737 Standardized Procedures

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Boeing Flight Crew Operations
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Standardized Normal Procedures

Why change?

- Incorporating lessons learned
- Standard scan-flow across models promotes transfer of knowledge
- Reduces training \(\rightarrow\) Saves money
- Improves operational usability
  - Observations of our customer’s techniques
  - Suggestions from our customers
  - Reduction of “superfluous” preflight tests
  - Fewer checklist steps through use of Master
    Caution “recall”
  - Reduction of runway incursions
  - Accommodate worldwide operations
Standardized Normal Procedures
(737)

Significant Changes

To help aircrews where English is a second language

- Standardize word usage
- Simpler English
  - Shorter sentences
  - Single subject in a paragraph
Standardized Normal Procedures
(737)

**Significant Changes**

- **Exterior inspection** – added more detail
- Standardized scan flow based on 777
  - 737 First Officer has overhead panel
- New preliminary preflight procedure
- CDU preflight – separate procedure
- Pushback procedure built into ‘Before Start’
- Pilot not flying now called *Pilot Monitoring*
- ‘After Start’ changed to ‘Before Taxi’
- Flight control checks in ‘Before Taxi’
# Standardized Normal Procedures
(Exterior Inspection)

<table>
<thead>
<tr>
<th>Exterior Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to each flight, the flight crew must accomplish or verify that the maintenance crew has accomplished the following checks.</td>
</tr>
</tbody>
</table>

**Note:** Alert ground personnel before pressurizing hydraulic system.

**ELECTRIC HYDRAULIC PUMP switches**
- ON
- System A and B pressure – 2800 PSI minimum

**Parking brake**
- Set

**Exterior lights**
- Illuminated

**General airplane condition**
- Check

**Check airplane free of damage and fluid leakage.**

**Probes, sensors, ports, vents and drains**
- Unobstructed

**Doors, latches and access panels (not in use)**
- Properly secured

**Tires, brakes and wheels**
- Check

**If brake wear indicator pins are ever in brake housing, check with maintenance.**

**Gear struts and doors**
- Check

**Verify door seals secure, impact fittings intact, and struts not fully compressed.**

**Ground locking pins**
- Removed

**Nose gear steering lockout pin**
- Check

**Installed if pushback or tow out will be accomplished, otherwise removed.**

**Nose wheel stubbers**
- In place

**Wheel well light switches**
- NORMAL

**Oxygen pressure relief green disc**
- In place

**Cargo compartments**
- Check

---

<table>
<thead>
<tr>
<th>Wing Surfaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check</td>
</tr>
</tbody>
</table>
| A & B hydraulic reservoir quantity indicators
- RF or above

**Brake accumulator indicator**
- 2800 psi minimum

**APU fire control handle**
- UP

**Outflow valve**
- Full open

**[Tailing] [27370] [000]**
- Tail skid

**Check**

**Replace shoe if worn or to wear dimple.**

**Replace cartridge assembly if warning decal is red.**

**Engine fire extinguishers**
- Check

**Verify pressure adequate per bottle data plate.**

**ELECTRIC HYDRAULIC PUMP switches**
- OFF

**Exterior lights**
- As required

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March 29, 2004

D6-27370-TBC

NP.20.7

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NP.20.8

D6-27370-TBC

March 29, 2004
Standardized Normal Procedures
(Exterior Inspection)

Exterior Inspection
Before each flight the captain, first officer, or maintenance crew must verify that the airplane is satisfactory for flight.
Items at each location may be checked in any sequence.

Use the detailed inspection route below to check the following items:
• surfaces and structures clear and undamaged, no missing parts and no fluid leaks
• tires free of excessive wear, tread separation and damage
• gear struts not fully compressed
• engine inlets and tailpipes clear, access panels secured, no exterior damage, reversers stowed
• doors and access panels (not in use) latched
• probes, vents and static ports undamaged and clear
• skin area adjacent to static ports and pilot probes not wrinkled
• antennas undamaged
• light lenses clean and undamaged

For cold weather operations see Supplementary Procedures.

Inspection Route

START

END

Left Forward Fuselage
Probes, sensors, ports, vents, and drains (as applicable)..............Check

Right Forward Fuselage
Probes, sensors, ports, vents, and drains (as applicable)..............Check

Nose
Radome.................................................................Check
Conductor straps - Secure
Forward E and E door ..............................................Secure

Nose Wheel Well
Tires and wheels ....................................................Check
Exterior light ............................................................Check
Gear strut and doors .................................................Check
Nose wheel steering assembly ..................................Check
Nose gear steering lockout pin .................................As needed
Gear pin .....................................................................As needed
Nose wheel spin brake (snubbers) .............................In place

Right Forward Fuselage
Probes, sensors, ports, vents, and drains (as applicable)..............Check
Oxygen pressure relief green disc ..............................In place
Doors and access panels (not in use) .........................Latched

Right Wing Root, Pack, and Lower Fuselage
Ram air deflector door ..............................................Extended
Pack and pneumatic access doors ................................Secure
Probes, sensors, ports, vents, and drains (as applicable).............Check
Exterior lights ..............................................................Check
Leading edge flaps .....................................................Check

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DRAFT
4/29/2004

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Standardized Normal Procedures (737)

**Significant Changes**

- Exterior inspection – added more detail
- **Standardized scan flow based on 777**
  - 737 First Officer has overhead panel
- New preliminary preflight procedure
- CDU preflight – separate procedure
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- Flight control checks in ‘Before Taxi’
Standardized Normal Procedures
(Scan Flow)

Panel Scan Diagram
The diagram below describes each crew member’s area of responsibility and scan flow pattern for each panel when the airplane is not moving under its own power.

Typical panel locations are shown.

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Standardized Normal Procedures (Area of Responsibility)

Pilot Flying/Taxiing and Pilot Not Flying/Not Taxiing Areas of Responsibility

The diagram below describes each crew member's area of responsibility for each panel when the airplane is moving under its own power.

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NP.10.5
Standardized Normal Procedures (Area of Responsibility)
Standardized Normal Procedures (737)

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Electrical Power Up

The following procedure is accomplished to permit safe application of electrical power.

BATTERY switch .................................................. Guard closed [Option]

Note: Do not move the airplane until ISFD alignment is complete.

STANDBY POWER switch .................................... Guard closed

Verify STANDBY POWER OFF light extinguished

ALTERNATE FLAPS master switch ....................... Guard closed

Windshield WIPER selectors ...................................... OFF

ELECTRIC HYDRAULIC PUMP switches ................. OFF

LANDING GEAR lever ................................................ DN

Electrical Power ........................................................ Establish

If external power is desired:

Verify GRD POWER AVAILABLE light illuminated

GRD POWER switch - ON

Verify SOURCE OFF lights extinguished

Verify TRANSFER OFF lights extinguished

If APU power is desired:

OVERHEAT DETECTOR switches - NORMAL

Preliminary Preflight Procedure – Captain or First Officer

The Preliminary Preflight Procedure assumes that the Electrical Power Up supplementary procedure is complete.

A full IRS alignment is recommended prior to each flight. If time does not permit a full alignment, accomplish the Fast Realignment supplementary procedure.

IRS mode selectors ................................................. OFF, then NAV

Verify that the ON DC lights illuminate momentarily followed by steady illumination of the ALIGN lights.

[Option - Required in Preliminary Preflight for IAA operators with this switch]

VOICE RECORDER switch ................................ As needed

Verify that the following are sufficient for flight:

• hydraulic quantity
• engine oil quantity

Accomplish the remaining actions after a crew change or maintenance action.

Maintenance documents ................................................ Check [Option]

FLIGHT DECK ACCESS SYSTEM switch................. Guard closed

Emergency equipment ............................................. Check

Fire extinguisher – Checked and stowed

Crash axe – Stowed

Escape ropes – Stowed

Additional needed equipment – Checked and stowed

PSEU light ............................................................ Verify extinguished [Option]

GPS light ............................................................. Verify extinguished
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Start the CDU Preflight Procedure anytime after the Preliminary Preflight Procedure. The Initial Data and Navigation Data entries must be complete before the flight instrument check during the Preflight Procedure. The Performance Data entries must be complete before the Before Start Checklist.

The captain or first officer can make CDU entries. The other pilot must verify the entries.

Enter data in all the boxed items on the following CDU pages.

Enter data in the dashed items or modify small font items that are listed in this procedure. Enter or modify other items at pilot's discretion.

Failure to enter enroute winds can result in inaccurate flight plan time and fuel burn.

[Option - FMC updates where ORIGIN is not boxed]
Enter the ORIGIN

Enter the route

[Option - airplanes with Mode S enhancements for ADS]
Enter the FLIGHT NUMBER

Activate and execute the route
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(737)

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Standardized Normal Procedures
(Before Start Procedure)

Verify that the brake pressure is 2800 PSI minimum.
[Option - not Over/Under Display]
Verify that system B pressure is 2800 PSI minimum.
[Option - Over/Under Display]
Display systems information on the lower display unit.
Verify that system B pressure is 2800 PSI minimum.

Pushback or Towing Procedure:
The Engine Start procedure may be done during pushback or towing.

Establish communications with ground handling personnel.

CAUTION: Do not hold or turn the nose wheel steering wheel or
use airplane brakes to stop the airplane while the
airplane is being pushed back or towed. This can
damage nose gear components or the tow bar.

Set or release parking brake as directed by
ground handling personnel.

When pushback is complete:
Verify that tow bar is disconnected.
Verify that the nose gear steering locknut pin is removed.
System A HYDRAULIC PUMPS switches – OFF.

Set rear landing gear in unlocked position.

WARNING: If hydraulic system A is pressurized and the
nose gear steering locknut pin is not installed,
unwanted tow bar movement can result.

System A HYDRAULIC PUMPS switches – OFF.
Verify that the system A pump LOW PRESSURE lights
are illuminated.

System B electric HYDRAULIC PUMP switch – ON.
Verify that the system B electric pump LOW PRESSURE light
is extinguished.

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Standardized Normal Procedures
(Engine Start Procedure)

Engine Start Procedure

<table>
<thead>
<tr>
<th>CAPTAIN</th>
<th>FIRST OFFICER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announce engine start sequence. Normal starting sequence is 2, 1. Call &quot;STARTING ENGINE No ___.&quot;</td>
<td>Verify increase in N2 RPM.</td>
</tr>
<tr>
<td>Position ENGINE START switch to GRD.</td>
<td>Verify engine oil pressure by the time engine is stabilized at idle and call &quot;OIL PRESSURE RISING&quot; when observed.</td>
</tr>
<tr>
<td>Acknowledge first officer’s report.</td>
<td></td>
</tr>
</tbody>
</table>

Position engine start lever to IDLE detent when:

- N1 rotation is observed and N2 RPM reaches 25% or (if 25% N2 is not achievable) at maximum and at minimum of 20% N2.
- Maximum torque occurs when N2 acceleration is less than 1% in approximately 5 seconds.

Verify fuel flow and EGT indication.

[Without automatic ignition]
At 50% N2 RPM check ENGINE START switch moves to OFF; if not, position start switch to OFF.

[Automatic ignition]
At 50% N2 RPM check ENGINE START switch moves to AUTO; if not, position start switch to AUTO.

Monitor N1, N2, EGT, fuel flow and oil pressure for normal indications as the engine accelerates and stabilizes at idle.

Note: Standard day, sea level, approximate stabilized idle indications for the CFM56–7 engine.

- N1 RPM – 20%
- N2 RPM – 59%

EGT – 410°C**
Fuel Flow – 272 KGPH/600 PPH

** Idle EGT may vary from 320°C – 520°C depending on OAT, bleed configuration, and engine conditions.

Starter Duty Cycle

- Limit each start attempt to a maximum of 3 minutes.
- A minimum of 10 seconds is required between start attempts.

CAUTION: Normal engine start considerations:

- Advancing engine start lever to idle prematurely can cause a "HOT" start.

- Keep hand on engine start lever while observing RPM, EGT and fuel flow until stabilized.

- If fuel is shut off inidernically (by closing engine start lever) do not re-engage engine start lever in an attempt to restart engine.

- Failure of ENGINE START switch to hold in GRD until starter cutout RPM is reached can result in a "HOT" start. Do not re-engage ENGINE START switch until engine RPM is below 20% N2.

Note: Accomplish the ABORTED ENGINE START checklist for one or more of the following conditions:

- No N1 rotation before the engine start lever is raised to IDLE.
- No oil pressure indication by the time the engine is stabilized at idle.
- No increase in EGT within 10 seconds of raising the engine start lever to IDLE.
- No increase in, or a very slow increase in N1 or N2 after EGT indication.
- EGT rapidly approaching or exceeding the start limit.
Standardized Normal Procedures
(Engine Start Procedure)

Engine Start Procedure

[Over/Under Display]
Select the secondary engine display. F/O
Air conditioning PACK switches......................... OFF F/O
Start sequence ............................................... Announce C
Call “START ______ ENGINE” C
Position ___ START switch to GROUND F/O
Verify an increase in N2 RPM. C, F/O
When N1 rotation is observed and N2 reaches 22%, or if 25% N2 is not achievable, at maximum morning and minimum of 20% N2:

Engine start lever ........................................... IDLE C
Observe fuel flow and EGI indications. Observe oil pressure by the time the engine is stabilized at idle. C, F/O

[Without automatic ignition]
At 50% N2 RPM verify that the ENGINE START switch moves to OFF; if not, position the start switch to OFF. C

[Automatic ignition]
At 50% N2 RPM verify that the ENGINE START switch moves to AUTO; if not, position the start switch to AUTO. C

[Without automatic ignition]
Verify that the START VALVE OPEN alert extinguishes as the ENGINE START switch moves to OFF and call: “STARTER CUTOUT”. F/O

[Automatic ignition]
Verify that the START VALVE OPEN alert extinguishes as the ENGINE START switch moves to AUTO and call: “STARTER CUTOUT”. F/O

Monitor N1, N2, EGI, fuel flow and oil pressure for normal indications as the engine accelerates and stabilizes at idle. F/O

After the engine is stabilized at idle, start the remaining engine.
Standardized Normal Procedures (737)

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# Standardized Normal Procedures (PF/PNF)

## Takeoff Procedure

<table>
<thead>
<tr>
<th>PILOT FLYING</th>
<th>PILOT NOT FLYING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advance thrust levers to approximately 40% N1.</td>
<td></td>
</tr>
<tr>
<td>Push either TOGA switch to advance the thrust levers to takeoff N1.</td>
<td></td>
</tr>
<tr>
<td>Verify mode annunciation.</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** After takeoff thrust is set, the captain on V1.

## Landing Roll Procedure

<table>
<thead>
<tr>
<th>PILOT FLYING</th>
<th>PILOT NOT FLYING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor rollout progress and <em><strong>(([0,89])</strong></em>)</td>
<td>Verify autotrottle is disengaged.</td>
</tr>
<tr>
<td>Ensure thrust levers closed and speedbrake lever up.</td>
<td>Verify SPEED BRAKE lever UP.</td>
</tr>
<tr>
<td>Without delay, ease reverse thrust levers to the idle stops, hold light pressure until idle and then with reverse thrust required.</td>
<td>Call “SPEED BRAKE NOT UP.”</td>
</tr>
<tr>
<td>Monitor engine instruments and announce any engine limit being approached, exceeded or any other abnormalities.</td>
<td></td>
</tr>
<tr>
<td>At 0.5 mile, have reverse thrust be at IDLE release when nearing taxi speed.</td>
<td>Call “50 KNOTS.”</td>
</tr>
<tr>
<td>Approaching taxi speed, slowly move the reverse thrust levers to the full down position.</td>
<td>Verify the REV indication is extinguished.</td>
</tr>
<tr>
<td>Prior to taxi speed, disarm the autobrake and continue manual braking as required.</td>
<td></td>
</tr>
<tr>
<td>Disengage autopilot prior to runway turnover.</td>
<td></td>
</tr>
</tbody>
</table>

**WARNING:** After reverse thrust has been initiated, a full stop landing must be made.
Significant Changes

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Checklist Content

The checklist contains the minimum items needed to operate the airplane safely.

Normal checklists contain items that meet any of the following criteria:

- items essential to safety of flight that are not monitored by an alerting system, or
- items essential to safety of flight that are monitored by an alerting system but if not done, would likely result in a catastrophic event if the related alerting system fails, or
- items that the FAA requires in the checklist, or
- items needed to maintain fleet commonality between the 737, 747-400, 757, 767, and 777, or
- items that enhance safety of flight and are not monitored by an alerting system (for example autobrakes), or
- during shutdown and secure, items that could result in injury to personnel or damage to equipment if not done.
Standardized Normal Procedures
(Normal Checklist)

BEFORE START
- FLIGHT DECK PREPARATION ................................ COMPLETED
- LIGHT TEST .......................................................... CHECKED
- OXYGEN & INTERPHONE ....................................... CHECKED
- YAW DAMPER ....................................................... ON
- NAVIGATION TRANSFER & DISPLAY SWITCHES .......... NORMAL & AUTO
- FUEL ................................................................. KG/LS & PUMPS ON
- CAB/UTIL & IFE/PASS SEAT POWER SWITCHES ............ ON
- EMERGENCY EXIT LIGHTS ....................................... ARMED
- PASSENGER SIGNS ........................................................... SET
- WINDOW HEAT ......................................................... ON
- HYDRAULICS .......................................................... NORMAL
- AIR COND & PRESS ................................................. PACK(3), BLEEDS ON, SET
- AUTOPILOTS .............................................................. DISENGAGED
- INSTRUMENTS .......................................................... X-CHECKED
- AUTO BRAKE ........................................................ RTO
- SPEED BRAKE ............................................................ DOWN DETENT
- PARKING BRAKE ........................................................ SET
- STABILIZER TRIM CUTOUT SWITCHES ....................... NORMAL
- WHEEL WELL FIRE WARNING ..................................... CHECKED
- RADIOS, RADAR, TRANSPONDER & HUD ................ SET
- RUDDER & AILERON TRIM ......................................... FREE & ZERO
- PAPERS ................................................................. ABOARD
- FMC/CDU ............................................................... SET
- N1 & IAS BUGS ........................................................ SET

PREFLIGHT
- Oxygen .............................................................. TESTED, 100%
- Navigation transfer and display switches .................... NORMAL, AUTO
- Window heat .......................................................... ON
- Flight instruments .................................................. HEADING__, ALTIMETER__
- Parking brake ........................................................ SET
- Engine start levers .................................................. CUTOFF

BEFORE START
- Windows signs .......................................................... LOCKED
- MCP ................................................................. V2, HEADING__, ALTITUDE__
- Takeoff speeds ....................................................... V1, VR, V2
- CDU preflight .......................................................... COMPLETED
- Trim ................................................................. ____ UNITS, 0, 0
- Taxi and takeoff briefing ........................................... COMPLETED
- ANTI COLLISION light .............................................. ON

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NC.1
Standardized Normal Procedures (Normal Checklist)

Before Start

**DO NOT USE FOR FLIGHT**

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- Cleared for Start
- Doors closed
- Flight deck windows locked
- Air conditioning packs off
- Anti-collision light on

**AFTER START**

- Electrical generators on
- Probe heat on
- Anti-ice as required
- Air cond & press packs on
- Isolation valve auto
- APU as required
- Start levers idle detent

**BEFORE TAKEOFF**

- Recall checked
- Flight controls checked
- Flaps units green light
- Stabilizer trim unlocked
- Cabin door locked
- Takeoff briefing reviewed
- Cleared for takeoff
- [Without automatic ignition]
- Engine start switches on
- Transponder on

BEFORE TAXI

- Generators on
- Probe heat on
- Anti-ice
- Isolation valve auto
- Engine start switches cont
- Recall checked
- Autobrake rto
- Engine start levers idle detent
- Flight controls checked
- Ground equipment clear

BEFORE TAKEOFF

- Flaps green light
Standardized Normal Procedures
(Normal Checklist)

SHUTDOWN

FUEL .................................................. PUMPS OFF
CAB/UTIL & IFE/PASS SEAT POWER SWITCHES .......... AS REQUIRED
ELECTRICAL ........................................... ON
FASTEN BELTS ....................................... OFF
WINDOW HEAT ......................................... OFF
PROBE HEAT .......................................... OFF
ANTI-ICE .............................................. OFF
ELECTRIC HYDRAULIC PUMPS ......................... OFF
AIR COND .............................................. PACKS BLEEDS ON
EXTERIOR LIGHTS .................................... AS REQUIRED
ANTICOLLISION LIGHT .............................. OFF
[Without automatic ignition]
ENGINE START SWITCHES ............................ OFF
AUTO BRAKE ......................................... OFF
SPEED BRAKE ....................................... DOWN DETENT
FLAPS .................................................. UP, NO LIGHTS
PARKING BRAKE ..................................... AS REQUIRED
START LEVERS ...................................... CUTOFF
WEATHER RADAR .................................... OFF
TRANSponder ......................................... AS REQUIRED

SECURE

IRS MODE SELECTORS .............................. OFF
EMERGENCY EXIT LIGHTS ............................ OFF
AIR CONDITIONING PACKS ....................... OFF
APU/GROUND POWER ............................... OFF
BATTERY .............................................. OFF

DO NOT USE FOR FLIGHT

737 Flight Crew Operations Manual

Fuel pumps ............................................ OFF
Probe heat ............................................. OFF
Hydraulic panel ..................................... SET
Flaps .................................................... UP
Parking brake ........................................
Engine start levers ................................ CUTOFF
Weather radar ........................................ OFF

IRSs ..................................................... OFF
Emergency exit lights ............................ OFF
Window heat ......................................... OFF
Packs .................................................... OFF
Standardized Normal Procedures

Are We Really Standard?
Standardized Normal Procedures
Scanflow 737 vs. 777
### Standardized Normal Procedures

#### Takeoff 737 vs. 777

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<td><strong>Pilot Flying</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>  [Option - Runway position update with TO/GA activation]</td>
<td>Enter the runway offset on the CDU TAKEOFF REF page.</td>
<td>When entering the departure runway, position the STROBE light switch ON. Use other lights as needed.</td>
</tr>
<tr>
<td>  [Option - Runway position update with the CDU only] Update to runway threshold on the CDU TAKEOFF REF page.</td>
<td>Verify that the brakes are released. Align the airplane with runway. When cleared for takeoff, position the FIXED LANDING light switches ON. [Without TCAS] Position the transponder ON. [With TCAS] Position transponder mode selector to TA/RA.</td>
<td>When cleared for takeoff, position the LEFT and RIGHT LANDING light switches ON. Position transponder mode selector to TA/RA.</td>
</tr>
<tr>
<td><strong>Verify that the brakes are released.</strong></td>
<td><strong>Advance the thrust levers to approximately 40% N1 and allow engines to stabilize.</strong></td>
<td><strong>[GE Engines]</strong> Advance the thrust levers to approximately 55% N1 and allow the engines to stabilize. <strong>[PW, RR Engines]</strong> Advance the thrust levers to approximately 1.05 EPR and allow the engines to stabilize.</td>
</tr>
<tr>
<td><strong>Push the TO/GA switch.</strong></td>
<td><strong>Verify that correct takeoff thrust is set.</strong></td>
<td><strong>Push the TO/GA switch.</strong></td>
</tr>
<tr>
<td><strong>Verify that correct takeoff thrust is set.</strong></td>
<td><strong>Monitor engine instruments throughout takeoff and call out any abnormalities. Adjust takeoff thrust prior to 60 knots, if needed.</strong></td>
<td><strong>Verify that correct takeoff thrust is set.</strong> Monitor engine instruments throughout takeoff and call out any abnormalities. Adjust takeoff thrust prior to 80 knots, if needed. • During strong headwinds, if the thrust levers have not advanced to planned takeoff thrust by 80 knots, manually advance the thrust levers.</td>
</tr>
<tr>
<td><strong>After takeoff thrust is set, the captain’s hand must be on the thrust levers until V1.</strong></td>
<td><strong>After takeoff thrust is set, the captain’s hand must be on the thrust levers until V1.</strong></td>
<td><strong>After takeoff thrust is set, the captain’s hand must be on the thrust levers until V1.</strong> Monitor airspeed. Maintain light forward pressure on the control column. Verify 80 knots and call “CHECK”. Call “80 KNOTS”.</td>
</tr>
</tbody>
</table>
# Standardized Normal Procedures

## Takeoff 737 vs. 777

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<th>Pilot Flying</th>
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<tr>
<td><strong>After flap retraction is complete:</strong>&lt;br&gt;• Position landing gear lever OFF after landing gear retraction is complete&lt;br&gt;<strong>[Without automatic ignition]</strong>&lt;br&gt;• Position engine start switches as needed&lt;br&gt;• Set or verify engine bleed and air conditioning packs operating</td>
<td><strong>Accomplish the AFTER TAKEOFF checklist.</strong></td>
</tr>
</tbody>
</table>

**CAUTION:** Do not allow the shoulder harness straps to retract quickly. Buckles can pull or damage circuit breakers.
## Standardized Normal Procedures
### Landing 737 vs. 777

<table>
<thead>
<tr>
<th>Landing Procedure</th>
<th>Pilot Flying</th>
<th>Pilot Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pilot Flying</strong></td>
<td>Notify the cabin crew to prepare for landing. Verify that the cabin is secure.</td>
<td></td>
</tr>
<tr>
<td><strong>Call “FLAPS ” according to the flap extension schedule.</strong></td>
<td>Position the flap lever as directed and monitor flap and slit extension.</td>
<td></td>
</tr>
<tr>
<td><strong>When on localizer intercept heading:</strong></td>
<td>Position the flap lever at 15.</td>
<td></td>
</tr>
<tr>
<td>• verify that the ILS is tuned and identified</td>
<td></td>
<td>[Without automatic ignition]</td>
</tr>
<tr>
<td>• verify that the LOC and G/S pointers are shown</td>
<td></td>
<td>Position engine start switches to CONT.</td>
</tr>
<tr>
<td><strong>Arm APP mode</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Engage the second autopilot.</strong></td>
<td>Use HDG SEL to establish an intercept heading to the final approach course, if needed.</td>
<td></td>
</tr>
<tr>
<td><strong>Verify that the localizer is captured.</strong></td>
<td>Call “GLIDE SLOPE ALIVE”</td>
<td></td>
</tr>
<tr>
<td><strong>At glide slope alive, call:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• “GEAR DOWN”</td>
<td>Position the landing gear lever DN. Verify that the green landing gear indicator lights are illuminated.</td>
<td></td>
</tr>
<tr>
<td>• “FLAPS 15”</td>
<td>Position the flap lever to 15.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Without automatic ignition]</td>
</tr>
<tr>
<td><strong>Position the speedbrake lever to ARM.</strong></td>
<td>Verify that the SPEEDBRAKE ARMED light is illuminated.</td>
<td></td>
</tr>
<tr>
<td><strong>At glide slope capture, call “FLAPS ” as needed for landing.</strong></td>
<td>Position the flap lever as directed.</td>
<td></td>
</tr>
<tr>
<td><strong>Set the missed approach altitude on the MCP.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Call “LANDING CHECKLIST.”</strong></td>
<td>Accomplish the LANDING checklist.</td>
<td></td>
</tr>
</tbody>
</table>

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# Standardized Normal Procedures

## Go-Around 737 vs. 777

### Go–Around or Missed Approach Procedure

<table>
<thead>
<tr>
<th>Pilot Flying</th>
<th>Pilot Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneously push TO/GA switch and call “FLAPS 15”</td>
<td>Position the FLAP lever to 15 and monitor flap retraction</td>
</tr>
<tr>
<td>Verify the rotation to go–around attitude and the thrust increase.</td>
<td>Verify that the thrust is adequate for go-around; adjust if necessary.</td>
</tr>
<tr>
<td>Verify a positive rate of climb on the altimeter and call “GEAR UP”.</td>
<td>Verify a positive rate of climb on the altimeter and call “POSITIVE RATE”</td>
</tr>
<tr>
<td>Above 400 feet radio altitude; select an appropriate roll mode.</td>
<td>Position the landing gear lever UP.</td>
</tr>
<tr>
<td>Verify that the missed approach route is being tracked.</td>
<td>Verify that the missed approach altitude is set.</td>
</tr>
<tr>
<td>At acceleration height, select LVL CHG and set the maneuvering speed for the desired flap setting.</td>
<td>Verify that climb thrust is set.</td>
</tr>
<tr>
<td>Call “FLAPS ...” according to the flap retraction schedule.</td>
<td>Position the FLAP lever as directed and monitor flaps and slats retraction.</td>
</tr>
<tr>
<td>After flaps are set and at or above the maneuvering speed for the desired flap setting call “CLIMB THRUST”.</td>
<td>Verify that climb thrust is set.</td>
</tr>
<tr>
<td>Verify that the missed approach altitude is captured</td>
<td>Position the landing gear lever OFF after landing gear retraction is complete.</td>
</tr>
<tr>
<td>Call “AFTER TAKEOFF CHECKLIST.”</td>
<td>[Without automatic ignition] Position the engine start switches as needed.</td>
</tr>
</tbody>
</table>

## Go–Around or Missed Approach Procedure

<table>
<thead>
<tr>
<th>Pilot Flying</th>
<th>Pilot Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneously push the TO/GA switch and call “FLAPS 20”</td>
<td>Position the FLAP lever to 20.</td>
</tr>
<tr>
<td>Verify the rotation to go–around attitude and the thrust increase.</td>
<td>Verify that the thrust is adequate for go-around; adjust if necessary.</td>
</tr>
<tr>
<td>Verify a positive rate of climb on the altimeter and call “GEAR UP”.</td>
<td>Verify a positive rate of climb on the altimeter and call “POSITIVE RATE”</td>
</tr>
<tr>
<td>Above 400 feet radio altitude, select an appropriate roll mode.</td>
<td>Position the landing gear lever UP.</td>
</tr>
<tr>
<td>Verify that the missed approach route is being tracked.</td>
<td>Verify that the missed approach altitude is set.</td>
</tr>
<tr>
<td>At acceleration height, select FLCH and set the maneuvering speed for the desired flap setting.</td>
<td>Verify that climb thrust is set.</td>
</tr>
<tr>
<td>Call “FLAPS ...” according to the flap retraction schedule.</td>
<td>Position the flap lever as directed.</td>
</tr>
<tr>
<td>After flaps are set and at or above the maneuvering speed for the desired flap setting call “CLIMB THRUST”.</td>
<td>Verify that climb thrust is set.</td>
</tr>
<tr>
<td>Verify that the missed approach altitude is captured</td>
<td>Position the engine start switches as needed.</td>
</tr>
<tr>
<td>Call “AFTER TAKEOFF CHECKLIST.”</td>
<td>Accomplish the AFTER TAKEOFF checklist.</td>
</tr>
</tbody>
</table>
Standardized Normal Procedures
Checklists 737 vs. 777

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Normal Checklists | Chapter NC
---|---
PREFLIGHT
Oxygen ........................................ TESTED, 100%
Navigation transfer and display switches ................................ NORMAL, AUTO
Window heat ...................................... ON
Flight instruments ............... HEADING___, ALTIMETER___
Parking brake .................................... SET
Engine start levers ......................... CUTOFF

BEFORE START
Passenger signs ...................................
Windows ........................................ LOCKED
MCP ........................................ V2___, HEADING___, ALTITUDE___
Takeoff speeds ......................... V1___, VR___, V2___
CDU preflight .............................. COMPLETED
Trim ........................................ UNITS, 0, 0
Taxi and takeoff briefing ............ COMPLETED
ANTI COLLISION light ...................... ON

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Normal Checklists | Chapter NC
---|---
PREFLIGHT
Oxygen ........................................ TESTED, 100%
Flight instruments ............... HEADING___, ALTIMETER___
Parking brake .................................... SET
FUEL CONTROL switches .................. CUTOFF

BEFORE START
Passenger signs ...................................
MCP ........................................ V2___, HDG/TRK___, ALT___
Takeoff speeds ......................... V1___, VR___, V2___
CDU preflight .............................. COMPLETED
Trim ........................................ UNITS, 0, 0
Taxi and takeoff briefing ............ COMPLETED
BEACON ........................................ ON

BEFORE TAXI
Anti-ice ..........................................
Recall .......................................... CHECKED
Autobrake ...................................... RTO
Flight controls ................................ CHECKED
Ground equipment ......................... CLEAR

BEFORE TAKEOFF
Flaps ............................................
Standardized Normal Procedures
Checklists 737 vs. 777

BEFORE TAXI

Generators ........................................ ON
Probe heat ........................................ ON
Anti-ice .............................................
Isolation valve .................................... AUTO
[Without automatic ignition]
ENGINE START switches .................... CONT
Recall ............................................. CHECKED
Autobrake ........................................ RTO
Engine start levers .............................. IDLE DETENT
Flight controls .................................... CHECKED
Ground equipment ............................... CLEAR

BEFORE TAKEOFF

Flaps ..................................................., GREEN LIGHT

BEFORE START

Passenger signs ....................................
MCP .................................................. V2, HDG/TRK, ALT
Takeoff speeds .................................... V1, VR, V2
CDU preflight ..................................... COMPLETED
Trim .................................................. UNITS, 0, 0
Taxi and takeoff briefing ....................... COMPLETED
BEACON ........................................ ON

BEFORE TAXI

Anti-ice .............................................
Recall ............................................. CHECKED
Autobrake ........................................ RTO
Flight controls .................................... CHECKED
Ground equipment ............................... CLEAR

BEFORE TAKEOFF

Flaps ..................................................
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Checklists 737 vs. 777

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Normal Checklists

AFTER TAKEOFF

Engine bleeds ........................................... ON
Packs .................................................... AUTO
Landing gear ............................................. UP AND OFF
Flaps .................................................... UP, NO LIGHTS

DESCENT

Recall ..................................................... CHECKED
Autobrake ................................................
Landing data .......................................... VREF__, MINIMUMS__
Approach briefing ..................................... COMPLETED

APPROACH

Altimeters ..............................................

LANDING

[Without automatic ignition]
ENGINE START switches ............................ CONT
Speedbrake ........................................... ARMED
Landing gear ........................................... DOWN
Flaps .................................................... ____, GREEN LIGHT

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Normal Checklists

AFTER TAKEOFF

Landing gear ............................................ UP
Flaps .................................................... UP

DESCENT

Recall and notes ..................................... CHECKED
Autobrake ................................................
Landing data .......................................... VREF__, MINIMUMS__
Approach briefing ..................................... COMPLETED

APPROACH

Altimeters ..............................................

LANDING

Speedbrake ........................................... ARMED
Landing gear ........................................... DOWN
Flaps ....................................................

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### Standardized Normal Procedures

#### Checklists 737 vs. 777

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<th>Boeing 777 QRH Draft</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHUTDOWN</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel pumps</td>
<td>OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probe heat</td>
<td>OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic panel</td>
<td>SET</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flaps</td>
<td>UP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking brake</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine start levers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weather radar</td>
<td>OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SECURE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRs</td>
<td>OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency exit lights</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Window heat</td>
<td>OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packs</td>
<td>OFF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Any Questions??