

PHENOM 300E



QUICK REFERENCE HANDBOOK



FS Reborn

FSR PHENOM 300E

By



Quick Reference Handbook

V1.0



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OPERATING SPEEDS & LIMITATIONS

Weight Limits

Maximum Ramp Weight (MRW)	18,617 lb / 8,444 kg
Maximum Takeoff Weight (MTOW)	18,551 lb / 8,414 kg
Maximum Landing Weight (MLW)	17,272 lb / 7,834 kg
Maximum Zero Fuel Weight (MZFW)	14,263 lb / 6,469 kg

Operating Speeds

VMO/MMO	See chart / MMO 0.8
VO (Operating Maneuvering)	205 KIAS
VLO/VLE (Landing Gear)	250 KIAS
VMC Takeoff	99 KIAS
VMC Landing (no icing)	99 KIAS
VMC Landing (icing)	99 KIAS

Max Flap Extended Speeds (VFE)

Flap 1	180 KIAS
Flap 2	170 KIAS
Flap 3	170 KIAS
Flap FULL	160 KIAS

Engine Limits (PW535E1)

Max ITT Take-off	725°C
Max ITT Takeoff (5 min)	700°C
Max ITT Continuous	680°C
Max ITT Starting (5 sec)	765°C
Max ITT Transient (20 sec)	765°C
Oil Pressure Normal	45–160 PSI
Oil Pressure Ground Idle Min	25 PSI
Oil Temperature Max	132°C

Miscellaneous

Maximum Operating Altitude	45,000 ft
Max Altitude Flaps Extended	18,000 ft
Max Tire Ground Speed	182 kt
Minimum Crew	1 Pilot
Load Factor Flaps 0	+3.00g / -1.00g
Load Factor Flaps Down	+2.00g / 0.00g
Demonstrated Crosswind (TO)	25 kt
Demonstrated Crosswind (LDG)	28 kt
Turbulent Air (≤32,000ft)	232 KIAS
Turbulent Air (>32,000ft)	232 KIAS / 0.65M

N-1 COCKPIT / CABIN SAFETY INSPECTION

Emergency Door Locking Pin	REMOVE
Emergency Door	SECURED AND LOCKED
Documents, Manuals and Charts	CHECK ON BOARD
Maintenance Status	CHECK
Emergency Equipment	CHECK
Oxygen Bottle Valve Handle	PUSH TO RESTORE
SUPPLY CONTROL Knob	PAX AUTO
Oxygen Mask Regulator	CHECK 100%
ELECTRICAL Panel	CHECK
BLEED 1 & 2 Switches	AUTO
XBLEED Knob	AUTO
TEST Panel	OFF
Circuit Breakers	CHECK IN
FUEL PUMP 1 & 2 Switches	AUTO
XFEED Knob	OFF
HYD PUMP SOV 1 & 2 Switches	OPEN
ELT Switch	ARMED
PUSHER CUTOFF Button	PUSHED OUT
Gust Lock Pin	REMOVE
Rudder Pedals	CHECK UNLOCKED
HEATING Panel	CHECK
ICE PROTECTION Panel	CHECK
LDG GEAR Lever	DN
PRESSURIZATION Panel	CHECK
AIR CONDITIONING Panel	AS REQUIRED
ENG FIRE EXTINGUISHER Panel	CHECK
Start/Stop Knobs	STOP
Flap Lever	ZERO
SPEED BRAKE Switch	CLOSE
Parking Brake	SET
Seats and Belts	CONDITION

N-2 EXTERNAL INSPECTION

External Lights	CHECK
IASP	CONDITION, NO OBSTRUCTION
Oxygen Discharge Indicator	GREEN DISK IN PLACE
Ice Detector (if installed)	CHECK
Antennas	CONDITION
Red Beacon Light	CONDITION
NLG Doors, Wheel and Tire	CONDITION
NLG Torque Link	CONNECTED AND SECURED
NLG Safety Pin	REMOVED
Fwd LH Baggage Compartment Door	LATCHED
Radome	CONDITION
Fwd RH Baggage Compartment Door	LATCHED
Stand-By Pitot Tube	CONDITION, NO OBSTRUCTION
Refueling Panel	CLOSED
LDG/Taxi Lights	CONDITION
Fuselage Air Inlet	NO OBSTRUCTION
Engine Fan	CONDITION
Engine Air Inlet	NO OBSTRUCTION
Starter/Generator Air Inlets	CLEAR
Fuel Drains	DRAIN AND CHECK
Right Wing Leading Edge	CONDITION
MLG Doors, Wheels, Brakes and Tires	CONDITION
MLG Safety Pin	REMOVED
Fuel Cap	CLOSED AND LOCKED
Navigation/Strobe Lights	CONDITION
Right Winglet	CONDITION
Right Aileron	CHECK FREE
Right Spoilers	CONDITION
Right Flap	CONDITION

Cowlings	LATCHED
Engine Exhausts	CLEAR
Engine Oil Level	CHECK
Vertical Stabilizer	CONDITION
Rudder	CONDITION
Horizontal Stabilizer	CONDITION
Elevator	CONDITION
Aft Baggage Compartment Door	LATCHED
Left Flap	CONDITION
Left Spoilers	CONDITION
Left Aileron	CHECK FREE
Left Winglet	CONDITION
Left Wing Leading Edge	CONDITION
Fuel Cap (Left)	CLOSED AND LOCKED
MLG (Left)	CONDITION

N-3 POWER UP

BATT 1 & 2 Switches	ON
GPU Button (if applicable)	AS REQUIRED
CVDR Panel	CHECK (TEST HOLD 5 SEC)
Transponder / TCAS II (if applicable)	CHECK

N-4 BEFORE START

Oxygen Mask Flow and Microphone	CHECK
TEST Panel	TEST
SIGNS/OUTLET Switch	BELTS / ON
External Lights	AS REQUIRED
EMER LT Switch	ARM
Fuel Quantity and Balance	CHECK
Oxygen Pressure	CHECK MIN FOR DISPATCH
ENG IGNITION Switches	AUTO
Thrust Levers	IDLE
Parking Brake	SET
Doors	CLOSED

N-5 ENGINE START

Associated Start/Stop Knob	START, THEN RUN
Engine Parameters	MONITOR
.....	Check N2, ITT, N1 and oil pressure within limits.
Repeat for other engine	

NOTE: Allow minimum 2 minutes at or near IDLE before selecting higher thrust settings.

N-6 AFTER START

GPU (if applicable)	DISCONNECT
ELEC EMER Button	PUSH IN
Battery 1 & 2 Voltage	CHECK (min 23.5V each)
ELEC EMER Button	PUSH OUT
Stall Protection System (TEST Panel)	TEST
AFCS Control Unit	SET
Engine Takeoff Data (OAT / ATR)	SET
Landing Field Elevation	SET
Takeoff Speeds (V1, VR, V2, VFS)	SET
Transponder / TCAS II (if applicable)	SET
Altimeters (pilots and IESI)	SET & X-CHECK
Flight Controls	CHECK FREE
Trims (Roll, Yaw, Pitch NORM & BKP)	CHECK / SET
Flap	SET FOR TAKEOFF
External Lights	AS REQUIRED
Ice Protection	AS REQUIRED

N-7 BEFORE TAKEOFF

Takeoff Configuration **CHECK (T/O CONFIG Button)**
 CAS Messages **CHECK**
 SIGNS/OUTLET Switch **PED-BELTS / OFF**
 Yaw Damper **OFF**

--- SHORTLY BEFORE TAKEOFF ---

Passengers **ADVISE**
 Lights **AS REQUIRED**

CAUTION: Press T/O CONFIG button. Aural 'TAKEOFF OK' confirms correct configuration.

N-8 TAKEOFF

Thrust Levers **TO/GA**
 Engine Parameters **MONITOR**
 At VR: Rotate **Flap 1: 10.5° / Flap 2: 8°**
 With positive rate of climb:
 LDG GEAR Lever **UP**
 Airspeed **V2 + 10 KIAS MINIMUM**

N-9 AFTER TAKEOFF / CLIMB

LDG GEAR Lever **CHECK UP**
 Flap **ZERO (on schedule at/below VFE)**
 Thrust Levers **CON / CLB**
 Altimeters (pilots and IES) **SET & X-CHECK**
 Yaw Damper **ON**
 Icing Conditions **VERIFY**

--- ABOVE 10,000 ft ---

SIGNS/OUTLET Switch **AS REQUIRED**
 External Lights **AS REQUIRED**
 Weather Radar (if installed) **AS REQUIRED**
 Airspeed **AS REQUIRED**

N-10 DESCENT

Windshield Heating **ON**
 Pressurization **CHECK LFE**
 Landing Speeds (VREF, VAC, VFS) **SET**
 Icing Conditions **VERIFY**

--- BELOW 10,000 ft ---

SIGNS/OUTLET Switch **PED-BELTS / OFF**

N-11 APPROACH

External Lights **AS REQUIRED**
 Passengers **ADVISE**
 XFEED Knob **OFF**
 Altimeters (pilots and IES) **SET & X-CHECK**
 Icing Conditions **VERIFY**

N-12 BEFORE LANDING

Yaw Damper **OFF**
 LDG GEAR Lever **DN AND CHECK**
 Flap **SET FOR LANDING**
 Airspeed **VREF**

N-13 LANDING

Thrust Levers **IDLE**
 Brakes (after touchdown) **APPLY MAXIMUM**

N-14 GO-AROUND

TO/GA Button.....	PRESS
Thrust Levers	TO/GA
Rotate	Flap 3: 8° / Flap FULL: 6°
Flap	Flap 3→1 / Flap FULL→2
With positive rate of climb:	
LDG GEAR Lever.....	UP
Minimum Airspeed	VAC
At acceleration altitude	Proceed as normal takeoff

N-15 AFTER LANDING

Flap.....	ZERO
Lights	AS REQUIRED
Transponder.....	AS REQUIRED

N-16 SHUTDOWN

Thrust Levers	IDLE
Emergency/Parking Brake.....	APPLY
HEATING Panel	CHECK (WSHLD OFF, ADS AUTO)
ICE PROTECTION Panel.....	CHECK (all OFF)
Start/Stop Knobs	STOP
MFD Status Pages	CHECK
SIGNS/OUTLET Switch	OFF / ON

CAUTION: Maintain IDLE for at least 2 minutes prior to engine shutdown.

N-17 LEAVING THE AIRPLANE

Oxygen Bottle Valve Handle	PULL TO CUTOUT
EMER LT Switch	OFF
BATT 1 & 2 Switches	OFF
Gust Lock Pin.....	INSTALL
Rudder Pedals	LOCK
Lights	OFF

N-18 OPERATION IN ICING CONDITIONS

BEFORE START:	
ADS PROBES Knob	ON
BEFORE TAKEOFF (SAT 5-10°C with moisture):	
ENG 1 and ENG 2 Switches	ON
WINGSTAB Switch	OFF
WSHLD 1 and WSHLD 2 Switches	OFF
BEFORE TAKEOFF (SAT below 5°C with moisture):	
ENG 1 and ENG 2 Switches	ON
WINGSTAB Switch	ON
WSHLD 1 and WSHLD 2 Switches	ON
ADS PROBES Switch	AUTO
IN FLIGHT (TAT 5-10°C with moisture):	
ENG 1 and ENG 2 Switches	ON
IN FLIGHT (TAT below 5°C or ice accretion):	
ENG 1 and ENG 2 Switches	ON
WINGSTAB Switch	ON
WSHLD 1 and WSHLD 2 Switches	ON
AFTER LEAVING ICING (no ice on airplane):	
ENG 1 and ENG 2 Switches	OFF
WINGSTAB Switch	OFF, THEN ICE SPEED RESET
WSHLD 1 and WSHLD 2 Switches	OFF

WARNING: Takeoff must NOT be performed with A-I WINGSTB INHB CAS message presented. Ice protection must be kept ON until crew is certain all ice has been removed.

LEGEND: Φ = Memory / Recall Item. Must be performed immediately from memory before referring to the QRH.

E-1 REJECTED TAKEOFF (AT OR BELOW V1)

Φ Thrust Levers IDLE
 Φ Brakes APPLY MAXIMUM
 Φ Directional Control MAINTAIN
Immediately after stopping:
ENGINE SHUTDOWN or FIRE Procedure AS REQUIRED

E-2 TAKEOFF WITH ENGINE FAILURE AT OR ABOVE V1

Φ At VR: Rotate Flap 1: 10.5° / Flap 2: 8°
 Φ With positive rate of climb:
 Φ LDG GEAR Lever UP
 Φ Airspeed V2
Maintain V2 to acceleration altitude
Retract flap, accelerate to VFS
After retracting flap:
ENGINE 1(2) FAILURE Procedure ACCOMPLISH

E-3 EMERGENCY DESCENT

Φ SIGNS/OUTLET Switch PED-BELTS / OFF
 Φ Altitude 10,000 ft OR MEA (higher)
 Φ Thrust Levers IDLE
 Φ SPEED BRAKE Switch OPEN
 Φ Airspeed 250 KIAS / MMO MAXIMUM
 Φ LDG GEAR Lever DN
 Φ Transponder 7700
 Φ ATC NOTIFY
At 10,000 ft or MEA:
SPEED BRAKE Switch CLOSE

E-4 EMERGENCY EVACUATION

Φ Thrust Levers IDLE
 Φ Emergency/Parking Brake ON
 Φ Start/Stop Knobs STOP
 Φ Fire Shutoff Button PUSH IN
 Φ PRESN MODE Switch MAN
 Φ Pressurization DUMP Button PUSH IN
 Φ ATC NOTIFY
 Φ Evacuation PERFORM
 Φ BATT 1 & 2 Switches OFF

E-5 ENGINE FIRE, SEVERE DAMAGE OR SEPARATION

Φ Thrust Lever (affected engine) IDLE
 Φ Start/Stop Knob (affected engine) STOP
 Φ Fire Shutoff Button (affected engine) PUSH IN
LAND AS SOON AS POSSIBLE.
Wait 30 seconds, if fire persists:
BOTTLE Switch DISCH
Altitude 36,000 ft MAXIMUM
ECS Knob UNAFFECTED SIDE
Thrust Lever (operative engine) AS REQUIRED
If high vibration:
Airspeed REDUCE (140 KIAS MIN)

E-6 DUAL ENGINE FAILURE

LAND AS SOON AS POSSIBLE.
 Φ Thrust Levers IDLE

φ Crew Oxygen Masks	DON, 100%
φ Communication	ESTABLISH
If both engines restarted via autorelight:	
Engine Parameters	MONITOR
If no autorelight:	
Altitude	30,000 ft MAXIMUM
Airspeed	250 KIAS MAXIMUM
XFEED Knob	LO2
Attempt windmilling or assisted start	

E-7 ENGINE ABNORMAL START

φ Start/Stop Knob (affected engine)	STOP
On ground, if dry motoring considered:	
ENGINE DRY MOTORING Procedure	ACCOMPLISH

E-8 FORCED LANDING

Passengers	PREPARE
ATC	NOTIFY
Transponder	7700
SIGNS/OUTLET Switch	PED-BELTS / OFF
ELT	ON
Landing Data	SET
At 10,000 ft: DUMP Button	PUSH IN
LDG GEAR Lever	AS REQUIRED
Flap	MAXIMUM AVAILABLE
Oxygen Bottle Valve Handle	PULL TO CUTOUT
Just before touchdown: Passengers	ANNOUNCE IMPACT
After landing:	
Thrust Levers	IDLE
Start/Stop Knobs	STOP
Fire Shutoff Buttons	PUSH IN
EMERGENCY EVACUATION	ACCOMPLISH

E-9 CABIN ALTITUDE HIGH

φ Crew Oxygen Masks	DON, 100%
φ Communication	ESTABLISH
φ SIGNS/OUTLET Switch	PED-BELTS / OFF
φ Altitude	10,000 ft OR MEA (higher)
φ Thrust Levers	IDLE
φ SPEED BRAKE Switch	OPEN
φ Airspeed	250 KIAS / MMO MAXIMUM
φ LDG GEAR Lever	DN
φ Transponder	7700
φ ATC	NOTIFY
If pax masks not deployed:	
Oxygen SUPPLY CONTROL Knob	PAX OVRD
At 10,000 ft or MEA:	
Pressurization DUMP Button	PUSH IN
ECS Knob	OFF VENT
SPEED BRAKE Switch	CLOSE
LDG GEAR Lever	AS REQUIRED

E-10 ENGINE 1(2) FIRE

φ Thrust Lever (affected engine)	IDLE
φ Start/Stop Knob (affected engine)	STOP
φ Fire Shutoff Button (affected engine)	PUSH IN
LAND AS SOON AS POSSIBLE.	
Wait 30 sec, if fire persists:	
BOTTLE Switch	DISCH
Altitude	36,000 ft MAXIMUM

ECS Knob	UNAFFECTED SIDE
Thrust Lever (operative engine)	AS REQUIRED
If high vibration: Airspeed	REDUCE (140 KIAS MIN)

E-11 ENGINE 1(2) FAILURE

LAND AS SOON AS POSSIBLE.	
Associated Thrust Lever	IDLE
If not restarted via autorelight:	
Start/Stop Knob	STOP
If not accomplishing takeoff:	
Thrust Lever (operative engine)	CON / CLB
If fuel leak suspected:	
FUEL LEAKAGE Procedure	ACCOMPLISH
If restart considered:	
ENGINE IN-FLIGHT START	ACCOMPLISH

E-12 ENGINE 1(2) OIL LOW PRESSURE

If oil pressure indication abnormal:	
ENGINE SHUTDOWN Procedure	ACCOMPLISH

E-13 ELECTRICAL EMERGENCY

φ PRESN MODE Switch	MAN
φ CABIN ALT Switch	HOLD DN 10 SEC
If above 10,000 ft:	
CABIN ALTITUDE HIGH Procedure	ACCOMPLISH
At 10,000 ft or MEA:	
Pressurization DUMP Button	PUSH IN
ECS Knob	OFF VENT
Reset both generators.	
If message persists:	
LAND AS SOON AS POSSIBLE.	
EMER LT Switch	OFF
Airplane	FLY MANUALLY
Icing Conditions	EXIT / AVOID

CAUTION: Battery duration is 45 minutes maximum.

E-14 BATTERY DISCHARGE

LAND AS SOON AS PRACTICAL.	
Check BATT 1 & 2 voltage on MFD.	
If voltage out of range (yellow):	
Associated GEN Switch	OFF
Associated Thrust Lever	IDLE
If message persists:	
LAND AS SOON AS POSSIBLE.	
ELEC EMER Button	PUSH IN

CAUTION: Battery duration is 45 minutes.

E-15 GENERATOR 1(2) OFF BUS

Associated GEN Switch	OFF, THEN AUTO
If message persists:	
LAND AS SOON AS PRACTICAL.	
Associated GEN Switch	OFF
Associated Thrust Lever	IDLE

E-16 FLAP FAILURE

Flap Lever	CYCLE (up to 3 attempts)
If failure persists:	
Altitude	18,000 ft MAXIMUM

Icing Conditions..... **EXIT / AVOID**
For landing, maintain airspeed:
Flap 0: VREF FULL + 27 KIAS
Flap 1: VREF FULL + 19 KIAS
Flap 2/3: VREF FULL + 6 KIAS
Flap FULL: VREF FULL

E-17 HYDRAULIC LOW PRESSURE

Expect lower roll rates, no speedbrake.
Avoid side slip and high AOA.
For landing:
ABNORMAL LDG GEAR EXTENSION **ACCOMPLISH**
Flap **MAXIMUM AVAILABLE**
Airspeed **VREF FULL + 17 KIAS**
During landing run:
EMERGENCY BRAKING TECHNIQUE **ACCOMPLISH**
***CAUTION:** Multiply flap FULL unfactored landing distance by 2.70.*

E-18 HYDRAULIC HIGH TEMPERATURE

HYD PUMP SOV 1 & 2 Switches **CLOSED**
Wait 7 minutes.
If HYD HI TEMP extinguishes:
HYD PUMP SOV 2 Switch **OPEN**
Monitor system.
If HYD HI TEMP persists with SOV FAIL:
LAND AS SOON AS POSSIBLE.
Thrust Lever (associated engine) **IDLE**
Start/Stop Knob (associated engine) **STOP**

E-19 ABNORMAL LANDING GEAR EXTENSION

LDG GEAR Lever **DN**
Free Fall Handle **PULL**
If gear does not lock down:
Airspeed **140 KIAS MINIMUM**
Slip airplane to attempt to lock gear
Check landing gear indications.

E-20 LANDING GEAR LEVER DISAGREE

Airspeed **250 KIAS MAXIMUM**
LDG GEAR Lever **CYCLE**
If persists after extension:
ABNORMAL LDG GEAR EXTENSION **ACCOMPLISH**
If persists after retraction:
LDG GEAR Lever **DN**
Icing Conditions **EXIT / AVOID**
LAND AS SOON AS PRACTICAL.

E-21 FUEL IMBALANCE

If fuel leak suspected:
FUEL LEAKAGE Procedure **ACCOMPLISH**
If fuel leak NOT suspected:
Attitude **WINGS LEVEL**
Right wing low: XFEED Knob **LO2**
Left wing low: XFEED Knob **LO1**
Fuel Quantity **MONITOR**
When balance achieved:
XFEED Knob **OFF**
FUEL PUMP Switches **AUTO**

E-22 FUEL 1(2) LOW LEVEL

Associated FUEL PUMP Switch..... ON
Thrust Levers REDUCE TO LONG RANGE
Level airplane, check fuel quantities.
If fuel not sufficient:
LAND AS SOON AS POSSIBLE.
If fuel leak suspected:
FUEL LEAKAGE Procedure ACCOMPLISH
If no fuel leak:
XFEED Knob AS REQUIRED

E-23 ENGINE SHUTDOWN (IN FLIGHT)

LAND AS SOON AS POSSIBLE.
Thrust Lever (affected engine) IDLE
Start/Stop Knob (affected engine) STOP
Thrust Lever (operative engine) AS REQUIRED
Fuel BALANCE
Airspeed 140 KIAS MINIMUM

E-24 AUTOPILOT FAILURE

Autopilot DISCONNECT
Fly airplane manually.
If in RVSM airspace:
ATC NOTIFY

E-25 YAW DAMPER FAILURE

If in icing conditions:
Airspeed 180 KIAS MAXIMUM
If with VENTRAL RUD FAIL:
Rudder Pedals FIXED
Altitude 25,000 ft MAXIMUM

E-26 BAGGAGE SMOKE

LAND AS SOON AS POSSIBLE.

E-27 SMOKE EVACUATION

φ Crew Oxygen Masks DON, EMERGENCY THEN 100%
φ Auto Dilution Valve CLOSED
φ Smoke Goggles (if available) DON
φ Communication ESTABLISH
CKPT FAN Switch HI
ECS Knob OFF VENT
Pressurization DUMP Button PUSH IN
If smoke persists: Identify source
LAND AS SOON AS POSSIBLE.

E-28 ENGINE DRY MOTORING

Associated Thrust Lever IDLE
Associated Start/Stop Knob STOP
Associated Ignition Switch OFF
Associated Start/Stop Knob START, THEN RUN
After 30 seconds:
Associated Start/Stop Knob STOP
Associated Ignition Switch AUTO

CAS MESSAGES — WARNING (RED)

DOOR PAX OPEN	Passenger/crew door is open.
E1 FIRE	Engine 1 fire detected.
E2 FIRE	Engine 2 fire detected.
E1 OIL LO PRES	Engine 1 oil pressure critically low (below 24 PSI) with engine running.
E2 OIL LO PRES	Engine 2 oil pressure critically low (below 24 PSI) with engine running.
CAB ALTITUDE HI	Cabin altitude exceeds 10,000 ft.
BAG SMK	Smoke detected in baggage compartment.
LG LEVER DISAG	Landing gear lever position disagrees with actual gear position.
NO TO CONFIG	Takeoff configuration incorrect (flaps, trim, or parking brake).
ELEC EMERGENCY	Both DC buses de-energized with batteries providing power. Electrical emergency mode active.

CAS MESSAGES — CAUTION (AMBER)

E1 FAIL	Engine 1 failure detected.
E2 FAIL	Engine 2 failure detected.
ENG NO TO DATA	Engine takeoff data not entered or OAT mismatch exceeds 5°C.
ADS 1 FAIL	Air Data System 1 failure.
ADS 2 FAIL	Air Data System 2 failure.
ADS 1 HTR FAIL	Air Data System 1 probe heater failure or ADS PROBES knob OFF with engine running.
ADS 2 HTR FAIL	Air Data System 2 probe heater failure or ADS PROBES knob OFF with engine running.
AHRS 1 FAIL	Attitude and Heading Reference System 1 failure.
AHRS 2 FAIL	Attitude and Heading Reference System 2 failure.
AUDIO PNL 1 FAIL	Audio Panel 1 failure.
AUDIO PNL 2 FAIL	Audio Panel 2 failure.
BARO MISCOMP	Barometric altimeter settings miscompare between PFDs.
XPDR FAIL	Transponder 1 failure.
XPDR IN STBY	Transponder in standby mode during flight.
TCAS FAIL	Traffic Collision Avoidance System failure.
A-I WINGSTB INHB	Wing/stabilizer anti-ice inhibited — outside operational envelope.
A-I E1 FAIL	Engine 1 anti-ice valve commanded open but failed, or duct leak detected.
A-I E2 FAIL	Engine 2 anti-ice valve commanded open but failed, or duct leak detected.
A-I WINGSTB FAIL	Wing/stabilizer anti-ice system component failure (AIV or pressure transducer).
ICE CONDITION	Structural ice detected (>5%). Aircraft is in icing conditions.

WSHLD 1 HTR FAIL	Windshield 1 heater failure or overheat.
WSHLD 2 HTR FAIL	Windshield 2 heater failure or overheat.
HYD HI TEMP	Hydraulic fluid temperature over operating limit (112.7°C).
HYD LO PRES	Hydraulic system pressure below 1,800 PSI.
HYD SOV 1 FAIL	Hydraulic EDP 1 fire shutoff valve disagrees with command.
HYD SOV 2 FAIL	Hydraulic EDP 2 fire shutoff valve disagrees with command.
DUCT 1 OVERTEMP	ECS duct 1 overtemperature.
DUCT 2 OVERTEMP	ECS duct 2 overtemperature.
CAB DELTA-P FAIL	Cabin differential pressure exceeds limits (>9.55 psid or <-0.3 psid).
AMS CTRL FAIL	Both AMS Controller channels failed — bleed temp/pressure control unavailable.
BLEED 1 FAIL	Bleed system 1 PRSOV failure — valve commanded open but did not open.
BLEED 2 FAIL	Bleed system 2 PRSOV failure — valve commanded open but did not open.
ECS 1 VALVE FAIL	ECS 1 FCSOV failed — commanded open but did not open.
ECS 2 VALVE FAIL	ECS 2 FCSOV failed — commanded open but did not open.
DOORBAG LH OPEN	Forward (left) baggage compartment door open.
DOORBAG RH OPEN	Crew (right) baggage compartment door open.
DOORBAG AFT OPEN	Aft baggage compartment door open.
E1 FIREX FAIL	Engine 1 fire extinguisher system failure.
E2 FIREX FAIL	Engine 2 fire extinguisher system failure.
FUEL IMBALANCE	Lateral fuel imbalance exceeds 220 lbs.
FUEL 1 LO LEVEL	Left wing tank fuel level below 310 lbs.
FUEL 2 LO LEVEL	Right wing tank fuel level below 310 lbs.
FUEL 1 LO PRES	Left engine fuel pressure below 6 PSI with engine running.
FUEL 2 LO PRES	Right engine fuel pressure below 6 PSI with engine running.
FUEL 1 SOV FAIL	Fuel shutoff valve 1 failure.
FUEL 2 SOV FAIL	Fuel shutoff valve 2 failure.
FUEL XFEED FAIL	Crossfeed valve failure.
FUEL PUMP 1 FAIL	DC fuel pump 1 failure.
FUEL PUMP 2 FAIL	DC fuel pump 2 failure.
BATT 1 OFF BUS	Battery 1 disconnected from bus.
BATT 2 OFF BUS	Battery 2 disconnected from bus.
BATT DISCHARGE	At least one battery discharging during normal operation.
BATT EXCEEDANCE	Battery voltage exceeds 29V.
GEN 1 OFF BUS	Generator 1 off bus or GEN 1 switch OFF.

GEN 2 OFF BUS	Generator 2 off bus or GEN 2 switch OFF.
GEN OVLD	Generator overload — output above 330 A for more than 8 seconds.
GEN START FAULT	Starter-generator fault detected during engine start.
OXY LO PRES	Oxygen supply pressure below 600 PSI.
YD MISTRIM	Yaw damper mistrim — turn coordinator ball deflection exceeds ± 12 with AP/YD engaged.
AP FAIL	Autopilot system failure.
YD FAIL	Yaw damper failure.
PUSHER OFF	Stall protection stick pusher cut out.
FLAP FAIL	Flap control system failure or jam.
GND SPLR FAIL	Ground spoiler function not available — spoilers did not deploy on ground above 50 kt.
PTRIM NML FAIL	Pitch trim normal channel inoperative — autopilot pitch trim unavailable.
PTRIM BKP FAIL	Pitch trim backup channel inoperative — manual backup trim unavailable.
EMER BRK LO PRES	Emergency brake accumulator pressure below 1,550 PSI.
PARK BRK NOT REL	Parking brake not released (in flight).
BRK FAIL	Brake control unit failure — normal braking unavailable.
ANTI-SKID FAIL	Anti-skid braking system failure.
EMER LT NOT ARM	Emergency lights switch not in ARM position.

CAS MESSAGES — ADVISORY (WHITE)

A-I WINGSTB ARM	Wing/stabilizer anti-ice armed but not yet active (conditions not met).
A-I WINGSTB ON	Wing/stabilizer anti-ice system active.
A-I E1 ON	Engine 1 anti-ice system operating normally.
A-I E2 ON	Engine 2 anti-ice system operating normally.
ADS HTR SW ON	ADS probe heat switch manually set to ON (normally in AUTO on the ground).
AHRS 1 FAULT	Attitude and Heading Reference System 1 degraded.
AHRS 2 FAULT	Attitude and Heading Reference System 2 degraded.
AUDIO PNL1 FAULT	Audio Panel 1 degraded.
AUDIO PNL2 FAULT	Audio Panel 2 degraded.
FANS FAIL	Avionics cooling blower failure.
NAV 1 FAIL	Navigation radio 1 failure.
NAV 2 FAIL	Navigation radio 2 failure.
VHF 3 FAIL	VHF radio 3 failure.
XPDR 1 FAIL	Transponder 1 failure.
XPDR 2 FAIL	Transponder 2 failure.
XPDR FAULT	Transponder system fault.
ADS-B NOT AVAIL	ADS-B surveillance not available.
ADS-B OUT NOT AVAIL	ADS-B Out transmit not available.
RALT FAIL	Radar altimeter failure.
E1 CHIP DETECTED	Engine 1 chip detector triggered.
E2 CHIP DETECTED	Engine 2 chip detector triggered.
E1 FADEC FAULT	Engine 1 FADEC fault detected.
E2 FADEC FAULT	Engine 2 FADEC fault detected.
ENG EXCEEDANCE	Engine exceedance condition recorded.
ENG NO DISPATCH	Engine not cleared for dispatch.
ENG FIREX DISCH	Engine fire extinguisher bottle discharged.
HYD SYS FAULT	Hydraulic system degraded — single pump operation.
BLEED 1 OFF	BLEED 1 switch OFF — pneumatic system 1 depressurized.
BLEED 2 OFF	BLEED 2 switch OFF — pneumatic system 2 depressurized.
ECS 1 OFF	Environmental Control System pack 1 off.
ECS 2 OFF	Environmental Control System pack 2 off.
RAM AIR FAIL	Ram air valve failure.

XBLEED FAIL	Crossbleed valve failure.
XBLEED SW OFF	Crossbleed switch in OFF position.
AMS CTRL FAULT	One AMS controller channel inoperative — system degraded.
FUEL EQUAL	Fuel tanks balanced — crossfeed may be closed.
DC BUS 1 OFF	DC Bus 1 de-energized.
DC BUS 2 OFF	DC Bus 2 de-energized.
EMER BUS OFF	Emergency bus de-energized.
SHED BUS OFF	Shed bus de-energized.
SPDBRK SW DISAG	Speed brake switch disagrees with spoiler position — surfaces retracted automatically.
SPOILER FAULT	Speed brake and/or roll spoiler function not available.
SWPS ICE SPEED	Stall warning speeds adjusted for icing conditions.
OXY SW NOT AUTO	Oxygen SUPPLY CONTROL knob not in AUTO position.
DOOR REFUEL OPEN	Refueling door open.

APPROACH & LANDING REFERENCE SPEEDS LBS

Approach Flap 1, Landing Flap 3 (No Icing)

Weight (lb)	VAC (KIAS)	VREF (KIAS)	VFS (KIAS)
12,346	104	101	127
13,228	107	104	125
14,110	110	107	122
14,991	114	111	126
15,873	117	114	129
16,755	120	117	132
17,042 (MLW)	121	118	134
18,387 (MTOW)	125	122	138

Approach Flap 2, Landing Flap FULL (No Icing)

Weight (lb)	VAC (KIAS)	VREF (KIAS)	VFS (KIAS)
12,346	100	100	127
13,228	103	103	125
14,110	106	106	122
14,991	110	110	126
15,873	113	113	129
16,755	115	115	132
17,042 (MLW)	117	117	134
18,387 (MTOW)	121	121	138

Approach Flap 1, Landing Flap 3 (SWPS ICE SPEED)

Weight (lb)	VREF (KIAS)	VFS (KIAS)
12,346	108	127
13,228	111	131
14,110	115	135
14,991	118	138
15,873	121	142
16,755	125	147
17,042 (MLW)	127	149
18,387 (MTOW)	131	154

APPROACH & LANDING REFERENCE SPEEDS KILOGRAMS

Approach Flap 1, Landing Flap 3 (No Icing)

Weight (kg)	VAC (KIAS)	VREF (KIAS)	VFS (KIAS)
5,600	104	101	127
6,000	107	104	125
6,400	110	107	122
6,800	114	111	126
7,200	117	114	129
7,600	120	117	132
7,730 (MLW)	121	118	134
8,340 (MTOW)	125	122	138

Approach Flap 2, Landing Flap FULL (No Icing)

Weight (kg)	VAC (KIAS)	VREF (KIAS)	VFS (KIAS)
5,600	100	100	127
6,000	103	103	125
6,400	106	106	122
6,800	110	110	126
7,200	113	113	129
7,600	115	115	132
7,730 (MLW)	117	117	134
8,340 (MTOW)	121	121	138

Approach Flap 1, Landing Flap 3 (SWPS ICE SPEED)

Weight (kg)	VREF (KIAS)	VFS (KIAS)
5,600	108	127
6,000	111	131
6,400	115	135
6,800	118	138
7,200	121	142
7,600	125	147
7,730 (MLW)	127	149
8,340 (MTOW)	131	154

END OF QUICK REFERENCE HANDBOOK

WARNING: FOR SIMULATION USE ONLY. DO NOT USE FOR REAL-WORLD FLIGHT.
