

**DO NOT USE FOR FLIGHT**



## PART III – Normal Procedures

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## **ABOUT THIS MANUAL**

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### **WARNING:**

**THIS MANUAL IS FOR 777 CAPTAIN EXPANSION FOR MS FSX®/FSX-SE®/LOCKHEED MARTIN Prepar3D® ONLY. DO NOT USE FOR FLIGHT.  
DO NOT USE FOR TRAINING, COMMERCIAL OR INSTITUTIONAL PURPOSES.**

The '777 Captain' MANUAL is organized into four Parts:  
Each Part is provided as a separate Acrobat® PDF document:

- Part I – User's Manual
- Part II – Aircraft Systems
- **Part III – Normal Procedures** - this document
- Part IV - Flight Management System.

All Parts of the Manual are available free of charge via [Sim Ops](#).

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**DO NOT USE FOR FLIGHT****OPERATING LIMITATIONS****GENERAL**

This chapter contains Airplane Manual (AM) limitations and Boeing recommended operating limitations. Limitations that are obvious, shown on displays or placards, or incorporated within an operating procedure are not contained in this chapter.

**AIRPLANE GENERAL****OPERATIONAL LIMITATIONS**

Runway slope	±2%
Maximum Operating Altitude	43,100 feet pressure altitude
Maximum Takeoff and Landing Altitude	8,400 feet pressure altitude
Maximum Takeoff and Landing Tailwind Component	10 knots

**NON-AFM OPERATIONAL INFORMATION****Note**

The following items are not AFM limitations, but are provided for flight crew information.

Turbulent air penetration speed is: 290 KIAS/.78 Mach.

The navigation and display system does not support operations at latitudes greater than 87° North or South.

**AIRPLANE WEIGHT RESTRICTIONS****MAXIMUM WEIGHT LIMITATIONS**

Weights	Pounds
Maximum Taxi Weight (MTW)	413,000
Maximum Take Off Weight (MTOW)	412,000
Maximum Landing Weight (MLW)	320,000
Maximum Zero Fuel Weight (MZFW)	295,000

**OTHER WEIGHT RESTRICTIONS****Note**

These weights may be further restricted by field length limits, climb limits, tire speed limits, brake energy limits, obstacle clearance, or enroute and landing requirements.

**DO NOT USE FOR FLIGHT****AUTO FLIGHT**

After takeoff, the autopilot must not be engaged below 200 feet AGL.

Use of aileron trim with the autopilot engaged is prohibited.

Maximum allowable wind speeds when landing weather minima are predicated on autoland operations:

Headwind	25 knots
Crosswind	25 knots
Tailwind	10 knots

**ENGINE**

Continuous ignition must be on (engine start selector in the CONT position) while operating in severe turbulence.

**Note**

Continuous ignition is automatically provided in icing conditions when engine anti-ice is on.

Flight crew shall not blank engine vibration display during takeoff.

**ENGINE FUEL SYSTEM**

The maximum fuel temperature is 49° C (120° F).

The minimum inflight fuel tank temperature is 3°C (5°F) above the freeze point of the fuel being used.

The center tank may contain up to 2000 pounds of fuel with less than full main tanks provided center tank fuel weight plus actual zero fuel weight does not exceed the maximum zero fuel weight, and center of gravity limits are observed.

**REVERSE THRUST**

Reverse thrust is for ground use only.

Backing the airplane with use of reverse thrust is prohibited.

**FLIGHT CONTROLS**

The maximum altitude for flap extension is 20,000 ft.

**NAVIGATION**

Do not operate under IFR or at night into airports north of 73° North or south of 60° South latitude whose navigation aids are referenced to magnetic north.

## **NORMAL PROCEDURES**

### **INTRODUCTION**

#### **GENERAL**

This chapter contains Normal Procedures. It incorporates routine normal procedures and associated flight patterns.

#### **NORMAL PROCEDURES**

Normal procedures are used by the trained flight crew to ensure airplane condition is acceptable and that the flight deck is correctly configured for each phase of flight. These procedures assume all systems are operating normally and automated features are fully utilized.

Procedures are performed from recall and follow a panel flow. These procedures are designed to minimize crew workload and are consistent with flight deck technology. If the correct indication is not observed during accomplishment of procedures, verify controls are positioned correctly. If necessary, check the appropriate circuit breaker(s) and test the related system light(s).

Before engine start, lights or indications verify the systems' condition or configuration. Review the EICAS status display before engine start to determine if messages are displayed which may affect dispatch and require maintenance action or compliance with the Minimum Equipment List (MEL).

After engine start, it is not necessary to check status messages as any message having an adverse effect on safe continuation of the flight, and requiring crew attention, will appear as an EICAS alert message (warning, caution, or advisory).

EICAS alert messages are the primary means of alerting the flight crew to non-normal conditions or improper configuration. During engine start and prior to takeoff, any alert message requires accomplishment of the appropriate non-normal procedure. Upon completion of the procedure and prior to takeoff, the Dispatch Deviations Guide (DDG) should be consulted to determine if MEL relief is available.

Exterior lighting, flight deck lighting, and personal comfort items (such as shoulder heaters) are systems assumed to have obvious procedural requirements and are not addressed in this section.

Flight crew duties are organized in accordance with an area of responsibility concept. Each crewmember is assigned a flight deck area where the crewmember initiates actions for required procedures. The panel illustrations in this section describe each crewmember's area of responsibility for pre/post flight and phase-of-flight.

Pre/post flight duties are apportioned between the captain and first officer, while phase-of-flight duties are apportioned between the pilot flying (PF) and pilot not flying (PNF). A normal panel flow is encouraged; however, certain items may be handled in the most logical sequence for existing conditions. Actions outside the crewmember's area of responsibility are initiated at the direction of the captain. General phase-of-flight responsibilities are as follows:

##### **Pilot flying:**

- flight path and airspeed control
- airplane configuration
- navigation.

##### **Pilot not flying:**

- checklist reading
- communications
- tasks requested by PF
- fuel shutoff and fire switches (with PF concurrence).

Phase-of-flight duties, beginning with the takeoff procedure and ending with the landing roll procedure, are presented in table form in the appropriate procedures section.

The first officer, when flying the airplane, performs the duties listed under pilot flying and the captain performs those duties listed under pilot not flying.

Note: Although the mode control panel is designated as the pilot flying's

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responsibility, the pilot not flying should operate the controls on the mode control panel at the direction of the pilot flying when the airplane is being flown manually.

**Autopilot Flight Director System and Flight Management System Monitoring**

When the autopilot, flight director, or autothrottle is in use and a mode change is selected or is scheduled to occur, the annunciation must be verified on the flight mode annunciation display. Airplane course, vertical path, and speed must always be monitored.

Similarly, when a thrust reference mode change is selected or is scheduled to occur, the annunciation must be verified on the EICAS display.

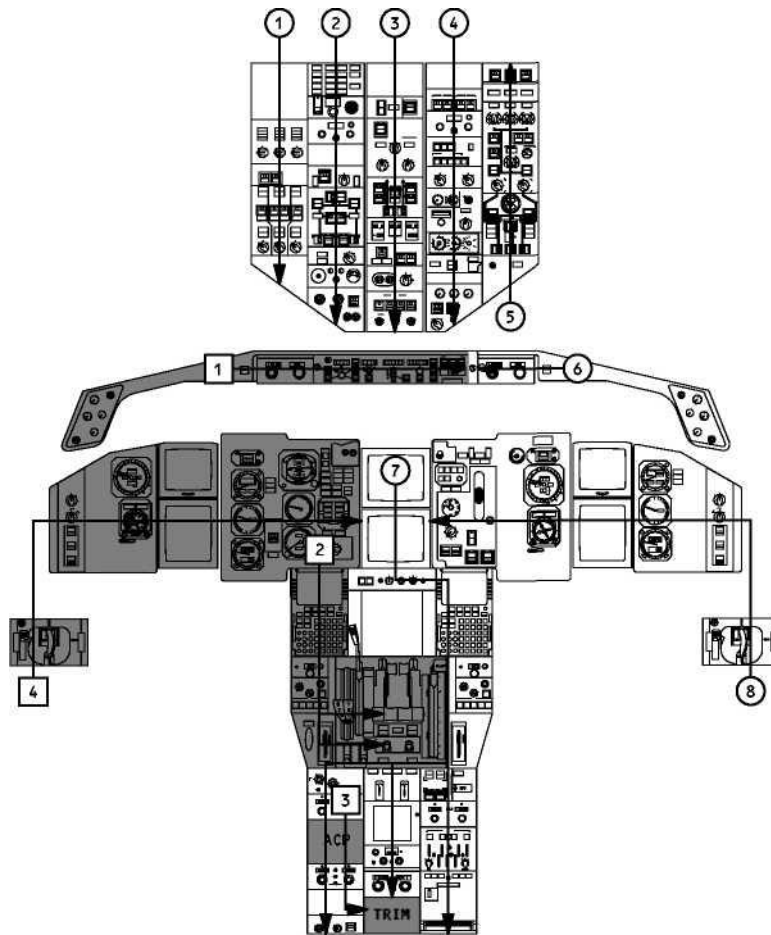
In LNAV and VNAV, all airplane course, vertical path, thrust, and speed changes must be verified.

**CDU Operation**

On the ground, the control display unit (CDU) manipulations are normally performed by the first officer and verified by the captain.

In flight, CDU entries are accomplished by the pilot not flying and verified by the pilot flying prior to execution. CDU manipulations should be accomplished prior to high workload periods such as departure, arrival, or holding. During high workload periods, using autopilot modes such as heading select, flight level change, and the altitude and speed intervention features, along with the map switches, may be more efficient than entering complex route modifications into the CDU.



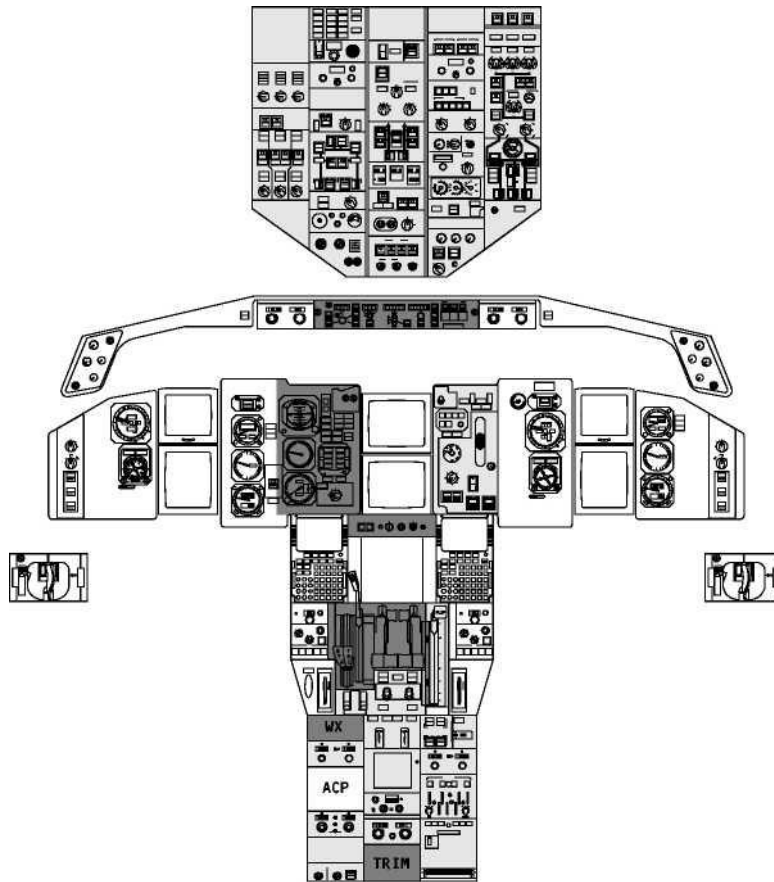
**DO NOT USE FOR FLIGHT****PREFLIGHT AND POSTFLIGHT AREAS OF RESPONSIBILITY AND PANEL FLOW**

Audio Control Panel (ACP) and trim location may vary

■ Captain

□ First Officer

LEGEND: Shaded area defines Captain's area of responsibility. Unshaded area is First Officer's responsibility.

**DO NOT USE FOR FLIGHT****PILOT FLYING AND PILOT NOT FLYING AREAS OF RESPONSIBILITY**

Weather Radar (WX) Audio Control Panel (ACP) and trim location may vary

■ PF area of Responsibility

■ PNF area of Responsibility

□ Unshaded areas are the responsibility of the pilot seated on the respective side.

**AMPLIFIED PROCEDURES****EXTERIOR INSPECTION**

Prior to each flight, a flight crewmember or the maintenance crew must verify the airplane is acceptable for flight.

Check:

- Flight control surfaces unobstructed and all surfaces clear of ice, snow, or frost.
- Door and access panels (not in use) properly secured.
- Ports and vents unobstructed.
- Airplane free of damage and fluid leakage.
- Wheel chocks in place, ground locking pins removed, and nose gear steering lever in normal position.
- Tire condition.
- Gear struts not fully compressed.

**PREFLIGHT PROCEDURE - FIRST OFFICER**

This procedure assumes the supplementary power up procedure has been accomplished and electrical power is established.

The following procedures are accomplished in their entirety on each originating trip or crew change, or following maintenance action.

Normally this procedure is accomplished by the First Officer. However, it does not preclude the captain from completing the procedure if time and conditions dictate.

Maintenance documents .....Check

FLIGHT DECK ACCESS SYSTEM switch.....NORM

RESERVE BRAKES & STRG RESET/DISABLE guard.....Closed  
Verify ISLN light extinguished.

Circuit breakers .....Check

Emergency equipment.....Check

IRS mode selectors .....OFF, then NAV  
Verify ALIGN lights illuminated.  
For all flights, a full alignment is recommended.

YAW DAMPER switches .....ON  
INOP lights remain illuminated until IRS alignment is complete.

EEC switches.....NORM

HYDRAULIC panel .....Set

LEFT and RIGHT ENGINE PRIMARY pump switches - ON  
Left and right engine pump PRESS lights remain illuminated until the respective engine is started.  
ELECTRIC PRIMARY pump switches - OFF  
DEMAND pump selectors - OFF

HF radio .....Set

BATTERY/STANDBY CONTROL panel.....Set  
BATTERY switch - ON  
Verify DISCH light extinguished.  
STANDBY POWER selector - AUTO

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Verify standby power bus OFF light extinguished.

ELECTRICAL panel .....Set  
BUS TIE switches - AUTO  
Verify AC BUS OFF and utility bus OFF lights extinguished. APU GENERATOR switch - ON

GENERATOR CONTROL switches - ON  
OFF and DRIVE lights remain illuminated until respective engine is started.

APU selector.....START, then ON  
Position the APU selector back to the ON position. Do not allow the APU selector to spring back to the ON position.

Lighting panel .....Set  
GLARESHIELD panel light controls - As desired  
AISLE STAND panel light controls - As desired  
LIGHT OVERRIDE switch - As desired  
RUNWAY TURNOFF light switches - OFF

EMERGENCY LIGHTS switch .....ARMED  
Verify UNARMED light extinguished.

PASSENGER OXYGEN ON light.....Extinguished

**CAUTION:**

Switch activation causes deployment of passenger oxygen masks.

RAM AIR TURBINE UNLKD light.....Extinguished

**WARNING:**

Switch activation may cause deployment of the ram air turbine.

ENGINE CONTROL panel .....Set  
Engine ignition selector - 1 or 2  
Engine start selectors - AUTO

FUEL JETTISON panel.....Set  
NOZZLE switches - OFF  
Selector-OFF

FUEL panel.....Set  
CROSSFEED switches - OFF  
Verify VALVE lights extinguished.

FUEL PUMP switches - OFF  
Left and right pump PRESS lights are illuminated.  
Left forward pump PRESS light is extinguished if the APU is running.  
Both center pump PRESS lights are extinguished.

ANTI-ICE panel.....Set  
WING anti-ice switch - OFF  
ENGINE anti-ice switches - OFF

WIPER selector .....OFF

Lighting panel .....Set  
POSITION light switch - As required  
RED and WHITE ANTI-COLLISION light switches - OFF  
WING light switch - OFF  
LANDING light switches - OFF

WINDOW HEAT switches.....ON  
Verify INOP lights extinguished.

HF radio .....Set

PASSENGER SIGNS panel .....Set

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NO SMOKING selector - AUTO or ON  
SEATBELTS selector - AUTO or ON

CABIN ALTITUDE CONTROL panel .....Set  
    AUTO RATE control - Index  
    LANDING ALTITUDE selector - Destination airport elevation  
    MODE SELECTOR - AUTO 1 or AUTO 2

EQUIPMENT COOLING mode selector .....AUTO

Lighting panel .....Set  
    CIRCUIT BREAKER panel light control - As desired  
    OVERHEAD PANEL light control - As desired  
    DOME LIGHT control - As desired  
    LOGO light switch - As desired  
    INDICATOR LIGHT selector - As desired

BLEED AIR panel .....Set  
    ENGINE bleed air switches - ON  
        Verify OFF lights illuminated.  
    APU bleed air switch - ON  
        Verify VALVE light extinguished.  
    LEFT, CENTER and RIGHT ISOLATION switches - ON  
        Verify VALVE lights extinguished.

Air conditioning panel .....Set  
    PACK CONTROL selectors - AUTO  
        Verify PACK OFF lights extinguished.  
    FLIGHT DECK temperature control - AUTO  
        Set as desired.  
        Verify INOP lights extinguished.  
    TRIM AIR switch - ON  
    RECIRCULATION FAN switches - ON  
        Verify INOP lights extinguished.  
    CABIN temperature controls - AUTO  
        Set as desired.  
        Verify INOP lights extinguished.

CARGO HEAT switches .....ON

Right VOR/DME switch .....AUTO

Right FLIGHT DIRECTOR switch .....ON

EICAS display .....Check

Secondary ENGINE DISPLAY switch - Push  
    Indications - Normal. Verify:  

- primary and secondary engine indications display existing conditions
- no exceedance values are displayed
- oil quantity adequate for flight.

STATUS DISPLAY switch - Push

STATUS display - Verify:  

- hydraulic quantities do not display RF

If any status message is displayed, refer to the Minimum Equipment List and Dispatch Deviation Guide to determine if dispatch relief is available.

COMPUTER selector - AUTO

Right CDU .....Set

If MENU page displayed:  
    FMC line select key - Push  
If IDENT page not displayed:

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INITREF key-Push  
INDEX line select key - Push  
IDENT line select key - Push  
IDENT page - Check  
    Verify active date current.  
    Verify Fuel Flow Factor is +1.7 or greater for PW4000 series engines.  
POS INIT line select key - Push  
    Verify time correct.  
Inertial position - Enter  
    Enter inertial position using the most accurate latitude and longitude.  
ROUTE line select key - Push  
    Select company route or load route manually.  
ACTIVATE line select key - Push  
EXEC key-Push  
DEPARR key-Push Select runway and SID.  
ROUTE line select key - Push  
    Verify SID and route are correct.  
EXEC key-Push

Right EFIS control panel .....Set  
    Decision height selector - As desired  
    TERRAIN switch - As desired  
    HSI RANGE selector - As desired  
    HSI TRAFFIC switch - As desired  
    HSI mode selector - MAP  
    HSI CENTER switch - As desired  
    WEATHER RADAR switch - Off  
    MAP switches - As desired

WEATHER RADAR panel.....Set  
    Set panel - As desired

Left VHF communications panel .....Set

Center VHF communications panel .....Set

Engine fire panel.....Set

ENG BTL 1 DISCH and ENG BTL 2 DISCH lights - Extinguished

Engine fire switches - In  
    Verify LEFT and RIGHT fire warning lights extinguished.

ADF panel.....Set  
    Set panel - As desired

Transponder panel .....Set

ILS panel.....Set  
    Set panel - As desired

CARGO FIRE panel .....Set  
    CARGO FIRE ARM switches - Off  
        Verify FWD and AFT fire warning lights extinguished.  
    CARGO FIRE BTL DISCH light - Extinguished

APU fire panel .....Set  
    APU BTL DISCH light - Extinguished  
    APU fire switch - In  
        Verify APU fire warning light extinguished.

Right VHP communications panel .....Set

First officer's audio control panel .....Set  
    Set panel - As desired

**DO NOT USE FOR FLIGHT**

Window 2 right.....Locked

Verify the lock lever is in the locked (forward) position and the WINDOW NOT CLOSED decal is not in view.

First officer's HEATERS .....Set  
FOOT and SHOULDER switches - As desired

First Officer's Lighting panel.....Set  
PANEL light control - As desired  
CHART light control - As desired  
FLOOD light control - As desired  
MAP light control - As desired

Right INSTRUMENT SOURCE SELECT panel .....Set  
FLIGHT DIRECTOR selector - R  
NAVIGATION SOURCE selector - FMC-R  
ALTERNATE SOURCE switches - Off

Right flight instruments .....Set

**Note:**

IRS alignment must be complete before AUTOLAND STATUS, VSI, ADI, HSI, and RDMI checks.

ALTIMETER - Correct  
Set the local altimeter setting.  
Verify instrument indications are correct.  
Verify no flag displayed.

VERTICAL SPEED INDICATOR - Correct  
Verify instrument indications are correct.  
Verify no flag displayed.

Clock - Correct  
DATE switch - GMT

ADI - Correct  
Flight mode annunciations - Verify:  
• autothrottle mode is blank  
• roll mode is TO  
• pitch mode is TO  
• AFDS status is F/D.  
Flight instrument indications are correct.  
Verify no flags displayed.

HSI - Correct  
Verify magnetic track correct.  
Verify present heading correct.  
Verify map mode displayed.  
Verify no flags displayed.  
Route - Displayed, correct

Airspeed indicator - Correct  
Verify instrument indications are correct.  
Verify no flag displayed.

RDMI - Correct  
VOR/ADF switches - As desired.  
Verify instrument indications are correct.  
Verify no inappropriate flag displayed.

AUTOLAND STATUS annunciator.....Check  
Verify blank indications.

HEADING REFERENCE switch.....NORM or TRUE

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FLAP position indication and FLAP lever .....Agree

ALTERNATE FLAPS .....Set  
     ALTERNATE FLAPS selector - NORM  
     ALTERNATE FLAPS switches - OFF

Landing gear panel .....Set  
     Landing gear lever - DN  
     ALTERNATE GEAR EXTEND switch - OFF (guarded position)

GROUND PROXIMITY FLAP OVERRIDE switch.....Off

GROUND PROXIMITY GEAR OVERRIDE switch.....Off

GROUND PROXIMITY TERRAIN OVERRIDE switch.....Off

Right seat.....Adjust  
     Position seat for optimum eye reference.

**WARNING:**

Do not place objects between the seat and the aisle stand. Injury can occur when the seat is adjusted forward.

Rudder Pedals .....Adjust  
     Adjust to permit full rudder pedal and brake application.

Right seat belt and shoulder harness.....Adjust  
     Accomplish PREFLIGHT checklist on captain's command.

**PREFLIGHT PROCEDURE - CAPTAIN**

Normally, this procedure is accomplished by the captain. However, it does not preclude the first officer from completing the procedure if time and conditions dictate.

Left VOR/DME switch.....AUTO

Mode control panel.....Set  
     Left FLIGHT DIRECTOR switch - ON  
     AUTOTHROTTLE ARM switch - ARM  
     BANK LIMIT selector - As desired  
     Autopilot DISENGAGE bar - UP

LeftCDU.....Set  
     If MENU page displayed:  
         FMC line select key - Push  
     If IDENT page not displayed:  
         INITREF key-Push  
         INDEX line select key - Push  
         IDENT line select key - Push  
     IDENT page - Check  
         Verify active date current.  
         Verify Fuel Flow Factor is +1.7 or greater for PW4000 series engines.  
     POS INIT line select key - Push  
         Verify present position and time correct.  
     ROUTE line select key - Push  
         Verify:  
             • flight number correct  
             • route correct.

Left EFIS control panel .....Set  
     Decision height selector - As desired  
     TERRAIN switch - As desired  
     HSI RANGE selector - As desired  
     HSI TRAFFIC switch - As desired



**DO NOT USE FOR FLIGHT**

HSI mode selector - MAP  
HSI CENTER switch - As desired  
WEATHER RADAR switch - Off  
MAP switches - As desired

SPEEDBRAKE lever.....DOWN

ALTERNATE STABILIZER TRIM switches.....Neutral

Reverse thrust levers .....Down

**DO NOT USE FOR FLIGHT****WARNING:**

Movement of the reverse thrust lever could result in operation of the engine thrust reverser.

- Thrust levers.....Closed
- Flap lever .....Set  
Position lever to agree with flap position.
- Parking brake.....Set  
Verify PARK BRAKE light illuminated.
- STABILIZER TRIM cutout switches .....NORM (guarded position)
- FUEL CONTROL switches.....CUT OFF
- Captain's audio control panel.....Set  
Set panel - As desired
- Window 2 left.....Locked  
Verify the lock lever is in the locked (forward) position and the WINDOW NOT CLOSED decal is not in view.
- Captain's HEATERS .....Set  
FOOT and SHOULDER switches - As desired
- Captain's Lighting panel.....Set  
PANEL light control - As desired  
CHART light control - As desired  
FLOOD light control - As desired  
MAP light control - As desired
- Left INSTRUMENT SOURCE SELECT panel .....Set  
FLIGHT DIRECTOR selector - L  
NAVIGATION SOURCE selector - FMC-L  
ALTERNATE SOURCE switches - Off
- Left flight instruments .....Set
- Note:**
- IRS alignment must be complete before AUTOLAND STATUS, VSI, ADI, HSI, and RDMI checks.
- Airspeed indicator - Correct  
Verify instrument indications are correct.  
Verify no flag displayed.
- RDMI - Correct  
VOR/ADF switches - As desired.  
Verify instrument indications are correct.  
Verify no inappropriate flag displayed.
- ADI - Correct  
Flight mode annunciations - Verify:  
•..autothrottle mode is blank  
•..roll mode is TO  
•..pitch mode is TO  
•..AFDS status is F/D.  
Flight instrument indications are correct.  
Verify no flags displayed.
- HSI - Correct  
Verify magnetic track correct.  
Verify present heading correct.  
Verify map mode displayed.  
Verify no flags displayed.  
Route - Displayed, correct
- ALTIMETER - Correct  
Set the local altimeter setting.  
Verify instrument indications are correct.  
Verify no flag displayed.

**DO NOT USE FOR FLIGHT**

- VERTICAL SPEED INDICATOR - Correct  
    Verify instrument indications are correct.  
    Verify no flag displayed.  
Clock - Correct  
    DATE switch - GMT
- AUTOLAND STATUS annunciator .....Check  
    Verify blank indications.
- RESERVE BRAKES AND STEERING switch.....OFF  
    Verify VALVE light extinguished.
- Standby instruments .....Check  
    Standby ADI - Check  
        ILS selector-OFF  
        Verify no flags displayed.  
    Airspeed indicator - Check  
        Verify instrument indications are correct.  
    Altimeter - Set  
        Set local altimeter setting.  
        Verify instrument indications are correct.
- Standby engine indicator selector .....AUTO
- AUTO BRAKES selector .....OFF
- Left seat .....Adjust  
    Position seat for optimum eye reference.
- WARNING:**  
    Do not place objects between the seat and the aisle stand. Injury can occur when the seat is adjusted forward.
- Rudder pedals .....Adjust  
    Adjust to permit full rudder pedal and brake application.
- Left seat belt and shoulder harness .....Adjust

**BEFORE START PROCEDURE**

This procedure is accomplished after papers are on board and flight crew is ready for push back and/or engine start.

- Takeoff thrust reference .....Set      C, F/O  
    Verify correct thrust reference mode displayed.
- CDU .....Set      C,F/O  
    INITREF key-Push  
        Verify fuel quantities agree:  
            • upload fuel quantity  
            • fuel quantity indicator  
            • CDU.  
        Enter:  
            • zero fuel weight  
            • reserve fuel  
            • cruise altitude  
            • cost index.  
        Check:  
            • Step size  
    TAKEOFF line select key - Push  
        Enter:  
            • takeoff flap setting.  
            • CG  
            • position shift value (if required).  
            • wind (if required).

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- slope (if required).
- Check:
- thrust line.
  - acceleration height.

Verify PRE-FLT COMPLETE displayed

CDU display-Set

Usually one pilot on LEGS page and the other on CLB page.

**Note:**

If required for noise abatement reasons, enter a speed restriction, on the CLIMB page, of VREF 30 + 80 to 3,000 feet above field elevation.

MCP .....Set..... C

IAS/MACH selector - Rotate

Set V2 speed in the IAS/MACH window.

Initial heading - Set

Initial altitude - Set

Airspeed bugs .....Set C, F/O

Set bugs at VI, VR, VREF 30 + 40, and VREF 30 + 80.

Start clearance.....Obtain C, F/O

Obtain clearance to pressurize hydraulic systems and start engines.

HYDRAULIC panel .....Set..... F/O

**Note:**

Pressurize right system first to prevent fluid transfer between systems.

Right ELECTRIC DEMAND pump selector - AUTO

Verify PRESS lights extinguished.

C1 and C2 ELECTRIC PRIMARY pump switches - ON

Verify C1 PRESS light extinguished.

Center AIR DEMAND pump selector - AUTO

Verify PRESS lights extinguished.

Left ELECTRIC DEMAND pump selector - AUTO

Verify PRESS lights extinguished.

**Note:**

C2 PRESS light will not be extinguished due to load shedding. Indication will be normal after engine start.

FUEL panel.....Set..... F/O

LEFT and RIGHT FUEL PUMP switches - ON

Verify PRESS lights extinguished.

If center tank contains fuel:

CENTER FUEL PUMP switches - ON

**Note:**

Both PRESS lights will not be extinguished due to load shedding. Indications will be normal after engine start.

RED ANTI-COLLISION light switch.....ON ..... F/O

PACK CONTROL selectors.....OFF ..... F/O

Trim..... Units, zero, zero C, F/O

Stabilizer trim - \_\_\_\_\_ UNITS

Set for takeoff.

Check in greenband.

Aileron trim - ZERO

Rudder trim-ZERO

Flight controls .....Check ..... C

Displace control wheel and control column to full travel in both directions and verify:

- freedom of movement

**DO NOT USE FOR FLIGHT**

- controls return to center
- proper flight control movement on EICAS status display.

Hold the nose wheel steering tiller during rudder check to prevent undesired nose wheel movement.

Displace rudder pedals to full travel in both directions and verify:

- freedom of movement
- rudder pedals return to center
- proper flight control movement on EICAS status display.

Secondary ENGINE DISPLAY switch.....PUSH..... F/O

Call for "BEFORE START CHECKLIST." .....C

Accomplish BEFORE START checklist. ....F/O

**DO NOT USE FOR FLIGHT****NORMAL PROCEDURES - AMPLIFIED PROCEDURES****ENGINE START PROCEDURE**

<b>Captain</b>	<b>First Officer</b>
Announce start sequence.	
Normal start sequence is right then left	
Call "START_____ENGINE."	Position_____START selector to GROUND.
Observe oil pressure increase	
Position_____FUEL CONTROL switch to RUN when:	
<ul style="list-style-type: none"> <li>at maximum motoring and a minimum of 15% N2</li> </ul>	
Observe initial EGT rise and EGT within limits.  Abort start if EGT fails to rise within 20 seconds of selecting RUN or if EGT rising rapidly or approaching limit.  Abort start if N1 fails to increase at EGT rise.  Abort start if N2 fails to reach stabilized idle within 120 seconds of selecting RUN.  Do not advance thrust beyond that required for taxi until 50°C oil temperature.	

Repeat procedure to start remaining engine.

**AFTER START PROCEDURE**

APU selector.....OFF ..... F/O

ENGINE ANTI-ICE switches .....As required ..... F/O

LEFT and RIGHT ISOLATION switches.....OFF ..... F/O

PACK CONTROL selectors.....AUTO..... F/O

RECALL .....Check ..... C, F/O

If any message displayed refer to Minimum Equipment List and Dispatch Deviation Guide or airline equivalent to determine if dispatch relief is available.

AUTO BRAKES selector .....RTO..... C

Ground equipment .....Clear ..... C, F/O

Call for "AFTER START CHECKLIST.".....C

Accomplish AFTER START checklist. ....F/O

**DO NOT USE FOR FLIGHT****BEFORE TAKEOFF PROCEDURE**

Obtain taxi clearance .....F/O

Brief taxi clearance .....C

Parking brake.....Release..... C

Call for "FLAPS \_\_" as required for takeoff .....C

Position flap lever to takeoff setting. ....F/O

Takeoff briefing .....Accomplish..... C

Flight attendants .....Notify ..... F/O

Call for "BEFORE TAKEOFF CHECKLIST." .....C

Accomplish BEFORE TAKEOFF checklist.....F/O

**TAKEOFF PROCEDURE**

<b>Pilot Flying</b>	<b>Pilot Not Flying</b>
Release brakes. Align airplane with runway.	Position LEFT and RIGHT WING LANDING and WHITE ANTI-COLLISION light switches ON. Position transponder mode selector to TA/RA.
Advance thrust levers to approximately 1.10 EPR. Push THR switch.	
Verify correct takeoff thrust set.	Monitor engine instruments throughout takeoff. Adjust takeoff thrust prior to 80 knots, if required.
<b>Note:</b> After takeoff thrust is set, the captain's hand must be on the thrust levers until VI.	
Monitor airspeed.	Monitor airspeed indications and call out any abnormalities.
Verify 80 knots.	Call "80 KNOTS."
Verify V1 speed.	Call "V1"
Rotate at VR.	At VR call "ROTATE."
Establish a positive rate of climb.	Monitor airspeed and vertical speed.
Call for "GEAR UP" when positive rate of climb established.	Verify positive rate of climb then position landing gear lever UP.
Call for "LNAV" when climb stabilized.	Push L NAV switch.
Call for "VNAV" at flap retraction altitude. Push A/P ENGAGE COMMAND switch.	Push VNAV switch.
Call for "FLAPS ____" according to flap retraction schedule.	Position flap lever as directed.
Verify climb thrust set.	

**DO NOT USE FOR FLIGHT**

Call for "AFTER TAKEOFF CHECKLIST."	Position landing gear lever OFF after GEAR and DOORS lights extinguish.  Accomplish AFTER TAKEOFF checklist.
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**CLIMB PROCEDURE**

Pilot Flying	Pilot Not Flying
	Above 10,000 feet, position LANDING light switches OFF.
At transition altitude, set altimeters to 29.92 in Hg (1013 mb).	

**CRUISE PROCEDURE**

Pilot Flying	Pilot Not Flying
	When CTR L and CTR R FUEL PUMP messages are displayed, push CENTER FUEL PUMP switches OFF.

**DESCENT PROCEDURE**

Pilot Flying	Pilot Not Flying
	Prior to top of descent, modify active route as required for arrival and approach.
	Verify pressurization set to landing altitude.
Set DH as required for approach.	Set DH, ADF, and ILS as required for approach.
Review all alert messages.	Recall and review all alert messages.
Set airspeed reference bugs to VREF 30, VREF 30 + 40 and VREF 30 + 80.	Set airspeed reference bugs to VREF 30, VREF 30 + 40 and VREF 30 + 80.
Set AUTO BRAKES selector to desired brake setting.	
When cleared to descend, set clearance limit altitude on MCP.	

**APPROACH PROCEDURE**

Pilot Flying	Pilot Not Flying
At transition level, set altimeters.	
Verify correct arrival and approach procedures selected.	
Accomplish approach briefing.	
	At 10,000 feet, position LEFT and RIGHT WING LANDING light switches ON.



**DO NOT USE FOR FLIGHT**

Call for "APPROACH CHECKLIST."	Accomplish APPROACH checklist.
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**DO NOT USE FOR FLIGHT****LANDING PROCEDURE**

<b>Pilot Flying</b>	<b>Pilot Not Flying</b>
	Notify flight attendants.
Call for "FLAPS ____" according to flap extension schedule.	Position flap lever as directed.
When on localizer intercept heading, verify ILS tuned and identified and localizer and glideslope pointers displayed, arm APP mode.	
At glideslope alive, call for:  "GEAR DOWN" "FLAPS 20."	Position landing gear lever DN.  Position flap lever to 20.
Position speedbrake lever to ARM.	
At glideslope capture, call for "FLAPS ____" as required for landing.	Position flap lever as commanded.
Set missed approach altitude on MCP.	
At final approach fix/OM, verify crossing altitude.	
Call for "LANDING CHECKLIST."	Accomplish LANDING checklist.
Monitor approach progress. Verify Autoland status at 500 feet radio altitude.	

**GO-AROUND PROCEDURE**

<b>Pilot Flying</b>	<b>Pilot Not Flying</b>
Push go-around switch.	Position flap lever to 20.
Call for "FLAPS 20."	
Verify rotation to go-around attitude and thrust increase.	
	Verify thrust adequate for go-around; adjust if necessary.
After positive rate of climb established, call for "GEAR UP."	Verify positive rate of climb then position landing gear lever UP.
Above 400 feet radio altitude, select LNAV or HDG SEL.	
At flap retraction altitude, set speed to VREF 30 + 80.  Call for "CLIMB THRUST."	Push CLIMB thrust reference mode select switch.
Call for "FLAPS ____" according to flap retraction schedule.	Position flap lever as directed.
After flap retraction, select FLCH or VNAV as required.	
Verify missed approach route being tracked and missed approach altitude captured.	

**DO NOT USE FOR FLIGHT**

Call for "AFTER TAKEOFF CHECKLIST."	Position landing gear lever OFF after GEAR and DOORS lights extinguish.  Accomplish AFTER TAKEOFF checklist.
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**LANDING ROLL PROCEDURE**

<b>Pilot Flying</b>	<b>Pilot Not Flying</b>
Monitor rollout progress and proper auto brakes operation.	
Verify thrust levers closed and speedbrake lever up.  Without delay, raise reverse thrust levers to the interlocks, hold light pressure until release, and then apply reverse thrust as required.	Verify speedbrake lever UP and call "SPEEDBRAKES UP." If speedbrake lever not UP, call "SPEEDBRAKES NOT UP."
By 60 knots, initiate movement of reverse thrust levers to reach reverse idle detent prior to taxi speed.  Position levers full down (forward thrust) when engines have decelerated to reverse idle.	Call "60 KNOTS."
Prior to taxi speed, disarm the auto brakes and continue manual braking as required.	
Disconnect autopilot prior to runway turnoff.	

**WARNING**

After reverse thrust is initiated, a full stop landing must be made.

**AFTER LANDING PROCEDURE**

Accomplished when clear of the active runway.

APU selector.....START, then ON..... F/O  
Position the APU selector back to the ON position. Do not allow the APU selector to spring back to the ON position.

Exterior lights.....Set..... F/O  
Position WHITE ANTI-COLLISION light switch OFF and LANDING/TAXI light switches as required.

Speedbrake lever.....DOWN ..... C

Weather radar.....Off ..... C,F/O

AUTO BRAKES selector .....OFF ..... F/O

Flaps.....UP ..... F/O

Transponder.....Off ..... F/O

**DO NOT USE FOR FLIGHT****SHUTDOWN PROCEDURE**

Parking brake .....Set..... C  
 Verify PARK BRAKE light illuminated.

Electrical power .....Establish ..... F/O  
 If APU power is required:  
     Check APU RUN light is illuminated.  
 If external power is desired:  
     EXTERNAL POWER AVAIL light - Illuminated  
     EXTERNAL POWER switch - Push

ENGINE ANTI-ICE switches .....OFF ..... F/O

FUEL CONTROL switches.....CUT OFF ..... C  
 Verify ENG VALVE and SPAR VALVE lights extinguished.

Parking brake .....Release..... C  
 When wheel chocks in place, release the parking brake.

SEATBELTS selector .....OFF ..... F/O

HYDRAULIC panel .....Set..... F/O

**Note:**

Depressurize right system last to prevent fluid transfer between systems.

Left ELECTRIC DEMAND pump selector - OFF  
 C1 and C2 ELECTRIC PRIMARY pump switches - OFF  
 Center AIR DEMAND pump selector - OFF  
 Right ELECTRIC DEMAND pump selector - OFF

FUEL PUMP switches.....OFF ..... F/O

RED ANTI-COLLISION light switch.....OFF ..... F/O

LEFT and RIGHT ISOLATION switches.....ON ..... F/O

FLIGHT DIRECTOR switches .....OFF C, F/O

Status messages .....Check ..... F/O

APU selector.....Set..... F/O  
 If APU power is no longer required:  
     APU selector-OFF

Call for "SHUTDOWN CHECKLIST." .....C

Accomplish SHUTDOWN checklist.....F/O

**SECURE PROCEDURE**

IRS mode selectors .....OFF ..... F/O

EMERGENCY LIGHTS switch .....OFF ..... F/O

WINDOW HEAT switches.....OFF ..... F/O

CARGO HEAT switches.....OFF ..... F/O

PACK CONTROL selectors.....OFF ..... F/O

Call for "SECURE CHECKLIST." .....C

**DO NOT USE FOR FLIGHT**

Accomplish SECURE checklist. ....F/O

**767 CHECKLISTS****NORMAL PROCEDURES****PREFLIGHT**

1	OXYGEN	TESTED, 100%
3	FLIGHT INSTRUMENTS	HEADING____, ALTIMETER____
4	PARKING BRAKES	SET
5	FUEL CONTROL SWITCHES	CUTOFF

**BEFORE START**

1	FLIGHT DECK DOOR	CLOSED AND LOCKED
2	PASSENGER SIGNS	_____
3	WINDOWS	LOCKED
4	MCP	V2____, HDG____, ALT____
5	TAKEOFF SPEEDS	V1____, VR____, V2____
6	CDU PREFLIGHT	COMPLETED
7	TRIM	_____UNITS, ZERO, ZERO
8	TAXI AND TAKEOFF BRIEFING	COMPLETED
9	RED ANTI COLLISION LIGHT	ON

**BEFORE TAXI**

1	ANTI-ICE	_____
2	L and R ISOLATION SWITCHES	OFF
3	RECALL	CHECKED
4	AUTOBRAKE	RTO
5	GROUND EQUIPMENT	CLEAR

**BEFORE TAKEOFF**

1	FLAPS	_____
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**AFTER TAKEOFF**

1	LANDING GEAR	UP and OFF
2	FLAPS	UP

**DESCENT**

1	PRESSURIZATION	LDG ALT
2	RECALL	CHECKED
3	AUTOBRAKE	_____
4	LANDING DATA	VREF____, MINIMUMS____
5	APPROACH BRIEFING	COMPLETED

**APPROACH**

1	ALTIMETERS	SET
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**LANDING**

**DO NOT USE FOR FLIGHT**

1	SPEEDBRAKE	ARMED
2	LANDING GEAR	DOWN
3	FLAPS	

**SHUTDOWN**

1	HYDRAULIC PANEL	SET
2	FUEL PUMPS	OFF
3	FLAPS	UP
4	PARKING BRAKE	DOWN
5	FUEL CONTROL SWITCHES	CUTOFF
6	WEATHER RADAR	OFF

**SECURE**

1	IRSs	OFF
2	EMERGENCY LIGHTS SWITCH	OFF
3	WINDOW HEAT	OFF
4	PACK SWITCHES	OFF

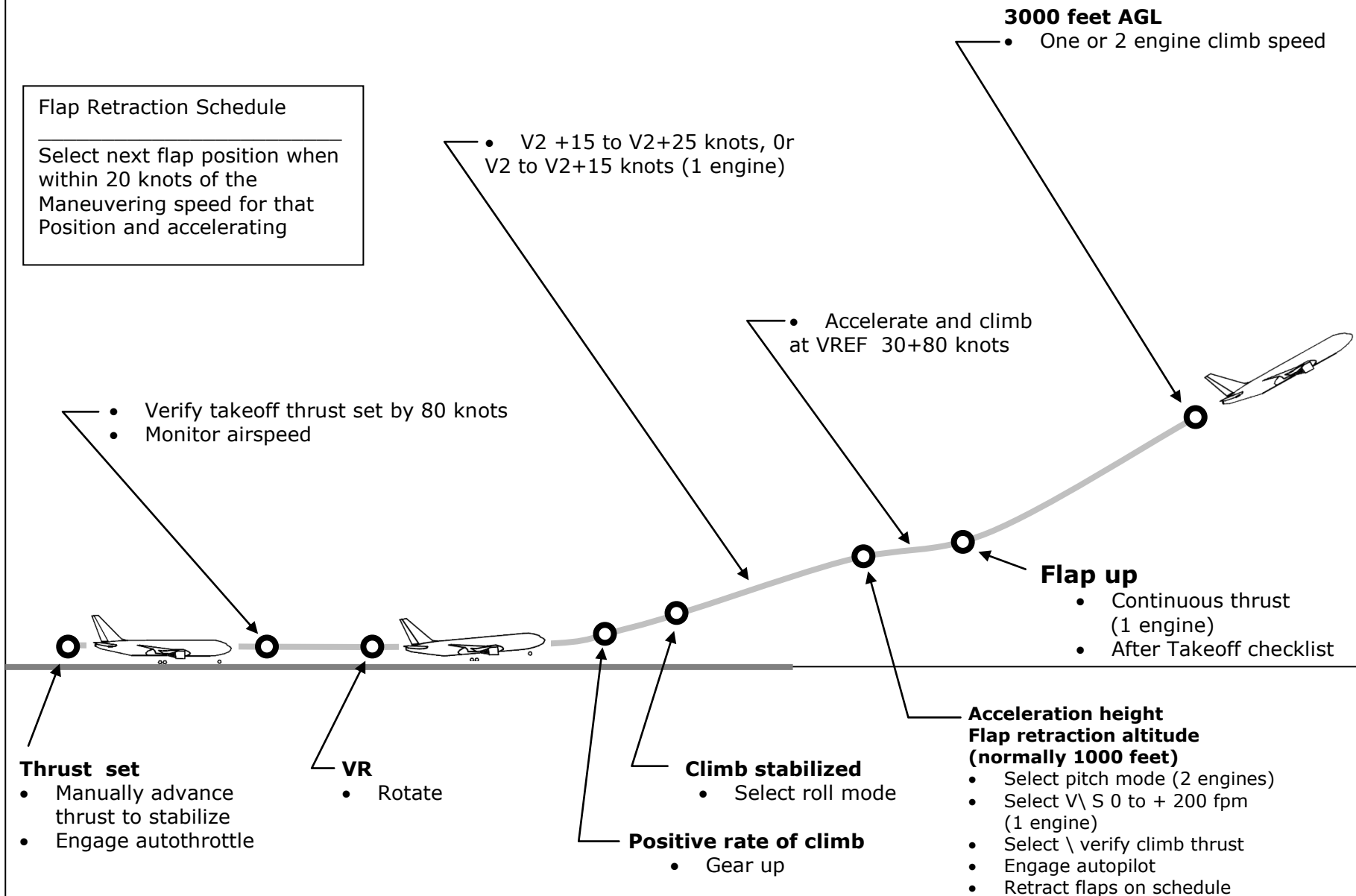
**FLIGHT PATTERNS**

**DO NOT USE FOR FLIGHT**

## Takeoff

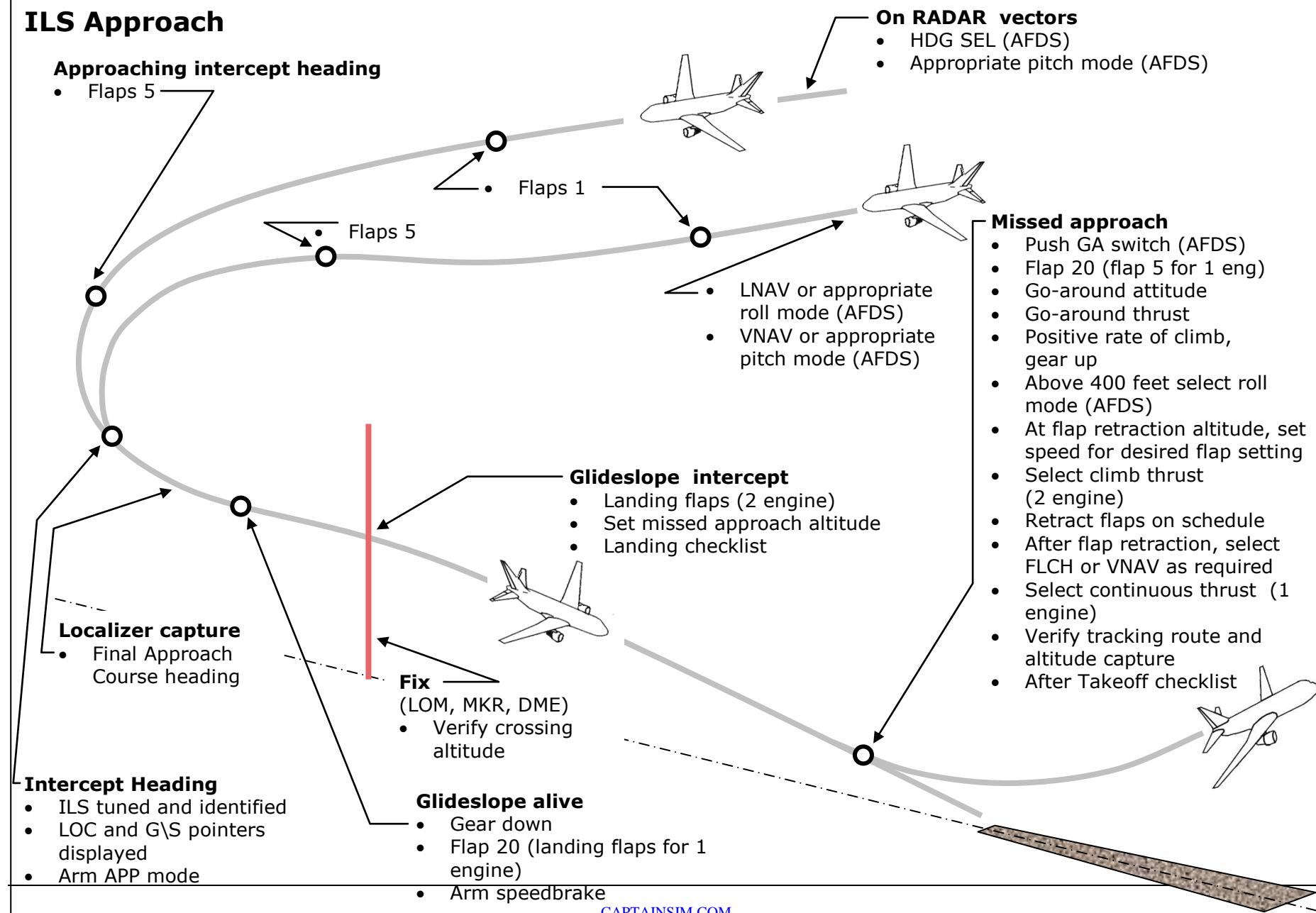
### Flap Retraction Schedule

Select next flap position when within 20 knots of the Maneuvering speed for that Position and accelerating



**DO NOT USE FOR FLIGHT**

## ILS Approach





**DO NOT USE FOR FLIGHT**

## Instrument Approach Using VNAV

### Approaching intercept heading

- Flaps 5

### On RADAR vectors

- HDG SEL
- Appropriate pitch mode

### Enroute to fix

- LNAV or appropriate roll mode
- VNAV or appropriate pitch mode

### Intercept Heading

- Arm LNAV or appropriate roll mode

### Descend to DA(H) or MDA(H)

- Monitor VNAV path
- Landing checklist

### Missed approach

- Push GA switch
- Flap 20 (flap 5 for 1 eng)
- Go-around attitude
- Go-around thrust
- Positive rate of climb, gear up
- Above 400 feet select roll mode
- At flap retraction altitude, set speed for desired flap setting
- Select CLB thrust (2 engine)
- Retract flaps on schedule
- After flap retraction, select FLCH or VNAV as required
- Select CON thrust (1 engine)
- Verify tracking route and altitude capture
- After Takeoff checklist

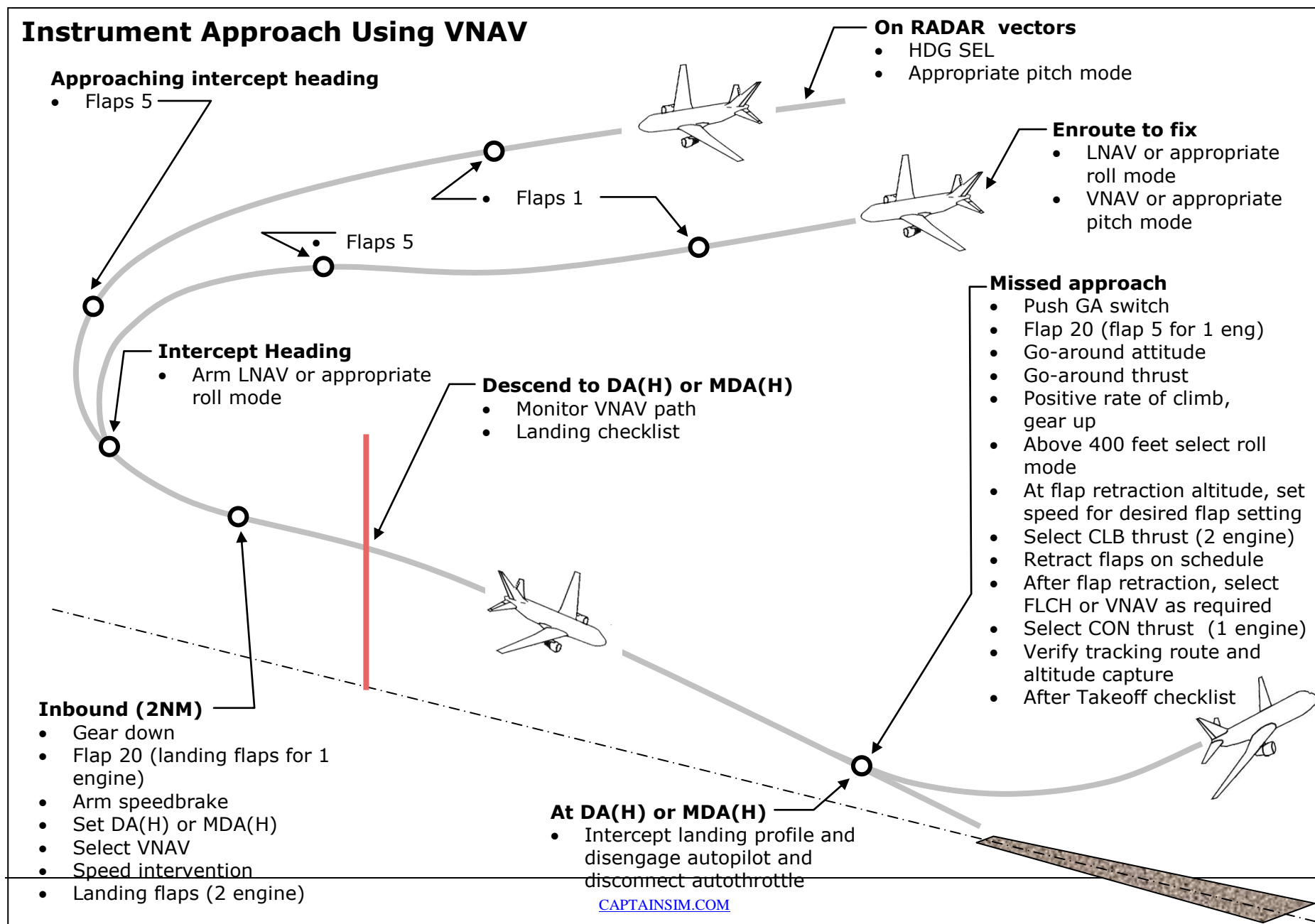
### Inbound (2NM)

- Gear down
- Flap 20 (landing flaps for 1 engine)
- Arm speedbrake
- Set DA(H) or MDA(H)
- Select VNAV
- Speed intervention
- Landing flaps (2 engine)

### At DA(H) or MDA(H)

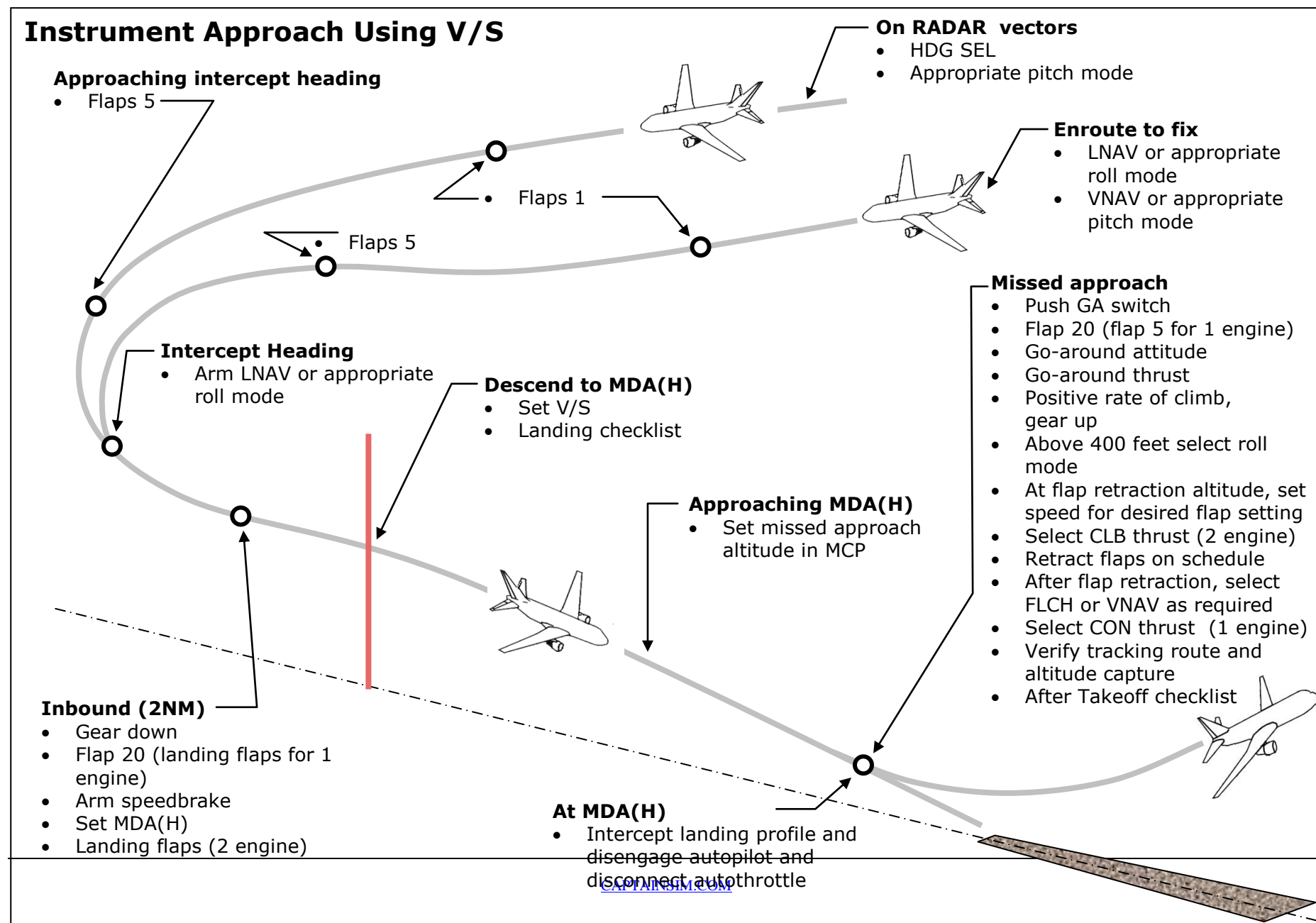
- Intercept landing profile and disengage autopilot and disconnect autothrottle

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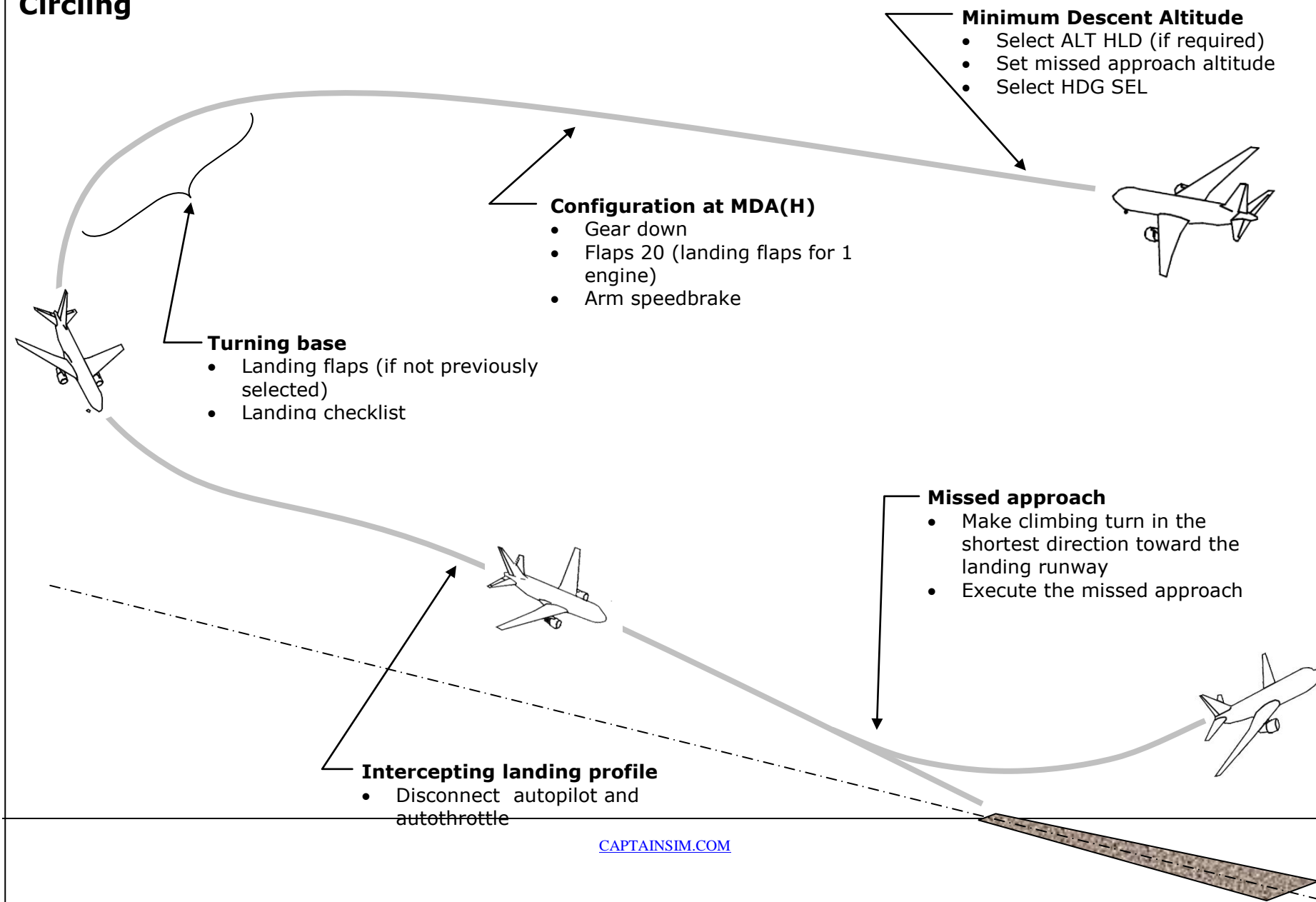
**DO NOT USE FOR FLIGHT**

## Instrument Approach Using V/S



**DO NOT USE FOR FLIGHT**

## Circling



**DO NOT USE FOR FLIGHT**

## Visual Traffic Pattern

### Base

- Landing flaps (2 engine)
- Landing checklist

### Prior to turning base

- Gear down
- Flaps 20 (landing flaps for 1 engine)
- Arm speedbrake
- Start descent as required

### 700-500 FT

- Stabilized on profile

### Entering downwind

- Flap 5

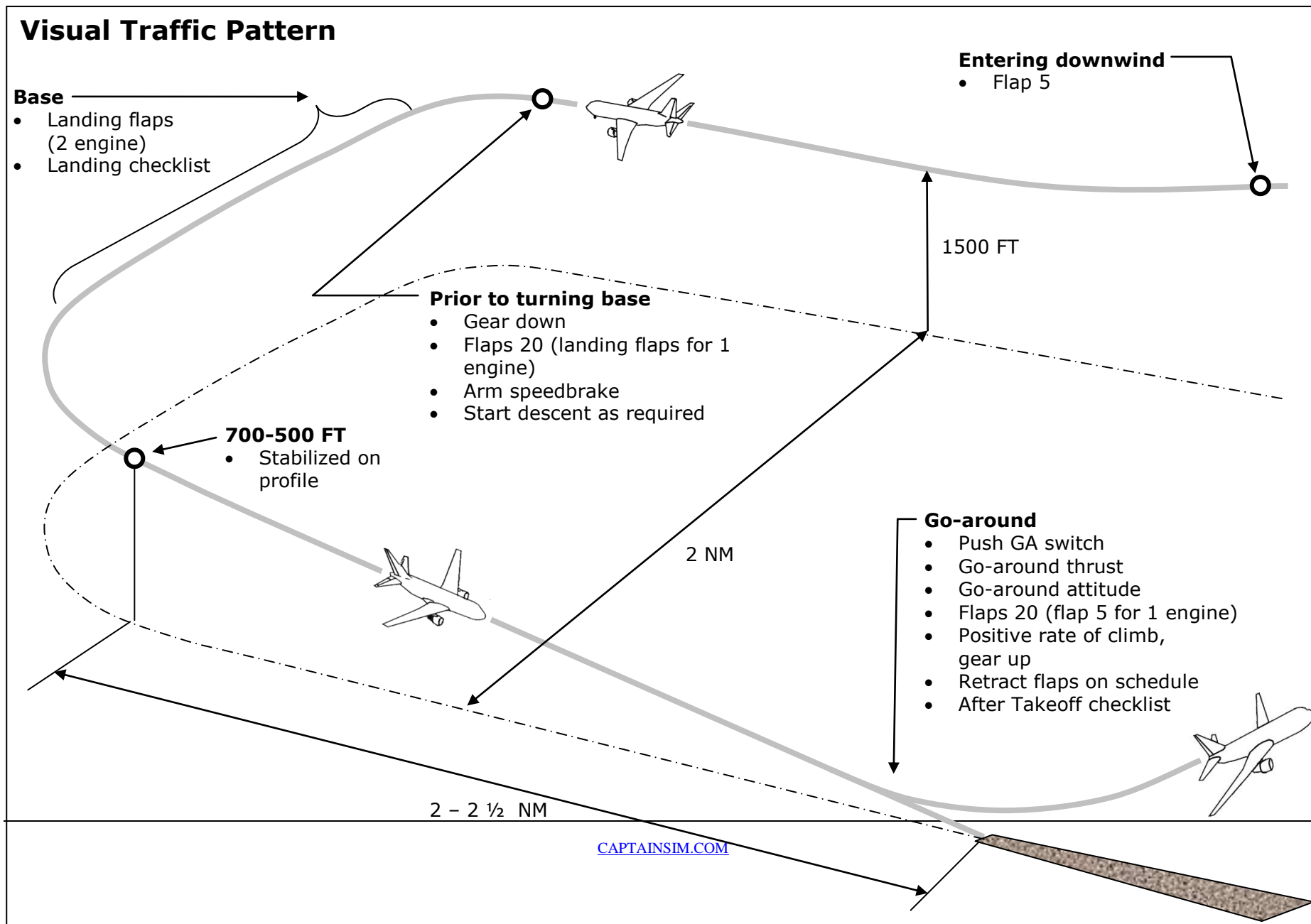
1500 FT

2 NM

### Go-around

- Push GA switch
- Go-around thrust
- Go-around attitude
- Flaps 20 (flap 5 for 1 engine)
- Positive rate of climb, gear up
- Retract flaps on schedule
- After Takeoff checklist

2 – 2 ½ NM

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**DO NOT USE FOR FLIGHT**

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