
| 7. | ENGINE ANTI-ICE   | OFF        |

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<b>6</b>	<b>EXPANDED CHECKLIST</b>	<b>00.03.30</b>

- |   |  |            |
|---|--|------------|
| 9.  | CABIN REPORT<br>Number of passengers, everything OK  | RCVD       |
| TAXI  |  |            |
| 1.  | FLIGHT INSTRUMENTS<br>Check heading<br>Check no warning flags, PFD, ND and stby ADI<br>Check altimeter within limits<br>Check VSI is approx 0  | CHKD       |
| 2.  | NAV AIDS and ASEL<br>Check that ADFs and VHF NAVs are set to proper stations according to ATS clearance<br>Set course selectors to ILS course or to VOR radials to be flown<br>Set ASEL to cleared Altitude/Flight Level<br>Select appropriate VOR/ADF settings on RMI | SET & CHKD |
| 3.  | FMP and FMA<br>Set AP command L or R<br>Check roll bar centered and pitch bar approx 8 degrees nose up<br>Select HDG and ASEL on FMP<br>Check HDG green and ASEL white displayed on PFD  | SET & CHKD |
| -----CHECKLIST COMPLETED TO CABIN WARNING ----- |  |            |
| 4.  | CABIN  | WARNED     |
| 5.  | TRANSPONDER<br>Set and check assigned code and select ALT on   | SET & CHKD |
| 6.  | TAKEOFF CONFIG WARNING<br>N/A  | CHKD       |
| 7.  | EXTERNAL LIGHTS<br>Strobe lights   | SET<br>ON  |
| 8.  | FLIGHT CONTROLS<br>Unlock flight controls<br>Check rudder, ailerons and elevators full travel<br>Hold controls to prevent movements due wind   | CHKD       |
| 9.  | GROUND IDLE STOP<br>N/A  | ON         |

<b><i>F-50</i></b>	<b>Flight Deck Manual</b>	<b>Appendix B</b>
<b>9</b>	<b>EXPANDED CHECKLIST</b>	<b>00.03.30</b>

#### **PARKING**

- |     |  |  |
|-----|--|--|
| 1.  | <b>PARKING BRAKE</b>   | <b>ON</b>  |
| 2.  | <b>SEATBELT</b>  | <b>OFF</b>   |
| 3.  | <b>ANTI COLLISION LIGHT</b><br>Anti Collision button off when both<br>propellers have stopped            | <b>OFF</b>   |
| 4.  | <b>EXTERNAL POWER</b><br>Check Avail light and Ext Pwr button on   | <b>ON</b>  |
| 5.  | <b>EXTERNAL LIGHTS</b><br>Landing and Taxi lights  | <b>SET</b><br><b>OFF</b>                             |
| 6.  | <b>ICE PROTECTION</b><br>Window Heat selector<br>Probe Heat button<br>Airframe de-icing                  | <b>OFF</b><br><b>OFF</b><br><b>OFF</b><br><b>OFF</b> |
| 7.  | <b>AIR CONDITIONING</b><br>As required   | <b>SET</b>   |
| 8.  | <b>FUEL PUMPS</b><br>Select fuel pumps buttons to off  | <b>OFF</b>   |
| 9.  | <b>EFIS</b>  | <b>OFF</b>   |
| 10. | <b>EVAC SIGNAL SYSTEM</b><br>N/A   | <b>OFF</b>   |
| 11. | <b>EMERGENCY LIGHTS</b><br>Select emergency light off when aircraft is<br>disembarked                    | <b>OFF</b>   |
| 12. | <b>BATTERIES SWITCH</b>  | <b>OFF</b>   |
| 13. | <b>FUELING INFO</b><br>Make note of remaining fuel   | <b>AS REQ</b>  |
| 14. | <b>AIRCRAFT LOG</b><br>Perform PFC after arrival as required<br>Enter applicable remarks in aircraft log | <b>SIGNED</b>  |
| 15. | <b>FLIGHT DECK LIGHTS</b>  | <b>OFF</b>   |
| 16. | <b>GROUND HANDLING SWITCH</b><br>N/A   | <b>OFF</b>   |

<b><i>F-50</i></b>	<b>Flight Deck Manual</b>	<b>Appendix B</b>
<b>10</b>	<b>EXPANDED CHECKLIST</b>	<b>00.03.30</b>

INTENTIONALLY LEFT BLANK

# CHECKLISTS

\*\* Item does not need to be performed at intermediate stops as long as one pilot remains on flight deck.

## PRESTART

EXTERNAL POWER	ON
BATTERIES SWITCH	ON
GND HANDLING SWITCH	ON
CIRUCIT BREAKERS	ON
GEAR PINS/PITOT CVRS**	ON DECK
LOOSE OBJECTS/EQUIP	CHKD
LANDING GEAR**	CHKD
FRESH AIR SCOOPS**	SHUT
GPWS**	TEST
EVAC SIGNAL SYSTEM**	ARMED
FLIGHT RECORDER	SET
COCKPIT VOICE REC**	CHKD
HEADING MODE SWITCH**	SLAVED
ENGINE FIRE PANELS	CHKD
BLEED AIR	OFF
AIR CONDITIONING	SET
EMERGENCY LIGHTS**	ARMED
PRESSURIZATION	SET
EXTERNAL LIGHTS	SET
SEAT BELT/NO SMOKING	ON/AUTO
AVIONICS & RADAR	SET/STBY
AREA NAV	SET
TEST PANEL**	CHKD
TRIM TABS	SET

## CREW AT STATION

CVR/QAR	ON
QXYGEN MASK/SUPPLY**	CHKD
PARKING BRAKE	ON/CHKD
HYDRAULICS	CHKD
PFD & ND	CHKD
ALTIMETERS	Hpa – Ft
CREW PAPERS/LOG	CHKD
PFI or SC	PERFORM
FUEL QUANTITY	CHKD
TAKEOFF DATA	CHKD

## BEFORE PUSH BACK

CABIN REPORT	RCVD
ANTI COLLISION LIGHTS	ON

## AFTER START

EXTERNAL POWER	REMOVED
START PUSH BUTTON	OFF
ICE PROTECTION	SET
BLEED AIR	ON
ALERT LIGHTS	OUT
PROPELLER OVERSPD	TESTED
CLEAR SIGNAL/LIGHTS	RCVD/ON
FLAPS	SET
CABIN REPORT	RCVD

## TAXI

FLIGHT INSTRUMENTS	CHKD
NAV AIDS & ASEL	SET
FMP and FMA	SET

---COMPLETED TO CABIN WARN---

CABIN	WARNED
TRANSPONDER	SET
TAKEOFF CONFIG WARN	CHKD
EXTERNAL LIGHTS	SET
FLIGHT CONTROLS	CHKD
GROUND IDLE STOP	ON

## CLIMB

EXTERNAL LIGHTS	SET
SEATBELT SWITCH	SET
ALTIMETERS	1013 Hpa

## DESCENT

AREA NAV	SET
ICE PROTECTION	SET
FUEL QUANTITY	CHKD
LANDING WEIGHT/DATA	CHKD
LOOSE OBJECTS	CHKD

## APPROACH

SEATBELT/NO SMOKING	ON
PRESSURIZATION	CHKD
GND IDLE STOP	OFF

---COMPLETED TO TRANSITION LVL---

ALTIMETERS	Hpa – Ft
NAV AIDS	SET

---COMPLETED TO LANDING GEAR---

LANDING GEAR	DOWN
ENGINE RATING PANEL	GA
CABIN	WARNED

## AFTER LANDING

ENGINE RATING PANEL	TO
FLIGHT CONTROLS	LOCKED
TRANSPONDER/RADAR	STBY/OFF
AREA NAV	OFF
FLAPS	UP
EXTERNAL LIGHTS	SET
ENGINE ANTI-ICE	OFF

## PARKING

PARKING BRAKES	ON
SEATBELT SWITCH	OFF
ANTI COLLISION LIGHT	OFF
EXTERNAL POWER	ON
EXTERNAL LIGHTS	OFF
ICE PROTECTION	OFF
AIR CONDITIONING	SET
FUEL PUMPS	OFF
EFIS**	OFF
EVAC SIGNAL SYSTEM**	OFF
EMERGENCY LIGHTS**	OFF
BATTERIES SWITCH**	OFF
FUELING INFO	AS REQ
AIRCRAFT LOG	SIGNED
FLIGHT DECK LIGHTS**	OFF
GND HANDING SWITCH**	OFF

## ENGINE START PROCEDURE

PRESS MASTER START BUTTON

PRESS IGNITION BUTTON FOR  
ENGINE YOU WISH TO START

TURN ROTATING START  
SELECTOR SWITCH TO THE  
ENGINE YOU WISH TO START

AT 20% Nh (PNF WILL CALLOUT)  
MOVE FUEL CONTROLLER FOR  
ENGINE TO “START” POSITION

**\*\*ENGINE WILL NOW LIGHT UP\*\***

AT 66% Nh (PNF WILL CALLOUT)  
MOVE FUEL CONTROLLER FOR  
ENGINE TO “OPEN” POSITION

**\*\*REPEAT ABOVE TO START THE  
OTHER ENGINE\*\***

WHEN BOTH ENGINES RUNNING  
AND STABLE SHUT DOWN THE  
START SYSTEM BY PRESSING  
THE MASTER START BUTTON  
OFF



# Fokker 50 Flight Deck Manual

## APPENDIX “C”

<b><i>F-50</i></b>	<b>Flight Deck Manual</b>	<b>Appendix C</b>
<b>3</b>	<b>FLIGHT PLANNING</b>	<b>00.08.30</b>

### MAXIMUM FLAP EXTEND SPEED (Vfe)

Flap Position	5	180 Kts
	10	180 Kts
	15	180 Kts
	20	160 Kts
	25	160 Kts
	30	140 Kts

### MAXIMUM LANDING GEAR EXTENDED AND OPERATING SPEED (Vle/Vlo)

170 Kts

### MAXIMUM WINDSHIELD WIPER SPEED

160 Kts

### TAKEOFF WEIGHT

The following chart shows takeoff weight based on passenger load and fuel load.

Zero Fuel Weight (Dry) 13 400 Kgs

Maximum Fuel Load 4 160 Kgs

Passenger Load 3 260 Kgs

Maximum Takeoff Weight (MTOW) 20 820 Kgs

		PASSENGER LOAD					
		0	10	20	30	40	50
FUEL LOAD KGS	416	13.8	14.5	15.1	15.8	16.4	17.1
	832	14.2	14.9	15.5	16.2	16.8	17.5
	1248	14.6	15.3	16.0	16.6	17.3	17.9
	1664	15.1	15.7	16.4	17.0	17.7	18.3
	2080	15.5	16.1	16.8	17.4	18.1	18.7
	2496	15.9	16.5	17.2	17.9	18.5	19.2
	2912	16.3	17.0	17.6	18.3	18.9	19.6
	3328	16.7	17.4	18.0	18.7	19.3	20.0
	3744	17.1	17.8	18.4	19.1	19.8	20.4
	4160	17.6	18.2	18.9	19.5	20.2	20.8

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<b>4</b>	<b>FLIGHT PLANNING</b>	<b>00.08.30</b>

## TORQUE SETTINGS

PRESS ALT (ft)	TORQUE(%)											
	OAT (deg. C)	-14	-12	-10	-8	-6	-4	-2	0	2	4	6
		79.5	79.9	80.2	80.6	81.0	81.3	81.7	82.0	82.4	82.8	83.1
		79.8	80.2	80.6	81.0	81.3	81.7	82.0	82.4	82.8	83.1	83.5
		80.2	80.6	81.0	81.3	81.7	82.1	82.4	82.8	83.1	83.5	83.8
		80.6	80.9	81.3	81.7	82.1	82.4	82.8	83.1	83.5	83.8	84.2
		80.9	81.3	81.7	82.1	82.4	82.8	83.1	83.5	83.9	84.2	84.6
		81.3	81.7	82.1	82.4	82.8	83.1	83.5	83.9	84.2	84.6	84.9
		81.7	82.1	82.4	82.8	83.1	83.5	83.9	84.2	84.6	84.9	85.3
		82.1	82.5	82.8	83.1	83.5	83.9	84.2	84.6	85.0	85.3	85.6
		82.4	82.8	83.2	83.5	83.9	84.2	84.6	85.0	85.3	85.6	86.0
		82.8	83.1	83.5	83.9	84.3	84.6	85.0	85.3	85.7	86.0	86.3
		83.2	83.5	83.9	84.3	84.6	85.0	85.3	85.7	86.0	86.4	86.7
		83.5	83.9	84.3	84.6	85.0	85.3	85.7	86.0	86.4	86.7	87.1
		83.9	84.3	84.6	85.0	85.3	85.7	86.1	86.4	86.8	87.1	87.4
		84.3	84.6	85.0	85.3	85.7	86.1	86.4	86.8	87.1	87.5	87.8
		84.6	85.0	85.4	85.7	86.1	86.4	86.8	87.1	87.5	87.9	88.2
		85.0	85.4	85.7	86.1	86.4	86.8	87.2	87.5	87.9	88.2	88.5
		85.4	85.7	86.1	86.4	86.8	87.2	87.5	87.9	88.2	88.5	88.9
		85.7	86.1	86.4	86.8	87.2	87.5	87.9	88.2	88.5	88.9	89.3
		86.1	86.4	86.8	87.2	87.5	87.9	88.2	88.5	88.9	89.3	89.6
		86.4	86.8	87.2	87.5	87.9	88.2	88.5	88.9	89.3	89.6	90.0
		86.7	87.1	87.4	87.8	88.1	88.5	88.9	89.3	89.6	90.0	90.2

IAS : Approx. 60kts

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<b>2</b>	<b>FLIGHT PLANNING</b>	<b>00.08.30</b>

Welcome to the FLIGHT PLANNING section. In the section you will find the various charts you will need to prepare the required data for a safe and efficient flight.

## AIRCRAFT PERFORMANCE CRITERIA

### MINIMUM CONTROL SPEEDS (VMC)

Minimum control speed ground (Vmcg)	80 Kts
Minimum control speed airborne (Vmca)	87 Kts

### TWO ENGINE CLIMB

Normal climb speed	160 Kts
Speed for best rate-of-climb	140 Kts
Speed for best climb gradient	Vclean

### ONE ENGINE CLIMB

Speed for best climb gradient and approx speed for best rate-of-climb	Vclean
---	--------

### MAXIMUM OPERATING SPEED (Vmo)

Up to 21 000 Ft	224 Kts
22 000 Ft	219 Kts
23 000 Ft	215 Kts
24 000 Ft	210 Kts
25 000 Ft	206 Kts

RECOMMENED ROUGH AIR SPEED (Vra)	165 Kts
Caution: Flaps shall be retracted in rough air	

MAXIMUM DESIGN MANOEUVERING SPEED (Va)	175 Kts
Full application of rudder and aileron controls as well as maneuvers that involve angle of attack near stall, should be confined to speed below Va.	

ONE ENGINE DRIFT DOWN SPEED	Vclean
-----------------------------	--------

MAXIMUM SPEED WITH HEAT INOPERATIVE	180 Kts
-------------------------------------	---------

MAXIMUM DESCENT SPEED	215 Kts
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<b>7</b>	<b>FLIGHT PLANNING</b>	<b>00.08.30</b>

holding speeds to be used for holding in race track patterns.											
Vhold											
Vhold	160	159	157	155	153	151	149	147	145	143	141
SPEED	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0
FLAP	0	0	0	0	0	0	0	0	0	0	0
Relation to V <sub>s</sub>	0 Appr. 1.6										
TIME	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0
(1) THG IAW SSORG sv (KT) SVI											

holding speeds

#### Engine & propeller operating limits

Condition	Time	Torque (%)	ITT (deg C)	RPM %		
				NH	NL	NP *
MAX TO/GA	10 min	102	800	102	103	100
NORMAL TO	10 min	92	graph	102	103	100
MAX CONT	unl	87.5	800	102	103	100
MAX CLIMB	unl	100	800	102	103	85
MIN GND IDLE	-	-	-	66	-	-
STARTING	5 sec	-	950	-	-	-
	20 sec	-	840	-	-	-
TRANSIENT	15 sec	-	-	-	-	115
	20 sec	115	840	-	-	-

\* Note: Fluctuations of +/- 0.5% is allowed relative to 85% and 100%

For operation with PROP EC fault (Overspeed governor)

MAX TO/GA	10 min	96	800	102	103	106
MAX CONT	unl	82.5	800	102	103	106

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<b>5</b>	<b>FLIGHT PLANNING</b>	<b>00.08.30</b>

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# APPROACH, LANDING AND GO-AROUND SPEEDS FOR NORMAL FLAP SETTINGS

SPEED	FLAP	RELATION TO V <sub>s</sub>	IAS (KT) vs LANDING WEIGHT (T)												
			15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	20.8
V <sub>p</sub> clean	0	1.5	126	128	130	132	134	136	138	140	142	144	146	148	149
V <sub>p</sub> 10	10	1.5	114	116	118	120	122	124	125	127	129	131	132	134	135
V <sub>p</sub> 25	25	1.5	103	105	107	109	110	112	113	115	116	118	119	121	122
V <sub>a</sub> 10	10	1.3+5 kt	104	106	107	109	111	112	114	115	117	118	120	121	122
V <sub>a</sub> 25	25	1.3+5 kt	96	98	99	100	102	103	104	106	107	108	110	111	112
V <sub>a</sub> 35	35	1.3+5 kt	95	96	95	97	98	99	100	102	103	104	105	106	107
V <sub>th</sub> 25	25	1.3	91	93	94	95	97	98	99	101	102	103	105	106	107
V <sub>th</sub> 35	35	1.3	90	90	90	92	93	94	95	97	98	99	100	101	102
V <sub>2</sub> 10	10	1.2	95	96	95	96	97	98	100	101	103	104	105	106	107
V <sub>fl</sub> up	0	1.2	101	102	104	106	107	109	110	112	113	115	116	117	118
V <sub>clean</sub>	0	1.25	105	107	108	110	112	113	115	117	118	120	121	123	124

V <sub>p</sub>	pattern speeds are used for procedure turns, circuits or in general as a maneuvering speed.
V <sub>a</sub>	approach speeds are used on final approach.
V <sub>th</sub>	threshold speed is the target speed over the runway threshold and is also the minimum speed for final approach.
V <sub>s</sub>	stall speed.
V <sub>fl</sub> up	minimum speed for selecting flaps up
V <sub>clean</sub>	min. climb out speed in clean configuration

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# APPROACH AND LANDING SPEEDS FOR ABNORMAL FLAP SETTINGS.

SPEED	FLAP	RELATION TO V <sub>s</sub>	IAS (KT) vs TAKEOFF WEIGHT (T)												
			15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	20.8
V <sub>p</sub> clean	0	1.5	126	128	130	132	134	136	138	140	142	144	146	148	149
V <sub>a</sub> 0	0	1.3 + 5 kt	114	116	118	120	121	123	125	126	128	130	131	133	134
V <sub>th</sub> 0	0	1.3	109	111	113	115	116	118	120	121	123	125	126	128	129
V <sub>p</sub> 5	5	1.5	117	119	121	123	125	127	129	130	132	134	135	137	138
V <sub>a</sub> 5	5	1.3 + 5 kt	107	108	110	112	113	115	117	118	120	121	122	124	125
V <sub>th</sub> 5	5	1.3	102	103	105	107	108	110	112	113	115	116	117	119	120
V <sub>p</sub> 10	10	1.5	114	116	118	120	122	124	125	127	129	131	132	134	135
V <sub>a</sub> 10	10	1.3 + 5 kt	104	106	107	109	111	112	114	115	117	118	120	121	122
V <sub>th</sub> 10	10	1.3	99	101	102	104	106	107	109	110	112	113	115	116	117
V <sub>p</sub> 15	15	1.5	111	113	114	116	118	120	121	123	125	126	128	129	131
V <sub>a</sub> 15	15	1.3 + 5 kt	101	102	104	106	107	109	110	112	113	114	116	117	118
V <sub>th</sub> 15	15	1.3	96	97	99	101	102	104	105	107	108	109	111	112	113

V <sub>p</sub>	pattern speeds are used for procedure turns, circuits or in general as a maneuvering speed.
V <sub>a</sub>	approach speeds are used on final approach.
V <sub>th</sub>	threshold speed is the target speed over the runway threshold and is also the minimum speed for final approach.
V <sub>s</sub>	stall speed.

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Target Torque - CRZ FL150

IAS (KTS)	TAT (C)	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20
140	QTQT							80.7	78.5	75.8	73.1	69.8	66.3	62.8	59.5	56.4
145	QTQT							81.2	78.9	76.3	73.6	70.3	66.8	63.6	59.9	56.7
150	QTQT							81.7	79.4	76.8	74.1	70.7	67.2	63.7	60.3	57.1
155	QTQT							82.3	79.9	77.3	74.6	71.2	67.7	64.2	60.8	57.5
160	QTQT							80.5	77.9	75.1	71.7	68.2	64.7	61.3	58.0	
165	QTQT							81.1	78.4	75.7	72.2	68.7	65.2	61.8	58.5	
170	QTQT							81.7	79.0	76.3	72.9	69.2	65.8	62.3	59.0	
175	QTQT							82.3	79.6	76.9	73.4	69.8	66.3	62.9	59.5	
180	QTQT							80.2	77.6	74.0	70.4	66.9	63.4	60.0		
185	QTQT							80.9	78.1	74.7	71.0	67.4	64.0	60.4		
190	QTQT							81.6	78.8	75.3	71.6	68.1	64.6	61.2		
195	QTQT							82.3	79.5	76.0	72.3	68.7	65.2	61.8		
200	QTQT							80.2	76.7	72.8	69.3	65.9	62.4			
205	QTQT							81.0	77.4	73.7	70.0	66.6	63.1			
210	QTQT							81.9	78.2	74.5	70.7	67.3	63.8			
215	QTQT									79.1	75.3	71.6	68.0	64.6		
220	QTQT									79.9	76.1	72.4	68.8	65.6		
225	QTQT									80.8	76.9	73.2	69.6	66.1		

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Target Torque - CRZ FL170

IAS (KTS)	TAT (C)	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20
140	QTQT				80.6	78.4	76.3	74.2	72.1	69.6	67.1	63.8	60.6	57.4	54.3	51.3
145	QTQT				81.1	78.9	76.8	74.7	72.5	70.0	67.6	64.2	61.0	57.8	54.8	51.7
150	QTQT				81.7	79.4	77.4	75.2	73.1	70.6	68.1	64.7	61.5	58.3	55.2	52.1
155	QTQT				82.2	80.0	77.9	75.8	73.6	71.1	68.6	65.3	62.0	58.8	55.7	52.7
160	QTQT				80.7	78.5	76.3	74.2	71.7	69.2	65.8	62.5	59.4	56.2	53.1	
165	QTQT				81.3	79.1	76.9	74.8	72.2	69.7	66.3	63.1	59.9	56.7	53.6	
170	QTQT				82.9	79.8	77.6	75.5	72.8	70.4	67.0	63.6	60.4	57.3	54.1	
175	QTQT						80.4	78.2	76.0	73.5	71.0	67.6	64.2	61.0	57.9	54.6
180	QTQT						81.1	78.9	76.7	74.1	71.6	68.2	64.8	61.6	58.4	55.2
185	QTQT						81.8	79.6	77.4	74.8	72.3	68.8	65.5	62.2	59.0	55.8
190	QTQT							80.3	78.1	75.5	72.9	69.5	66.1	62.8	59.7	56.4
195	QTQT							81.0	78.9	76.2	73.7	70.3	66.8	63.5	60.3	57.1
200	QTQT							81.9	79.7	77.0	74.4	71.0	67.5	64.2	61.0	57.8
205	QTQT							80.5	77.8	75.3	71.8	68.3	64.9	61.7	58.5	
210	QTQT							81.3	78.7	76.1	72.6	69.1	65.8	62.5	59.2	
215	QTQT							82.2	79.6	76.9	73.5	69.9	66.5	63.2	60.0	
220	QTQT								80.4	77.9	74.3	70.7	67.3	64.0	60.7	
225	QTQT								81.4	78.8	75.2	71.6	68.2	64.9	61.5	

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Target Torque - CRZ FL180

IAS (KTS)	TAT (C)	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20
140	QTQT		81.7	79.5	77.3	75.2	73.2	71.1	69.1	66.6	64.2	61.0	57.9	54.8	51.9	49.0
145	QTQT		82.3	80.0	77.8	75.7	73.7	71.6	69.9	67.1	64.7	61.5	58.4	55.3	52.4	49.4
150	QTQT			80.5	78.4	76.3	74.3	72.2	70.1	67.7	65.2	62.0	58.9	55.8	52.8	49.8
155	QTQT			81.1	79.0	76.8	74.8	72.7	70.7	68.2	65.8	62.5	59.4	56.3	53.3	50.3
160	QTQT			81.8	79.6	77.5	75.4	73.3	71.2	68.7	66.4	63.1	59.9	56.9	53.8	50.4
165	QTQT				80.2	78.1	76.0	73.9	71.9	69.3	67.0	63.6	60.5	57.4	54.4	51.3
170	QTQT				80.8	78.7	76.7	74.5	72.4	70.0	67.6	64.3	61.0	58.0	54.9	51.9
175	QTQT				81.6	79.4	77.4	75.2	73.2	70.6	68.2	64.8	61.6	58.6	55.5	52.4
180	QTQT				82.3	80.1	78.0	75.8	73.8	71.3	68.8	65.5	62.3	59.2	56.1	53.0
185	QTQT					80.9	78.7	76.6	74.5	71.9	69.5	66.2	62.9	59.8	56.7	53.6
190	QTQT					81.5	79.5	77.3	75.2	72.7	70.2	66.9	63.6	60.4	57.4	54.2
195	QTQT					82.4	80.3	78.1	76.0	73.4	71.0	67.6	64.3	61.1	58.1	55.0
200	QTQT						81.1	78.9	76.6	74.2	71.8	68.3	65.1	61.8	58.8	55.6
205	QTQT						82.0	79.8	77.6	75.1	72.4	69.1	65.8	62.6	59.5	56.4
210	QTQT							80.6	79.4	76.8	74.3	70.8	67.4	64.2	61.0	57.8
215	QTQT							81.5	79.4	76.8	74.3	70.8	67.4	64.2	61.0	57.8
220	QTQT								80.3	77.7	75.2	71.7	68.3	65.0	61.6	58.6
225	QTQT								81.2	78.7	76.1	72.6	69.2	65.9	62.7	59.4

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Target Torque - CRZ FL160

IAS (KTS)	TAT (C)	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20
140	QTQT					81.8	79.9	77.4	75.3	72.4	70.1	66.8	63.4	60.0	56.9	53.6
145	QTQT					82.3	80.1	77.9	75.6	73.1	70.6	67.2	63.8	60.5	57.3	54.2
150	QTQT						80.6	78.4	76.2	73.4	71.0	67.7	64.3	61.0	57.7	54.6
155	QTQT						81.2	79.0	76.7	74.2	71.5	68.2	64.8	61.5	58.2	55.0
160	QTQT						81.7	79.5	77.3	74.7	72.1	68.7	65.3	62.0	58.7	55.5
165	QTQT						82.3	80.1	77.9	75.2	72.7	69.2	65.8	62.5	59.2	56.0
170	QTQT							80.7	78.5	75.8	73.3	69.9	66.4	63.0	59.7	56.5
175	QTQT							81.3	79.1	76.5	73.9	70.4	66.9	63.6	60.3	57.0
180	QTQT							82.0	79.7	77.1	74.5	71.0	67.5	64.2	60.9	57.6
185	QTQT								80.4	77.8	75.1	71.7	68.1	64.8	61.5	58.1
190	QTQT								81.1	78.5	75.4	72.4	68.7	65.4	62.1	58.7
195	QTQT								81.8	79.2	76.5	73.1	69.4	66.0	62.7	59.3
200	QTQT									79.8	77.3	73.8	70.2	66.7	63.4	60.1
205	QTQT									80.7	78.1	74.5	70.9	67.4	64.1	60.8
210	QTQT									81.7	78.9	75.3	71.7	68.2	64.8	61.5
215	QTQT										79.7	76.2	72.4	69.0	65.6	62.2
220	QTQT										80.6	77.0	73.3	69.8	66.3	63.0
225	QTQT										81.6	77.9	74.2	70.4	67.1	63.8

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Target Torque - CRZ FL190

IAS (KTS)	TAT (C)	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20
140	QTQT	80.6	78.3	76.2	74.2	72.1	70.2	68.2	66.1	63.8	61.4	58.3	55.4	52.4	49.7	46.8
145	QTQT	81.2	79.0	76.7	74.7	72.6	70.7	68.7	66.7	64.3	61.9	58.8	55.9	52.9	50.1	47.2
150	QTQT	81.7	79.5	77.3	75.2	73.2	71.3	69.3	67.2	64.9	62.5	59.3	56.4	53.5	50.6	47.7
155	QTQT	82.4	80.1	77.9	75.8	73.8	71.8	69.8	67.8	65.5	63.0	59.9	56.8	54.0	51.1	48.2
160	QTQT		80.7	78.6	76.4	74.4	72.4	70.4	68.4	66.0	63.6	60.4	57.4	54.5	51.6	48.7
165	QTQT		81.4	79.2	77.1	75.0	73.0	71.0	69.0	66.6	64.2	61.0	58.0	55.1	52.1	49.2
170	QTQT		82.1	79.9	77.7	75.7	73.7	71.6	69.6	67.2	64.9	61.6	58.6	55.6	52.8	49.7
175	QTQT			80.6	78.5	76.4	74.4	72.3	70.3	67.9	65.5	62.3	59.2	56.2	53.3	50.3
180	QTQT			81.3	79.2	77.1	75.1	73.0	70.9	68.6	66.1	62.9	59.8	56.8	53.9	50.9
185	QTQT			82.0	79.9	77.8	75.8	73.7	71.6	69.2	66.8	63.6	60.4	57.5	54.6	51.5
190	QTQT				80.7	78.6	76.6	74.5	72.5	70.0	67.6	64.3	61.2	58.1	55.2	52.2
195	QTQT				81.5	79.4	77.4	75.3	73.2	70.7	68.3	65.1	61.9	58.8	55.9	52.9
200	QTQT				82.3	80.2	78.2	76.1	74.0	71.5	69.1	65.8	62.7	59.5	56.6	53.6
205	QTQT					81.1	79.1	77.0	74.8	72.4	69.9	66.6	63.5	60.3	57.3	54.3
210	QTQT					81.9	79.9	77.8	75.8	73.2	70.8	67.4	64.2	61.1	58.1	55.1
215	QTQT						80.9	78.7	76.7	74.1	71.7	68.3	65.1	61.9	58.9	55.8
220	QTQT						81.8	79.7	77.6	75.1	72.6	69.3	65.0	62.8	60.6	57.4
225	QTQT							80.6	78.5	76.0	73.5	70.2	66.8	63.8	60.6	57.4

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Target Torque - CRZ FL210

IAS (KTS)	TAT (C)	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20
140	QTQT	74.1	72.1	70.1	68.2	66.3	64.5	62.6	60.7	58.5	56.1	53.3	50.6	47.9	45.4	42.7
145	QTQT	74.7	72.7	70.6	68.7	66.8	65.0	63.2	61.2	59.1	56.7	53.8	51.1	48.4	45.8	43.1
150	QTQT	75.3	73.2	71.2	69.3	67.5	65.6	63.7	61.8	59.6	57.2	54.4	51.7	49.0	46.3	43.6
155	QTQT	75.9	73.8	71.9	69.9	68.0	66.2	64.3	62.3	60.2	57.8	54.9	52.5	49.5	46.8	44.1
160	QTQT	76.6	74.5	72.5	70.5	68.8	66.8	64.9	63.0	60.7	58.4	55.4	52.7	50.5	47.4	44.6
165	QTQT	77.2	75.1	73.1	71.1	69.3	67.5	65.5	63.5	61.4	59.0	56.1	53.3	50.6	47.9	45.2
170	QTQT	77.9	75.8	73.8	71.9	69.9	68.1	66.2	64.2	62.0	59.7	56.7	53.9	51.2	48.5	45.7
175	QTQT	78.7	76.5	74.5	72.5	70.6	68.8	66.9	64.9	62.7	60.3	57.3	54.5	51.8	49.1	46.3
180	QTQT	79.4	77.3	75.2	73.3	71.4	69.5	67.9	65.6	63.6	61.0	58.0	55.2	52.4	49.8	46.9
185	QTQT	80.2	78.1	76.0	74.0	72.1	70.2	68.3	66.4	64.1	61.7	58.8	55.9	53.1	50.4	47.5
190	QTQT	81.1	78.9	76.8	74.8	72.9	71.1	69.1	67.1	64.8	62.4	59.4	56.6	53.8	51.1	48.3
195	QTQT	81.9	79.8	77.7	75.6	73.7	71.8	69.9	67.9	65.7	63.2	60.2	57.3	54.4	51.8	48.9
200	QTQT		80.6	78.5	76.5	74.6	72.6	70.7	68.7	66.4	64.0	61.0	58.8	56.0	53.2	50.4
205	QTQT		81.6	79.4	77.4	75.4	73.5	71.5	69.6	67.3	64.8	61.8	58.8	56.0	53.2	50.4
210	QTQT			80.4	78.3	76.3	74.4	72.4	70.4	68.1	65.7	62.6	59.7	56.8	53.9	51.1
215	QTQT			81.3	79.3	77.3	75.3	73.4	71.3	69.0	66.6	63.5	60.5	57.6	54.8	51.9
220	QTQT			82.3	80.2	78.2	76.3	74.3	72.2	69.9	67.5	64.4	61.4	58.4	55.6	52.7
225	QTQT				81.2	79.2	77.2	75.2	73.1	70.8	68.4	65.3	62.2	59.3	56.5	53.5

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IAS (KTS)	TAT (C)	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20
140	QTQT	71.0	69.1	67.2	65.4	63.6	61.0	60.0	58.1	56.1	53.7	51.0	48.4	45.8	43.4	40.7
145	QTQT	71.6	69.7	67.7	65.9	64.1	62.4	60.6	58.6	56.6	54.2	51.5	48.9	46.3	43.6	41.2
150	QTQT	72.2	70.2	68.3	66.5	64.7	62.9	61.1	59.2	57.2	54.8	52.0	49.4	46.8	44.3	41.7
155	QTQT	72.6	70.9	69.0	67.1	65.3	63.5	61.7	59.8	57.7	55.3	52.6	49.9	47.4	44.8	42.2
160	QTQT	73.5	71.5	69.6	67.7	65.9	64.2	62.3	60.4	58.3	55.9	53.1	50.5	47.9	45.4	42.7
165	QTQT	74.2	72.2	70.2	68.4	66.5	64.8	62.9	61.0	58.9	56.5	53.8	51.1	48.5	45.9	43.2
170	QTQT	74.9	72.9	70.9	69.0	67.2	65.4	63.6	61.6	59.5	57.2	54.4	51.7	49.1	46.5	43.8
175	QTQT	75.6	73.5	71.6	69.7	67.9	66.1	64.3	62.3	60.2	57.6	55.0	52.3	49.7	47.1	44.4
180	QTQT	76.4	74.4	72.4	70.5	68.7	66.8	65.0	63.0	60.9	58.5	55.7	53.0	50.3	47.8	45.0
185	QTQT	77.2	75.1	73.2	71.2	69.4	67.6	65.7	63.4	61.6	59.3	56.4	53.6	51.0	48.4	45.7
190	QTQT	78.0	74.0	74.0	72.0	70.2	68.4	66.5	64.5	62.4	60.0	57.1	54.3	51.6	49.1	46.3
195	QTQT	78.9	76.8	74.8	72.8	71.0	69.2	67.3	65.3	63.2	60.7	57.8	55.1	52.3	49.7	47.0
200	QTQT	79.8	77.7	75.7	73.7	71.8	70.0	68.1	66.2	64.0	61.5	58.7	55.8	53.9	51.2	48.4
205	QTQT	80.7	78.6	76.6	74.6	72.7	70.8	69.0	67.0	64.6	62.4	59.5	56.6	53.9	51.2	48.4
210	QTQT	81.6	79.5	77.5	75.5	73.6	71.7	69.9	67.9	65.7	63.2	60.3	57.4	54.7	52.0	49.2
215	QTQT		80.5	78.5	76.5	74.5	72.7	70.7	68.7	66.6	64.1	61.1	58.3	55.5	52.8	49.9
220	QTQT		81.5	79.4	77.4	75.5	73.6	71.7	69.6	67.4	65.0	62.0	59.1	56.3	53.6	50.7
225	QTQT			80.4	78.4	76.5	74.5	72.6	70.6	68.4	65.9	62.9	60.0	57.2	54.5	51.6

Target Torque - CRZ FL220

<b>F-50</b>	Flight Deck Manual	Appendix C
14	FLIGHT PLANNING	00.08.30

IAS (KTS)	TAT (C)	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20
140	QTQT	77.3	75.1	73.1	71.1	69.2	67.3	65.4	63.4	58.7	55.8	55.8	53.0	50.2	47.5	44.7
145	QTQT	77.9	75.8	73.6	71.7	69.7	67.8	65.9	63.9	62.7	69.3	56.3	53.5	50.7	48.0	45.2
150	QTQT	78.5	76.3	74.2	72.2	70.3	68.4	66.5	64.5	62.2	59.8	56.8	54.0	51.2	48.5	45.4
155	QTQT	79.1	76.9	74.9	72.8	70.9	69.0	67.0	65.0	62.8	60.4	57.4	54.5	51.7	49.0	46.1
160	QTQT	79.7	77.5	75.5	73.4	71.5	69.4	67.7	65.6	63.3	61.0	57.9	55.1	52.3	49.5	46.6
165	QTQT	80.4	78.2	76.1	74.1	72.1	70.3	68.2	66.2	63.9	61.6	58.6	55.7	52.8	50.0	47.2
170	QTQT	81.0	78.9	76.8	74.8	72.8	70.9	68.9	66.9	64.6	62.3	59.2	56.2	53.4	50.7	47.7
175	QTQT	81.8	79.7	77.5	75.5	73.5	71.6	69.5	67.6	65.3	62.9	59.8	56.9	54.0	51.2	48.3
180	QTQT		80.3	78.2	76.2	74.2	72.2	70.3	68.2	65.9	63.5	60.5	57.4	54.6	51.8	48.9
185	QTQT		81.2	79.1	76.9	75.0	73.0	71.0	69.0	66.6	64.3	61.2	58.2	55.3	52.5	49.6
190	QTQT		82.0	79.8	77.7	75.7	73.8	71.8	69.8	67.4	65.1	61.9	58.9	56.0	53.2	50.3
195	QTQT			80.7	78.6	76.5	74.6	72.6	70.5	68.2	65.8	62.6	59.6	56.7	53.9	50.9
200	QTQT			81.5	79.4	77.6	75.4	73.4	71.4	69.0	66.6	63.4	60.4	57.4	54.6	51.7
205	QTQT				80.3	78.2	76.3	74.2	72.2	69.8	67.4	64.3	61.2	58.2	55.3	52.4
210	QTQT				81.2	79.2	77.2	75.1	73.1	70.7	68.3	65.1	62.0	59.0	54.1	53.1
215	QTQT				82.2	80.1	78.1	76.0	74.0	71.6	69.2	65.9	62.9	59.8	56.9	53.9
220	QTQT					81.1	79.0	76.9	74.9	72.5	70.1	64.8	63.7	60.7	57.7	54.7
225	QTQT					82.0	80.0	77.9	75.9	73.4	71.1	67.8	64.6	61.5	58.6	55.5

Target Torque - CRZ FL200



<b>F-50</b>	<b>Flight Deck Manual</b>	<b>Appendix C</b>
<b>17</b>	<b>FLIGHT PLANNING</b>	<b>00.08.30</b>

Target Torque - CRZ FL240

IAS (KTS)	TAT (C)	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20
140	QTQT	65.3	63.5	61.7	60.1	58.4	56.8	55.2	53.3	51.4	49.1	46.6	44.2	41.9	39.6	37.2
145	QTQT	65.9	64.1	62.3	60.6	59.0	57.3	55.7	53.8	52.0	49.6	47.1	44.7	42.4	40.0	37.6
150	QTQT	66.5	64.7	62.9	61.2	59.6	57.9	56.2	54.4	52.5	50.1	47.7	45.3	42.9	40.5	38.1
155	QTQT	67.1	65.3	63.5	61.8	60.2	58.5	56.8	55.0	53.1	50.7	48.2	45.8	43.4	41.1	38.6
160	QTQT	67.8	65.9	64.2	62.5	60.8	59.1	57.4	55.6	53.7	51.3	48.8	46.4	44.0	41.6	39.2
165	QTQT	68.5	66.6	64.8	63.1	61.4	59.8	58.1	56.2	54.3	52.0	49.4	47.0	44.6	42.2	39.7
170	QTQT	69.2	67.3	65.5	63.8	62.1	60.4	58.7	56.9	54.9	52.6	50.0	47.6	45.2	42.8	40.3
175	QTQT	69.9	68.1	66.2	64.5	62.8	61.1	59.4	57.6	55.6	53.3	50.7	48.2	45.8	43.4	40.9
180	QTQT	70.7	68.8	67.0	65.2	63.5	61.9	60.1	58.3	56.3	54.0	51.4	48.8	46.4	44.0	41.5
185	QTQT	71.5	69.6	67.8	65.9	64.3	62.6	60.9	59.0	57.0	54.6	52.0	49.5	47.0	44.6	42.1
190	QTQT	72.3	70.4	68.6	66.8	65.1	63.4	61.7	59.7	57.8	55.4	52.8	50.2	47.7	45.3	42.8
195	QTQT	73.2	71.3	69.4	67.6	65.9	64.2	62.4	60.0	58.5	56.1	53.5	50.9	48.4	46.0	43.5
200	QTQT	74.1	72.2	70.3	68.5	66.7	64.9	63.3	61.4	59.3	57.0	54.3	51.7	49.2	46.7	44.2
205	QTQT	75.0	73.1	71.2	69.4	67.6	65.9	64.1	62.2	60.2	57.6	55.1	52.5	50.0	47.4	44.9
210	QTQT	75.9	74.0	72.1	70.3	68.5	66.7	65.0	63.0	61.0	58.6	55.9	53.3	50.7	48.2	45.6
215	QTQT	76.8	74.9	73.0	71.2	69.4	67.7	65.9	64.0	61.9	59.5	56.8	54.1	51.5	49.0	46.3
220	QTQT	77.8	75.8	74.0	72.2	70.4	68.6	66.8	64.9	62.8	60.4	57.4	55.0	52.4	49.9	47.2
225	QTQT	78.9	76.8	74.9	73.1	71.4	69.6	67.6	65.8	63.8	61.3	58.6	55.9	53.3	50.7	48.0

<b>F-50</b>	<b>Flight Deck Manual</b>	<b>Appendix C</b>
<b>19</b>	<b>FLIGHT PLANNING</b>	<b>00.08.30</b>

Target Torque - CRZ FL230

IAS (KTS)	TAT (C)	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20
140	QTQT	68.1	66.3	64.4	62.7	60.9	59.3	57.6	55.6	53.7	51.3	48.7	46.3	43.8	41.4	38.9
145	QTQT	68.7	66.8	65.0	63.2	61.5	59.8	58.1	56.2	54.2	51.8	49.3	46.8	44.3	41.9	39.4
150	QTQT	69.3	67.4	65.6	63.8	62.1	60.3	58.6	56.7	54.8	52.4	49.8	47.3	44.8	42.4	39.8
155	QTQT	70.0	68.0	66.2	64.4	62.7	60.9	59.2	57.3	55.3	53.0	50.3	47.8	45.4	42.9	40.4
160	QTQT	70.5	68.7	66.8	65.1	63.3	61.6	59.8	57.9	55.9	53.6	50.9	48.4	45.9	43.5	40.9
165	QTQT	71.3	69.4	67.5	65.7	63.9	62.2	60.4	58.5	56.5	54.2	51.5	49.0	46.5	44.0	41.4
170	QTQT	72.0	70.0	68.1	66.3	64.6	62.9	61.1	59.2	57.2	54.8	52.1	49.6	47.1	44.6	42.0
175	QTQT	72.7	70.8	68.9	67.1	65.3	63.6	61.8	59.9	57.9	55.5	52.8	50.2	47.7	45.2	42.6
180	QTQT	73.5	71.5	69.6	67.8	66.0	64.3	62.5	60.6	58.5	56.2	53.5	50.9	48.3	45.8	43.2
185	QTQT	74.3	72.3	70.4	68.6	66.8	65.1	63.2	61.3	59.3	56.9	54.2	51.5	48.9	46.5	43.9
190	QTQT	75.1	73.1	71.2	69.3	67.6	65.8	64.0	62.1	60.0	57.6	54.9	52.2	49.6	47.1	44.5
195	QTQT	76.0	74.0	72.0	70.2	68.3	66.6	64.8	62.9	60.8	58.4	55.6	53.0	50.3	47.8	45.2
200	QTQT	76.9	74.9	72.9	71.0	69.2	67.5	65.6	63.7	61.6	59.2	56.4	53.7	51.1	48.6	45.9
205	QTQT	77.8	75.8	73.8	71.9	70.1	68.3	66.5	64.5	62.4	60.0	57.2	54.5	51.9	49.3	46.6
210	QTQT	78.8	76.7	74.7	72.8	71.0	69.2	67.3	65.4	62.4	60.0	57.2	54.5	51.9	49.3	46.6
215	QTQT	79.7	77.6	75.7	73.8	71.9	70.1	68.3	66.4	64.2	61.7	58.9	56.1	53.4	50.9	48.1
220	QTQT	80.6	78.6	76.6	74.7	72.9	71.1	69.2	67.2	65.1	62.6	59.8	57.0	54.3	51.7	48.9
225	QTQT	81.7	79.6	77.6	75.7	73.9	72.0	70.1	68.2	66.0	63.5	60.7	57.9	55.2	52.5	49.7

Target Torque - CRZ FL250

<b>F-50</b>	<b>Flight Deck Manual</b>	<b>Appendix C</b>
<b>18</b>	<b>FLIGHT PLANNING</b>	<b>00.08.30</b>

IAS (KTS)	TAT (C)	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20
140	QTQT	62.6	60.9	59.2	57.6	56.1	54.4	52.9	51.1	49.3	47.0	44.6	42.3	40.1	37.8	35.3
145	QTQT	63.2	61.5	59.8	58.1	56.6	55.0	53.4	51.6	49.8	47.5	45.1	42.8	40.6	38.3	36.0
150	QTQT	63.8	62.1	60.4	58.7	57.2	55.5	54.0	52.2	50.3	48.0	45.7	43.4	41.1	38.8	36.5
155	QTQT	64.6	62.7	61.0	59.4	57.8	56.2	54.5	52.7	50.9	48.6	46.2	43.9	41.6	39.3	37.0
160	QTQT	65.1	63.4	61.6	60.0	58.4	56.8	55.1	53.4	51.5	49.2	46.8	44.5	42.2	39.9	37.5
165	QTQT	65.8	64.0	62.3	60.6	59.1	57.4	55.8	54.0	52.2	49.8	47.4	45.0	42.8	40.5	38.1
170	QTQT	66.5	64.7	63.0	61.3	59.7	58.1	56.5	54.6	52.8	50.5	48.0	45.6	43.3	41.1	38.7
175	QTQT	67.3	65.5	63.7	62.0	60.4	58.8	57.1	55.3	53.4	51.1	48.7	46.3	43.9	41.8	39.2
180	QTQT	68.0	66.2	64.5	62.7	61.1	59.5	57.8	56.0	54.1	51.8	49.3	46.9	44.6	42.3	39.9
185	QTQT	68.8	67.0	65.2	63.5	61.9	60.2	58.6	56.7	54.9	52.5	50.0	47.6	45.2	42.9	40.5
190	QTQT	67.9	67.8	66.1	64.3	62.7	61.0	59.4	57.7	55.6	53.2	50.7	48.3	45.9	43.6	41.1
195	QTQT	70.5	68.7	66.9	65.2	63.5	61.8	60.2	58.3	56.4	54.0	51.5	49.0	46.6	44.2	41.8
200	QTQT	71.4	69.9	67.8	66.0	64.3	62.7	61.0	59.1	57.2	54.8	52.5	49.8	47.4	44.9	42.5
205	QTQT	72.2	70.4	68.6	66.9	65.2	63.5	61.8	59.9	58.0	55.6	53.0	50.6	48.1	45.7	43.2
210	QTQT	73.1	71.3	69.6	68.8	66.1	64.4	62.7	60.8	58.9	56.5	53.9	51.4	48.9	46.5	44.0
215	QTQT	74.1	72.2	70.4	68.8	67.1	65.3	63.6	61.7	59.8	57.4	54.8	52.2	49.8	47.3	44.8
220	QTQT	75.2	73.2	71.4	69.6	68.0	66.3	64.6	62.7	60.7	58.3	55.6	53.1	50.6	48.2	45.6
225	QTQT	76.2	74.3	72.4	70.6	68.9	67.3	65.5	63.6	61.6	58.3	56.6	54.0	51.5	49.0	46.5

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<b>F-50</b>	<b>Flight Deck Manual</b>	<b>Appendix C</b>
<b>20</b>	<b>Flight Planning</b>	<b>00.03.30</b>



FOKKER 50		FLIGHT #			
ARRIVAL INFORMATION					
COMM FREQ	CTR	ARR	TWR	GND	
ATIS/WX INFO					
APCH INFO					
ILS FREQ	COURSE	LDG WEIGHT		Vref	
OTHER					
MAX FLAP EXTEND SPDS (Vfe)					
FLAP 5	180				
FLAP 10	180				
FLAP 15	180				
FLAP 20	160				
FLAP 25	160				
FLAP 30	140				
NOTES					

FOKKER 50		FLIGHT #			
ARRIVAL INFORMATION					
COMM FREQ	CTR	ARR	TWR	GND	
ATIS/WX INFO					
APCH INFO					
ILS FREQ	COURSE	LDG WEIGHT		Vref	
OTHER					
MAX FLAP EXTEND SPDS (Vfe)					
FLAP 5	180				
FLAP 10	180				
FLAP 15	180				
FLAP 20	160				
FLAP 25	160				
FLAP 30	140				
NOTES					