Boeing 737 NG

Checklist / Flow-Procedure

including basic Flight-Planning-Charts

for PMDG 737NGX

with Microsoft Flight Simulator X

created by Carsten Rau

www.CarstenRau.de

Version 6.0
To start with a dark & cold cockpit, you need to set the aircraft to dark & cold in the FMC and activate dark and cold for every startup.

**Parking Position:**
- FSX: start & create 737 flight
- Parkingbreak: Check Set
- IVAP-Connection: Activate
- Dep-Metar: Check & note
- Arr-Metar: Check & note
- Flightplan: Create (e.g. in FSBuild)
- Door 1: Open (Shift + E / via FMC)
- Gangway: Enable (if available) (Strg + J)
- Battery (OHP): On & Covered
- DC-Voltemeter-Selector (left): BAT
- DC-Voltemeter: Check ≈ 28V
- AC-Voltemeter-Selector (right): STBY PWR
- Master Caution: Disengage
- Hyd. Pumps: All Off
- Fuel Pumps: All Off
- Interior Lights:
  - Panel-Light (Pedestal): as required
  - Flood-Light (Pedestal): as required
  - Lights (Main Panel): as required
  - Background (Main Panel): as required
  - AFDS Flood (Main Panel): as required
  - Panel Light (Ovhd Panel): as required
  - Circuit Brk. (Ovhd Panel): as required
- Cabin / Utility Power: Check On
- IFE Pass Seat Power: Check on

### Connect Ground Power ###
### If no Ground Power available bring forward APU-start ###

**FMC (Main Menu):**
Checklist + Flow-Procedure
Boeing 737 NG
-600/-700/-800/-900

- Clear any messages
- FS Actions
- Ground Connections
- Wheel Chocks
- Ground Power
- Air Start Unit
- Air Cond. Unit
- Pitot Covers
- Return

- Ground Power (GRD PWR)
- AC-Voltemeter-Selector (right)
- Emergency-Lights
- External Lights
  - Position
  - Wheel Well
  - Logo
  - Wing

- Master Caution
- Seat-Belt

### Continue here for next flight (cockpit not dark+cold) ###

- FMC (FS Action Menu):
  - Clear any messages
  - Payload Menu
  - Set Payload
  - Return
  - Fuel Menu
  - Set Fuel
  - Enter Fuel in LBS
  - Return
  - Return to Main Menu

- Recirc. Fan Left
- Recirc. Fan Right
- Pack Left Auto
- Pack Right Auto
- Autopilots Check Off
- Speed Brake Check Down / Off
- Cockpit Voice Recorder Hold for 5sec

### Wait for green light to appear ###

- Engine Fire Test Button Hold Left

### Verify FAULT and APU DET INOP light illuminated ###

- Engine Fire Test Button Hold Right

### Verify test lights illuminated and bell ringing ###

- IRS
  - DSPL SEL Test
  - DSPL SEL HDG/STS
  - IRS Selector Left ALIGN
  - IRS Selector Right ALIGN

- FMC
  - FMC Menu L1
  - Clear any messages CLR
  - Initiate (Pos Init Menu) INIT REF
  - Enter Airport Dep Code Enter + 2L (not required)
  - Enter Gate Enter + 3L (not required)
  - Go to Page 2 NEXT PAGE
  - Copy GPS L Position L4
  - Go to Page 1 PREV PAGE
  - Paste GPS Position R4

- IRS
  - IRS Selector Left NAV
  - IRS Selector Right NAV

- FMC
  - Route page R6
  - Enter Airport Dep Code L1
  - Enter Airport Arrival Code R1
Checklist + Flow-Procedure
Boeing 737 NG
-600/-700/-800/-900

- Enter Flight No. R2
- Go to Page 2 NEXT PAGE
- Enter first waypoint after SID R1
- Enter all airways Lx
  ### Repeat until all airways entered ###
- Enter last waypoint before STAR Rx (x = line of last airway)
- Activate R6
- Execute EXEC
  ### Enter alternative destination if desired via L6 ###
- Perf Init Page R6
- Auto-Enter ZFW 2x L3
- Enter Cost Index Enter + L5 (e.g. 80)
- Enter Cruise Flightlevel Enter + R1
- Enter Transition Alt Enter + R5
- Enter Average Cruise Wind Enter + R2 (not required)
- Enter Reserves Enter + L4
- Execute EXEC
- N1 Limit Page R6
- Set t/o power as desired
- Takeoff Page R6

- Fuel Pump Aft No.1 On
  ### Check Low Pressure Light extinguished ###
- APU START
- EFIS-Mode MAP
- EFIS-Range 20 nm (or as required)
  ### Wait until APU Gens available ###
- APU Gen Switch Left On
- APU Gen Switch Right On
  ### Wait until APU GEN OFF BUS + SOURCE OFF lights extinguished ###
- APU Bleed Switch Check On
- Engine Bleed Switches Check On
- AC-Voltemeter-Selector (right) APU
• FMC
  o Main Menu Page
  o FS Actions Menu
  o Ground Connections
  o Disconnect Ground Pwr
  o Disconnect Air Start Unit
  o Disconnect Air Cond. Unit
• Master Caution
  Disengage
• Com1-Frequenz
  Set (active ATC or 122.8 UniCom)
• IVAP-flightplan
  Copy route from FSBuild
• Departure Time
  Enter in UTC time (CET-2/CEWT-1)
• IVAP-flightplan
  Fill out and send
• IFR-Clearance
  o Clearance
  Request
  o First Altitude
  Note
  o Departure Route (SID)
  Note
  o Squawk Code
  Note
• Squawk
  Set
• Altimeter
  Set to current atm. pressure (B)
• First Altitude
  Set A/P-Alt.
• FMC
  o DEP/ARR Page
  DEP / ARR
  o Departure Page
  L1
  o Set dep. runway
  Rx
  o Set SID
  Lx
  o Set Transition
  Lx
  o Execute
  EXEC
  o Route Page
  RTE
  ### Check no discontinuities, delete any of them ###
  o Takeoff Page
  R6
  o Enter t/o flaps
  Enter + L1
  o Auto-Enter V-Speeds
  R1, R2, R3
<table>
<thead>
<tr>
<th>Task</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-Enter CG</td>
<td>2x L3 (note trim data)</td>
</tr>
<tr>
<td>Go to Page 2</td>
<td>NEXT PAGE</td>
</tr>
<tr>
<td>Enter t/o winds</td>
<td>Enter + L1</td>
</tr>
<tr>
<td>Select Runway condition</td>
<td>R1</td>
</tr>
<tr>
<td>Set Elevator trim</td>
<td>Set to trim data from FMC</td>
</tr>
<tr>
<td>Gangway</td>
<td>Disable (ctrl + j)</td>
</tr>
<tr>
<td>Door 1</td>
<td>Close (Shift + E / via FMC)</td>
</tr>
<tr>
<td>Doors</td>
<td>Check all closed</td>
</tr>
<tr>
<td>Gen Bus Transfer Switch</td>
<td>Check Auto + Covered</td>
</tr>
<tr>
<td>Fuel Pumps</td>
<td>All on (no cross-feed)</td>
</tr>
<tr>
<td>Hydraulic Pumps</td>
<td>All on</td>
</tr>
<tr>
<td>Anticollision Lights</td>
<td>On</td>
</tr>
<tr>
<td>Pack Left</td>
<td>Off</td>
</tr>
<tr>
<td>Pack Right</td>
<td>Off</td>
</tr>
<tr>
<td>Thrust</td>
<td>Idle (check)</td>
</tr>
<tr>
<td>Fuel Control Switches</td>
<td>Cutoff (check)</td>
</tr>
</tbody>
</table>

**Engine s/u & Pushback:**

- **Engine s/u & p/b clearance**
  - Request
- **FMC**
  - Main Menu Page
  - FS Actions Menu
  - Ground Connections
  - Wheel Chocks Off
  - MENU
  - R5
  - L3
  - L1
- **Pushback**
  - Start (via IVAP or FMC menu)

- **Duct Pressure Gauge**
  - 30 PSI (verify)
- **Ignition Selector**
  - Engine L (or R or Both)
- **Left Engine Start Switch**
  - GRD
  - ### Wait till Engine 1 at N2 > 20% ###
- **Left Engine Fuel Control Switch**
  - On
  - ### Wait till Left Engine Start Switch returned to off ###

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Created by C. Rau (www.CarstenRau.de)
- Left Engine Start Switch  
- Right Engine Start Switch  CONT  
  GRD  
  ### Wait till Engine 2 at N2 > 20% ###  
- Right Engine Fuel Control Switch  On  
  ### Wait till Right Engine Start Switch returned to off ###  
- Right Engine Start Switch  CONT  
- Engine Generator Switches  On  
  
- AC-Voltemeter-Selector  Gen 1 (or 2)  
- APU  Off  
- APU Bleed  Off  
- Pack Left  On  
- Pack Right  On  
- Pitot Heat Switches (PROBE)  On  
- Window Heat  As Required  
- Engine Anti-Ice  As Required  
- Wing Anti-Ice  As Required  
- Yaw Damper  On  
- Flaps  Select (as entered in FMC)  
- Autobreak  RTO  
- Pushback  End  
- Taxi-Lights  On  
- Runway Turnoff Lights  On  
- TCAS  Test  
  ### Wait for “TCAS Test passed” sound ###  
- TCAS  TA/RA  

**Taxi:**
- Taxi-Clearance  Request  
- Taxiways  Note  
- ( Ground guidance  Request if needed )  
- Taxi to h/p
Checklist + Flow-Procedure
Boeing 737 NG
-600/-700/-800/-900

○ Autopilot
  ▪ AP Disengage bar: Set Up (AP available)
  ▪ FD (Flight Director): On
  ▪ AT (Auto-Throttle): On
  ▪ IAS: 250 knots / first speed limit
  ▪ HDG: Rwy heading
  ▪ ALT: To assigned altitude (first alt)

○Spoiler: Armed

h/p:
- Hand-off GND to TWR: Change frequency
- I/u & t/o clrc: state ready for dep (h/p xx)
- Landing-Lights: On
- Runway Turnoff Lights: On
- Taxi-Lights: Off
- Position Lights: Strobe + Steady
- IVAP-Transponder: On
- Postion & hold: Taxi & stop on rwy

Ready to Takeoff:
- Parkingbreak: Set
- Thrust Levers: Takeoff-Setting
- Parkingbreak: Release
- Yoke (till 80 knots): Press forward
- VR: Rotate
- V2: Lift-off

Takeoff:
- Trim settings: Adjust (when needed)
- Gear: Up (at positive climb rate >500ft)

### After climb over 1000 ft ASL ###
### Checklist for Boeing 737 NG -600/-700/-800/-900

#### Autopilot
- On

#### VNAV
- On

#### LNAV
- On

#### Flaps
- Raise on schedule

#### Start time
- Note (if needed)

#### Hand-off TWR to DEP(APP)
- Change frequency

### Climb:

- Autobreak: Off
- Spoiler: Disarm
- Landing Lights: Off
- Runway Turnoff Lights: Off
- Wheel Well Lights: Off

#### AP altitude
- Set

#### Hand-off DEP(APP) to CTR
- Change frequency

- Window Heat: On (under 10°C TAT)
- Engine Anti-Ice: On (under 10°C TAT)
- Wing Anti-Ice: On (under 10°C TAT)
- Altimeter: Readjust (above 18000ft)

### Cruise:

- Radio /ATC contact: Maintain
- Autopilot / FMC: Check permanently
- FMC Progress Page: Check fuel consumption

#### Center fuel tank empty
- Off

### Descent & Approach:

- Descent preparations: Begin 30nm before T/D
- Airport-/Metar-Information: Retrieve
- Autobreaks
- Top of Descent (T/D)
  - Alt (AP)
  - VNAV
- FMC
  - DEP/ARR Menu
  - Arrivals Page
  - STARS Select
  - Transition Select
  - Approach Select
  - App Transition Select
  - Route Page

### Delete any discontinuities by copying and pasting the first waypoint after the discontinuity into the line of the discontinuity (Rx → Lx) ###
- Init Ref Page
- Copy flap/speed setting
- Paste flap/speed setting

### When ILS available ###
- ILS frequency
- ILS course
- HGS Settings
  - Mode
  - STBY
  - RWY
  - GS

### When too fast / too high / drag require ###
- Speedbrakes
- Altimeter
- Hand-off CTR to APP

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Created by C. Rau (www.CarstenRau.de)
- Landing Lights  On
- Runway Turnoff Lights  On
- spoilers  Arm

**Final approach & Landing (handflown):**
- Flaps  Lower as indicated on PFD
  ### (e.g. if 1 passes on PFD set to 5 etc.) ###
- Gear  Down (latest at flap 20)
- ILS captured / Runway in sight  Announce (on UC state final app)
  ### Check flaps to ref-degree and gear down ###
- Hand-off APP to TWR  Change frequency
- Autopilot (AP)  Disengage (Disengage bar down)
- A/T (AP)  Off
- AP Disengage Warning  Off
- Trim settings  Adjust (when needed)
  ### After touchdown ###
- Throttles  Idle
- Spoilers  Engage (if not auto-engaged)
- Thrust reversers  Engage (if needed)
- Thrust reversers  Disengage under 80kt
- Runway  Vacate (on UC: “rwy vacated“)

**Final approach & Landing (Autoland):**
- Flaps  Lower as indicated on PFD
  ### (e.g. if 1 passes on PFD set to 5 etc.) ###
- Gear  Down (latest at flap 20)
- Decision Height (Ovhd Panel)  Set 100 (ft)
- AP Alt  Set 0
  ### 10 - 15nm before runway verify on glideslope, required to start autoland ###
- LOC/LOC (AP)  On (to follow ILS localizer)
### Verify white VOR/LOC illuminated on PFD ###
### Wait until localizer captured, verify green VOR/LOC illuminated ###
- **APP (AP)** On (to follow glideslope)

### Verify white GS illuminated on PFD ###
### Wait until ILS glideslope captured, verify green GS illuminated ###
- **AP2** On

### Verify both autopilots on ###
### Verify LAND3, ROLLOUT and FLARE illuminated on PFD ###
- **ILS captured** Announce (on UC state final app)
- **Hand-off APP to TWR** Change frequency
- **Landing clearence** Request (UC: state “short final”)

### After touchdown ###
- **Throttles** Idle
- **Spoilers** Engage (if not auto-engaged)
- **Thrust reversers** Engage (if needed)
- **Thrust reversers** Disengage under 80kt
- **Autopilot (AP)** Disengage (bar down)
- **A/T (AP)** Off
- **AP Disengage Warning** Off
- **Runway** Vacate (UC: state „rwy vacated“)

### Taxi: ###
- **Transponder** Stdby
- **Hand-off TWR to GND** Change frequency
- **Taxiways** Note and follow
- **( Ground-Guidance** Request if required)
- **FD (AP)** Off
- **Spoilers** Off
- **Flaps** Set 0
- **Autobreaks** Off
- **Taxi Lights** On
- **Landing Lights** Off
- Runway Turnoff Lights Off
- Position Lights Steady
- Wheel Well Lights On
- Window Heat Off
- Engine Anti-Ice Off
- Wing Anti-Ice Off
- Landing time Note (if needed)
- APU START
- Autopilot (AP) Reset (bar up)

Parking Position:

### Before entering parking position ###
- Taxi Lights Off
### At parking position ###
- Parkingbreak Set
### Wait till APU Gen available ###
- APU Gen Switches On
- APU-Bleed On
- AC-Voltemeter-Selector APU
- ENG 1 Cut off
- ENG 2 Cut off
- Master Warning Disengage
- FMC
  - Main Menu MENU
  - FS Actions R5
  - Ground Connections L3
  - Set Wheel Chocks/Breaks L1
  - Ground Power L2
  - Air Start Unit L3
  - Air Condition Unit L4
  - Return L6
  - Door Menu L4
Checklist + Flow-Procedure
Boeing 737 NG
-600/-700/-800/-900

- Open Doors
- Gangway
- Seat-Belts
- Ground Power (GRD PWR)
- AC-Voltemeter-Selector (right)
- APU
- APU Bleed
- External Lights
  - Position
  - Wheel Well
  - Logo
  - Wing
  - Anti-Collision
- TCAS
- Yaw Damper
- Pitot Heat Switches (PROBE)
- Engine Start Switches
- Hyd Pumps
- Fuel Pumps
- Master Warning
  ### Stop here for next flight, continue to set cockpit to dark+cold ###
- External Lights
- Emergency Lights
- IRS Selectors
- AC-Voltemeter-Selector (right)
- Ground Power (GRD PWR)
- IFE Pass Seat Power
- Cabin / Utility Power
- Interior Lights
- DC-Voltemeter-Selector (left)
- Master Warning
- Battery

Lx / Rx
Enable (ctrl + j)
Off / Auto
On
GND PWR
Off
Off
Steady
On
On
On
Off
Stdby
Off
Both Off
All Off
All Off
Disengage
All Off
Uncovered + Off
Both off
STBY PWR
Off
Off
All Off
STBY PWR
Disengage
Uncovered + Off
Flights-Planing-Charts:
As all required charts are included within the FCOMv1 PDF-File I will not include them here again. Print the following pages from the PDF-file for the listed 737 models:
737-600: 285-288, 295-299, 305 (data in KG, 10 pages)
737-700: 325-327, 333-337, 343 (data in LB, 9 pages)
737-800: 359-362, 369-373, 379 (data in KG, 10 pages)
737-900: 405-408, 417-421, 427 (data in LB, 10 pages)
737-900ERW: 447-450, 457-461, 467 (data in KG, 10 pages)

Further Notes:

- Total fuel = Trip fuel + Reserves (45min Holding, 60min Diversion to alternate, Contingency including minimum landing fuel, 5% of trip-length-reserve and taxi-out fuel). Modify alternate value as required.
- Load wing tanks first, with same amount of fuel; wing tanks full ➔ center tank.

**Fuel planning notes (737-600):**

<table>
<thead>
<tr>
<th>Operation</th>
<th>Weight (KGS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Operating Weight (OEW)</td>
<td>XX.XXX</td>
</tr>
<tr>
<td>+ Payload (passengers &amp; cargo)</td>
<td>XX.XXX</td>
</tr>
<tr>
<td>= Zero Fuel Weigh (ZFW) (max 51.709 KGS)</td>
<td>XX.XXX</td>
</tr>
<tr>
<td>+ Holding</td>
<td>1.200</td>
</tr>
<tr>
<td>+ Diversion</td>
<td>1.750</td>
</tr>
<tr>
<td>+ Contingency Fuel</td>
<td>550</td>
</tr>
<tr>
<td>= Planned Landing Weight (PLW) (max 54.657 KGS)</td>
<td>XX.XXX</td>
</tr>
<tr>
<td>+ Flight Plan Fuel (fuel for route)</td>
<td>XX.XXX</td>
</tr>
<tr>
<td>= Planned Takeoff Weight (PTOW) (max 57.606 KGS)</td>
<td>XX.XXX</td>
</tr>
</tbody>
</table>

➔ Flight Plan Fuel + 3.500 KGS = Total Fuel
**Fuel planning notes (737-700):**

<table>
<thead>
<tr>
<th>Operation</th>
<th>Value (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Operating Weight (OEW)</td>
<td>XX.XXX LBS</td>
</tr>
<tr>
<td>+ Payload (passengers &amp; cargo)</td>
<td>XX.XXX LBS</td>
</tr>
<tr>
<td>= Zero Fuel Weigh (ZFW) (max 120.500 LBS)</td>
<td>XX.XXX LBS</td>
</tr>
<tr>
<td>+ Holding</td>
<td>2.800 LBS</td>
</tr>
<tr>
<td>+ Diversion</td>
<td>4.000 LBS</td>
</tr>
<tr>
<td>+ Contingency Fuel</td>
<td>1.000 LBS</td>
</tr>
<tr>
<td>= Planned Landing Weight (PLW) (max 128.000 LBS)</td>
<td>XX.XXX LBS</td>
</tr>
<tr>
<td>+ Flight Plan Fuel (fuel for route)</td>
<td>XX.XXX LBS</td>
</tr>
<tr>
<td>= Planned Takeoff Weight (PTOW) (max 133.000 LBS)</td>
<td>XX.XXX LBS</td>
</tr>
</tbody>
</table>

⇒ Flight Plan Fuel + 7.800 LBS = Total Fuel

**Fuel planning notes (737-800):**

<table>
<thead>
<tr>
<th>Operation</th>
<th>Value (KGS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Operating Weight (OEW)</td>
<td>XX.XXX KGS</td>
</tr>
<tr>
<td>+ Payload (passengers &amp; cargo)</td>
<td>XX.XXX KGS</td>
</tr>
<tr>
<td>= Zero Fuel Weigh (ZFW) (max 61.688 KGS)</td>
<td>XX.XXX KGS</td>
</tr>
<tr>
<td>+ Holding</td>
<td>1.400 KGS</td>
</tr>
<tr>
<td>+ Diversion</td>
<td>2.200 KGS</td>
</tr>
<tr>
<td>+ Contingency Fuel</td>
<td>600 KGS</td>
</tr>
<tr>
<td>= Planned Landing Weight (PLW) (max 65.317 KGS)</td>
<td>XX.XXX KGS</td>
</tr>
<tr>
<td>+ Flight Plan Fuel (fuel for route)</td>
<td>XX.XXX KGS</td>
</tr>
<tr>
<td>= Planned Takeoff Weight (PTOW) (max 70.533 KGS)</td>
<td>XX.XXX KGS</td>
</tr>
</tbody>
</table>

⇒ Flight Plan Fuel + 4.200 KGS = Total Fuel
Fuel planning notes (737-900):

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Operating Weight (OEW)</td>
<td>XX.XXX LBS</td>
</tr>
<tr>
<td>Payload (passengers &amp; cargo)</td>
<td>XX.XXX LBS</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Zero Fuel Weigh (ZFW) (max 138.300 LBS)</td>
<td>XX.XXX LBS</td>
</tr>
<tr>
<td>Holding</td>
<td>3.400 LBS</td>
</tr>
<tr>
<td>Diversion</td>
<td>4.800 LBS</td>
</tr>
<tr>
<td>Contingency Fuel</td>
<td>1.300 LBS</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Planned Landing Weight (PLW) (max 146.300 LBS)</td>
<td>XX.XXX LBS</td>
</tr>
<tr>
<td>Flight Plan Fuel (fuel for route)</td>
<td>XX.XXX LBS</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Planned Takeoff Weight (PTOW) (max 174.700 LBS)</td>
<td>XX.XXX LBS</td>
</tr>
</tbody>
</table>

→ Flight Plan Fuel + 9.500 LBS = Total Fuel

Fuel planning notes (737-900ERW):

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<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Operating Weight (OEW)</td>
<td>XX.XXX KGS</td>
</tr>
<tr>
<td>Payload (passengers &amp; cargo)</td>
<td>XX.XXX KGS</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Zero Fuel Weigh (ZFW) (max 62.731 KGS)</td>
<td>XX.XXX KGS</td>
</tr>
<tr>
<td>Holding</td>
<td>1.600 KGS</td>
</tr>
<tr>
<td>Diversion</td>
<td>2.400 KGS</td>
</tr>
<tr>
<td>Contingency Fuel</td>
<td>600 KGS</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Planned Landing Weight (PLW) (max 66.360 KGS)</td>
<td>XX.XXX KGS</td>
</tr>
<tr>
<td>Flight Plan Fuel (fuel for route)</td>
<td>XX.XXX KGS</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Planned Takeoff Weight (PTOW) (max 79.015 KGS)</td>
<td>XX.XXX KGS</td>
</tr>
</tbody>
</table>

→ Flight Plan Fuel + 4.600 KGS = Total Fuel
Intentionally Blank