SUPPLEMENT A02
TO THE AIRPLANE FLIGHT MANUAL
DA 40 NG
GARMIN G1000 NXi AVIONICS SYSTEM

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This supplement to the DA 40 NG Airplane Flight Manual is approved in accordance with the Canadian Aviation Regulations.

Signature	:
Authority	: For, Chief Flight Test Transport Canada Civil Aviation
Date of Approval	:

DIAMOND AIRCRAFT INDUSTRIES INC.
1560 Crumlin Sideroad
London, ON, Canada
N5V 1S2

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0.1 RECORD OF REVISIONS

Rev. No.	Reason	Chap-ter	Page(s)	Date of Revision	Approval Note	Date of Approval	Date Inserted	Signature
1	Administrative changes and NXi Phase II implementation (MÄM 40-1007) All pages have been revised due to pagination. Content changes are marked by rev. bars, and are on pages noted here.	0, 1, 2, 4A, 7	9-A02-1, 9-A02-2, 9-A02-3, 9-A02-4, 9-A02-5, 9-A02-6, 9-A02-7, 9-A02-8, 9-A02-9, 9-A02-10, 9-A02-12, 9-A02-13, 9-A02-14, 9-A02-16, 9-A02-17, 9-A02-20, 9-A02-22, 9-A02-29, 9-A02-35, 9-A02-55, 9-A02-68, 9-A02-75, 9-A02-76	08-Feb-2019				

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1. GENERAL

1.1 INTRODUCTION

This airplane flight manual supplement (AFMS) supplies the information necessary for the efficient operation of the airplane when the Garmin G1000 NXi avionics system is installed. The information contained within this supplement is to be used in conjunction with the complete airplane flight manual (AFM).

This supplement is a permanent part of this AFM, and must remain in this AFM at all times when the Garmin G1000 NXi avionics system is installed.

1.5 DEFINITIONS AND ABBREVIATIONS

(j) Miscellaneous

AC:	Advisory Circular
AMC:	Acceptable Means of Compliance
AIRAC:	Aeronautical Information Regulation and Control
SBAS:	Satellite Based Augmentation System
WAAS:	Wide Area Augmentation System
EGNOS:	European Geostationary Navigation Overlay Service
MSAS:	Multi-Functional Satellite Augmentation System
RNAV:	Area Navigation
P-RNAV:	Precision Area Navigation
B-RNAV:	Basic Area Navigation
LPV:	Localizer Performance with Vertical Guidance
LNAV/VNAV:	Lateral Navigation/Vertical Navigation
LNAV+V:	Lateral Navigation with Advisory Vertical Guidance
RNP:	Required Navigation Performance

GNSS: Global Navigation Satellite System

STAR: Standard Terminal Arrival Route

SID: Standard Instrument Departure

ETSO: European Technical Standard Order

RAIM: Receiver Autonomous Integrity Monitoring

WFDE: WAAS Fault Detection/Exclusion

1.8 SOURCE DOCUMENTATION

This section lists documents, manuals and other literature that were used as sources for the supplement, and indicates the respective publisher. However, only the information given in the AFM and AFMS are valid.

1.8.3 AVIONICS SYSTEM

Address: Garmin International Inc.
1200 East 151st Street
Olathe, Kansas 66062
USA

Phone: +1-913-397-8200

Fax: +1-913-397-8282

Website: www.garmin.com

Documents: G1000 NXi Cockpit Reference Guide:
For aircraft with MÄM 40-868 only, P/N 190-02258-( ), appropriate revision
For aircraft with MÄM 40-1007, P/N 190-02453-( ), appropriate revision
G1000 NXi Pilot's Guide:
For aircraft with MÄM 40-868 only, P/N 190-02257-( ), appropriate revision
For aircraft with MÄM 40-1007, P/N 190-02452-( ), appropriate revision

1.9 G1000 AVIONICS SYSTEM

1. The G1000 NXi integrated avionics system is a fully integrated flight, engine, communication, navigation, and surveillance instrumentation system. The system consists of a Primary Flight Display (PFD), Multi-Function Display (MFD), audio panel, Air Data Computer (ADC), Attitude and Heading Reference System (AHRS), engine sensors and processing unit (GEA), and integrated avionics (GIA) containing VHF communications, VHF navigation, and GPS (Global Positioning System)

2. The primary function of the PFD is to provide attitude, heading, air data, navigation, and alerting information to the pilot. The PFD may also be used for flight planning. The primary function of the MFD is to provide engine information, mapping, terrain information, and autopilot operation. The MFD may also be used for flight planning. The audio panel is used for selection of radios for transmitting and listening, intercom functions, and marker beacon functions.

3. The primary function of the VHF communication portion of the G1000 NXi is to enable external radio communication. The primary function of the VOR/ILS receiver portion of the equipment is to receive and demodulate VOR, Localizer, and Glide Slope signals. The primary function of the GPS portion of the system is to acquire signals from the GPS satellites, recover orbital data, make range and Doppler measurements, and process this information in real-time to obtain the user's position, velocity, and time.

4. The Garmin GNSS navigation system installed in this airplane is a GPS system with a Satellite Based Augmentation System (SBAS) comprised of two TSO-C145a Class 3 approved Garmin GIA 63Ws (TSO-C145d Class 3 approved Garmin GIA 64W if MÄM 40-1007 is installed), TSO-C146d Class 3 approved Garmin GDU 105X Display Units, two Garmin GA 36 antennas, and GPS software version 5.1 or later approved version. The Garmin G1000 NXi integrated Avionics GNSS navigation system in this airplane is installed in accordance with FAA AC 20-138D, EASA AMC 20-28, and EASA AMC 20-27.

NOTE

The following listing of the Garmin G1000 NXi operational capabilities does not constitute an operational approval. For the operational approval of the airplane, contact the appropriate governing authority.

The Garmin G1000 NXi Integrated Avionics GNSS navigation system as installed in this airplane is approved for navigation using GPS and GPS/SBAS (within the coverage of a Satellite Based Augmentation System complying with ICAO Annex 10) for IFR en-route, terminal area, non-precision approach, and approach procedures with vertical guidance operation.

The Garmin G1000 NXi Integrated Avionics GNSS navigation system as installed in this airplane complies with the equipment, performance, and functional requirements to conduct RNAV and RNP operations in accordance with the applicable requirements of the reference documents listed in the following table.

5. Phase II of the NXi installation is accomplished in accordance with MÄM 40-1007. This upgrades the GIA 63W to GIA 64W, GMA 1347 to GMA 1360, GEA 71 to GEA 71B and installs a Flight Stream 510 Bluetooth and Wi-Fi transceiver.

Specification	Reference Document		ICAO Flight Plan Code	Integrated Flight Deck G1000 with SBAS
	FAA	EASA or JAA		
RNAV 10 (RNP 10) Oceanic	FAA Order 8400.12B	-	A1	Yes
B-RNAV/RNAV 5 (operations in Europe)	FAA AC 90-96A CHG 1	EASA AMC 20-4	B2	Yes
RNAV 2	FAA AC 90-100A	-	C2	Yes
RNAV 1	FAA AC 90-100A	-	D2	Yes
P-RNAV (operations in Europe)	FAA AC 90-96A CHG 1	JAA TGL 10 Rev 1	D2	Yes
RNP 4 (Oceanic)	FAA Order 8400.33	-	L1	Yes
RNP 1	FAA AC 90-105	-	O2	No
RNP APCHLNAV	FAA AC 90-105	EASA AMC 20-27	S1	Yes
RNP APCHLNAV/VNAV	FAA AC 90-105	EASA AMC 20-27 with CM-AS-002	S2	Yes
LP	FAA AC 90-107	-	N/A	Yes[1]
LPV	FAA AC 90-107	EASA AMC 20-28	N/A	Yes
RNP AR APCH	FAA AC 90-101A	EASA 20-26	T1	No

[1] When GDU software version 13.00 or later is installed.

2. OPERATING LIMITATIONS

2.15 LIMITATION PLACARDS

If autopilot GFC 700 is installed:

LIMITATIONS FOR GFC 700 AUTOPILOT SYSTEM:
DO NOT USE AP IF "ALTERNATE STATIC" IS OPEN.
CONDUCT AP AND TRIM CHECK PRIOR TO EACH FLIGHT (SEE AFM).
AUTOPILOT OFF DURING TAKE-OFF AND LANDING.
MAXIMUM SPEED FOR AUTOPILOT OPERATION IS 165 KIAS.
MINIMUM SPEED FOR AUTOPILOT OPERATION IS 70 KIAS.
MINIMUM ALTITUDE FOR AUTOPILOT OPERATION:
CRUISE, CLIMB, DESCENT AND MANEUVERING: 800 FEET AGL
APPROACH: 200 FEET AGL

2.16 OTHER LIMITATIONS

2.16.8 GARMIN G1000 AVIONICS SYSTEM

| MÄM 40-868 installed:

The Garmin G1000 NXi Cockpit Reference Guide, P/N 190-02258-( ), appropriate revision must be immediately available to the flight crew.

| MÄM 40-868 and MÄM 40-1007 installed:

| The Garmin G1000 NXi Cockpit Reference Guide, P/N 190-02453-( ), appropriate revision
| must be immediately available to the flight crew.

NOTE

Refer to DAI MSB 40NG-003 for information regarding the appropriate revisions of the Garmin G1000 NXi Cockpit Reference Guide.

The Garmin G1000 NXi must utilize the Garmin software images shown in the following table.

Software Part Number (MÄM 40-868 only)	**Software Part Number** (MÄM 40-868 and MÄM 40-1007)	**Software Version**	**Software Name**
System	**System**	Refer to the latest revision of DAI MSB 40NG-003 for information regarding the proper approved software version(s) for the given aircraft configuration.	
006-B2948-XX	006-B2948-XX		
Manifest	**Manifest**		
006-B0081-( )	006-B2371-( )		COM System
006-B0082-( )	006-B2253-( )		NAV System
006-B0193-( )	006-B2139-( )		GEA System
006-B0203-( )	006-B2210-( )		GMA System
006-B0224-( )	006-B0224-( )		GMU System
006-B0339-( )	006-B1827-( )		GPS/WAAS System
006-B0398-( )	006-B0398-( )		GSA 8X System
006-B0544-( )	006-B2548-( )		GIA System
006-B1177-( )	006-B1177-( )		GDU System
006-B1902-( )	006-B1902-( )		GDL 69e System
006-B1607-( )	006-B1607-( )		GTX 3X5 System
006-B1797-( )	006-B1797-( )		GTX 3X5 ADS-B System
006-B1838-( )	006-B1838-( )		GRS 79 System
006-B1838-( )	006-B1838-( )		GDC 72 System
006-C0048-( )	006-C0048-( )		GMU FPGA
006-C0124-( )	006-C0124-( )		NAV FPGA
006-C0153-( )	006-C0153-( )		GTX 3X5 FPGA
006-D5080-( )	006-D5080-( )		GRS 79 Region List
006-D5080-( )	006-D5080-( )		GDC 72 Region List
006-D1306-( )	006-D1306-( )		GFC Cert Gain

NOTE

The database version is displayed on the MFD power-up page immediately after system power-up, and must be acknowledged. The remaining system software versions can be verified on the AUX group sub-page 5, AUX- SYSTEM STATUS.

3. IFR enroute, oceanic, and terminal navigation predicated upon the G1000 NXi GPS receiver is prohibited unless the pilot verifies the currency of the database, or verifies each selected waypoint for accuracy by reference to current approved data.

4. Instrument approach navigation predicated upon the G1000 NXi GPS receiver must be accomplished in accordance with approved instrument approach procedures that are retrieved from the GPS equipment database. The GPS equipment database must incorporate the current update cycle.

NOTE

Not all published approaches are in the FMS database. The pilot must ensure that the planned approach is in the database.

A. Instrument approaches utilizing the GPS receiver must be conducted in the approach mode, and Receiver Autonomous Integrity Monitoring (RAIM) must be available at the final approach fix.

B. Accomplishment of ILS, LOC, LOC-BC, LDA, SDF, MLS, or any other type of approach not approved for GPS overlay with the G1000 NXi GPS receiver is not authorized.

C. Use of the G1000 NXi VOR/ILS receiver to fly approaches not approved for GPS, requires VOR/ILS navigation data to be present on the display.

D. When an alternate airport is required by the applicable operating rules, it must be served by an approach based on other than GPS or Loran-C navigation, the airplane must have the operational equipment capable of using that navigation aid, and the required navigation aid must be operational.

E. VNAV information may be utilized for advisory information only. Use of VNAV information for instrument approach procedures does not guarantee step-down fix altitude protection, or arrival at approach minimums in a normal position to land.

5. If not previously defined, the following default settings must be made in the SYSTEM SETUP menu of the G1000 NXi prior to operation (refer to Pilot's Guide for procedure if necessary):

   A. DIS, SPD: nm, kt (sets navigation units to “nautical miles” and “knots”)

   B. ALT, VS: ft, fpm (sets altitude units to “feet” and “feet per minute”)

   C. POSITION: deg-min (sets navigation grid units to decimal minutes)

NOTE

Navigation information is referenced to the WGS-84 reference system, and should only be used where the Aeronautical Information Publication (including electronic data and aeronautical charts) conforms to WGS-84 or equivalent.

6. When AHRS is required to meet the items listed in the minimum operational equipment (serviceable) table in Section 2.13 of the AFM, operation is prohibited in the following areas:

   A. North of 72° N latitude at all longitudes.

   B. South of 70° S latitude at all longitudes.

   C. North of 65° N latitude between longitude 75° W and 120° W (Northern Canada).

   D. North of 70° N latitude between longitude 70° W and 128° W (Northern Canada).

   E. North of 70° N latitude between longitude 85° E and 114° E (Northern Russia).

   F. South of 55° S latitude between longitude 120° E and 165° E (Region south of Australia and New Zealand).

When day VFR operations are conducted in the above areas, the MFD must be in a non-heading up orientation.

7. The fuel quantity, fuel remaining, range, and endurance functions of the FMS are supplemental information only, and must be verified by the flight crew.

8. The availability of SafeTaxi®, ChartView, or FliteCharts® in electronic form on the G1000 NXi is for information purposes only; it is still mandatory to carry another source of charts on board the airplane.

2.16.9 AUTOPILOT LIMITATIONS (IF AUTOPILOT GFC 700 IS INSTALLED)

1. It is the responsibility of the pilot in command to monitor the autopilot when it is engaged. The pilot should be prepared to immediately disconnect the autopilot and to take prompt corrective action in the event of unexpected, or unusual autopilot behavior.

2. The autopilot must be disconnected (using the DISC button) during take-off and landing.

3. Following an autopilot or electric trim malfunction, re-engaging the autopilot or manual electric trim, or resetting the AFCS/ESP/USP circuit breaker is prohibited until the cause of the malfunction has been determined and corrected.

4. ILS approaches using the GFC700/flight director are limited to Category I approaches.

5. Autopilot maximum airspeed : 165 KIAS

   Autopilot minimum airspeed : 70 KIAS

6. The autopilot must be disengaged:

   A. below 200 ft AGL during approach

   B. below 800 ft AGL for all other phases of flight

7. Overriding the autopilot to change pitch or roll attitude is prohibited. (Disengage or press CWS while maneuvering).

8. The GFC 700 AFCS pre-flight test must be successfully completed prior to use of the autopilot, flight director, or manual electric trim. Use of the autopilot or manual electric trim system is prohibited if the preflight test is not satisfactorily completed.

9. A pilot with the seat belt fastened must occupy the left pilot's seat during all operations.

2.16.10 G1000 NXi GPS NAVIGATION SYSTEM LIMITATIONS

(a) Flight Preparation Phase

For flight planning purposes, operations on RNP and RNAV procedures when SBAS signals are not available, the availability of GPS integrity RAIM shall be confirmed for the intended route of flight. In the event of a predicted continuous loss of RAIM of more than five minutes for any part of the intended route of flight, the flight should be delayed, cancelled, or re-routed on a track where RAIM requirements can be met.

For flight planning purposes for operations within European B-RNAV and P-RNAV airspace, if more than one satellite is scheduled to be out of service, then the availability of GPS integrity RAIM shall be confirmed for the intended flight (route and time). In the event of a predicted continuous loss of RAIM of more than five minutes for any part of the intended flight, the flight should be delayed, cancelled, or re-routed on a track where RAIM requirements can be met.

For flight planning purposes, operations where the route requires Class II navigation, the airplane's operator, or pilot-in-command must use the Garmin WFDE Prediction Program to demonstrate that there are no outages on the specified route that would prevent the Garmin GNSS navigation system to provide primary means of Class II navigation in oceanic and remote areas of operation that requires (RNP-10 or RNP-4) capability. If the Garmin WFDE Prediction Program indicates fault exclusion (FDE) unavailability will exceed 34 minutes in accordance with FAA Order 8400.12A for RNP-10 requirements, or 25 minutes in accordance with FAA Order 8400.33 for RNP-4 requirements, then the operation must be rescheduled when FDE is available.

NOTE

Within the United States, RAIM availability can be determined using the Garmin WFDE Prediction program 3.00, or later approved version, with the Garmin GA36 antenna, or the FAA's en route and terminal RAIM prediction website: http://sapt.faa.gov, or by contacting a Flight Service Station.

NOTE

Within Europe, RAIM availability can be determined using the Garmin WFDE Prediction program or Europe's AUGER GPS RAIM Prediction Tool at http://augur.ecacnav.com/augur/app/home. For other areas, use the Garmin WFDE Prediction program. This requirement is not necessary if SBAS coverage is confirmed to be available along the entire route of flight. The route planning and WFDE prediction program may be downloaded from the GARMIN website on the internet. For information on using the WFDE Prediction Program, refer to GARMIN WAAS FDE Prediction Program, part number 190-00643-01, WFDE Prediction Program Instructions.

NOTE

Navigation information is referenced to WGS-84 reference system, and should only be used where the Aeronautical Information Publication (including electronic data and aeronautical charts) conform to WGS-84 or equivalent.

For flight planning purposes, it is not acceptable to plan an RNAV (GPS) LPV, or an LNAV/VNAV approach on the destination and alternate airport. The alternate airport must be planned using a LNAV approach or available ground-based aid.

(b) Preflight Phase

SBAS functionality must be enabled on the G1000 NXi GPS Status page (refer to the G1000 NXi Pilot's Guide for procedure).

The pilot must confirm at system initialization that the Navigation database is current. GPS/SBAS based IFR enroute, oceanic, and terminal navigation is prohibited unless the pilot verifies and uses a valid, compatible, and current Navigation database, or verifies each waypoint for accuracy by reference to current approved data.

The Navigation database is expected to be current for the duration of the flight. If the AIRAC cycle will change during flight, the pilot must ensure the accuracy of navigation data, including suitability of navigation facilities used to define the routes and procedures for flight. If an

amended chart affecting navigation data is published for the procedure, the database must not be used to conduct the procedure.

NOTE

Discrepancies that invalidate a procedure must be reported to Garmin International. The affected procedure is prohibited from being flown using data from the Navigation database until a new Navigation database is installed in the airplane, and verified that the discrepancy has been corrected. Contact information to report Navigation database discrepancies can be found at www.Garmin.com > Support > Contact Garmin Support > Aviation. Pilots and operators can view navigation database alerts at www.Garmin.com > In the Air > NavData Alerts.

Both Garmin GPS navigation receivers must be operating and providing GPS navigation guidance to their PFD for operations requiring RNP-4 performance.

North Atlantic (NAT) Minimum Navigational Performance Specifications (MNPS) Airspace operations per FAA AC 91-49 and FAA AC 120-33, require both GPS/SBAS receivers to be operating and receiving usable signals, except for routes requiring only one Long Range Navigation sensor.

(c) In Flight Phase

Manual entry of waypoints using latitude/longitude, or place/bearing is prohibited.

NOTE

Whenever possible, RNP and RNAV routes including Standard Instrument Departures (SIDs), Obstacle Departure Procedures (ODPs), Standard Terminal Arrival (STAR), enroute RNAV Q, and RNAV T routes should be loaded into the flight plan from the database in their entirety, rather than loading route waypoints from the database into the flight plan individually. Selecting and inserting individual named fixes from the database is permitted, provided all fixes along the published route to be flown are inserted.

(d) Approach Phase

GPS based instrument approaches must be flown in accordance with an approved instrument approach procedure that is loaded from the Navigation database.

NOTE

Not all published Instrument Approach Procedures (IAP) are in the Navigation database. Pilots planning on flying an RNAV instrument approach must ensure that the Navigation database contains the planned RNAV IAP, and that approach procedure must be loaded from the Navigation database into the FMS flight plan by its name.

IFR non-precision approach approval using the GPS/SBAS sensor is limited to published approaches authorized by the appropriate governing authority.

Advisory vertical guidance deviation information is only an aid to help pilots comply with altitude restrictions. When using advisory vertical guidance, the pilot must use the primary barometric altimeter to ensure compliance with all altitude restrictions, particularly during instrument approach operations.

The navigation equipment required to join and fly an instrument approach procedure is indicated by the title of the procedure and notes on the IAP chart. Use of the Garmin GPS/SBAS receivers to provide navigation guidance during the final approach segment of an ILS, LOC, LOC-BC, LDA, SDF, MLS, or any other type of approach not approved for “or GPS” navigation is prohibited. When using the Garmin VOR/LOC/GS receivers to fly the final approach segment, VOR/LOC/GS navigation data must be selected, and presented on the CDI of the pilot flying.

3. EMERGENCY PROCEDURES

3.1 INTRODUCTION

3.1.3 SELECTING THE EMERGENCY FREQUENCY

In an in-flight emergency, depressing and holding the Com transfer button ↔ on the G1000 NXi for 2 seconds will tune the emergency frequency of 121.500 MHZ. If the display is available, it will also show it in the active frequency window.

3.9 OTHER EMERGENCIES

3.9.4 AUTOPILOT OR ELECTRIC TRIM MALFUNCTION/FAILURE (IF INSTALLED)

NOTE

If the autopilot GFC 700 is not installed, the following checklist is not valid, and the airplane must be trimmed manually.

NOTE

An autopilot or electric trim malfunction may be recognized by an unexpected deviation from the desired flight path, abnormal flight control or trim wheel movement, or flight director commands which cause unexpected or contradictory information on the other cockpit displays. It may be accompanied by the aural autopilot disconnect tone, a red AFCS, red PTCH, red ROLL, red AP or yellow AP indication on the PFD, or a yellow CHECK ATTITUDE on the PFD. The autopilot and AHRS monitors normally detect failures and automatically disconnect the autopilot.

Failure of the electric pitch trim, indicated by a red boxed PTRM flashing on the PFD, may not cause the autopilot to disconnect. Be alert to possible autopilot out of trim conditions (see AUTOPILOT OUT OF TRIM procedure below), and expect residual control forces upon disconnect. The autopilot will not re-engage after disconnect with failed pitch trim. If AUTOPILOT OUT OF TRIM ELE indication is present, expect substantial elevator forces on autopilot disconnect.

NOTE

Accomplish items 1 and 2 simultaneously!

1. Airplane control stick . . . . . grasp firmly and regain aircraft control
2. AP DISC switch . . . . . DEPRESS AND HOLD
3. Trim . . . . . retrim airplane manually as required
4. AUTOPILOT circuit breaker. . . . . pull
5. AP DISC switch . . . . . RELEASE

NOTE

When the AUTOPILOT circuit breaker is pulled, the manual electric trim and autopilot autotrim systems will be disabled.

WARNING

Do not attempt to re-engage the autopilot following an autopilot, autotrim, or manual electric trim malfunction until the cause for the malfunction has been corrected.

END OF CHECKLIST

3.10 AIRPLANE RELATED G1000 NXi WARNINGS

3.10.1 WARNINGS/GENERAL

CHARACTERISTICS	Means that the non-observation of the corresponding procedure leads to an immediate or important degradation in flight safety. Red color coded warning text. Warning chime tone of 1.5 second duration which repeats without delay until acknowledged by the crew.

3.10.2 ENG TEMP

ENG TEMP	Engine coolant temperature is in the upper red range (too high/above 105 ºC).

Proceed according to AFM Section 3.2.1 - ENGINE TEMPERATURE.

3.10.3 OIL TEMP

OIL TEMP	Engine oil temperature is in the upper red range (too high/above 140 ºC).

Proceed according to AFM Section 3.2.2 - OIL TEMPERATURE.

3.10.4 OIL PRES

OIL PRES	Engine oil pressure is in the lower red range (too low/below 0.9 bar).

Proceed according to AFM Section 3.2.3 - OIL PRESSURE.

3.10.5 GBOX TEMP

GBOX TEMP	Engine gearbox temperature is in the upper red range (too high/above 120 ºC).

Proceed according to AFM Section 3.2.4 - GEARBOX TEMPERATURE.

3.10.6 L/R FUEL TEMP

L/R FUEL TEMP	Fuel temperature is in the upper red range (too high/above 60 ºC).

Proceed according to AFM Section 3.2.5 - L/R FUEL TEMPERATURE.

3.10.7 FUEL PRESS

FUEL PRESS	Engine fuel pressure is low.

Proceed according to AFM Section 3.2.6 - FUEL PRESSURE.

3.10.8 ALTN AMPS

ALTN AMPS	Engine alternator output is in the upper red range (too high/above 70 A).

Proceed according to AFM Section 3.2.7 - ALTERNATOR AMPS.

3.10.9 ALTN FAIL

ALTN FAIL	Engine alternator has failed.

Proceed according to AFM Section 3.2.8 - ALTERNATOR FAIL.

3.10.10 STARTER

STARTER	Engine starter is engaged.

Proceed according to AFM Section 3.4.3 - STARTER MALFUNCTION.

3.10.11 DOOR OPEN

DOOR OPEN	Canopy and/or rear door are/is not closed and locked.

Proceed according to AFM Section 3.9.3 - UNLOCKED DOORS.

3.11 G1000 NXi SYSTEM WARNINGS

3.11.1 RED X/YELLOW X

RED X/YELLOW X	The G1000 NXi uses a red “X” for indications of failures which require immediate pilot action (e.g. primary flight instruments) and a yellow “X” for all other failure indications. The legacy G1000 used a red “X” for all failure indications.

3.11.2 ATTITUDE FAIL

ATTITUDE FAIL	The display system is not receiving attitude reference information from the AHRS; accompanied by the removal of sky/ground presentation and a red X over the attitude area.

Revert to the standby attitude indicator.

3.11.3 AIRSPEED FAIL

AIRSPEED FAIL	The display system is not receiving airspeed input from the air data computer; accompanied by a red X through the airspeed display.

Revert to the standby airspeed indicator.

3.11.4 ALTITUDE FAIL

ALTITUDE FAIL	The display system is not receiving altitude input from the air data computer; accompanied by a red X through the altimeter display.

Revert to the standby altimeter.

3.11.5 VERT SPEED FAIL

VERT SPEED FAIL	The display system is not receiving vertical speed input from the air data computer; accompanied by a red or yellow X through the vertical speed display.

Determine vertical speed based on the change of altitude information.

3.11.6 HDG

HDG	The display system is not receiving valid heading input from the AHRS; accompanied by a red X through the digital heading display.

Revert to the emergency compass.

3.12 G1000 NXi FAILURES

3.12.1 NAVIGATION INFORMATION FAILURE

If Garmin G1000 NXi GPS navigation information is not available or invalid, utilize remaining operational navigation equipment as required.

3.12.2 PFD OR MFD DISPLAY FAILURE

1. DISPLAY BACKUP button on audio panel . . push

(a) Automatic Entry of Display Revisionary Mode

If the PFD and MFD have automatically entered reversionary mode, use the following procedure:

2. DISPLAY BACKUP button on audio panel . . PUSH (button will be OUT)

NOTE

After automatic entry of reversionary mode, the pilot must press the DISPLAY BACKUP button on the audio panel. After the DISPLAY BACKUP button has been pushed, the system will remain in reversionary mode even if the problem causing the automatic entry of reversionary mode is resolved. A maximum of one attempt to return to normal mode is approved using the following procedure.

3. DISPLAY BACKUP button on audio panel . . PUSH (button will be IN)
4. If the system returns to normal mode, leave the DISPLAY BACKUP button IN and continue.
5. If the system remains in reversionary mode, or abnormal display behavior such as flashing occurs, then return the DISPLAY BACKUP button to the OUT position.

END OF CHECKLIST

3.12.3 AHRS FAILURE

NOTE

A failure of the Attitude and Heading Reference System (AHRS) is indicated by a removal of the sky/ground presentation, and a red X and a yellow AHRS FAILURE shown on the PFD. The digital heading presentation will be replaced with a yellow HDG, and the compass rose digits will be removed. The course pointer will indicate straight up, and course may be set using the digital window.

1. Use standby attitude indicator, emergency compass, and navigation map
2. Course . . . . . set using digital window

END OF CHECKLIST

3.12.4 AIR DATA COMPUTER (ADC) FAILURE

NOTE

Complete loss of the air data computer is indicated by a red X and yellow text over the airspeed, altimeter, vertical speed, TAS, and OAT displays. Some FMS functions, such as true airspeed, and wind calculations, will also be lost.

1. Use standby airspeed indicator, and altimeter.

END OF CHECKLIST

3.12.5 ERRONEOUS OR LOSS OF ENGINE AND FUEL DISPLAYS

NOTE

Loss of an engine parameter is indicated by a red or yellow X through the data field. Erroneous information may be identified by indications which do not agree with other system information. Erroneous indications may be determined by comparing a display with other displays and other system information.

1. Set power based on power lever position, engine noise and speed.
2. Monitor other indications to determine the health of the engine.
3. Use known power settings and performance data, refer to AFM Section 5.3.2 - FUEL FLOW TABLE for approximate fuel flow values.
4. Use other system information, such as annunciator messages, GPS, fuel quantity and flow, to safely complete the flight.

END OF CHECKLIST

3.12.6 ERRONEOUS OR LOSS OF WARNING/CAUTION ANNUNCIATORS

NOTE

Loss of an annunciator may be indicated when engine or fuel displays show an abnormal or emergency situation, and the annunciator is not present. An erroneous annunciator may be identified when an annunciator appears which does not agree with other displays or system information.

1. If an annunciator appears, treat it as if the condition exists. Refer to Chapter 3 - EMERGENCY PROCEDURES, or Chapter 4B - ABNORMAL OPERATING PROCEDURES.
2. Monitor other indications to determine the health of the engine. If a display indicates an abnormal condition but no annunciator is present, use other system information, such as engine displays, GPS fuel quantity and flow, to determine if the condition exists. If it cannot be determined that the condition does not exist, treat the situation as if the condition exists. Refer to Chapter 3 - EMERGENCY PROCEDURES, or Chapter 4B - ABNORMAL OPERATING PROCEDURES.

END OF CHECKLIST

4A. NORMAL OPERATING PROCEDURES

4A.1 INTRODUCTION

NOTE

Readability of the G1000 NXi PFD, and MFD displays may be degraded when wearing polarizing sunglasses.

NOTE

MÄM 40-868 installation: normal operating procedures for the GFC 700 are described in the Garmin G1000 NXi Cockpit Reference Guide, P/N 190-02258-( ) or later, and the Garmin G1000 NXi Pilot's Guide for the Diamond DA 40 NG, P/N 190-02257-( ) or later.

NOTE

MÄM 40-868, and MÄM 40-1007 installation: normal operating procedures for the GFC 700 are described in the Garmin G1000 NXi Cockpit Reference Guide, P/N 190-02453-( ) or later, and the Garmin G1000 NXi Pilot's Guide for the Diamond DA 40 NG, P/N 190-02452-( ) or later.

4A.5 CHECKLISTS FOR NORMAL OPERATING PROCEDURES

4A.5.21 GFC 700 OPERATION (IF AUTOPILOT GFC 700 IS INSTALLED)

WARNING

It is the responsibility of the pilot in command to monitor the autopilot when it is engaged. The pilot should be prepared to immediately disconnect the autopilot, and to take prompt corrective action in the event of unexpected or unusual autopilot behavior. Do not attempt to manually fly the airplane with the autopilot engaged. The autopilot servos will oppose pilot input, and will trim opposite the direction of pilot input (pitch axis only). This could lead to a significant out-of-trim condition. Disconnect the autopilot if manual control is desired. The pilot in command must use proper autopilot modes, and proper engine power settings to ensure that airplane speed is maintained between 70 KIAS and 165 KIAS. It will be necessary to change engine power to maintain the desired rate of descent when operating at 165 KIAS. Observe the minimum autopilot operating speed of 70 KIAS. Operation in pitch (PIT), or vertical speed (VS) modes below this speed can result in an airplane stall. If indications of an airplane stall are present, including stall warning horn, loss of control effectiveness, or airframe buffet, disconnect the autopilot and manually return the airplane to stabilized flight prior to re-engaging the autopilot.

(a) GFC 700 Operation During Climb (if Autopilot GFC 700 is Installed)

NOTE

The NOSE UP and NOSE DN buttons on the mode controller on the MFD are referenced to airplane movement. The NOSE UP button will increase the reference pitch attitude, increase the reference vertical speed, and decrease the reference airspeed. Likewise, the NOSE DN button will decrease the reference pitch attitude, decrease the reference vertical speed, and increase the reference airspeed.

Vertical speed (VS)

1. Altitude preselect . . . . . set to desired altitude
2. Mode controller . . . . . select VS on mode controller
3. Vertical speed reference . . . . . adjust using NOSE UP and NOSE DN buttons
4. White ALT (altitude preselect armed) . . . . . note on PFD
5. Green ALT . . . . . verify upon altitude capture

NOTE

If the altitude preselect is not changed before selecting VS, the autopilot may re-capture the current altitude immediately after entering VS mode. Always ensure that the altitude preselect is adjusted prior to selecting VS. The VS mode is limited to 1500 ft/min climb, and 3000 ft/min descent. If the CWS switch is used while in VS mode, the VS reference will change to the vertical speed when the CWS switch is released.

END OF CHECKLIST

Flight level change (FLC)

1. Altitude preselect . . . . . set to desired altitude
2. Mode controller . . . . . select FLC on mode controller
3. Airspeed reference . . . . . adjust using NOSE UP and NOSE DN buttons
4. White ALT (altitude preselect armed) . . . . . note on PFD
5. Green ALT . . . . . verify upon capture

NOTE

If the altitude preselect is not changed before selecting FLC, the autopilot may re-capture the current altitude immediately after entering FLC mode. Always ensure that the altitude preselect is adjusted prior to selecting FLC. If the airspeed reference cannot be maintained without deviating away from the selected altitude, the system will maintain level flight until the power or reference is changed, to allow climbing or descending towards the selected altitude. The FLC mode is limited to airspeeds between 70 KIAS and 165 KIAS. Use engine power to maintain appropriate vertical speed. If the CWS switch is used while in FLC mode, the airspeed reference will change to the airspeed when the CWS switch is released.

END OF CHECKLIST

To capture a selected altitude

1. Altimeter setting . . . . . adjust to appropriate value
2. Altitude preselect . . . . . set to desired altitude
3. Vertical mode and reference . . . . . select on mode controller
4. White ALT (altitude preselect armed) . . . . . note on PFD
5. Green ALT . . . . . verify upon capture

NOTE

In ALT mode, the autopilot will maintain the reference altitude shown in the autopilot window of the PFD, regardless of the altitude in the altitude preselect window, or the altimeter's barometric pressure setting. If the altimeter setting is changed, the autopilot will climb or descend to maintain the reference altitude.

END OF CHECKLIST

Altitude hold

To maintain a selected altitude,

1. Altimeter setting . . . . . adjust to appropriate value
2. Reaching desired altitude . . . . . select ALT on mode controller
3. Green ALT . . . . . verify on PFD

END OF CHECKLIST

Navigation capture and track

1. Navigation source . . . . . select VOR or GPS using CDI button on PFD
2. Course bearing pointer. . . . . set using course knob (VOR only)
3. Intercept heading . . . . . establish in HDG or ROL mode (if required)
4. Mode controller . . . . . select NAV on mode controller
5. Green or white VOR or GPS annunciation. . . note on PFD
6. Vertical mode and reference . . . . . select on mode controller

NOTE

If the Course Deviation Indicator (CDI) is greater than one dot from center, the autopilot will arm the NAV mode, and indicate VOR or GPS in white on the PFD. The pilot must ensure that the current heading will result in a capture of the selected course. If the CDI is one dot or less from center, the autopilot will enter the capture mode when the NAV button is pressed, and annunciate VOR or GPS in green on the PFD.

END OF CHECKLIST

(b) GFC 700 Operation During Cruise (if Autopilot GFC 700 is Installed)

NOTE

The NOSE UP and NOSE DN buttons on the mode controller on the MFD are referenced to airplane movement. The NOSE UP button will increase the reference pitch attitude, increase the reference vertical speed, and decrease the reference airspeed. Likewise, the NOSE DN button will decrease the reference pitch attitude, decrease the reference vertical speed, and increase the reference airspeed.

Vertical speed (VS)

1. Altitude preselect . . . . . set to desired altitude
2. Mode controller . . . . . select VS on mode controller
3. Vertical speed reference . . . . . adjust using NOSE UP and NOSE DN buttons
4. White ALT (altitude preselect armed) . . . . . note on PFD
5. Green ALT . . . . . verify upon altitude capture

NOTE

If the altitude preselect is not changed before selecting VS, the autopilot may re-capture the current altitude immediately after entering VS mode. Always ensure that the altitude preselect is adjusted prior to selecting VS. The VS mode is limited to 1500 ft/min climb, and 3000 ft/min descent. Use engine power to maintain appropriate airplane speed. If the CWS switch is used while in VS mode, the VS reference will change to the vertical speed when the CWS switch is released.

END OF CHECKLIST

Flight level change (FLC)

1. Altitude preselect . . . . . set to desired altitude
2. Mode controller . . . . . select FLC on mode controller
3. Airspeed speed reference . . . . . adjust using NOSE UP and NOSE DN buttons
4. White ALT (altitude preselect armed) . . . . . note on PFD
5. Green ALT . . . . . verify upon capture

NOTE

If the altitude preselect is not changed before selecting FLC, the autopilot may re-capture the current altitude immediately after entering FLC mode. Always ensure that the altitude preselect is adjusted prior to selecting FLC. If the airspeed reference cannot be maintained without deviating away from the selected altitude, the system will maintain level flight until the power or reference is changed, to allow climbing or descending towards the selected altitude. The FLC mode is limited to airspeeds between 70 KIAS and 165 KIAS. Use engine power to maintain appropriate vertical speed. If the CWS switch is used while in FLC mode, the airspeed reference will change to the airspeed when the CWS switch is released.

END OF CHECKLIST

To capture a selected altitude

1. Altimeter setting . . . . . adjust to appropriate value
2. Altitude preselect . . . . . set to desired altitude
3. Vertical mode and reference . . . . . select on mode controller
4. White ALT (altitude preselect armed) . . . . . note on PFD
5. Green ALT . . . . . verify upon altitude capture

NOTE

In ALT mode, the autopilot will maintain the reference altitude shown in the autopilot window of the PFD, regardless of the altitude in the altitude preselect window, or the altimeter's barometric pressure setting. If the altimeter setting is changed, the autopilot will climb or descend to maintain the reference altitude.

END OF CHECKLIST

Altitude hold

To maintain a selected altitude,

1. Altimeter setting . . . . . adjust to appropriate value
2. Reaching desired altitude . . . . . select ALT on mode controller
3. Green ALT . . . . . verify on PFD

END OF CHECKLIST

Navigation capture and track

1. Navigation source . . . . . select VOR or GPS using CDI button on PFD
2. Course bearing pointer. . . . . set using course knob (VOR only)
3. Intercept heading . . . . . establish in HDG or ROL mode (if required)
4. Mode controller . . . . . select NAV on mode controller
5. Green or white VOR or GPS annunciation. . . note on PFD
6. Vertical mode and reference . . . . . select on mode controller

NOTE

If the Course Deviation Indicator (CDI) is greater than one dot from center, the autopilot will arm the NAV mode, and indicate VOR or GPS in white on the PFD. The pilot must ensure that the current heading will result in a capture of the selected course. If the CDI is one dot or less from center, the autopilot will enter the capture mode when the NAV button is pressed, and annunciate VOR or GPS in green on the PFD.

END OF CHECKLIST

(c) GFC 700 Operation During Descent (if Autopilot GFC 700 is Installed)

NOTE

The NOSE UP and NOSE DN buttons on the mode controller on the MFD are referenced to airplane movement. The NOSE UP button will increase the reference pitch attitude, increase the reference vertical speed, and decrease the reference airspeed. Likewise, the NOSE DN button will decrease the reference pitch attitude, decrease the reference vertical speed, and increase the reference airspeed.

Vertical speed (VS)

1. Altitude preselect . . . . . set to desired altitude
2. Mode controller . . . . . select VS on mode controller
3. Vertical speed reference . . . . . adjust using NOSE UP and NOSE DN buttons
4. White ALT (altitude preselect armed) . . . . . note on PFD
5. Green ALT . . . . . verify upon altitude capture

NOTE

If the altitude preselect is not changed before selecting VS, the autopilot may re-capture the current altitude immediately after entering VS mode. Always ensure that the altitude preselect is adjusted prior to selecting VS. The VS mode is limited to 1500 ft/min climb, and 3000 ft/min descent. Use engine power to maintain appropriate airplane speed. If the CWS switch is used while in VS mode, the VS reference will change to the vertical speed when the CWS switch is released.

END OF CHECKLIST

Flight level change (FLC)

1. Altitude preselect . . . . . set to desired altitude
2. Mode controller . . . . . select FLC on mode controller
3. Airspeed speed reference . . . . . adjust using NOSE UP and NOSE DN buttons
4. White ALT (altitude preselect armed) . . . . . note on PFD
5. Green ALT . . . . . verify upon altitude capture

NOTE

If the altitude preselect is not changed before selecting FLC, the autopilot may re-capture the current altitude immediately after entering FLC mode. Always ensure that the altitude preselect is adjusted prior to selecting FLC. If the airspeed reference cannot be maintained without deviating away from the selected altitude, the system will maintain level flight until the power or reference is changed, to allow climbing or descending towards the selected altitude. The FLC mode is limited to airspeeds between 70 KIAS and 165 KIAS. Use engine power to maintain appropriate vertical speed. If the CWS switch is used while in FLC mode, the airspeed reference will change to the airspeed when the CWS switch is released.

END OF CHECKLIST

To capture a selected altitude

1. Altimeter setting . . . . . adjust to appropriate value
2. Altitude preselect . . . . . set to desired altitude
3. Vertical mode and reference . . . . . select on mode controller
4, White ALT (altitude preselect armed) . . . . . note on PFD
5. Green ALT . . . . . verify upon capture

NOTE

In ALT mode, the autopilot will maintain the reference altitude shown in the autopilot window of the PFD, regardless of the altitude in the altitude preselect window, or the altimeter's barometric pressure setting. If the altimeter setting is changed, the autopilot will climb or descend to maintain the reference altitude.

END OF CHECKLIST

Altitude hold

To maintain a selected altitude,

1. Altimeter setting . . . . . adjust to appropriate value
2. Reaching desired altitude . . . . . select ALT on mode controller
3. Green ALT . . . . . verify on PFD

END OF CHECKLIST

Navigation capture and track

1. Navigation source . . . . . select VOR or GPS using CDI button on PFD
2. Course bearing pointer. . . . . set using course knob (VOR only)
3. Intercept heading . . . . . establish in HDG or ROL mode (if required)
4. Mode controller . . . . . select NAV on mode controller
5. Green or white VOR or GPS annunciation. . . note on PFD
6. Vertical mode and reference . . . . . select on mode controller

NOTE

If the Course Deviation Indicator (CDI) is greater than one dot from center, the autopilot will arm the NAV mode, and indicate VOR or GPS in white on the PFD. The pilot must ensure that the current heading will result in a capture of the selected course. If the CDI is one dot or less from center, the autopilot will enter the capture mode when the NAV button is pressed, and annunciate VOR or GPS in green on the PFD.

END OF CHECKLIST

(d) GFC 700 Operation During Approach (if Autopilot GFC 700 is Installed)

VOR

1. Navigation source . . . . . select VOR using CDI button on PFD
2. Course bearing pointer . . . . . set using course knob
3. Intercept heading. . . . . establish in HDG or ROL mode (if required)
4. Mode controller . . . . . select APR on mode controller
5. Green or white VAPP annunciation . . . . . note on PFD
6. Vertical mode and reference . . . . . select on mode controller
7. Airspeed . . . . . maintain 80 KIAS or greater (recommended)

NOTE

If the Course Deviation Indicator (CDI) is greater than one dot from center, the autopilot will arm the VAPP mode, and indicate VAPP in white on the PFD. The pilot must ensure that the current heading will result in a capture of the selected course. If the CDI is one dot or less from center, the autopilot will enter the capture mode when the APR button is pressed, and annunciate VAPP in green on the PFD.

END OF CHECKLIST

ILS

1. Navigation source . . . . . select LOC using CDI button on PFD
2. Course bearing pointer. . . . . set using course knob
3. Intercept heading . . . . . establish in HDG or ROL mode (if required)
4. Mode controller . . . . . select APR on mode controller
5. Green or white LOC and GS annunciation. . . note on PFD
6. Vertical mode and reference . . . . . select on mode controller

NOTE

When the selected navigation source is a valid ILS, glideslope coupling is automatically armed when tracking the localizer. The glideslope cannot be captured until the localizer is captured. The autopilot can capture the glideslope from above or below the glideslope.

END OF CHECKLIST

GPS

1. Navigation source . . . . . select GPS using CDI button on PFD
2. Approach . . . . . load in FMS and ACTIVATE
3. Intercept heading . . . . . establish in HDG or ROL mode (if required)
4. Mode controller . . . . . select APR on mode controller
5. Green or white GPS annunciation . . . . . note on PFD
6. Vertical mode and reference . . . . . select on mode controller

END OF CHECKLIST

Back course (BC)

1. Navigation source . . . . . select LOC using CDI button on PFD
2. Course bearing pointer . . . . . set to ILS front course using course knob
3. Intercept heading. . . . . establish in HDG or ROL mode (if required)
4. Mode controller . . . . . select NAV on mode controller
5. Green or white BC annunciation . . . . . note on PFD

NOTE

The course pointer must be at least 115° from the current magnetic heading before BC will be annunciated in the lateral mode field. Until that point, LOC will be annunciated.

Selecting NAV mode for back course approaches inhibits the glideslope from coupling.

6. Vertical mode and reference . . . . . select on mode controller

END OF CHECKLIST

(e) GFC 700 Operation During Go-Around (if Autopilot GFC 700 is Installed)

1. Control stick . . . . . GRASP FIRMLY
2. GA button . . . . . PUSH - Verify GA/GA on PFD in lateral and vertical mode fields

NOTE

After the GA button is pressed, the autopilot disconnects, and the flight director indicates a 7° pitch up attitude.

3. Balked landing . . . . . execute
4. Missed approach procedure. . . . . execute (as applicable)
5. Altitude preselect . . . . . set to appropriate altitude

At an appropriate safe altitude

6. Autopilot mode controller . . . . . select appropriate lateral and vertical modes on mode controller
7. Autopilot . . . . . RE-ENGAGE if desired

NOTE

If the missed approach procedure requires tracking the localizer outbound from the airport, use NAV mode to prevent inadvertent coupling to glideslope.

END OF CHECKLIST

4A.6 ADVISORY ALERTS ON THE G1000 NXi

The G1000 NXi provides the following advisory alerts on the PFD in the alert area:

4A.6.1 ADVISORY/GENERAL

CHARACTERISTICS	White color coded text.

4A.6.2 GLOW ON

GLOW ON	Engine glow plug active.

4A.6.3 FUEL XFER

FUEL XFER	Fuel transfer from auxiliary to main tank is in progress.

4A.6.4 PFD/MFD/GIA FAN FAIL

PFD FAN FAIL	Cooling fan for the PFD is inoperative.
MFD FAN FAIL	Cooling fan for the MFD is inoperative.
GIA FAN FAIL	Cooling fan for the GIAs is inoperative.

The flight may be continued, but maintenance action is required after landing.

4B. ABNORMAL OPERATING PROCEDURES

4B.9 ENGINE INSTRUMENT INDICATIONS OUTSIDE OF GREEN RANGE ON THE G1000 NXi

4B.9.1 RPM

Proceed according to AFM Section - 4B.2.1 - RPM.

4B.9.2 COOLANT TEMPERATURE

Proceed according to AFM Section - 4B.2.2 - COOLANT TEMPERATURE.

4B.9.3 OIL TEMPERATURE

Proceed according to AFM Section - 4B.2.3 - OIL TEMPERATURE.

4B.9.4 OIL PRESSURE

Proceed according to AFM Section - 4B.2.4 - OIL PRESSURE.

4B.9.5 GEARBOX TEMPERATURE

Proceed according to AFM Section - 4B.2.5 - GEARBOX TEMPERATURE.

4B.9.6 FUEL TEMPERATURE

Proceed according to AFM Section - 4B.2.6 - FUEL TEMPERATURE.

4B.9.7 VOLTAGE

Proceed according to AFM Section - 4B.2.7 - VOLTAGE.

4B.9.8 CURRENT

Proceed according to AFM Section - 4B.2.8 - CURRENT.

4B.10 CAUTION-ALERTS ON THE G1000

The G1000 NXi provides the following CAUTION-alerts on the PFD in the ALERT area.

4B.10.1 CAUTIONS/GENERAL

CHARACTERISTICS	Yellow color coded text. Single warning chime tone of 1.5 seconds duration.

4B.10.2 ECU A FAIL

ECU A FAIL	Engine ECU A has failed, or is being tested during the FADEC test procedure before take-off check.

Proceed according to AFM Section 4B.3.1 - ECU A FAILURE.

4B.10.3 ECU B FAIL

ECU B FAIL	Engine ECU B has failed, or is being tested during the FADEC test procedure before take-off check.

Proceed according to AFM Section 4B.3.2 - ECU B FAILURE.

4B.10.4 FUEL LOW

FUEL LOW	Left fuel quantity is low.

Proceed according to AFM Section 4B.3.3 - FUEL QUANTITY LOW.

4B.10.5 LOW VOLTAGE CAUTION (VOLTS LOW)

VOLTS LOW	Bus voltage is less than 25 volts.

Proceed according to AFM Section 4B.2.7 - VOLTAGE.

4B.10.6 COOL LVL

COOL LVL	Engine coolant level is low.

Proceed according to AFM Section 4B.3.4 - COOLANT LEVEL.

4B.10.7 PITOT FAIL/HT OFF

PITOT FAIL	Pitot heating system has failed.
PITOT HT OFF	Pitot heating system is off.

1. PITOT HEAT . . . . . check ON/as required

NOTE

The Pitot heating caution message is displayed when the Pitot heating is switched OFF, or when there is a failure of the Pitot heating system. Prolonged operation of the Pitot heating on the ground can also cause the Pitot heating caution message to be displayed. In this case, it indicates the activation of the thermal switch, which prevents overheating of the Pitot heating system on the ground. This is a normal function of the system. After a cooling period, the heating system will be switched on again automatically.

Proceed according to AFM Section 4B.3.5 - PITOT HEATING FAILURE.

END OF CHECKLIST

4B.10.8 LOI

LOI	GPS integrity is insufficient for the current phase of flight.

(a) Enroute, Oceanic, Terminal, or Initial Approach Phase of Flight

If the LOI annunciation is displayed in the enroute, oceanic, terminal, or initial approach phase of flight, continue to navigate using the GPS equipment, or revert to an alternate means of navigation other than the G1000 NXi GPS receiver, appropriate to the route and phase of flight. When continuing to use GPS navigation, position must be verified every 15 minutes using the G1000 NXi VOR/ILS receiver, or another IFR-approved navigation system.

(b) Final Approach

If the LOI annunciation is displayed while on the final approach segment, GPS based navigation will be aborted.

END OF CHECKLIST

4B.11 FAILURES IN THE GFC 700 AUTOPILOT SYSTEM (IF INSTALLED)

4B.11.1 AUTOPILOT DISCONNECT (YELLOW AP FLASHING ON PFD)

1. AP DISC switch . . . . . DEPRESS AND RELEASE (to cancel disconnect tone)
2. Pitch trim . . . . . retrim if necessary, using the trim wheel

NOTE

The autopilot disconnect may be accompanied by a red boxed PTCH (pitch) or ROLL on the PFD, indicating the axis which has failed. The autopilot cannot be re-engaged with either of these annunciations present.

END OF CHECKLIST

4B.11.2 AUTOPILOT OVERSPEED RECOVERY (YELLOW MAXSPD ON PFD)

1. Power lever . . . . . REDUCE

When overspeed condition is corrected:

2. Autopilot . . . . . RESELECT VERTICAL MODE (if necessary)

NOTE

Overspeed recovery mode provides a pitch up command to decelerate the airplane at, or below the maximum autopilot operating speed (165 KIAS). Overspeed recovery is not active in altitude hold (ALT) or glideslope (GS) modes.

END OF CHECKLIST

4B.11.3 LOSS OF NAVIGATION INFORMATION (YELLOW VOR, VAPP, GPS, OR LOC FLASHING ON PFD)

NOTE

If a navigation signal is lost while the autopilot is tracking it, the autopilot will roll the aircraft wings level, and default to roll mode (ROL).

1. Autopilot . . . . . SELECT HDG on mode controller
2. Nav source . . . . . SELECT A VALID NAV SOURCE
3. Autopilot . . . . . SELECT NAV or APR on mode controller

If on an instrument approach at the time the navigation signal is lost:

4. Missed Approach Procedure . . . . . EXECUTE (as applicable)

END OF CHECKLIST

4B.11.4 AUTOPILOT OUT OF TRIM (YELLOW ←AIL, AIL→, ↑ELE, OR ↓ELE ON PFD)

For ↑ELE, or ↓ELE Indication:

WARNING

Do not attempt to overpower the autopilot in the event of a pitch mistrim. The autopilot servos will oppose pilot input and will cause pitch trim to run opposite the direction of pilot input. This will lead to a significant out-of-trim condition resulting in large control stick force when disengaging the autopilot.

CAUTION

Be prepared for significant sustained control forces in the direction of the annunciation arrow. For example, an arrow pointing down indicates nose down control stick force will be required upon autopilot disconnect.

NOTE

Momentary illumination (5 sec or less) of the ↑ELE, or ↓ELE indication during configuration or large airspeed changes is normal.

If the annunciation remains:

1. AP DISC switch . . . . . DEPRESS AND HOLD while grasping control stick firmly
2. Airplane attitude. . . . . maintain/regain airplane control use standby attitude indicator if if necessary
3. Pitch Trim. . . . . RETRIM if necessary, using the trim wheel

CONTINUED

4. Autopilot circuit breaker . . . . . PULL
5. AP DISC switch . . . . . RELEASE

WARNING

Following an autopilot, autotrim, or manual electric trim system malfunction, do not engage the autopilot or operate the manual electric trim until the cause of the malfunction has been corrected.

END OF CHECKLIST

For ←AIL, or AIL→ Indication:

1. Rudder Trim . . . . . VERIFY slip/skid indicator is centered

NOTE

Observe the maximum fuel imbalance limitation.

If annunciation remains:

2. Airplane control stick . . . . . grasp firmly and regain airplane control

CAUTION

Be prepared for sustained control forces in the direction of the annunciation arrow. For example, an arrow pointing to the right indicates that sustained right wing down control stick force will be required upon autopilot disconnect.

3. AP DISC Switch . . . . . DEPRESS
4. Autopilot . . . . . RE-ENGAGE if lateral trim is re-established

END OF CHECKLIST

4B.11.5 FLASHING YELLOW MODE ANNUNCIATION

NOTE

Abnormal mode transitions (those not initiated by the pilot or by normal sequencing of the autopilot) will be annunciated by flashing the disengaged mode in yellow on the PFD. Upon loss of a selected mode, the system will revert to the default mode for the affected axis, either ROL or PIT. After 10 seconds, the new mode (PIT or ROL) will be annunciated in green.

(a) Loss of Selected Vertical Mode (FLC, VS, ALT, GS, VPTH, GP):

1. Autopilot mode controls . . . . . Select another vertical mode

If on an instrument approach

2. Autopilot. . . . . DISCONNECT and continue manually, or execute missed approach

END OF CHECKLIST

(b) Loss of Selected Lateral Mode (HDG, NAV, GPS, LOC, VAPP, BC):

1. Autopilot mode controls . . . . . Select another lateral mode

If on an instrument approach

2. Autopilot. . . . . DISCONNECT and continue manually, or execute missed approach

END OF CHECKLIST

4B.11.6 EFFECTS OF G1000 NXi LOSSES UPON AUTOPILOT OPERATION

G1000 NXi System Loss	Effect upon Autopilot Operation
AHRS	The autopilot disconnects, and autopilot flight director is inoperative. Manual electric trim is available.
HDG function of AHRS	The autopilot will remain engaged with the loss of the HDG mode.
MFD	The autopilot will remain engaged with limited functionality.
PFD	The autopilot disconnects, and autopilot, and flight director are inoperative. Manual electric trim is available.
GIA No. 1	The autopilot disconnects, and autopilot, flight director, and manual electric trim are inoperative.
GIA No. 2	The autopilot disconnects, and autopilot, and manual electric trim are inoperative. Flight director is available.
GPS No. 1 and 2	The autopilot and flight director operates in NAV modes only (LOC, BC, VOR, VAPP) with reduced accuracy.
ADC	The autopilot disconnects, and autopilot is inoperative. The flight director is available, except for air data modes (ALT, VS, FLC). Manual electric trim is available.

5. PERFORMANCE

No change.

6. MASS AND BALANCE

No change.

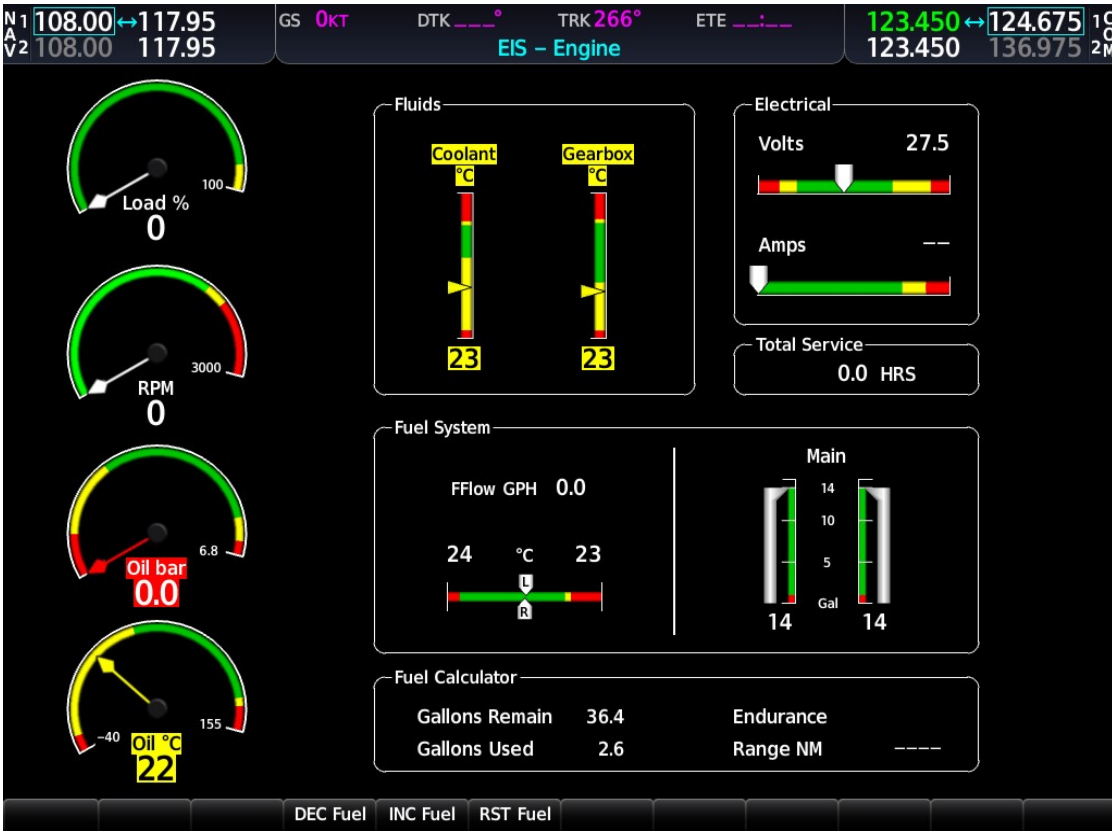
7. DESCRIPTIONS OF THE AIRPLANE AND ITS SYSTEMS

7.9 POWER PLANT

7.9.8 ENGINE INSTRUMENTS

The engine instruments are displayed on the Garmin G1000 NXi MFD. Also refer to 7.13.3 - MULTI-FUNCTION DISPLAY (MFD) of this supplement.

Default page, engine.



Displayed after pushing the ENGINE button.

NOTE

The figures shown are a general demonstration of a typical G1000 NXi MFD, to show the different display modes. The pictured engine instrument markings may not stringently agree with the current engine limitations of the DA 40 NG.

NOTE

The fuel calculations on the FUEL CALC portion do not use the airplane's fuel quantity indicators. The values shown are numbers which are calculated from the last fuel quantity update done by the pilot and actual fuel flow data. Therefore, the endurance and range data is for information only, and must not be used for flight planning.

Designation	Indication	Unit
LOAD	Available power	%
RPM	Propeller RPM	1/min
VOLT	Volts	V
AMPS	Ampère	A
COOLANT TEMP	Coolant temperature	ºC
GEARBOX	Gearbox temperature	ºC
OIL TEMP	Engine oil temperature	ºC
OIL PRES	Oil pressure	bar
FUEL QTY	Fuel pressure	US gal
FFLOW	Fuel flow	US gal/hr
FUEL TEMP	Fuel temperature	ºC

7.10 ELECTRICAL SYSTEM

7.10.3 WARNING, CAUTION, AND ADVISORY MESSAGES

(a) Crew Alerting System (CAS)

The G1000 NXi crew alerting system (CAS) is designed to provide visual and aural alerts to the flight crew. Alerts are divided into three levels as follows:

WARNING

CAUTION

ADVISORY

Crew alerts will appear in the alerts window on the PFD. In this window, warnings will appear at the top, followed by cautions, and advisories, respectively. Within the criticality levels, messages will appear from newest (top) to oldest (bottom).

At the low right corner of the display, there is a MSG (message) soft key. The MSG key provides two functions in the CAS:

1. Pressing the MSG key acknowledges a new master warning/caution/advisory indication.

2. An additional MSG key press (with no master alert indication active) will open a pop-up auxiliary flight display (AFD) page that contains information for all active alerts.

This structure allows the crew to scroll through all system alerts, if the alerts window overflows. This approach displays the most critical alerts close to the pilot's primary field of view at all times, with the option of allowing lower criticality alerts to overflow, and be accessible from the pop-up AFD page/window.

(b) Alert Levels

Level	Text Color	Importance	Audible Tone
Warning	Red	May require immediate corrective action	Warning chime tone which repeats without delay until acknowledged by the crew
Caution	Yellow	May require future corrective action	Single warning chime tone
Annunciation Advisory	White		None
Message Advisory	White		None
Safe Operation Annunciation	Green	Lowest	None

(c) Warning, Caution, and Advisory Alerts

A list of all alerts is given in AFM Section 2.6 - WARNING, CAUTION, AND STATUS LIGHTS.

7.13 GARMIN G1000 NXi INTEGRATED AVIONICS SYSTEM

7.13.1 GENERAL

A remote avionic box is located behind the aft baggage compartment frame. A push-to-talk (PTT) button for the COM portion of the G1000 NXi is mounted on the end of each control stick. There are connection facilities for up to 4 headsets between the front seats.

| MÄM 40-868 is installed:

Refer to the Garmin G1000 NXi Cockpit Reference Guide, P/N 190-02258-( ) and Garmin G1000 NXi Pilot's Guide for the Diamond DA 40 NG, P/N 190-02257-( ) for complete descriptions of the G1000 NXi system and operating procedures.

| MÄM 40-868 and MAM 40-1007 is installed:

| Refer to the Garmin G1000 NXi Cockpit Reference Guide, P/N 190-02453-( ) and Garmin
| G1000 NXi Pilot's Guide for the Diamond DA 40 NG, P/N 190-02452-( ) for complete
| descriptions of the G1000 NXi system and operating procedures.

NOTE

Near the DME ground station, it can happen under certain adverse conditions that the Bendix/King KN 63 DME loses the direct signal from the ground station and locks onto an “echo.” This will result in an inaccurate indication of the distance.

7.13.2 PRIMARY FLIGHT DISPLAY (PFD)

The primary flight display (PFD; see figure below) typically displays airspeed, attitude, altitude, and heading information in a traditional format. Slip information is shown as a trapezoid under the bank pointer. One width of the trapezoid is equal to a one ball width slip. Rate of turn information is shown on the scale above the compass rose; full scale deflection is equal to a standard rate turn. The following controls are available on the PFD (clockwise from top right):

* Communications frequency volume and squelch knob
* Communications frequency set knobs

* Communications frequency transfer button
* Altimeter setting knob (baro set)
* Course knob
* Map range knob and cursor control
* FMS control buttons and knob
* PFD softkey buttons, including master warning/caution acknowledgment
* Navigation frequency set knobs
* Navigation frequency volume and identifier knob

The PFD displays the crew alerting (annunciator) system. When a warning or caution message is received, a warning or caution annunciator will flash on the PFD, accompanied by an aural tone. A warning is accompanied by a repeating tone, and a caution is accompanied by a single tone. Acknowledging the alert will cancel the flashing and provide a text description of the message. Refer to AFM Chapter 3 - EMERGENCY PROCEDURES, 4B - ABNORMAL OPERATING PROCEDURES, and Section 7.10.3 - WARNING, CAUTION, AND ADVISORY MESSAGES of this supplement.

Advisory messages related to G1000 NXi system status are shown in white, and are accompanied by a white flashing ADVISORY alert. Refer to the G1000 NXi Pilot's Guide, and Cockpit Reference Guide for descriptions of the messages and recommended actions.

Trend vectors are shown on the airspeed and altimeter displays as a magenta line predicting 6 seconds at the current rate. The turn rate indicator also functions as a trend indicator on the compass scale.

The PFD can be displayed in a composite format for emergency use by pressing the DISPLAY BACKUP button on the audio panel. In the composite mode, the full crew alerting function remains, but no map functions are available.

7.13.3 MULTI-FUNCTION DISPLAY (MFD)

The multi-function display (MFD) typically displays engine data, maps, terrain, traffic and topography displays, and flight planning and progress information. The display unit is identical to the PFD, and contains the same controls as previously listed. Additionally, the MFD incorporates the controls for the autopilot system, if installed.

Engine instruments are displayed on the MFD. Discrete engine sensor information is processed by the Garmin Engine Airframe (GEA) sub-system. When an engine sensor indicates a value outside the normal operating range, the legend will turn yellow for the caution range, and turn red, and flash for the warning range.

Also refer to 7.9.8 - ENGINE INSTRUMENTS.

7.13.4 AUDIO PANEL

The audio panel contains traditional transmitter and receiver selectors, an integral intercom, and a marker beacon system. The marker beacon lights appear on the PFD. In addition, a

clearance recorder records the last 2 ½ minutes of received audio. Lights above the selections indicate what selections are active. Pressing the red DISPLAY BACKUP button on the audio panel causes both the PFD and MFD to display in a composite mode.

7.13.5 ATTITUDE AND HEADING REFERENCE SYSTEM (AHRS)

The attitude and heading reference system (AHRS) uses GPS, rate sensors, air data, and magnetic variation to determine pitch and roll attitude, sideslip, and heading. Operation is possible in a degraded mode if the system loses any of these inputs. Status messages alert the crew of the loss of any of these inputs. The AHRS will align while the airplane is in motion, but will align quicker if the wings are kept level during the alignment process.

7.13.6 AIR DATA COMPUTER (ADC)

The air data computer (ADC) provides airspeed, altitude, vertical speed, and air temperature to the display system. In addition to the primary displays, this information is used by the FMS and TIS systems.

7.14 AVIONICS

7.14.1 AUTOPILOT SYSTEM (IF AUTOPILOT GFC 700 IS INSTALLED)

(a) General

The GFC 700 Automatic Flight Control System (AFCS) is a two axis autopilot and flight director system which provides the pilot with the following features: Altitude Preselect and Altitude Hold (ALT), Flight Level Change with Airspeed Hold (FLC), Vertical Speed Hold (VS), Navigation Tracking for VOR (NAV) and GPS (GPS), Heading Hold (HDG), and Approach mode and Go-Around (GA) pitch/roll guidance. The system consists of autopilot controls on the multi-function display (MFD), servos with autopilot processing logic, Flight Director processing logic in the GIAs, a control stick-mounted elevator trim switch, a control stick mounted trim interrupt and autopilot disconnect switch, a control stick mounted CWS (Control Wheel Steering) switch, a power lever mounted GA (go-around) switch, and PFD/MFD-mounted altitude preselect, heading, and course knobs.

The GFC 700 autopilot contains an electric pitch trim system, which is used by the autopilot for automatic pitch trim during autopilot operation, and by the pilot for manual electric pitch trim

when the autopilot is not engaged. The manual electric pitch trim is operated by a split switch on the pilot´s control stick.

The GFC 700 autopilot and manual electric trim (MET) will not operate until the system has satisfactorily completed a preflight test. The preflight test begins automatically with initial power application to the autopilot (AVIONIC MASTER switch is set to the ON position).

The following conditions will cause the autopilot to automatically disconnect:

* Electrical power failure
* Internal autopilot system failure
* AHRS malfunction
* Loss of air data computer information

The GFC 700 may be manually disconnected by any of the following means:

* Depressing the red AP DISC button on the pilot’s or copilot’s control stick
* Moving the left (outboard) side of the manual electric trim switch on the pilot’s control stick
* Pushing the AP button on the autopilot mode controller when the autopilot is engaged
* Depressing the GA button on the left side of the POWER lever
* Pulling the AUTOPILOT circuit breaker
* Turning off the AVIONICS MASTER switch
* Turning off the ELECTRIC MASTER key switch

In addition, the CWS (control wheel steering) switch on the pilot's control stick will disconnect the autopilot servos from the airplane flight controls as long as the CWS switch is depressed.

Power to the GFC 700 autopilot, and electric trim system is supplied through the AVIONIC MASTER switch, and the AUTOPILOT circuit breaker. The AVIONIC MASTER switch can be used as an additional means to disable the autopilot and electric trim system. The red AP DISC

switch on the pilot's control stick will interrupt power to the manual electric trim for as long as the switch is depressed.

Loss of instruments or components of the G1000 NXi system will affect the GFC 700 AFCS as follows:

* Loss of the AHRS will cause the autopilot to disconnect. The autopilot and flight director will be inoperative. Manual electric trim will be available.

* Loss of the heading function of the AHRS will result in loss of the HDG mode. If in HDG mode at the time heading is lost, the autopilot will revert to basic roll mode (ROL).

* Loss of the MFD will not cause the autopilot to disconnect. The autopilot will remain engaged with limited functionality, but the autopilot cannot be re-engaged after disconnect by the pilot.

* Loss of the PFD will cause the autopilot to disconnect. The autopilot and flight director will be inoperative. Manual electric trim will be available.

* Loss of air data computer information will cause the autopilot to disconnect. The autopilot will be inoperative. The flight director will be available, except for air data modes (ALT, VS, FLC). Manual electric trim is available.

* Loss of GIA #1 will cause the autopilot to disconnect. The autopilot, flight director, and manual electric trim will be inoperative. Loss of GIA #2 will also prevent autopilot and manual electric trim operation, but flight director will be available.

* Loss of the standby airspeed indicator, standby attitude indicator, standby altimeter, or compass will have no effect on the autopilot.

* Loss of both GPS systems will cause the autopilot and flight director to operate in NAV modes (LOC, BC, VOR, VAPP) with reduced accuracy. Course intercept, and station crossing performance may be improved by executing intercepts, and station crossings in HDG mode, then reselecting NAV mode.

WARNING

Following an autopilot or electric trim malfunction, do not re-engage the autopilot or manual electric trim, or reset the AUTOPILOT circuit breaker until the cause of the malfunction has been determined and corrected.

The GFC 700 Automatic Flight Control system (AFCS) installed in the Diamond DA 40 NG consists of the following components:

* One GDU which contains the following mode control buttons:

AP	Autopilot engage/disengage
FD	Flight director on/off
HDG	Heading mode on/off
NAV	Nav mode on/off
APR	Approach mode on/off
ALT	Altitude hold mode on/off
VS	Vertical speed mode on/off
FLC	Flight level change mode on/off
NOSE UP and NOSE DN	Vertical mode reference change
VNV	Vertical navigation mode on/off

This GDU is installed as the MFD.

* Servos with autopilot processing logic in the pitch, roll, and pitch trim control systems
* Servo mounts and brackets
* Flight director processing logic in the GIAs
* Control stick-mounted manual electric trim (MET) switch (split switch) for pitch trim
* Control stick-mounted trim interrupt and autopilot disconnect switch

* Control stick-mounted CWS (Control Wheel Steering) switch
* Remote-mounted go-around switch (on the left side of the POWER lever knob)
* PFD/MFD mounted altitude preselect knob (ALT)
* PFD/MFD mounted heading select knob (HDG)

Flight director commands, and autopilot modes are displayed on the PFD. Full AFCS functionality is only available with both displays operating, and will disconnect under certain reversionary conditions.

Upon initial system power-up, the system undergoes a preflight test. At the end of the test, the autopilot disconnect tone sounds, and the PFT, and AFCS annunciations are removed. Successful completion of the preflight test is required for the autopilot and manual electric trim to engage.

Annunciation of the flight director and autopilot modes is shown in the lower status field of the PFD. In general, green indicates active modes, and white indicates armed modes. When a mode is directly selected by the pilot, no flashing of the mode will occur. When automatic mode changes occur, they will be annunciated with a flashing annunciation of the new mode for ten seconds in green. If a mode becomes unavailable for whatever reason, the mode will flash for ten seconds in yellow, and be replaced by the new mode in green.

Normal autopilot disconnects are annunciated with a yellow flashing AP on the PFD accompanied by a two second autopilot disconnect tone. Normal disconnects are those initiated by the pilot with the AP DISC switch, the MET switch, the AP button on the MFD mode controller, or the GA button. Abnormal disconnects will be accompanied by a red flashing AP on the PFD, accompanied by a continuous autopilot disconnect tone. The disconnect tone and flashing alert may be cancelled by pressing the AP DISC switch, or the left side of the MET switch.

| MÄM 40-868 installed:

Refer to the Garmin G1000 NXi Cockpit Reference Guide for the Diamond DA 40 NG, P/N 190-02258-( ), and Garmin G1000 NXi Pilot's Guide for the Diamond DA 40 NG, P/N 190-02257-( ), for complete descriptions of the G1000 NXi system, and operating procedures.

MÄM 40-868 and MÄM 40-1007 is installed:

Refer to the Garmin G1000 NXi Cockpit Reference Guide for the Diamond DA 40 NG, P/N 190-02453-( ), and Garmin G1000 NXi Pilot's Guide for the Diamond DA 40 NG, P/N 190-02452-( ), for complete descriptions of the G1000 NXi system, and operating procedures.

Power Supply

The AVIONIC MASTER switch supplies power to the avionics bus bar of the radio circuit breakers and the autopilot circuit breaker.

The following circuit breaker is used to protect the following element of the GFC 700 autopilot:

Circuit Breaker	Function
AUTOPILOT	Supplies power to the autopilot pitch, roll, and pitch trim servos.

7.14.2 AUTOMATIC FLIGHT CONTROL SYSTEM ANNUNCIATIONS AND ALERTS (IF AUTOPILOT GFC 700 IS INSTALLED)

(a) Automatic Flight Control System (AFCS) Status Alerts

The following annunciations can appear on the PFD above the airspeed and attitude indicators. Only one annunciation occurs at a time, and messages are priorized by criticality.

Warning alerts on the automatic flight control system (AFCS)

Warning Alerts	Meaning/Cause
PFT	PREFLIGHT TEST - Preflight system test failed; aural alert sounds at failure.
AFCS	SYSTEM FAILURE - AP and MET are unavailable; FD may still be available
PTCH	PITCH FAILURE - Pitch axis control failure; AP inoperative
ROLL	ROLL FAILURE - Roll axis control failure; AP inoperative
PTRM	PITCH TRIM FAILURE (or stuck AP TRIM switch) If AP engaged, take control of the airplane and disengage AP. If AP disengaged, move AP TRIM switches separately to release.

Caution alerts on the automatic flight control system (AFCS)

Caution Alerts	Meaning/Cause
↑ELE	ELEVATOR MISTRIM UP - Pitch servo providing sustained force in the indicated direction.
↓ELE	ELEVATOR MISTRIM DOWN - Pitch servo providing sustained force in the indicated direction.
←AIL	AILERON MISTRIM LEFT - Roll servo providing force in indicated direction.
AIL→	AILERON MISTRIM RIGHT - Roll servo providing force in indicated direction.

Advisory alerts on the automatic flight control system (AFCS)

Advisory Alerts	Meaning/Cause
PFT	PREFLIGHT TEST - Performing preflight system test; aural alert sounds at completion. Do not press the AP DISC switch during a servo power-up and preflight system tests, as this may cause the preflight system test to fail or never to start (if servos fail their power-up tests). Power must be cycled to the servos to remedy the situation.

8. AIRPLANE HANDLING, CARE, AND MAINTENANCE

No change.