



Cockpit Reference Guide
5 May 2018

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Agriculture Import

Generally Allowed Food Items

[<http://www.aphis.usda.gov/wps/portal/aphis/home>] — Click "Resources" / "Travelers International" and under "Related Links" select "Generally Allow Food and Agricultural Items by Category"

The following food items are generally allowed entry:

- Condiments such as oil, vinegar, mustard, catsup, pickles, syrup, honey without honey combs, jelly, and jam.
- Foodstuffs such as bakery items, candy, and chocolate.
- Hard cured cheeses without meat, such as Parmesan or cheddar.
- Canned goods and goods in vacuum-packed jars (except those containing meat or poultry products) for personal use.
- Fish or fish products for personal use.
- Powdered drinks sealed in original containers with ingredients listed in English.
- Dry mixes containing dairy and egg ingredients (such as baking mixes, cocoa mixes, drink mixes, instant cake mixes, instant pudding mixes, liquid drink mixes containing reconstituted dry milk or dry milk products, potato flakes, and infant formula) that are commercially labeled, presented in final finished packaging, and require no further manipulation of the product are generally allowed.

Remember, you must declare all food and agricultural products, including those listed above, to a CBP agriculture specialist or officer when you arrive in the United States.

Fruits and Vegetables

The United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) maintains a website where you plug in the country or the food item and get a ruling on import. The web site is: epermits.aphis.usda.gov.

If you enter "Papaya," for example, you will find out you can never bring one to Hawaii. You are also restricted from bringing any papaya from Chile, Ecuador, or Malaysia to any port of the United States.

The web site works well but the list is rather large. If you are en route and don't have an Internet connection, the USDA publishes phone numbers for inquiries: 1-301-851-2046 or 1-877-770-5990.

Animal Products and Animal By-Products

[<http://www.aphis.usda.gov/wps/portal/aphis/home>] — Click "Resources" / "Travelers International" and then "Animal Products and By Products"

- Meat, milk, egg, poultry, and products such as dried soup mix or bouillon, are either prohibited or restricted from entering the United States, depending on the types of animal diseases that occur in the country of origin. Fresh (chilled or frozen), dried, cured, and fully cooked meat is generally prohibited from most countries. Canned meat is allowed entry, except beef, veal, lamb, mutton, venison, elk, bison, etc., from countries affected by bovine spongiform encephalopathy.
- Products containing raw egg ingredients are not allowed from most regions.
- Pork and pork products are not allowed from Mexico, except for cooked pork in small amounts for a meal.
- Effective January 14, 2010, cooked pork skins (also known as pork rinds) entering as commercial cargo or in passenger baggage from some countries must be accompanied by additional documents. For more details, contact USDA's National Center for Import and Export at (301) 734-3277, or email AskNCIE.Products@aphis.usda.gov

Violations

[USDA - APHIS] Individuals who fail to declare non-commercial agricultural items may be subject to penalties ranging from \$1,100 to \$60,000 per violation. These penalties are based on authorities granted to USDA through the Plant Protection Act and the Animal Health Protection Act.

If you discover a banned item on the aircraft it is best to declare it on inspection. I've done that and had the item confiscated, which was better than the times the item was discovered and the passenger was forced to write a check.

Audio Checklist

Scenarios:

- **Normal startup, cold airplane**
 - Before Starting Engines ADVANCE
 - Before Starting Engines Thruflight SKIP
 - Normal Engine Ground Start ADVANCE
 - High Elevation Engine Start SKIP
 - After Starting Engines ADVANCE
 - Continue
- **High elevation startup, cold airplane**
 - Before Starting Engines ADVANCE
 - Before Starting Engines Thruflight SKIP
 - Normal Engine Ground Start SKIP
 - High Elevation Engine Start ADVANCE
 - Continue
- **Taxi to normal flight**
 - Taxi/Before Takeoff ADVANCE
 - Line Up ADVANCE
 - Continue
- **Taxi to pattern flight**
 - Taxi/Before Takeoff ADVANCE
 - EXIT ADVANCE (gets you out of normal checklists)
 - Traffic Pattern Line Up ADVANCE
 - (From this point you stay in pattern checklists until the last landing)
- **Traffic pattern last landing**
 - JUMP, JUMP, JUMP (moves you to Normal Before Landing Checklist)
- **Missed approach**
 - JUMP (moves you to Climb Checklist)
- **Landing to customs ramp to parking spot for shutdown**
 - After Landing ADVANCE
 - Reposition ADVANCE
 - Shutdown ADVANCE
- **Landing to parking for quick turn**
 - After Landing ADVANCE
 - Reposition SKIP
 - Shutdown SKIP
 - Quick Turn ADVANCE ADVANCE
 - Before Starting Engines SKIP
 - Before Starting Engines Thruflight ADVANCE

BEFORE STARTING ENGINES

PREFLIGHT CHECKLISTS	COMPLETE	NWS POWER	OFF
CIRCUIT BREAKERS	CHECK	NWS PEDAL DISCONNECT	ON
ELECTRIC POWER CONT PNL	SET	CLOCKS	SET/ZERO
HMG	OFF	DISPLAY CONTROLS	CHECKED
APU	START	ENGINE	EPR MODE
EMERGENCY POWER	ARM	V SPEEDS	ENTERED/VERIFY
DISPLAY SYSTEM CONTROL	NORMAL	EGPWS	TEST
MFD DISPLAY SWITCHING	NORMAL	TCAS	TEST
IRSs	ON/INITIALIZED	ALTIMETERS	SET
FMSs	ON/FLIGHT ID	GUIDANCE PANEL	SET
ENG FIRE DET FAULT TEST	TESTED	ELECTRONIC CHART EFFECTIVE DATES	CHECK
L ENG/R ENG FIRE TEST	TESTED	SFD	ON/CHECKED
SYSTEM TESTS	TESTED	EBDI	CHECK/AUTO/HDG1
ENGINE BLEED AIR	OFF	STAB/FLAP INDICATION	CHECKED
TEMP CONTROL PANEL	SET	GEAR HANDLE / LIGHTS	DOWN/3 GREEN
CABIN PRES CONTROL PANEL	CHECK/SET	YAW DAMPER	DISENGAGE
WINDSHIELD HEAT	OFF	PITCH TRIM	ENG/CHECK/SET
ANTI-ICE HEATERS	OFF	TERRAIN INHIBIT	OFF
EVS WINDOW HEAT	OFF	FIRE HANDLES	IN
CABIN WINDOW HEAT	SELECT ON/LGND OFF	POWER/REVERSE LEVERS	IDLE/DOWN
COWL/WING ATI-ICE	AUTO	FUEL CONTROLS	OFF
FUEL SYSTEM PANEL	CHECK	GPWS/GND SPLR FLAP ORIDE	OFF
LEFT/RIGHT MAIN TRU	OFF	LATERAL CONTROL	ON
MASTER SWITCHES	ON	SPEED BRAKE	RETRACT
POWER TRANSFER UNIT	ARM	RADAR	STBY
AUX PUMP/BRAKE SYSTEM	ARM/CHECKED	STALL BARRIER	ON
CKPT LIGHTS MASTER CONTROL	SET	ANTI-SKID	ON
SEATBELT/NO SMOKE	ON	GROUND SPOILER	OFF
CRANK MASTER	OFF	ALT FLAP	OFF
START MASTER	OFF	EMER STAB	OFF
CKPT LIGHTS CONT SIDE PANELS	SET	PARKING BRAKE/PRESSURE	SET/3000
EMERG LANDING GEAR HANDLE	IN	RADIO TUNING	SET
AUDIO CONTROL PANELS	SET	CABIN PRESSURE SELECTOR PANEL	SET
CREW/PASS OXYGEN	ON/AUTO	RUDDER/AILERON TRIM	CHECK/ZERO
CREW OXYGEN MASKS	CHECK	TAKE-OFF BRIEFING	COMPLETED

BEFORE STARTING ENGINES THRUFLIGHT

SYS MONITOR/TEST PANEL	CHECK	CABIN/GALLEY MASTERS	ON
CIRCUIT BREAKERS	CHECK	PTU	ARM
ELECTRIC POWER CONTROL PANEL	SET	AUX PUMP	ARM
APU	STARTED	INT/EXT LIGHTS	SET
EMERGENCY POWER	ARMED	SEAT BELT/NO SMOKE	ON
DISPLAY SYSTEM CONTROL	NORMAL	CREW/PASS OXYGEN	ON/AUTO
MFD DISPLAY SWITCHING	NORMAL	CLOCKS	SET/ZERO
FMSs	ON/INITIALIZED	ALTIMETERS	SET
ENGINE BLEED AIR	OFF	POWER/REVERSE LEVERS	IDLE/DOWN
TEMP CONTROL PANEL	SET	FUEL CONTROLS	OFF
CABIN PRES CONTROL PANEL	SET	RADAR	STANDBY
CABIN WINDOW HEAT	SELECT ON/LEGEND	PARKING BRAKE PRESSURE	SET/3000
OFF		TRIM	SET/ZERO
COWL/WING ANTI-ICE	AUTO	TAKEOFF BRIEFING	COMPLETED
FUEL SYSTEM PANEL	SET		

NORMAL ENGINE GROUND START

DOORS	CLOSED	START MASTER	ON
BEACON	ON	R ENG START	PRESS
PARKING BRAKE/PRESSURE	SET/3000	R OIL PRESS	CHECK 17 PSI
POWER LEVERS	IDLE	R SYS	3000
GUST LOCK	OFF	PTU PRESSURE	3000
ENGINE BLEED AIR	OFF	SINGLE RUDDER CAS MSG	DISPLAYED
L/R MAIN BOOST PUMPS	ON	L ENGINE START	PRESS
ENGINE CONTROL	EPR MODE	L OIL PRESSURE	CHECK 17 PSI
ENGINE START PAGE	SELECTED	L SYS/R SYS/PTU PRESSURE	3000/3000/0
BLEED AIR PRESSURE	CHECK 28 PSI MIN	SINGLE RUDDER CAS MSG	NOT DISPLAYED

HIGH ELEVATION ENGINE START

BEACON	ON	ENGINE STABLE AT IDLE	PTU ARM
PARKING BRAKE/PRESSURE	ON/3000	PTU PRESSURE	3000
POWER LEVERS	IDLE	SINGLE RUDDER CAS MESSAGE	DISPLAYED
GUST LOCK	OFF	IDLE SPEED	49 HP MIN
ENGINE BLEED AIR	OFF	L ENGINE START	PRESS
ENGINE CONTROL	EPR MODE	MAX MOTORING RPM	FUEL CONTROL
BLEED AIR PRESSURE	CHECK 28 PSI MIN	RUN	
PTU	OFF	L OIL PRESSURE	CHECK 17 PSI
BOOST PUMPS	1 ON / 3 OFF	L SYS/R SYS/PTU	3000/3000/0
CROSSFLOW	OPEN	SINGLE RUDDER CAS MESSAGE	NOT DISPLAYED
START MASTER	ON	BOOST PUMPS	4 ON
R ENGINE START	PRESS	CROSSFLOW	CLOSED
MAX MOTORING RPM	FUEL CONTROL RUN	START MASTER	OFF
R OIL PRESSURE	CHECK 17 PSI	PASSENGER OXYGEN	ON
R SYS PRESSURE	3000		

AFTER STARTING ENGINES

START MASTER	OFF	FLIGHT CONTROLS SYNOPTIC PAGE	SELECT
ELECTRIC PWR CONTROL PANEL	SET	GROUND SPOILERS	CHECKED
EMERGENCY POWER	ARM	STALL BARRIER	TEST
APU	STOP	FLIGHT CONTROLS	CHECKED
BLEED AIR CONTROL PANEL	SET	APU MASTER	OFF
FUEL SYSTEM PANEL	SET	NWS POWER	ON
COWL/WING ANTI-ICE	SET	YAW DAMPER	ENGAGE
ANTI-ICE HEATERS	ON	HMG	CHECK
WINDSHIELD HEAT	ON	MOBILE PHONES	OFF
CABIN PRESSURE AUTO/SEMI	AUTO		

TAXI/BEFORE TAKEOFF

TRANSPONDER	ON	TAKEOFF BRIEFING	REVIEW
EXTERIOR LIGHTS	SET	HUD COMBINER	DEPLOY CHECK
BRAKES	CHECKED	PRIMARY/STNDBY DISPLAYS	SET FOR DEPARTURE
FLAPS/STAB	SET FOR TAKEOFF	GUIDANCE PANEL	SET
TRIM SETTINGS	SET	WARN INHIBIT	INHIBIT
SLIP INDs/CMPs/FLT INSTs	CHECKED	BLEED AIR CONTROL PANEL	APU OFF/ENGs ON
ENGINE INSTRUMENTS	CHECKED/ALL WHITE	COWL WING ANIT-ICE	SET
CABIN PRESSURE CONTROL	FLIGHT	FLIGHT CONTROLS SYNOPTIC PAGE	SELECT
THRUST REVERSERS	CHECK	FLT OBS SEAT/INTERIOR DOOS	CHECK

LINE UP

EXTERIOR LIGHTS	SET	V SPEEDS	CHECKED/BOXED
TRANSPONDER/TCAS	ON/TA/RA	EICAS	CHECKED
RADAR	SET	RUNWAY ALIGNMENT	CONFIRM
GROUND SPOILERS	ARMED		

CLIMB

GEAR	UP	CABIN PRESSURE CONTROL PANEL	CHECKED
FLAPS	UP	EXTERIOR LIGHTS	SET
GUIDANCE PANEL	SET	SEAT BELT	OFF
CLIMB POWER	SET	ALTIMETERS	SET
GND SPOILERS	OFF		

CRUISE

POWER	SET FOR CRUISE	PANEL SWEEP	COMPLETE
PRESSURIZATION	CHECK	FMS FUEL QUANTITY	UPDATE

DESCENT

WEATHER	RECEIVED	MDA/DA/DDA	SET
FMS ARRIVAL/LANDING DATA	SET	HUD DC PAGE	SET
HUD COMBINER	DEPLOY/CHECK	COWL/WING ANTI-ICE	SET
NAV AIDS	TUNED	PRESSURIZATION	LANDING
COURSE SELECTION	CONFIRMED	APPROACH BRIEFING	COMPLETED

IN RANGE

ALTIMETERS	SET	EXTERIOR LIGHTS	SET
SEAT BELT	ON	FLT OBS SEAT/INTERIOR DOORS	CHECK

BEFORE LANDING

GEAR	DOWN/3 GREEN/4	FLAPS	SET FOR LANDING
AIR		AIRSPEED	Vref PLUS ADDITIVE
GROUND SPOILERS	ARMED	WARN INHIBIT	INHIBIT
BRAKES/HYD/BRAKE ACCUMULATOR	CHECKED 3000		

AFTER LANDING

RADAR	STANDBY	WINDSHIELD HEAT	OFF
FLAPS	SET	L/R ALTERNATE BOOST PUMPS	OFF
GROUND SPOILERS	OFF	APU	ON
LANDING/STROBE LIGHTS	OFF	APU GENERATOR	CHECKED
COWL/WING ANTI-ICE	SET	BLEED AIR	SET
ANTI-ICE HEATERS	OFF	BRAKE TEMPS	CHECKED

REPOSITION

PARKING BRAKE	SET/3000	R ENGINE START	PRESS
TRANSPONDER	STANDBY	R OIL PRESSURE	CHECK 17 PSI
PTU	NOT ARMED	R SYS/PTU PRESSURE	3000/3000
L/R FUEL CONTROL	OFF	SINGLE RUDDER CAS MESSAGE	DISPLAYED
NWS/BEACON/SEAT BELT	OFF	L ENGINE TGT	LESS THAN 200C
MAIN ENTRANCE DOOR	OPEN	L ENGINE START	PRESS
BLEED AIR	APU	L ENGINE OIL PRESSURE	CHECK 17 PSI
PTU	ARM	L SYS/R SYS/PTU PRESSURE	3000/3000/0
POWER/REVERSE LEVERS	IDLE/DOWN	SINGLE RUDDER CAS MESSAGE	NOT DISPLAYED
TIMES/FUEL	RECORDED	START MASTER	OFF
CUSTOMS	COMPLETED	ELECTRIC PWR CONTROL PANEL	SET
MAIN ENTRANCE DOOR	CLOSED	APU	AS REQUIRED
SEAT BELTS SIGNS	ON	BLEED AIR PANEL	SET
BEACON	ON	COWL/WING ANTI-ICE	SET
GUST LOCK	OFF	ANTI-ICE HEATERS/WNDSHLD HEAT	SET
ENGINE CONTROL	EPR MODE	NWS	ON
ENGINE START PAGE	SELECTED	TRANSPONDER	SET
BLEED AIR PRESSURE	28 PSI MIN	TAXI LIGHT	ON
R ENGINE TGT	LESS THAN 200C	BRAKES	CHECK
START MASTER	ON	CABIN PRESSURE	AUTO/LANDING

SHUTDOWN

PARKING BRAKE/PRESSURE	SET/3000	EMERGENCY POWER	OFF
TRANSPONDER	STANDBY	APU	STOP
PTU	NOT ARMED	MAIN BOOST PUMPS	OFF
RADAR	OFF	COWL/WING ANTI-ICE	OFF
L/R FUEL CONTROL	OFF	COCKPIT LIGHTS	SET
SEAT BELT	OFF	EXTERIOR LIGHTS	OFF
MAIN ENTRANCE DOOR	OPEN	GUST LOCK	ON
ENGINE AIR	OFF	WHEEL CHOCKS	SET
APU AIR	ON	PARKING BRAKE	OFF
OXYGEN SYSTEMS	OFF	APU MASTER/RPM <5%	OFF
NWS POWER	OFF	CABIN WINDOW HEAT	OFF
TIMES/FUEL	RECORDED	CAB PRES VERIFY TROV CLOSED	SEL MANUAL
IRSS	OFF	AUX PUMP	NOT ARMED
DISPLAY SYSTEM CONTROL	OFF	LEFT/RIGHT BATTERIES	OFF
MASTER SWITCHES	OFF		

QUICK TURN

PARKING BRAKE	SET/300	BRAKE TEMPS	CHECKED
TRANSPONDER	STANDBY	WEATHER	RECEIVED
PTU	NOT ARMED	CLEARANCE	RECEIVED
SEAT BELT	OFF	FMSs	SET
L/R FUEL CONTROL	OFF	V SPEEDS	ENTERED/VERIFIED
MAIN ENTRANCE DOOR	OPEN	DISPLAY CONTROLLER	SELECT BLUE DATA
NWS	OFF	GUIDANCE PANEL	SET
ENGINE BLEED AIR	OFF	WARN INHIBIT	OFF
APU AIR	ON	CAS	CHECKED
EXTERIOR LIGHTS	AS REQUIRED	FUEL	
TIMES/FUEL	RECORDED/ZERO	RECEIVED/BALANCE/LOG	
HYDRAULIC PRESSURE	ZERO	WEIGHT & BALANCE	COMPLETED
GUST LOCK	ON		

TRAFFIC PATTERN PROCEDURES

LINE UP

COWL/WING ANTI-ICE	SET	GROUND SPOILERS	ARMED
EXTERIOR LIGHTS	SET	V SPEEDS	CHECKED/BOXED
TRANSPONDER	ON/TA/RA	EICAS	CHECKED
RADAR	SET	RUNWAY ALIGNMENT	CONFIRM

TAKEOFF

GEAR	UP	CLIMB POWER	SET
FLAPS	UP	GROUND SPOILERS	OFF
GUIDANCE PANEL	SET	EXTERIOR LIGHTS	SET

PATTERN

FMS ARRIVAL/LANDING DATA	SET	MDA/DA/DDA	SET
HUD COMBINER	DEPLOY/CHECK	HUD DC PAGE	SET
NAV AIDS	TUNED	APPROACH BRIEFING	COMPLETED
COURSE SELECTION	CONFIRMED		

LANDING

GEAR	DOWN/3 GREEN/4	FLAPS	SET FOR LANDING
AIR		WARN INHIBIT	INHIBIT
GROUND SPOILERS	ARMED	FLT CONTROL SYNOPTIC PAGE	SELECT
BRAKES/HYD/BRAKE ACCUM	CHECKED		

TAXI-BACK

GROUND SPOILER

FLAPS

LANDING/STROBE LIGHTS

BRAKE TEMPS

GPWS/GND SPLR/FLAP OVRD

TRIM SETTINGS

OFF

SET FOR TAKEOFF

OFF

CHECKED

OFF

SET

TAKEOFF BRIEFING

FMS

FLIGHT INSTRUMENTS

GUIDANCE PANEL

WARN INHIBIT

FLIGHT OBSERVER SEAT

COMPLETED

SET/BLUE DATA

SET

SET

INHIBIT

CHECK

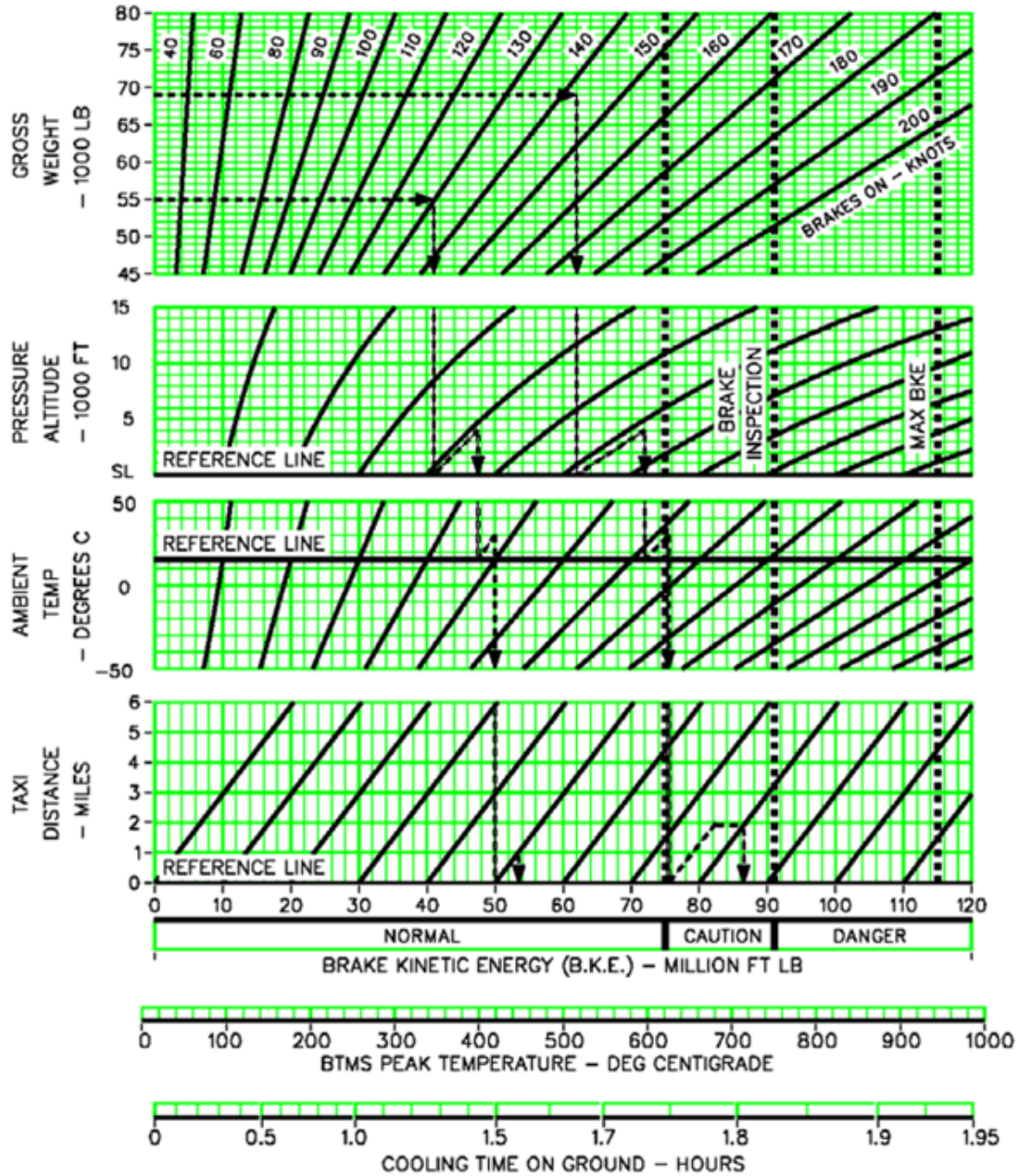
Auto Forward Codes

- ARINC — Arinc
- ARI — Air Routing International
- 12345678901 — Enter a phone number directly to pass a message
- F12345678901 — Enter a fax number preceded by an "F"
- N123AC — Enter a registration number to message another aircraft also using the same system

Brake Energy Chart

BRAKE KINETIC ENERGY AND COOLING REQUIREMENTS

NOTE: FOR EACH 1% OF DOWNHILL SLOPE DURING TAXI, ADD 4 MFP (PER STATUTE MILE) TO THE COMPUTED BKE BEFORE READING THE BTMS TEMPERATURE AND/OR COOLING TIME VALUES.



Cyber Security

Every Day Security

On a daily basis there are things you can do to secure your mobile device. It's highly recommended to take the steps noted below that will add additional safety nets to protect your data, accounts, and devices.

- Only install applications from the official app store
 - Software from sources other than the official app stores runs a much greater risk of being malicious. Installing a malicious app is one of the greatest risks to a device
- Keep the operating system and all applications updated
 - These updates commonly include security patches that are critical to protecting the device
- Setup a secure login
 - Password, pattern, biometric, 8-digit PIN, etc.
 - Pins less than 8 digits are easier to exploit
- Encrypt the hard drive
 - iPhones and iPods are encrypted by default, as are the latest android devices
 - Encrypted drives can provide both security and compliance benefits
- Set your device to lock after a short period of inactivity
 - Helps ensure your device is secure even if the device is lost or stolen
- Set your device to auto-erase if too many incorrect logins are attempted
 - This may require third-party software
 - This prevents someone from trying infinite password guessing
- Backup your device configuration and data
- Ensure endpoint security software and anti-virus is installed and up-to-date
 - This option may not be supported by all vendors (e.g. Apple iOS devices)
- Enable the find-my-device feature
 - In addition to locating your device, this feature enables you to remotely lock or erase your device through your Google or iCloud account
- Add a lock screen message with alternate contact information
 - This can be an email address that can be used to reach you if your device is found
- Know how to disconnect devices from personal accounts
 - Many devices are setup to automatically log into cloud services like Google or iCloud
 - Most services allow you to log in and remove access for previously authorized devices

Before You Travel

Before leaving on your trip, be sure to review the following items. Several of these steps will make your device a bit less convenient to use, but also make them more secure or significantly reduce the impact if they are stolen or compromised. Be sure you consider the potential risks for any recommendation you do not utilize.

- Consider using one-time-use travel devices (phones, laptops, etc.) that only have data required for the trip and are wiped after returning
- Know your company's process for reporting lost or stolen devices
 - Keep the associated phone numbers or email addresses written down where you can locate them if needed
 - Be sure you know how to dial the numbers internationally
- Log out of any synchronized accounts
 - Google, Yahoo, Microsoft, iCloud, social media, etc
- Clear saved website passwords from all web browsers
 - If a device is compromised, it is possible for an attacker to gain access to these passwords
- Turn off Near Field Communication (NFC)
 - NFC is a short-range contactless communication chip on many devices
 - Attacks against NFC can lead to data theft
 - There are risks with any technology that allows other devices to remotely exchange data with your device
- Disable the Infrared port
 - Disable it in system settings or the BIOS if required
 - Another option is to cover the port with a piece of black electrical tape
 - There are risks with any technology that allows other devices to remotely exchange data with your device
- Clear "saved" wireless networks that your device will connect to automatically
 - Someone could fake a common network access point and your PC would auto join without you even knowing
- Remove all locally stored, sensitive data, not required for the trip
 - This minimizes the impact of a lost, stolen or compromised device
- Encrypt highly sensitive information and store it on a USB drive that you can keep on your person at all times
 - USB drives with built in encryption are potentially less secure than encrypting the data ahead of placing it on the drive, due to proven hardware attacks on native drive encryption
- Remove stickers or logos that may indicate your organization
- Organizations should use Mobile Device Management software and individuals should look into consumer versions for personal devices
 - This significantly increases your ability to control lost or stolen devices
- Test your organization's Virtual Private Network (VPN) and other remote access services

While Traveling

The following best practices will help protect your device, accounts and data while traveling. They are more stringent, but will help protect you from the increased risks that travelers face.

- Do not update your devices OS or applications
 - Fake updates notifications are a common traveler exploit technique
- Turn off your device's Bluetooth feature when not in use
 - Bluetooth vulnerabilities like BlueBorne can allow remote hacking of a device
- Use privacy screen covers to prevent others from shoulder surfing your screen
 - Privacy filters use micro louvers that prevent screen viewing at sharp angles
- Turn off your devices when not in use
 - Do not use public mobile device charging stations
 - Charging stations can be data-harvesting points (e.g. Juice Jacking)
 - If you have to use a public charging station:
 - Consider carrying USB data blocking adapter like those from PortaPow Data Blocker available on Amazon
 - Turn your device completely off first as this reduces the chances of data compromise
 - Travel with your own backup battery
- Do not use any USB storage device that you find and be wary of those you are given
 - This is a known method of deploying malware to infect devices
- Screen lock your device if you have to step away from it
- Do not use publicly accessible computers to access any online accounts or for anything other than casual web browsing
 - There is no way to know if these have been compromised or what data they may collect
- While traveling, do not use passwords or PINs that match any other accounts you already have
 - Password re-use is one of the leading causes of multi-account compromise
- Do not loan your device to anyone else
 - Remember that physical control of a device equals full control
- Avoid using public access points whenever possible
 - These open networks can expose your device to a number of attacks
 - Wireless hotspot spoofing can lead to someone seeing all your communications
 - Fake updates or other communications can be pushed to your device in an attempt to install malware
- Consider using cellular data connection or mobile device hot spotting to access the Internet
 - It can be slower than the hotel network, but cellular networks are somewhat less risky
 - Cellular GSM and CDMA networks do have security risks, but may be less frequently targeted than traditional wireless networks
- Use caution when using Automated Teller Machines (ATMs) overseas. Stick to hotel and bank locations.

- ATMs can be compromised or rogue ones can be placed for use - Stick with trusted locations
- Beware of distract and grab attacks in public areas
 - This is a common technique used to steal phones and laptops

After the Trip

When you get back home, take a few moments to ensure your information and accounts remain safe.

- Turn in any loaned devices so that they can have their hard drive wiped
- Wipe, reload or factory reset the device
 - This is the most secure option, but will mean restoring and reconfiguring the device
- Non-wiped devices:
 - Virus scan any devices that will not have the hard drive wiped
 - Check for and run any updates you did not do while traveling
 - Change any passwords you used during the trip, including voicemail

Data Link Checklist

CPDLC Preflight Setup

1. Ensure you have the following documents in paper form, EFB, or iPad:
 - a. ICAO Doc 10037 Global Operational Data Link Document (GOLD)
 - b. GAC OMS-4
2. Review latest ICAO NAT Bulletins
3. Verify the following appears in your ICAO Flight Plan
 - a. Block 7 - Aircraft ID agrees with FMS Flight ID
 - b. Block 10A - Equipment Code "J3" and "J5" (Data Link System)
 - c. Block 10B - Equipment Code "D1" (ADS)
4. Master Document / En Route Charts
 - a. Annotate FIR boundaries
 - b. Check FIRs versus ICAO Doc 10037 Appendix B and make note of:
 - i. CPDLC status
 - ii. ADS-C status
 - c. AFN address
 - d. Any instructions under Remarks
5. Confirm COM/NAV3 in Data Mode
6. Verify Data Link works by any of the following methods:
 - a. Downlink the flight plan
 - b. Downlink D-ATIS
 - c. Downlink PDC
 - d. Downlink Terminal Wx
7. Check VHF Datalink
 - a. DLK > SYSTEM > DATALINK MGR
 - i. If data link is GND VHF (VDL) test SATCOM (DLK > STATUS > TEST > DATALINK SEND)
 - ii. If data link is SAT check GND VHF (VDL) when airborne<
8. Confirm FMS Settings for CPDLC
 - a. Confirm Flight ID entered into TCAS details page of FMS agrees with Block 7 of Flight Plan
 - b. Confirm Data Link is Operational:
 - i. DLK > SYSTEM > DATALINK MGR
 - ii. VHF available
 - iii. SATCOM available

CPDLC Log On

1. When:
 - a. On the ground at a departure airfield within 15 minutes of an OCA or FIR that supports CPDLC, you are expected to log on NET 45 minutes prior to takeoff.
 - b. If you are unable to log on from the ground, wait until passing 10,000 feet. Log on to the current FIR unless you are within 10 to 25 minutes of the next FIR, then log on to the next FIR.
 - c. If already airborne, log on to the next ATSU NET 25 minutes NLT 10 minutes from reaching their airspace.
2. Log On Procedure
 - a. NAV > ATC > LOGON STATUS
 - b. Ensure FLT ID and TAIL NO are correct
 - c. Ensure ADS ARMED
 - d. Ensure ADS EMERGENCY mode is OFF
 - e. On second page, ensure ATC COMM is ARMED
 - f. On first page, enter LOGIN ID of FIR (From GOLD Appendix E, En Route Chart, or GAC-OMS-4)
 - g. SEND
3. You should see ACCEPTED on LOGON field
4. Once handed over to an ATSU with CPDLC you should see:
 - a. ATC COMM ESTABLISHED
 - b. LOGON TO field should go blank
 - c. The FIR's ID should be in the ACT CTR field d) ATC COMM should now be ACTIVE
5. If you are also in an ADS location, you will see ADS ESTABLISHED and the ADS will go from ARMED to ACTIVE.

CPDLC Latency Timer Message Response

1. You may get "CONFIRM MESSAGE LATENCY TIMER OFF" or "SET UPLINK DELAY VALUE TO 40 SECONDS"
2. The G450 does not have a latency timer
3. Respond using free text "TIMER NOT AVAILABLE"

Downlink Oceanic Clearance

1. From a DSP (Everywhere except New York Oceanic)
 - a. DLK > ATS > OCEANIC CLX
 - b. Set ENTRY POINT, ENTRY TIME, and adjust Req Mach and Req FL if required
 - c. SEND
 - d. ACKNOWLEDGE on receipt
2. From NY Oceanic using CPDLC
 - a. Will get the oceanic from NY Oceanic via ATC UPLINK message
 - b. ACCEPT within 60 seconds
 - c. REVIEW
 - d. ATC CLEARANCE to interpret LLXX waypoints
 - e. ACTIVATE to insert into FMS flight plan
 - f. Remove extraneous waypoints at end of flight plan

CPDLC Crossing an FIR Boundary

1. Before crossing an FIR boundary, you should get a conditional clearance to contact the next ATSU.
2. Accept the clearance, send, but do not contact the next ATSU yet.
3. On the LOGON/STATUS page you will see the NEXT CTR field has the next ATSU listed.
4. When the next ATSU takes control, you will see ATC COMM ESTABLISHED
5. A check-in with the departing controller is not necessary.
6. At the waypoint listed, contact the new controller.

CPDLC Coast Out (North Atlantic Example)

1. Establish log on NET 45 minutes, NLT 15 minutes prior to oceanic FIR
2. Verify ATC COMM ESTABLISHED and ATSU in ACT CTR
3. When sent to HF, for example:

_____ Radio, November _____, CPDLC, _____ Next,
"Shanwick Radio, November one two three alpha alpha, CPDLC, Gander Next, flight level
_____, request SELCAL check _____ flight level four
one zero, request SELCAL check Alpha Bravo Charlie Delta"

Note: the flight level and term "CPDLC" are no longer required but seem to be expected by most radio operators.

4. If you also have ADS-C, you should hear: "November one two three alpha bravo, Shanwick Radio, SELCAL check OK, voice reports not required in Shanwick OCA, at 30 West contact Gander on three zero one six primary or five five niner eight secondary."
5. For most ATSU's around the world, you will also send a position report. (This is not required in the North Atlantic.) Check ICAO Doc 10037 Appendix B Remarks for the ATSU's requirements.

Crossing an Oceanic Boundary

1. You should get new ADS contracts at least 15 minutes prior to the boundary.
2. At the boundary you should get ATC COMM ESTABLISHED.
3. If you will be leaving oceanic airspace after this OCA, include the last two fixes on the cleared route, for example:

_____ Radio, November _____, CPDLC, _____,
_____, "Gander Radio, November one two three alpha alpha, CPDLC, CARPE, REDBY, flight
level _____ request SELCAL check _____ flight level
four one zero request SELCAL check alpha, bravo, Charlie, delta."

Note: the flight level and term "CPDLC" are no longer required but seem to be expected by most radio operators.

Switch CMF (If data link frozen)

Note: before you switch CMFs, record or print any logged data (such as OUT and OFF times) or new messages (such as from Data Link). They will be lost on switching.

1. Select MENU
2. Select MISC
3. Toggle LSK 5L to the other CMF. It will take a few seconds, but you should see the change reflected on the screen.

Force SATCOM / Disable VHF Data Mode

1. RADIO Page 2/2
2. COM/NAV3
3. MODE VOICE

Make a SATCOM Short Code Call

1. You can contact most oceanic radio centers using SATCOM for any emergency or non-routine situation. To dial the 6-digit short code from the MCDU:
 - a. Select MENU > SAT > DIRECTORY
 - b. Type the number in the scratch pad
 - c. Push MANUAL DIAL (5L)
 - d. The system dials the number
 - e. To end the call, push END CALL (2R)
2. The oceanic numbers are given on some en route charts and are reproduced here:
 - a. Gander Radio: 431613
 - b. New York Radio (ARINC): 436623
 - c. Iceland Radio (Emergency): 425101 or 425103
 - d. Iceland Radio (Com Failure): 425105
 - e. Santa Maria Radio: 426305 or 426302
 - f. Shanwick Radio: 4250002

Constrain a Satellite

1. Under normal operations, constraining a satellite is not necessary. If, for some reason a particular satellite drops you, this might be helpful.
2. Before ADS-C LOGON on the MCDU:
 - a. MENU
 - b. SAT (6L)
 - c. SUBMENU (6L)
 - d. LOGON (2L)
 - e. GES (6L)
 - f. Constrain the satellite in question
 - g. LOGON (6L)
 - h. GES (6L)
 - i. Constrain the satellite in question
 - j. LOGON (6L)

Unconstrain a Satellite

1. MENU
2. SAT (6L)
3. SUBMENU (6L)
4. LOGON (2L)
5. AUTO LOGON (2L)

Exiting CPDLC and ADS-C Airspace

1. The CPDLC connection and the ADS contract should terminate automatically.
2. If not, switch both off

Deice / Anti-ice Checklist

- | | | |
|-----|------------------------------|-------------------|
| 1. | Engines | Idle |
| 2. | Brakes | Set |
| 3. | L/R Cowl Anti-ice | Off |
| 4. | L/R Engine Bleed Air | Off |
| 5. | APU Bleed Air | Off |
| 6. | Cabin Pressure/Outflow Valve | Manual/Closed |
| 7. | Flaps | Up |
| 8. | Communication | Establish |
| 9. | Anti-ice Fluid | Type/Ratio |
| 10. | Application | Start/Finish Time |
| 11. | Pre-T/O Contamination Check | Complete |
| 12. | Doors | Closed |
| 13. | Cabin Pressure Control | Auto |
| 14. | L/R Engine Bleed Air | On |
| 15. | L/R Cowl Anti-ice | On |
| 16. | Brakes | Release |
| 17. | Cabin Pressure Control | Flight |
| 18. | Flaps | Set for Takeoff |
| 19. | Wing Anti-ice | Set |




Fuel Quantity Pounds/Gallons/Liters

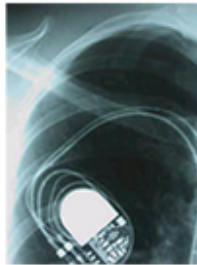
Pounds	Gallons	Liters	Pounds	Gallons	Liters
	0.15	3.785	14,500	2,175	8,232
1,000	150	568	15,000	2,250	8,516
1,500	225	852	15,500	2,325	8,800
2,000	300	1,136	16,000	2,400	9,084
2,500	375	1,419	16,500	2,475	9,368
3,000	450	1,703	17,000	2,550	9,652
3,500	525	1,987	17,500	2,625	9,936
4,000	600	2,271	18,000	2,700	10,220
4,500	675	2,555	18,500	2,775	10,503
5,000	750	2,839	19,000	2,850	10,787
5,500	825	3,123	19,500	2,925	11,071
6,000	900	3,407	20,000	3,000	11,355
6,500	975	3,690	20,500	3,075	11,639
7,000	1,050	3,974	21,000	3,150	11,923
7,500	1,125	4,258	21,500	3,225	12,207
8,000	1,200	4,542	22,000	3,300	12,491
8,500	1,275	4,826	22,500	3,375	12,774
9,000	1,350	5,110	23,000	3,450	13,058
9,500	1,425	5,394	23,500	3,525	13,342
10,000	1,500	5,678	24,000	3,600	13,626
10,500	1,575	5,961	24,500	3,675	13,910
11,000	1,650	6,245	25,000	3,750	14,194
11,500	1,725	6,529	25,500	3,825	14,478
12,000	1,800	6,813	26,000	3,900	14,762
12,500	1,875	7,097	26,500	3,975	15,045
13,000	1,950	7,381	27,000	4,050	15,329
13,500	2,025	7,665	27,500	4,125	15,613
14,000	2,100	7,949	28,000	4,200	15,897
			28,500	4,275	16,181

Hazardous Materials (HAZMAT)






Hazardous Materials Carried by Passengers and Crewmembers




In general, US Department of Transportation (DOT) regulations prohibit passengers and crewmembers from carrying hazardous materials (dangerous goods) aboard commercial aircraft. The table below lists the exceptions that allow passengers and crewmembers to carry a limited amount of personal-use hazardous materials in carry-on and/or checked baggage. Though allowable by DOT regulations (see 49 CFR, section 175.10), some of the items listed here may, at times, be prohibited in the aircraft cabin by Transportation Security Administration (TSA) rules. Individual airlines and other nations may also have more restrictive rules on what passengers can carry aboard the aircraft.

Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text That Allows It 49 CFR 175.10(a)...
Medicinal and toilet articles (including flammable and nonflammable aerosols)	<p>☑ Toilet or medicinal articles that are hazardous materials such as rubbing alcohol, flammable perfume and colognes, nail polish and remover, and aerosols (hairspray, shaving cream, etc.).</p> 	<p>☒ Hazardous materials that are not medicinal/toilet articles or described in the other exceptions, such as: spray paints, aerosol laundry starch, insecticides, drain cleaners, camping fuel, etc.</p> 	<p>(1)(i) Non-radioactive toilet articles for personal use (including aerosols) carried in carry-on and checked baggage. Release devices on aerosols must be protected by a cap or other suitable means to prevent inadvertent release.</p> <p>(ii) Other aerosols in Div. 2.2 (nonflammable gas) with no subsidiary risk carried in checked baggage only. Release devices on aerosols must be protected by a cap or other suitable means to prevent inadvertent release; and</p> <p>(iii) The aggregate quantity of these hazardous materials carried by each person may not exceed 2 kg (70 ounces) by mass or 2 L (68 fluid ounces) by volume and the capacity of each container may not exceed 0.5 kg (18 ounces) by mass or 500 ml (17 fluid ounces) by volume.</p>
Additional nonflammable aerosols that are not medicinal or toilet articles (Nonflammable aerosols are rare.)	<p>☑ Non-toiletry aerosols that contain nonflammable & non-toxic gas –<u>in checked baggage only.</u></p> 	<p>☒ Aerosols without caps or other protective features around the release device/button are also not allowed.</p>	



Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text That Allows It 49 CFR 175.10(a)...
Matches and Lighters	<p>✔ One book of safety matches (book matches) may be carried <u>in the aircraft cabin</u>.</p>  <p>✔ One lighter (gas or absorbed liquid) may be carried <u>in the aircraft cabin</u>.</p> 	<p>✘ Torch lighters, utility lighters.</p>  <p>✘ Strike anywhere matches.</p>  <p>✘ Lighter refills, lighter fluid.</p> 	<p>(2) One packet of safety matches or a lighter intended for use by an individual when carried on one's person or in carry-on baggage only. Lighter fuel, lighter refills, and lighters containing unabsorbed liquid fuel (other than liquefied gas) are not permitted on one's person or in carry-on or checked baggage.</p> <p>Note: This subparagraph was amended in the Federal Register on Dec. 29, 2006 (71 FR 78634). The amended text is shown above.</p>
Radioactive and battery-powered devices in the body	<p>✔ Pacemakers or similar battery-powered devices and radiopharmaceuticals contained in the body.</p> 		<p>(3) Implanted medical devices in humans or animals that contain hazardous materials, such as a heart pacemaker containing Class 7 (radioactive) material or lithium batteries; and radiopharmaceuticals that have been injected or ingested.</p>

Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text That Allows It 49 CFR 175.10(a)...
Alcoholic beverages	<p>☑ Up to 5 liters of alcoholic beverages with an alcohol content of more than 24% but not more than 70% in unopened retail packages.</p>  <p><i>Note: Alcoholic beverages containing 24% or less alcohol by volume (beer, wine, etc.) are not subject to the DOT hazardous materials regulations.</i></p> 	<p>☒ Alcoholic beverages with more than 70% alcohol by volume (more than 140 Proof) including 95% grain alcohol and 151-proof rum.</p> 	<p>(4) Alcoholic beverages containing:</p> <ul style="list-style-type: none"> (i) Not more than 24% alcohol by volume; or (ii) More than 24% and not more than 70% alcohol by volume when in unopened retail packaging not exceeding 5 liters (1.3 gallons) carried in carry-on or checked baggage, with a total net quantity per person of 5 liters (1.3) gallons for such beverages.
Duty free perfume and cologne	<p>☑ Flammable perfumes and colognes from the airport / airline duty free shops.</p>  		<p>(5) Perfumes and colognes purchased through duty-free sales and carried on one's person or in carry-on baggage.</p>


Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text That Allows It 49 CFR 175.10(a)...
Curling iron (cordless)	<input checked="" type="checkbox"/> A curling iron with a flammable gas cartridge installed. 	<input checked="" type="checkbox"/> Extra flammable gas cartridges. 	(6) Hair curlers (curling irons) containing a hydrocarbon gas such as butane, no more than one per person, in carry-on or checked baggage. The safety cover must be securely fitted over the heating element. Gas refills for such curlers are not permitted in carry-on or checked baggage.
Small mercury thermometer	<input checked="" type="checkbox"/> Small personal mercury thermometer in a protective case. 		(7) A small medical or clinical mercury thermometer for personal use, when carried in a protective case in carry-on or checked baggage.
Small arms ammunition	<input checked="" type="checkbox"/> Small arms ammunition (up to 19.1 mm for rifle and pistol cartridges, any size shotgun shells) for personal use, when securely boxed—in checked baggage only. 	<input checked="" type="checkbox"/> Loose ammunition <input checked="" type="checkbox"/> Loaded firearms	(8) Small arms ammunition for personal use carried by a crewmember or passenger in checked baggage only, if securely packed in boxes or other packagings specifically designed to carry small amounts of ammunition. Ammunition clips and magazines must also be securely boxed. This paragraph does not apply to persons traveling under the provisions of 49 CFR 1544.219.
Self-defense spray	<input checked="" type="checkbox"/> One small (4-ounce or less) self-defense spray—in checked baggage only.  <i>Note: Usually forbidden even in checked baggage outside the U.S.</i>		(9) One self-defense spray (see § 171.8 of this subchapter), not exceeding 118 mL (4 fluid ounces) by volume, that incorporates a positive means to prevent accidental discharge may be carried in checked baggage only.

Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text That Allows It 49 CFR 175.10(a)...
Dry ice	<p>✔ Small amounts of dry ice in carry-on (2 kg.) or checked baggage (2.3 kg.) in a package that allows venting of carbon dioxide gas.</p> 	<p>✘ Dry ice in air-tight packages.</p>	<p>(10) Dry ice (carbon dioxide, solid), in quantities not exceeding 2.0 kg (4.4 pounds) per person in carry-on baggage or 2.3 kg (5 pounds) per person in checked baggage, when used to refrigerate perishables. The packaging must permit the release of carbon dioxide gas. For checked baggage, the package must be marked "DRY ICE" or "CARBON DIOXIDE, SOLID" and must be marked with the net weight of dry ice or an indication the net weight is 2.3 kg (5 pounds) or less.</p>
Self-inflating jacket with gas cartridges	<p>✔ A life jacket containing two nonflammable gas cartridges, plus two spare cartridges.</p> 		<p>(11) A self-inflating life jacket fitted with no more than two small gas cartridges (containing no hazardous material other than a Div. 2.2 gas) for inflation purposes plus no more than two spare cartridges. The lifejacket and spare cartridges may be carried in carry-on or checked baggage, with the approval of the aircraft operator.</p>
Gas cylinders for mechanical limbs	<p>✔ Nonflammable gas cylinders/cartridges in mechanical limbs, plus spare cylinders need for the trip.</p> 		<p>(12) Small compressed gas cylinders of Division 2.2 (containing no hazardous material other than a Division 2.2 gas) worn by the passenger for the operation of mechanical limbs and, in carry-on and checked baggage, spare cylinders of a similar size for the same purpose in sufficient quantities to ensure an adequate supply for the duration of the journey.</p>

Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text That Allows It 49 CFR 175.10(a)...
Mercury barometer or thermometer	<p>✓ Larger mercury thermometers and barometers carried by government weather personnel –<u>in carry-on baggage only</u>. Must be in leak-proof, mercury-proof packaging.</p> 		<p>(13) A mercury barometer or thermometer carried as carry-on baggage, by a representative of a government weather bureau or similar official agency, provided that individual advises the operator of the presence of the barometer or thermometer in his baggage. The barometer or thermometer must be packaged in a strong packaging having a sealed inner liner or bag of strong, leak proof and puncture-resistant material impervious to mercury, which will prevent the escape of mercury from the package in any position.</p>
Heat-producing equipment	<p>✓ Diving lamps and other battery-operated extreme heat producing equipment – <u>in carry-on baggage only</u>. Power must be disconnected.</p> 		<p>(14) Electrically powered heat producing articles (e.g., battery-operated equipment such as diving lamps and soldering equipment) as carry-on baggage only and with the approval of the operator of the aircraft. The heat producing component, or the energy source, must be removed to prevent unintentional functioning during transport.</p>

Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text That Allows It 49 CFR 175.10(a)...
<p>Wheelchairs and mobility devices with <u>nonspillable</u> batteries</p>	<p>☑ Wheelchair or other battery powered mobility device equipped with a nonspillable battery <u>when carried as checked baggage</u>.</p>  		<p>(15) A wheelchair or other battery –powered mobility aid equipped with a nonspillable battery, when carried as checked baggage, provided—</p> <ul style="list-style-type: none"> (i) The battery meets the provisions of § 173.159(d) of this subchapter for nonspillable batteries; (ii) Visual inspection including removal of the battery, where necessary, reveals no obvious defects (removal of the battery from the housing should be performed by qualified airline personnel only); (iii) The battery is disconnected and terminals are insulated to prevent short circuits; and (iv) The battery is— <ul style="list-style-type: none"> (A) Securely attached to the wheelchair or mobility aid, (B) Is removed and placed in a strong, rigid packaging marked “NONSPILLABLE BATTERY” (unless fully enclosed in a rigid housing that is properly marked), or (C) Is handled in accordance with paragraph (a)(16)(iv) of this section. <p><i>Note: Many US airlines hold a special permit (exemption) allowing them to carry wheelchairs with <u>nonspillable</u> batteries without having to disconnect the battery.</i></p>

Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text That Allows It 49 CFR 175.10(a)...
<p>Wheelchairs and mobility devices with <u>spillable</u> batteries</p>	<p>☑ Wheelchair or other battery powered mobility device equipped with a spillable battery <u>when carried as checked baggage</u>. Device must be stowed so the battery is upright or the battery must be disconnected and packaged separately.</p> <div data-bbox="527 646 768 865" data-label="Image"> </div> <div data-bbox="540 898 727 1075" data-label="Image"> </div>		<p>(16) A wheelchair or other battery-powered mobility aid equipped with a spillable battery, when carried as checked baggage, provided—</p> <p>(i) Visual inspection including removal of the battery, where necessary, reveals no obvious defects (however, removal of the battery from the housing should be performed by qualified airline personnel only);</p> <p>(ii) The battery is disconnected and terminals are insulated to prevent short circuits;</p> <p>(iii) The pilot-in-command is advised, either orally or in writing, prior to departure, as to the location of the battery aboard the aircraft; and</p> <p>(iv) The wheelchair or mobility aid is loaded, stowed, secured and unloaded in an upright position, or the battery is removed, and carried in a strong, rigid packaging under the following conditions:</p> <p>(A) The packaging must be leak-tight and impervious to battery fluid. An inner liner may be used to satisfy this requirement if there is absorbent material placed inside of the liner and the liner has a leakproof closure;</p> <p>(B) The battery must be protected against short circuits, secured upright in the packaging, and be packaged with enough compatible absorbent material to completely absorb liquid contents in the event of rupture of the battery; and</p> <p>(C) The packaging must be labeled with a CORROSIVE label, marked to indicate proper orientation, and marked with the words "Battery, wet, with wheelchair."</p>

Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text That Allows It 49 CFR 175.10(a)...
Lithium and lithium-ion batteries	<p>✔ Small lithium and lithium-ion batteries in consumer electronic devices. Spare batteries must be protected from damage and short circuit and placed in carry-on baggage.</p> 	<p>✘ Spare lithium batteries in checked baggage.</p> <p>✘ Loose batteries not protected from short circuit.</p>	<p>(17) Except as provided in § 173.21 of this subchapter, consumer electronic and medical devices (watches, calculators, cameras, cellular phones, lap-top computer, camcorders, etc.) containing lithium cells or batteries, and spare lithium batteries and cells for these devices, when carried by passengers or crew members for personal use. Each spare battery must be individually protected so as to prevent short circuits (by placement in original retail packaging or by otherwise insulating the terminals, e.g., by taping over exposed terminals or placing each battery in a separate plastic or protective pouch) and carried in carry-on baggage only. In addition, each installed or spare battery must not exceed the following:</p> <p>(i) For a lithium metal battery, a lithium content of not more than 2 grams per battery; or</p> <p>(ii) For a lithium-ion battery, an aggregate equivalent lithium content of not more than 8 grams per battery, except that up to two batteries with an aggregate equivalent lithium content of more than 8 grams but not more than 25 grams may be carried.</p>

Though the Federal Aviation Administration (FAA) enforces these rules in air transportation, the US DOT Hazardous Materials Regulations (49 CFR, Parts 100-185) are written, issued, and officially interpreted by the US DOT Pipeline and Hazardous Materials Safety Administration, Office of Hazardous Materials Safety (<http://hazmat.dot.gov>). **For questions or comments regarding these hazardous materials regulations, please contact the Hazardous Materials Information Center at: 1-800-467-4922 or infocntr@dot.gov**

The Transportation Security Administration (TSA) is responsible for the security screening of passengers and their baggage at U.S. airports. **For questions about TSA "prohibited items" or other air travel security measures please go to: <http://www.tsa.gov> or contact the TSA Contact Center at: 1-866-289-9673 or TSA-ContactCenter@dhs.gov**

Batteries Carried by Airline Passengers

Frequently Asked Questions

- Q. What kinds of batteries are allowed in carry-on baggage (in the aircraft cabin)?**
- A.** Passengers can carry most consumer batteries and personal battery-powered devices. Spare batteries must be protected from damage and short circuit. Battery-powered devices should be protected from accidental activation. Batteries allowed in carry-on baggage include:
- Dry cell alkaline batteries; typical AA, AAA, C, D, 9-volt, button sized cells, etc.
 - Dry cell rechargeable batteries such as Nickel Metal Hydride (NiMH) and Nickel Cadmium (NiCad). For rechargeable lithium ion batteries; see next sentence.
 - Lithium ion batteries (a.k.a.: rechargeable lithium, lithium polymer, LIPO, secondary lithium). Passengers may carry consumer-sized lithium ion batteries [no more than 8 grams of equivalent lithium content or 100 watt hours (wh) per battery]. This size covers AA, AAA, 9-volt, cell phone, PDA, camera, camcorder, Gameboy, and standard laptop computer batteries.
 - Passengers can also bring two (2) larger lithium ion batteries (more than 8 grams, up to 25 grams of equivalent lithium content per battery) in their carry-on. This size covers larger extended-life laptop batteries. Most consumer lithium ion batteries are below this size.
 - Lithium metal batteries (a.k.a.: non-rechargeable lithium, primary lithium). These batteries are often used with cameras and other small personal electronics. Consumer-sized batteries (up to 2 grams of lithium per battery) may be carried. This includes all the typical non-rechargeable batteries for personal film cameras and digital cameras (AA, AAA, 123, CR123A, CR1, CR2, CRV3, CR22, 2CR5, etc.) as well as the flat round lithium button cells.
- Q. What kinds of batteries are allowed in checked baggage?**
- A.** Except for spare (uninstalled) lithium batteries, all the batteries allowed in carry-on baggage are also allowed in checked baggage. The batteries must be protected from damage and short circuit or installed in a device. Battery-powered devices—particularly those with moving parts or those that could heat up—should be protected from accidental activation. Spare lithium batteries (both lithium metal and lithium ion/polymer) are prohibited in checked baggage.
- Q. Is there a limit to the number of batteries I can carry?**
- A.** There is no limit to the number of consumer-size batteries or battery-powered devices that a passenger can carry. **Only the larger lithium ion batteries are limited to two (2) batteries per passenger;** see “Lithium ion batteries” explanation above.
- Q. What does “protected from short circuit” mean?**
- A.** Protected from short circuit means that a battery’s terminals are protected from being touched by metal. When metal such as keys, coins, or other batteries come in contact with both terminals of a battery, it can create a “circuit” or path for electricity to flow through. This can cause extreme heat and sparks and even start a fire. To prevent short circuits, keep spare batteries in their original packaging, a battery case, or separate pouch or pocket. Make sure loose batteries can’t move around. Placing tape over the terminals of unpackaged batteries also helps to insulate them from short circuit.

For a quick reference guide, see illustrated table on next page....




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For a quick reference guide, see illustrated table on next page....

Batteries Allowed in Airline Baggage

Type of Battery <small>There is no limit to the number of batteries or devices carried unless specified below.</small>	Allowed in <u>carry-on</u> baggage?		Allowed in <u>checked</u> baggage?	
	In equipment	Spares	In equipment	Spares
Dry alkaline batteries 	YES	YES <small>When protected from damage and short circuit</small>	YES	YES <small>When protected from damage and short circuit</small>
Dry rechargeable — Nickel Metal Hydride (NiMH), Nickel Cadmium (NiCad), etc.  <small>For lithium, see below.</small>	YES	YES <small>When protected from damage and short circuit</small>	YES	YES <small>When protected from damage and short circuit</small>
Lithium ion (rechargeable lithium, lithium polymer, LIPO) as used in small consumer electronics, such as cell phones, cameras, PDAs, and most laptops. (8 grams or less equivalent lithium content per battery) 	YES	YES <small>When protected from damage and short circuit</small>	YES	NO
Larger* Lithium ion — <u>Limit two (2) batteries per passenger.</u> <small>(*More than 8 grams but not more than 25 grams equivalent lithium content per battery)</small>	YES	YES <small>When protected from damage and short circuit</small>	YES	NO
Lithium metal , as used in small consumer electronics such as cameras, LED flashlights, etc. (2 grams or less lithium per battery) 	YES	YES <small>When protected from damage and short circuit</small>	YES	NO

This is intended as informal guidance material only. For further information, please go to <http://SafeTravel.DOT.Gov> or call the DOT Hazardous Materials Information Center at 1-800-467-4922. For TSA security restrictions, please go to <http://www.tsa.gov>

January 9, 2008

FAA Office of Security and Hazardous Materials

<http://ash.faa.gov>

ICAO Lost Communications

Reference: ICAO Annex 2

Inflight references: Jeppesen Text Emergency Tab, Emergency Procedures and State Rules and Procedures for country specific differences to ICAO standards for lost com

Upon loss of normal com:

1. Squawk 7600
2. Attempt to reestablish communication by any means: SATCOM Phone/HF/AFIS

If VMC:

1. Remain in VMC Conditions
2. Land at nearest suitable airport

If IMC:

Non-Radar Environment:

1. Maintain last assigned speed and level (or climb to minimum IFR Altitude if higher) for 20 min following a compulsory reporting pt
2. Then resume the flight plan altitude

Radar Environment:

1. Maintain last assigned speed and level (or climb to minimum IFR Altitude if higher) for 7 min after the latter of the following:
 - a. The assigned/min IFR level was reached
 - b. The 7600 squawk began
 - c. Passing a compulsory reporting pt
2. Then resume the flight plan altitude

Landing Distances

Gulfstream G450

OPERATIONAL INFORMATION SUPPLEMENT

ADVISORY DATA ONLY – NOT FAA APPROVED

G450-OIS-02

**TABLE 47c. ENROUTE LANDING DISTANCES, FLAPS 39
ANTI-SKID OPERATIVE AND AUTO-GROUND SPOILER**

Dry AFM/FMS Ldg Dist (FT)	Dry, Operational Dist (FT)	Wet, Depth < 3mm Operational Dist (FT)	Compacted Snow Dist (FT) ⁽¹⁾	Std Water, Slush, Loose Snow (Equiv Depth > 3mm) Dist (FT) ⁽²⁾	Icy Dist (FT) ⁽³⁾
2600	2990	3800	4000	5300	7540
2700	3105	4000	4150	5700	7950
2800	3220	4200	4300	6070	8350
2900	3335	4420	4480	6420	8740
3000	3450	4680	4690	6780	9150
3100	3565	4850	4850	7100	9530
3200	3680	5050	5050	7450	9960
3300	3795	5220	5220	7800	10360
3400	3910	5480	5400	8150	10780
3500	4025	5700	5600	8500	11180
3600	4140	5880	5800	8850	11580
3700	4255	6080	6000	9200	11980
3800	4370	6300	6180	9550	12390
3900	4485	6500	6340	9900	12790
4000	4600	6700	6490	10250	13200
4100	4715	6900	6680	10600	13600
4200	4830	7100	6840	10950	14000
4300	4945	7310	7010	11300	14400
4400	5060	7500	7180	11650	14800
4500	5175	7720	7380	12000	15200
4600	5290	7950	7510	12370	15620
4700	5405	8180	7700	12700	16080
4800	5520	8390	7880	13070	16490
4900	5635	8600	8080	13420	16900
5000	5750	8800	8270	13800	17300

Notes:

1. All distances in column 2-6 contain a 15% safety margin. A classic Part 91 operator can elect to remove the 15% safety margin.
2. All distances but dry runway distances assume both engines in Max Reverse Thrust (Dry runway distances assume both engines in Forward Idle Thrust). If one or both TRs are inop, increase distances by the following amounts:
 - a. On wet or compacted snow runways, increase distance by 10%
 - b. On runways covered with standing water, slush or loose snow, increase distance by 20%
 - c. On runways covered with ice, increase distance by 50%
3. Air distance based on 7-second EASA requirement.
4. Runway Slope Corrections:
 - a. Increase distance by 11% for each 1% of downhill slope.
 - b. Decrease distance by 10% for each 1% of uphill slope.
5. Ambient Temperature Corrections:
 - a. Increase distance by 3% for each 10°C above ISA.
 - b. Decrease distance by 3% for each 10°C below ISA.

Minimums

Prior to Flight

- Takeoff Alternate Required [§135.217] If weather above takeoff minimums but below authorized IFR landing minimums must have an alternate airport within 1 hour's flying time (at normal cruise speed in still air) of the departure airport.
- Destination Alternate Not Required [§91.167] — If there is an IAP and weather for ETA +/- 1 hour is at least 2,000 and 3.
- Destination Alternate Not Required [§135.223] — If there is an IAP AND Weather for ETA +/- 1 hour at least 1,500' ceiling above lowest circling MDA or if no circling at least 1,500' above lowest minimum or 2,000' above airport elevation whichever higher AND Visibility at least 3 miles or 2 miles more than lowest applicable mins, whichever greater.
- Approach Minimums [§91.175] — (b) For the purpose of this section, when the approach procedure being used provides for and requires the use of a DA/DH or MDA, the authorized DA/DH or MDA is the highest of the following: (1) The DA/DH or MDA prescribed by the approach procedure. (2) The DA/DH or MDA prescribed for the pilot in command. (3) The DA/DH or MDA appropriate for the aircraft equipment available and used during the approach.
- Alternate Airport Weather Requirements [§91.169] — With IAP: 600'/2 precision, 800'/2 non precision at ETA Without IAP: ceiling and vis to allow descent from MEA, approach and landing under basic VFR.

Prior to Takeoff

- Minimum Fuel [§91.151] — No person may begin a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed (1) During the day, to fly after that for at least 30 minutes; or (2) At night, to fly after that for at least 45 minutes.
- Minimum Fuel [§91.167] — No person may operate a civil aircraft in IFR conditions unless it carries enough fuel (considering weather reports and forecasts and weather conditions) to (1) Complete the flight to the first airport of intended landing; (2) Except when an alternate is not required, fly from that airport to the alternate airport; and (3) Fly after that for 45 minutes at normal cruising speed or, for helicopters, fly after that for 30 minutes at normal cruising speed.
- Takeoff Minimums [§91.175] — As provided in Part 97, if none then 1 sm visibility for 2 engine aircraft.
- Takeoff Minimums [§135.225] — As provided in Part 97 or Ops Specs, if none then 1 sm visibility for 2 engine aircraft, if straight-in approach available then at mins for that approach.

Prior to Approach

- Approach Minimums [§135.225] — May not begin an IAP unless the airport has an approved weather facility and the latest weather is above minimums. Eligible on-demand may begin the IAP without an approved weather facility provided the alternate has one and have an approved altimeter setting. If weather goes below after beyond the FAF, may continue.

General definitions

Ceiling means the height above the earth's surface of the lowest layer of clouds or obscuring phenomena that is reported as "broken", "overcast", or "obscuration", and not classified as "thin" or "partial".

Flight visibility means the average forward horizontal distance, from the cockpit of an aircraft in flight, at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.

Oceanic Checklist and RVSM/NAV Performance Log

Preflight

- ☐ Label one copy of the computer flight plan "Master Document"
- ☐ Plot route over Class II airspace and any relevant tracks
- ☐ Add ETPs (loss of pressurization, all-engine cruise, loss of engine) if required
- ☐ Position Check: Ramp (GPS) N/S _____ E/W _____
IRS #1 _____ IRS #2 _____ IRS #3 _____ GPS #1 _____ GPS#2 _____
Diff _____ Diff _____ Diff _____ Diff _____ Diff _____
- ☐ Altimeter Check: QNH _____ Pilot's _____ Stby _____ Copilot's _____
- ☐ Time Check: Source (circle) WWV/GPS/ATC +/- 10 sec _____
- ☐ Compare Master Document course/distance with plotting or en route chart, circle waypoint
- ☐ Compare Master Document course/distance with FMS, draw diagonal over waypoint
- ☐ Record fuel onboard on the Master Document

Coast Out

- ☐ Check both HF's, check SELCAL prior to entering oceanic airspace
- ☐ Nav Accuracy Check RAW: Fix _____ Radial _____ Distance _____
FMS: Fix _____ Radial _____ Distance _____
- ☐ Altimeter Check: QNH _____ Pilot's _____ Stby _____ Copilot's _____
- ☐ Record oceanic clearances on the Master Document
- ☐ Initiate SLOP, squawk 2000, monitor 121.5 and 123.45

At Each Waypoint

- ☐ Record ATA, fuel remaining, winds/temperature (if required), next ETA, HF frequencies, three altimeters on Master Document
- ☐ Make the position report, draw a second diagonal over waypoint on Master Document
- ☐ Check distance, time, heading, and fuel remaining against the Master Document
- ☐ Plot aircraft position approximately 10 minutes after waypoint passage

Coast In

- ☐ Remove SLOP, squawk as required
- ☐ Nav Accuracy Check RAW: Fix _____ Radial _____ Distance _____
FMS: Fix _____ Radial _____ Distance _____

Post-flight

- ☐ Position Check: Ramp (GPS) N/S _____ E/W _____
IRS #1 _____ IRS #2 _____ IRS #3 _____ GPS #1 _____ GPS#2 _____
Diff _____ Diff _____ Diff _____ Diff _____ Diff _____
- ☐ Altimeter Check: QNH _____ Pilot's _____ Stby _____ Copilot's _____

Oceanic Contingency Procedures

ONE ENGINE INOPERATIVE

- 1 Set MCT on Operating Engine (**Auto throttles will Disengage**)
- 2 Slow to L/D Max (SMC- FLTREF - V_{REF} Flaps 0 + 10 knots)
Then begin drift down using FLC to the One Engine Inop Cruise Alt. FMS - Press **PERF – S.E. RANGE**

70000# Target Altitude is FL300

80000# Target Altitude is FL260

86000# Target Altitude is FL235

A Green and Amber Banana will be displayed on the ND. Green indicates Bottom of Descent Amber is the Single Engine Ceiling

-Simultaneously-

- 3 Perform the applicable offset and diversion procedure
- Do Not Delay -
- 4 Verify or manually select CPDLC-Emergency
- 5 Consider starting APU when at / below **FL 390**

OTS: CONTINUE & OFFSET

- 1 Advise ATC when time permits - Turn on all exterior lights
- 2 Determine which way to turn (Consider OTS, Traffic, WX, Turn towards alternate airport)
- 3 Turn Left or Right as required at least 45° and Offset 15NM
- 4 Once clear of assigned route by 10NM Climb or Descend to an Offset Altitude

ABOVE FL410 CLB or DES 1000'

AT FL410 DES 500' or CLB 1000'

BELOW FL410 CLB or DES 500'

FMS Procedure

Press PROG, Page 3

Insert Offset (L15 or R15)

Verify the Offset and Flight Plan

Monitor new route

Check Fuel and determine appropriate speed

OTS: RETURN & OFFSET

Before initiating any 180° turn-back, consider maintaining a same direction 15NM offset. Expedite climb above or descend below the vast majority of NAT traffic FL410-280 prior to crossing adjacent tracks or making a 180° turn-back.

- 1 Advise ATC when time permits - Turn on all exterior lights
- 2 Determine which way to turn (Consider OTS, Traffic, WX, Turn towards alternate airport)
- 3 Turn Left or Right as required 45° from present course to intercept and establish a 15NM offset
- 4 Once established on the 15NM offset expedite climb above or descend below NAT HLA airspace (FL410-280)

ABOVE FL410 CLB or DES 1000'

AT FL410 DES 500' or CLB 1000'

BELOW FL410 CLB or DES 500'

- 5 Turn Left or Right as required 180° to 225° from present course to intercept and re-establish yourself on the offset course.

NOTE: This procedure assumes you have built a contingency based turn-back flight plan during your Pre-flight.

FMS Procedure

Select HDG Mode

Press NAV and select FPL LIST

Line Select your correct Flight Plan

Place the flight plan into SHOW FPL

Select FPL SEL

Select INVERT / ACTIVATE

Confirm Replacing – Select YES

Press PROG, Page 3 – Insert Offset L15 or R15

Use caution to select the correct offset. The new course line should be very close to your current position.

Verify Routing on PFD and Engage LNAV

Check Fuel and determine appropriate speed

DIVERSION: ACROSS PRIMARY TFC FLOW (OTS)

If drifting down or descending, DO NOT cross tracks until level at an appropriate altitude for crossing tracks. Maintain established offset and expedite Climb above or Descend below the OTS (FL410-280). Utilize one of the previous procedures until clear of the organized track system.

- 1 Advise ATC when time permits - Turn on all exterior lights
- 2 Confirm you are level at an appropriate Offset Altitude

ABOVE FL410 CLB or DES 1000'

AT FL410 DES 500' or CLB 1000'

BELOW FL410 CLB or DES 500'

- 3 Request a clearance and proceed to alternate airport as per your reclearance or, direct if unable to obtain a clearance.
- 4 Check Fuel & Determine appropriate speed
- 5 Maintain extra vigilance for traffic
- 6 Broadcast FL & Position to nearby traffic on 121.5/123.45

DEPRESSURIZATION / EMERGENCY DESCENT

Manually performing the Emergency Descent Procedure Once crew is on O₂ may be the safest course of action in Oceanic Airspace. Monitor for nearby traffic on TCAS.

NOTE: Difference in non-NAT HLA and NAT HLA procedures (3)

- 1 Crew and Passenger O₂ DON/100%
- 2 Autopilot Disconnect if EDM Annunciated / Re-engage AP and select HDG and ALT
- 3 **NON-North Atlantic HLA** – Turn Left or Right as required 90° from present course to quickly intercept and establish a 15NM offset
North Atlantic HLA – Turn Left or Right as required 90° from present course to quickly intercept a point midway between a pair of tracks prior to entering the OTS from above. If not above tracks establish a 15NM offset
- 4 Set 15000' in Altitude Selector, MAN Speed MMO and FLC
- 5 Deploy Speedbrakes
- 6 Datalink "Verify Emergency" will automatically display on FMS if EDM is activated. Review the info (add POB) and Press send. If not displayed Select Press NAV Select ATC (R1) Select ATC INDEX (L6) Select Emergency and Mayday to active ADS Emergency Mode
- 7 Advise ATC when time permits - Turn on all exterior lights
- 8 Maintain extra vigilance for traffic. Monitor TCAS
- 9 Broadcast FL & Position to nearby traffic on 121.5/123.45

WEATHER DEVIATION

Obtain ATC Clearance if possible. Indicate priority with "WEATHER DEVIATION REQUIRED" or "PAN-PAN-PAN". If ATC advises "Unable due Traffic, State your Intentions" consider Declaring an Emergency prior to utilizing this procedure.

If unable to obtain a clearance

- 1 If possible, deviate away from nearby routes, tracks, or traffic
- 2 Broadcast FL, Position and Intentions to nearby traffic on 121.5/123.45
- 3 Maintain extra vigilance for traffic – Turn on all ext. lights
- 4 If deviating **LESS** than 10NM remain at current FL
- 5 If deviating **MORE** than 10NM use the table below.

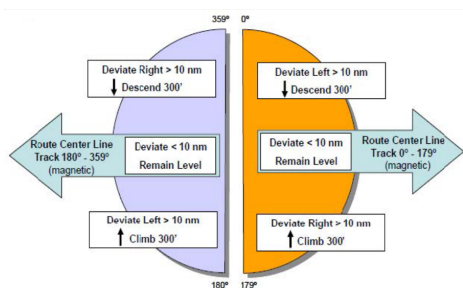
SAND – South Ascend – North Descend

EASTBOUND	Deviating Left	Descend 300'
	Deviating Right	Climb 300'
WESTBOUND	Deviating Left	Climb 300'
	Deviating Right	Descend 300'

- 6 Return to Cleared FL when within 10NM of course
- 7 Continue broadcasting FL and Position
- 8 Continue to attempt contact with ATC and advise them of your weather deviation.

FMS Procedure

Press PROG, Page 3 - Insert Offset (LXX or RXX)



ONE REMAINING NAV SOURCE

- 1 Assess prevailing circumstance:
 - a. Performance of remaining NAV source
 - b. Remaining portion of flight in NAT/HLA Airspace
- 2 Exercise good judgement w/ respect to current situation
 - a. Request clearance above or below NAT/HLA
 - b. Reverse course
 - c. Divert to use Special Routes (Blue Spruce)
- 3 Consult ATC as to the most suitable action
- 4 Obtain a clearance prior to any deviation from route
- 5 Ensure monitoring and crosscheck of remaining NAV src.
- 6 Check main and stby compass systems against flt plan
- 7 Attempt visual sighting of other aircraft for position confirmation
- 8 Contact aircraft in vicinity to obtain useful info: Current Winds, Mag Heading, Drift, etc.

TOTAL NAV FAILURE

- 1 Notify ATC
- 2 Make best use of procedures specified above
- 3 Turn on all exterior lights
- 4 Maintain extra vigilance for traffic
- 5 All data required for Dead Reckoning along route is available on Computer Flight Plan.

COMM FAILURE

- 1 Check the following:
 - a. Communications panels (3)
 - b. Volume
 - c. Circuit Breakers (See list below)
 - d. Replace microphone and or headset
 - e. Try different frequency
 - 2 Attempt communications on SATCOM
 - 3 Attempt contact vis Datalink (ADS-C/ CPDLC)
 - 4 Squawk 7600
 - 5 Broadcast in the Blind on 121.5/123.45
- Remain clear of Oceanic Airspace if able**
- 6 If failure occurs within the Oceanic airspace:
 - a. **NAT/HLA** fly route you received in your clearance and maintain your last cleared/assigned flight level and Mach
 - b. **PACIFIC OCA** maintain the last assigned speed and level for **60 mins** after the last **compulsory reporting** point since the failure. **THEN** adjust speed and Altitude in accordance with the **FILED Flight Plan**
 - 7 Rejoin FILED Route after exiting Oceanic Airspace
 - 8 Continue to attempts regain communication

COMM RELATED CB's

PILOT ACP LEER D-17 COPILOT ACP REER D-6 OBSERVER ACP REER D-7	VHF COMM 1 POP F-6 VHF COMM 2 CPOP F-6 NAV/COM CPOP G-6	HF CPLR 1 LEER E-18 HF CPLR 2 REER E-6 HF RX/TX 1 LEER F-18 HF RX/TX 2 REER F-6
SATCOM PRI SPC #2311		

OCEANIC CONTACTS

Verify numbers on Jepp Chart	
OAKLAND	SATCOM 436697 +1-510-745-3415 or 3416
GANDER OCEANIC	SATCOM 431603 Oceanic / 431602 Domestic +1-709-651-5324
GANDER RADIO	SATCOM 431613 +1-709-651-5328
SHANWICK OCEANIC	SATCOM 423201 or 425002 +353-61-368-241
SHANWICK RADIO	SATCOM 425002 +353-61-471-199
NEW YORK OCEANIC (NAT)	SATCOM 436695 +1-631-468-1495
NEW YORK OCEANIC (WATRS)	SATCOM 436696 +1-631-468-1495
REYKJAVIK ATC	SATCOM 425103 +354-568-3035
ICELAND RADIO	SATCOM 425105 +354-568-4600
SANTA MARIA RADIO	SATCOM 426305 +351-29-68-86-655

Phone Guide

- Calling from the aircraft:
 - To a U.S. or Canadian Phone: 9 – 1 – (XXX) – XXX – XXXX
 - To a phone outside the U.S.: 9 – country code – city code – number
- Calling to the aircraft:
 - If you don't know where the airplane is: 1-xxx-xxx-xxxx
 - Press 1 for Aircell, 2 for Satcom
 - Press 1 flight deck, 2 for cabin
 - If you know aircraft is in an Aircell network
 - Flight deck: xxx-xxx-xxx-xxxx-xx
 - Cabin: xxx-xxx-xxx-xxxx-xx
- Rates
 - Aircell: Mostly domestic U.S. (Iridium satellites), 60 minutes per month flat rate (about \$210/month), \$1.50 per additional minute
 - Satcom: Worldwide (Inmarsat satellites), \$3.95 per minute

Runway Condition Assessment Matrix (RCAM)

Assessment Criteria		Downgrade Assessment Criteria		
Runway Condition Description	Code	Mu (μ) ¹	Vehicle Deceleration or Directional Control Observation	Pilot Reported Braking Action
• Dry	6	40 or Higher	---	---
• Frost • Wet (Includes Damp and 1/8 inch depth or less of water) 1/8 inch (3mm) depth or less of: • Slush • Dry Snow • Wet Snow	5		Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	Good
5° F (-15°C) and Colder outside air temperature: • Compacted Snow	4	39	Braking deceleration OR directional control is between Good and Medium.	Good to Medium
• Slippery When Wet (wet runway) • Dry Snow or Wet Snow (Any depth) over Compacted Snow Greater than 1/8 inch (3mm) depth of: • Dry Snow • Wet Snow Warmer than 5° F (-15°C) outside air temperature: • Compacted Snow	3	10 to 30	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	Medium
Greater than 1/8 (3mm) inch depth of: • Water • Slush	2	29 to 30	Braking deceleration OR directional control is between Medium and Poor.	Medium to Poor
• Ice ²	1	21 to 29	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	Poor
• Wet Ice ² • Slush over Ice • Water over Compacted Snow ² • Dry Snow or Wet Snow over Ice ²	0	20 or Lower	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	Nil

¹ The correlation of the Mu (μ) values with runway conditions and condition codes in the Matrix are only approximate ranges for a generic friction measuring device and are intended to be used only to downgrade a runway condition code; with the exception of circumstances identified in Note 2. Airport operators should use their best judgment when using friction measuring devices for downgrade assessments, including their experience with the specific measuring devices used.

² In some circumstances, these runway surface conditions may not be as slippery as the runway condition code assigned by the Matrix. The airport operator may issue a higher runway condition code (but no higher than code 3) for each third of the runway if the Mu value for that third of the runway is 40 or greater obtained by a properly operated and calibrated friction measuring device, and all other observations, judgment, and vehicle braking action support the higher runway condition code. The decision to issue a higher runway condition code than would be called for by the Matrix cannot be based on Mu values alone; all available means of assessing runway slipperiness must be used and must support the higher runway condition code. This ability to raise the reported runway condition code to a code 1, 2, or 3 can only be applied to those runway conditions listed under codes 0 and 1 in the Matrix.

The airport operator must also continually monitor the runway surface as long as the higher code is in effect to ensure that the runway surface condition does not deteriorate below the assigned code. The extent of monitoring must consider all variables that may affect the runway surface condition, including any precipitation conditions, changing temperatures, effects of wind, frequency of runway use, and type of aircraft using the runway. If sand or other approved runway treatments are used to satisfy the requirements for issuing this higher runway condition code, the continued monitoring program must confirm continued effectiveness of the treatment.

Caution: Temperatures near and above freezing (e.g., at 26.6° F (-3°C) and warmer) may cause contaminants to behave more slippery than indicated by the runway condition code given in the Matrix. At these temperatures, airport operators should exercise a heightened level of runway assessment, and should downgrade the runway condition code if appropriate.

Water System Purge

When to Purge

Air Cond.	Cabin Temp.	Outside Air Temp.	Cold-Soak Time (Hrs : Mins)	Tank Draining
ON	Above 10° C (50° F)	-15° to 0° C (5° to 32° F)	Any	Not Required
		-14° C and below (4° F and below)	1:15	Required
OFF	N/A	-7° to 0° C (19° to 32° F)	1:30	
		-15° to -7° C (5° to 19° F)	:30	
		Below -15° C (5° F)	Any	

How to Purge – In the Air

- Begin at least 20 minutes prior to landing.
- Press and hold “System Purge” button for at least 3 seconds.
- V2 will move to purge position until conformal tank is empty, then to supply position until landing, then to drain position and all system valves open.
- Continue to “Both”

How to Purge – On the Ground

- This process will take 20 minutes.
- Press and hold “System Purge” button for at least 3 seconds.
- V2 will move to purge position until conformal tank is empty, then after 60 seconds to drain position and all system valves open.
- Continue to both.

How to Purge – Both

- The conformal tank takes 7 to 15 minutes to drain from full to empty.
- As air pressure is released, all vented cartridges open: lav faucets, coffee maker, and toilet rinse valves.
- Do not interrupt power to aircraft or galley until purge cycle completes.
- When complete, water system and system heaters turn off on their own.
- At this point, all non-vented valves must be opened for 2 to 3 minutes: galley faucet, forward and aft lav faucets, coffee fill button.
- Open all sink drains to allow water to drain.
- Empty all ice drawers or close drain valve underneath (close position is forward.)
- Flush each toilet twice.
- Open filler port outside, allow to drain, reclose.

Water System Start Up in Cold Weather

- Turn “Water System” heaters on for 20 minutes prior to adding water, do not turn on “Galley” and “Lavatory” heaters yet.
- After 20 minutes, add water to conformal tank (at least 6 gallons) and open all faucets until water begins to flow. Then turn on “Galley” and “Lavatory” heaters.

Weather Deviation

Reference: ICAO Annex 2

Inflight references: Jeppesen Text Emergency Tab, Emergency Procedures and State Rules and Procedures for country specific differences to ICAO standards for lost com

1. Attempt to obtain ATC clearance
2. If unable to obtain clearance:
 - a. Deviation less than 10 nm; maintain assigned FL
 - b. Deviation greater than 10 nm:
"SAND":
 - i. South Dev, Ascend 300 feet
 - ii. North Dev, Descend 300 feet
 - c. Broadcast intentions on 121.5 and 123.45