

# GULFSTREAM IV

## OPERATING MANUAL

### ADVISORY MESSAGES AND ANNUNCIATIONS

#### 04-04-10: Crew Alerting System (CAS) Advisory Messages and Procedures

CAS Message:	Possible Cause(s):	Corrective Action:
AC EXT POWER	AC external power is connected to airplane.	Remove external power before taxiing.
AP CTLR SW STUCK	Autopilot (A/P) ON/OFF switch on flight guidance panel is stuck in, preventing other selections.	Attempt to free stuck switch.
AP ENGAGE INHIBIT	An attempt to engage autopilot has been inhibited by one or more of the following conditions: <ul style="list-style-type: none"> <li>• Autopilot Disconnect (A/P DISC) button active</li> <li>• Go-Around (GA) switch active</li> <li>• Airplane on ground and airspeed less than 50 KCAS</li> <li>• Stick shaker is active</li> <li>• Touch Control Steering (TCS) switch active</li> <li>• Trim switch active (up or down)</li> </ul>	Correct inh biting situation and attempt re-engagement.
APU ALT OFF	APU alternator is operating but AUX PWR switch is not selected to ON.	Select AUX PWR switch to ON.
APU EXCEEDANCE	Fault Warning Computer (FWC) has recorded an exceedance.	<p><b>SPZ 8000 equipped airplanes not having ASC 415B:</b></p> <p>Message may be caused by APU fire. Take appropriate action and, if necessary, see Section 05-12-30, APU Fire. Recording may be viewed by selecting EXCEEDANCES on the SYSTEMS menu of the Display Controller.</p> <p><b>SPZ-8000 equipped airplanes having ASC 415B and SPZ 8400 equipped airplanes:</b></p> <p>Message may be caused by APU RPM or EGT exceedance. Verify APU auto shutdown and notify maintenance. Recording may be viewed by selecting EXCEEDANCES on the SYSTEMS menu of the Display Controller.</p>

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CAS Message:	Possible Cause(s):	Corrective Action:
		<p style="text-align: center;"><b>NOTE</b></p> <p>For airplanes SN 1000 and sub. with ASC 465: A nuisance "APU EXCEEDANCE" message may occur on second APU start and then on every other start unless power is removed/ interrupted from the fault warning computer between starts. The "APU EXCEEDANCE" message should be considered a nuisance message as long as the cockpit overhead APU panel and/or APU synoptic page indicate EGT and RPM parameters are within normal limits.</p>
AT ENGAGE INHIBIT	<p>An attempt to engage autothrottle has been inhibited by one or more of the following conditions:</p> <ul style="list-style-type: none"> <li>• Autothrottle Disconnect (A/T DISC) button active</li> <li>• Autothrottle Arm (A/T ARM) switch on Flight Guidance Panel not selected to ON</li> <li>• Both engines not running</li> <li>• EPR below 1.17</li> <li>• ISOLATION valve selected to OPEN</li> </ul>	Correct inh biting situation and attempt re-engagement.
AT 1-2 FAIL	Indicated autothrottle has failed, autothrottle will disconnect.	Check appropriate CBs. Select opposite A/T computer and reengage.
AT NOT IN HOLD	Airplane speed has exceeded 60 KCAS with autothrottle engaged on takeoff and autothrottle servos are not in HOLD mode.	Disengage autothrottle and manually adjust power levers to takeoff EPR.
BATT WARM Message active only if optional Battery Temperature Indicator system is installed. May be advisory or caution message depending on message module programming.	L or R battery temperature at or above 120°F as noted on Battery Temp Indicator (if installed).	<p>(1) Monitor battery temperature and select OFF if temperature reaches 140°F.</p> <p>(2) Log for maintenance action.</p>

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CAS Message:	Possible Cause(s):	Corrective Action:
BC 1-2-3 TEST FAIL	<p>Bus Controller power-up self test has failed.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>This message is only enabled on the ground. The Bus Controller test will fail if power is momentarily removed from both Fault Warning Computers after the Bus Controllers are powered. If this condition occurs, the TEST FAIL message can be cleared by reapplying airplane power in the normal power-up sequence or by pulling and resetting all three of the following CBs:</p> <p>BUS CONT #1: Copilot's Aft Panel, K-2</p> <p>BUS CONT #2: Copilot's Aft Panel, L-2</p> <p>BUS CONT #3: Copilot's Aft Panel, M-2</p>	<p>Verify power was applied to the Bus Controllers and Fault Warning Computers in the normal power-up sequence. Full system capabilities are maintained on a single Bus Controller.</p>
BRAKE MAINT REQ'D (Brake-By-Wire)	<p>For airplanes SN 1000 through 1213 with ASC 190, ASC 266 or ASC 296.</p> <p>If message is displayed after landing gear retraction and extinguishes approximately five (5) seconds later, the auto spin-down feature has failed.</p>	<p>See procedures for takeoff with anti-skid inoperative or off (wheel spin-down function disabled) contained in Section 05-02-10, Anti-Skid Failure (Brake-By-Wire).</p>
BRAKE MAINT REQ'D (HMAB)	<p>For airplanes SN 1214 and subsequent.</p> <p>If message is displayed during takeoff, during landing ground roll or during flight with landing gear extended, a wheel speed sensor miscompare lasting more than five (5) seconds has been detected.</p>	<p>Notify maintenance to check for wheel speed sensor faults or possible dragging brakes.</p> <p>If message is displayed momentarily during flight with landing gear extended, no action is required. See Section 05-06-30, BRAKE MAINTENANCE REQUIRED Message (HMAB).</p>

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CAS Message:	Possible Cause(s):	Corrective Action:
BUS CTLR 1-2-3 FAIL	Indicated Bus Controller has failed.	(1) Check CBs: BUS CONT #1: Copilot's Aft Panel, K-2 BUS CONT #2: Copilot's Aft Panel, L-2 BUS CONT #3: Copilot's Aft Panel, M-2 (2) Cycle CB of failed bus controller. Full system capabilities are maintained on a single bus controller.
CALL	Incoming call from SELCAL, cabin/galley/lavatory interphone or telephone.	Answer appropriate caller.
CDU 1-2 FAIL	FMS Central Display Unit (CDU) has failed.	Verify failure and, if failed, use remaining FMS for navigation.
CHECKLIST MISMATCH	Different checklists installed in FWC 1 and FWC 2.	Do not use checklist until correct checklists are installed.
CMB HYD HOT	Combined hydraulic system fluid temperature above 220° F (104° C).	Proceed with flight and investigate after landing.
L-R CONT IGN (SPZ 8400 equipped option)	Continuous ignition is on.	(1) Select off if not required. (2) Observe duty cycle limitations in Section 01-74-10, Continuous (Airstart) Ignition.
L-R COWL A/I ON	Indicated Cowl Anti-Ice is ON.	Select OFF after exiting icing conditions.
CPL DATA INVALID	Lateral or vertical mode cannot be selected or canceled automatically due to invalid source and/or invalid required sensors. Message is also displayed anytime selected course changes by greater than 3° when in LNAV/VOR, except when over station.	Check validity of coupled source. Reset appropriate lateral and/or vertical mode.
DADC 1-2 FAIL	A DADC has failed.	(1) Verify failure and, if failed, select opposite DADC. (2) Verify DADC selection for pressurization.

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CAS Message:	Possible Cause(s):	Corrective Action:
DADC MISCOMPARE	The priority FGC has detected an unflagged miscompare between DADC 1 and DADC 2.	<ol style="list-style-type: none"> <li>(1) Identify faulty DADC by reference to: <ul style="list-style-type: none"> <li>• Primary Flight Display</li> <li>• Navigation Display</li> <li>• Standby Instruments</li> <li>• Guidance Panel</li> <li>• CABIN PRESSURE CONTROL Panel</li> <li>• Transponder Panel</li> </ul> </li> <li>(2) Select reliable DADC to those items listed above.</li> <li>(3) Isolate faulty DADC with CB: <ul style="list-style-type: none"> <li>DADC #1: Copilot's Aft Panel, F-3</li> <li>DADC #2: Copilot's Aft Panel, G-3</li> </ul> </li> <li>(4) Verify message is no longer present and, if not present, re-engage yaw damper and autopilot if desired.</li> <li>(5) See Section 05-18-50, DADC Failures.</li> </ol>
DAU 1A-1B-2A-2B FL	Indicated DAU channel has failed.	Select alternate DAU channel.
DAU 1-2 MISCMP-MSG	Advisory CAS message miscomparison between DAU "A" and "B" channels.	<ol style="list-style-type: none"> <li>(1) Compare advisory CAS messages displayed with DAU "A" and "B" channels.</li> <li>(2) Select reliable channel.</li> </ol>
DC CONFIG MISMATCH (SPZ-8400 Equipped Airplanes)	Disagreement in the configuration of the two display controllers.	Resolve configuration mismatch prior to takeoff. Mismatch cannot be resolved with weight-off-wheels (airborne).
DC EXT POWER	DC external power is connected to airplane.	Remove external power before taxiing.
DISP CTRLR 1-2 FAIL	Indicated Display Controller has failed.	No action required. Use remaining Display Controller where applicable.
DU 1-2-3-4-5-6 HOT	Indicated Display Unit (DU) is detected hot (266° F (130° C)).	<ol style="list-style-type: none"> <li>(1) Select affected DU to OFF.</li> <li>(2) If message clears, select DU back to ON.</li> <li>(3) If message returns, select affected DU to OFF and leave OFF for remainder of flight.</li> </ol>

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CAS Message:	Possible Cause(s):	Corrective Action:
E BATT 1-2-3*-4* DISCH (* if installed)	Indicated Emergency Battery is discharging.	(1) Ensure E BATT is not ON. (2) If E BATT is not ON, pull and reset CB to clear message: FWD EMER BATT: Pilot's Aft Panel, H-13 AFT EMER BATT: Pilot's Aft Panel, I-13 (3) If message does not clear: (a) Leave CB closed. (b) Re-arm system as required. (c) No further action is required.
E BATT 1-2-3*-4* FAIL (* if installed)	Indicated Emergency Battery has failed.	Select affected E BATT to OFF.
ENGINE COWL OPEN	Engine cowl door is open.	Close cowl door.
ENGINE EXCEEDANCE (Deleted by ASC 415 on SPZ-8000 equipped airplanes.) EXCEEDANCE RECORD (SPZ-8400 Equipped Airplanes)	Fault Warning Computer has recorded an exceedance.	(1) Check engine instruments. (2) Reduce thrust on appropriate engine(s) to within limits.  This message may be caused by an engine fire. Take appropriate action and, if necessary, see Section 05-12-10, Engine Fire In Flight.  The exceedance recording may be viewed by selecting EXCEEDANCES on the SYSTEMS menu of the Display Controller.
EPR 1 - DADC 2 EPR 2 - DADC 1	DADC malfunction has caused remaining DADC to supply information to both EPR systems.	Verify status of DADCs.
EXT BATT SWITCH ON	External battery switch is ON.	Select external battery switch to OFF.
FGC 1-2 MASTER	A change in controlling Flight Guidance Computer (FGC) has occurred: indicated FGC is in control. Message times out automatically.	(1) Check SENSOR page. (2) Select original FGC, if desired, or leave as is.
FGC NOT USING IRS 1-2	IRS data has been rejected by FGC due to an unflagged miscompare between IRS 1-2 or flagged IRS failure.	Check IRS condition/status on FMS IRS status page. System performance is the same with 1 or 2 IRS sources.

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CAS Message:	Possible Cause(s):	Corrective Action:
FGC SYSTEM TEST	A Maintenance Test (MAINT TEST) switch is ON.	Locate MAINT TEST switch and select to OFF: <ul style="list-style-type: none"> <li>• Left Hand Radio Rack System Test/Monitor Panel</li> <li>• Right Hand Radio Rack System Test/Monitor Panel</li> <li>• Copilot's Aft CB Panel (Airplanes With ASC 221 Incorporated)</li> </ul>
FLT HYD HOT	Flight hydraulic system fluid temperature above 220° F (104° C).	If Flight Hydraulic System is hot and Utility Hydraulic System is required, UTILITY PUMP switch must be selected to ON.  If Utility Hydraulic System is not required, select UTILITY PUMP OFF/ARM switch to OFF.
FLIGHT REC FAIL	Flight Data Recorder has failed. It is normal for this message to be displayed until an engine is started and 10 psi oil pressure is obtained.	(1) Check CBs. Pull and reset as necessary: FDR/FDAU: Copilot's Aft Panel, C-7 FDR CONT #1: Copilot's Aft Panel, C-8 FDR CONT #2: Copilot's Aft Panel, C-9 (2) On Right Hand Radio Rack System Test/Monitor Panel, verify FDR MAINT GND OVRD switch is selected to AUTO. (3) Check for the following annunciations and report for maintenance action as noted: <ul style="list-style-type: none"> <li>• DFDR FAULT and/or FDAU FAULT indicators illuminated on Flight Data Acquisition Unit</li> <li>• DFDR and/or FDAU indicators illuminated on Flight Data Entry Panel</li> </ul>
FUEL INT TANK OPEN	Fuel intertank valve is open.	Select INTER TANK switch to CLOSED.
FUEL XFLOW OPEN	Fuel crossflow valve is open.	Select X FLOW switch to CLOSED.
FWC 1-2 FAIL	Indicated FWC has failed.	Select opposite FWC.
FWD EXT SW PNL OPN	Forward external switch panel door is open.	Close door.
FWD LAV SVC DR OPN	Forward lavatory service door is open.	Close door.
GND SPOILER UNARM	Ground spoiler system is not armed.	Check GND SPLR OFF/ ARMED switch; cycle to ARMED.



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<b>CAS Message:</b>	<b>Possible Cause(s):</b>	<b>Corrective Action:</b>
GPWS FAIL	Ground Proximity Warning System (GPWS) has failed.	(1) Check GPWS circuit breakers: EGPWS AC: CP, D-10 EGPWS DC: CP, E-10 (2) Verify at least one (1) radio altimeter is available.
IRS 1-2 FAIL	Indicated IRS has failed.	Verify failure on Mode Select Unit (MSU) and, if being used, select another sensor.
IRS 1-2 HI LAT ALN	IRS is in alignment status and senses a latitude above 70°.	Use IRS position with caution, as accuracy may be degraded. IRS should be left in ALIGN mode for 15 minutes prior to selecting NAV mode.
IRS MISCOMPARE	FGC has detected an unflagged miscomparison fault between IRS 1 and 2.	(1) If there is no IRS monitor fail message FGC will automatically note either IRS 1 or IRS 2 and AP/YD will remain engaged. (2) If there is IRS monitor fail message present, the AP/YD will automatically disconnect. Re-engagement is possible only after miscompare condition is corrected.
IRS MONITOR FAIL	FGC has detected failure of comparison monitor located in AHRS/IRS 3.	For monitor test to pass, AHRS/IRS 3 must be in NAV mode when yaw damper is engaged. If message is displayed and an unflagged IRS miscomparison occurs, the autopilot and yaw damper will automatically disconnect. To eliminate the message, switch from current FGC to opposite FGC and back, e.g., FGC 1 to FGC 2 to FGC 1.
IRS 1-2 NAV READY	Indicated IRS has completed alignment but MSU panel selector is still in ALN.	Select NAV on MSU panel selector.
IRS 1-2 ON DC	Airplane's AC power source to indicated IRS has failed.	Check appropriate airplane AC power supply. IRS will continue to operate normally.
ISOLATION VLV OPEN	ISOLATION valve is open.	Select ISOLATION valve to CLOSED.
MAINT SWITCH ON	A Maintenance Test (MAINT TEST) switch is ON.	Locate MAINT TEST switch and select to OFF: <ul style="list-style-type: none"> <li>• Left Hand Radio Rack System Test/Monitor Panel</li> <li>• Right Hand Radio Rack System Test/Monitor Panel</li> <li>• Copilot's Aft CB Panel (Airplanes With ASC 221 Incorporated)</li> </ul>



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CAS Message:	Possible Cause(s):	Corrective Action:
NAV MISCOMP L-R SEL	FGC has sensed difference in navigation receiver information and has selected a single receiver as NAV source.  <b>NOTE</b> Message is active only in ILS dual coupled mode.	None; switchover is automatic.
NZ 1-2 FAIL	Indicated navigation computer has failed.	Check appropriate CB: NAV CMPTR #1: Copilot's Aft Panel, D-8 NAV CMPTR #2: Copilot's Aft Panel, E-8 Associated FMS CDU will be blank or will display PERF INDEX.
L-R OIL FILT BPASS	Engine oil filter has clogged.	Monitor engine oil pressure. If pressure falls below limits, proceed with engine shutdown procedure in Section 05-10-10, Engine Failure / Shutdown In Flight.
PERF 1-2 FAIL	Indicated performance computer has failed.	Check appropriate CB: PERF #1: Copilot's Overhead Panel, C-11 PERF #2: Copilot's Overhead Panel, D-11 Performance information and autothrottle computer will not be available.
PROG MSG 1-2 FAIL (SPZ-8400 Equipped Airplanes)	Programmable Message Modules have failed.	Notify maintenance for corrective action.
PROG MSG 1-2 MISMATCH (SPZ-8400 Equipped Airplanes)	Programmable Message Modules do not contain same messages.	Notify maintenance for corrective action.
RAD ALT 1-2 FAIL	Indicated Radar Altimeter has failed.	Select opposite radar altimeter.
RECENTER TURN KNOB	Turn knob is not centered; autopilot cannot be engaged.	Recenter turn knob.
RUDDER LIMIT	Rudder actuator torque limiter is in operation.	No action required.
RUDDER STRG OFF	With ASC 302A incorporated, HAND WHEEL ONLY mode is selected on nose wheel steering control panel.	None required if this is desired mode. If not, select NORMAL mode.
SELECT INHIBIT	An attempt has been made to manually select an invalid FGC.	Determine cause of FGC fault.

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CAS Message:	Possible Cause(s):	Corrective Action:
SERVICE DOORS	One or both of the following service doors is open. <ul style="list-style-type: none"> <li>• Tail Compartment Access Door</li> <li>• Refuel Compartment Access Door (airplanes SN 1156 and subsequent)</li> </ul>	Close service doors.
SG 1-2-3 FAIL	Indicated Symbol Generator (SG) has failed.	(1) Select affected SYMBOL GENERATOR CONTROL switch to ALT. (2) Momentarily select a different mode on the Navigation Display. See Section 05-18-20, Symbol Generator Failure.
SG 1-2-3 HOT	Indicated SG is hot.	(1) Check avionics rack ventilation. (2) Select affected SYMBOL GENERATOR CONTROL switch to ALT. (3) Pull hot SG CB: SYM GEN #1: Copilot's Aft Panel, K-3 SYM GEN #2: Copilot's Aft Panel, L-3 SYM GEN #3: Copilot's Aft Panel, M-3
SPD BRAKE EXTENDED	Speed brakes are extended.	Retract speed brakes.
SPD BRAKE SWITCH	FWC and FGC disagree on position of speed brakes.	Check adjustment of speed brake extended signal to DAU and FGC at next maintenance opportunity.
T & L > 80% FULL (Added by ASC 415 for SPZ-8000 equipped airplanes.)	FWC memory is greater than 80% full.	Download and erase FWC memory at next convenient maintenance period.
TCAS FAIL	Traffic Alert and Collision Avoidance System (TCAS) has failed.	(1) Check TCAS circuit breaker. (2) Verify transponder and altitude reporting is selected ON.
TERRAIN NOT AVAIL	Terrain awareness is not available.	(1) Verify TERR INHIB switch is selected ON. (2) Check circuit breakers: EGPWS AC: CP, D-10 EGPWS DC: CP, E-10 (3) Verify at least one (1) radio altimeter is available.

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CAS Message:	Possible Cause(s):	Corrective Action:
TONE GEN FAIL TONE GEN 1-2 FAIL (SPZ-8400 Equipped Airplanes)	Aural warning tone generator has failed.	Check CBs; reset if required: TONE WARN #1: Pilot's Aft Panel, A-5 TONE WARN #2: Pilot's Aft Panel, B-5 If problem is not resolved, proceed with flight. No aural tones will be available.
UNDER FLOOR O'HEAT (SN 1200-1327 not having ASC 415B and ASC 395.)	Bleed air leak detected under cabin floor.	If wing anti-ice is on, select left wing OFF. Wait 2 minutes. If message persists, select right wing OFF. If message persists, depart icing conditions. If message extinguishes, re-establish wing anti-ice using the Anti-Ice switch which did not cause the message to extinguish. If in doubt, depart icing conditions. Verify ISOLATION valve closed. Select left bleed OFF. If message persists, select left bleed ON and right bleed OFF. If message persists, check floor board physically for temperature. If cool, no action. If hot, descend to 15,000 ft or below and select left bleed OFF and RAM AIR ON.  <b>NOTE</b> If the condition requires that a SINGLE (L or R) ENG BLEED be selected OFF, descend to 41,000 ft. or below. If above 41,000 ft. and ENG BLEED is selected OFF, make slow deliberate power lever movements on the affected engine.
VHF COMM 1-2-3 FAIL	Indicated VHF communications radio has failed.	Check status of VHF radio.
VNAV TRACK CHANGE	VNAV track change will commence in one (1) minute.	No action required.
VOICE REC FAIL	Cockpit Voice Recorder has failed.	No action required.
VOR COURSE	Autopilot has sensed being over station while coupled to LNAV (VOR/TCN).	If desired, course selector may now be changed more than 3° without dropping LNAV (VOR/TCN) mode.
WS FAIL	Windshear function of GPWS has failed.	(1) Check circuit breakers: EGPWS AC: CP, D-10 EGPWS DC: CP, E-10 (2) Verify at least one (1) radio altimeter is available.
WS UNAVAILABLE	Windshear function of GPWS not available.	(1) Check circuit breakers: EGPWS AC: CP, D-10 EGPWS DC: CP, E-10 (2) Verify at least one (1) radio altimeter is available.

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CAS Message:	Possible Cause(s):	Corrective Action:
L-R WING A/I	Wing Anti-Ice is ON.	Select wing anti-ice to OFF after departing icing conditions.

### 04-04-20: Other Advisory Annunciations and Procedures

Should any of the following aural or visual advisory annunciations occur, observe the Crew Advisory system (CAS) for related messages, and perform the procedure related to that advisory message.

Annunciation:	Cause or Meaning:
Single Chime aural tone sounds.	A new ADVISORY (blue) message is displayed on CAS. The new message will be displayed flashing on the top of the ADVISORY messages stack. The aural tone will then automatically cease and message will automatically revert to steady display.
Cricket aural tone sounds.	Airplane Overspeed
Beep aural tone sounds.	Altitude Alert
LEFT/RIGHT WING WARM light (blue) illuminated on overhead panel.	Wing anti-ice plenum in wing leading edges has reached minimum operating temperature of 100° F (38° C).
EXT BATT SW light (blue) illuminated on overhead panel.	External battery switch on.
AC EXT PWR light (blue) illuminated on overhead panel.	AC external power applied.
DC EXT PWR light (blue) illuminated on overhead panel.	DC external power applied.
LEFT/RIGHT FRONT/SIDE WINDOW light (green) illuminated on overhead panel.	Windshield heat operating.
REV ARM light (green) illuminated above Display Unit (DU) 2 or 5.	Parameters satisfied for thrust reverser deployment.
LH RR FAN FAIL light (blue) illuminated on copilot's side panel. <sup>(1)</sup>	Left-hand radio rack cooling fan has failed.
RH RR FAN FAIL light (blue) illuminated on copilot's side panel. <sup>(1)</sup>	Right-hand radio rack cooling fan has failed.
RH RR FAN AUTO light (blue) illuminated on copilot's side panel. <sup>(1)</sup>	Right-hand radio rack cooling fan operating automatically.
RH RR FAN MAN ON light (blue) illuminated on copilot's side panel. <sup>(1)</sup>	Right-hand radio rack cooling fan operating manually.
SPEED BRAKE handle illuminated (pale blue).	SPEED BRAKE handle not in RETRACT detent.

<sup>(1)</sup> Airplanes 1156 and subsequent.