# N972RD - Differences to DA42 / Sim with KAP140



### Overview

	N238US / N919ES	Sim	N972RD
WAAS GPS (LP, LPV, LNAV/VNAV, LNAV+V)	No		Yes
AP	KAP140	0	GFC700
- YD	No		Yes
- FD	No		Yes
- VNV	No		Yes
- FLC	No		Yes
- GA Button	No		Yes
TAS	No		Yes
Headset connectors	GA		GA / LEMO
XM Radio control buttons	Only 8US		Yes
USB Chargers	Yes (Front seats)	No	Yes (All seats)
Brakes / Tires	Standard / Tubes	N/A	Beringer / Tubeless

# Additional Info for each item

i For complete system descriptions consult the reference sources at the document bottom.

#### **WAAS** GPS

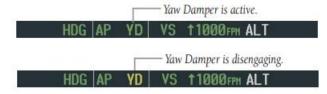
WAAS GPS in 2RD is provided by the two GIA63W units in the back of the plane; **W** as in WAAS (8US and 9ES have GIA63 units). In case you wonder, the WAAS GPS that is part of the ADS-B XPDR (GTX375) is not (and cannot be) used by the navigation system.

## AP – GFC700 Autopilot system



# YD - Engages/disengages the Yaw Damper

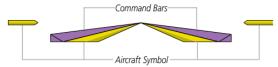
- Servo controlling the rudder trim
- Just like AP, the YD must be OFF
  - o before TO
  - o for all training maneuvers and simulated OEI, and
  - o for landing
- When the autopilot is engaged, the YD is automatically engaged and does not need to pressed separately. Turning off the AP will also disengage the YD
- The purpose of the YD button is to manually engage/disengage the yaw damper when the AP is not / not yet in use
  - Normal procedure is to engage YD (unless not desired) shortly after retracting the gear, and in any case while the ball is centered
- YD in the AP status line shows its status:





## FD – Engages/disengages the Flight Director

The pink command bars on the PFD AI



- Automatically engages with the AP the AP follows the FD (a combination of AP ON / FD OFF is not possible)
- FD can be used with the AP OFF, e.g. if you want to follow / fly manually what the AP would fly when engaged



# VNV – (aka: VNAV) Engages/disengages Vertical Navigation

- The G1000 VNAV feature helps especially with IFR Arrivals
- Follows vertical waypoint constraints in the FPL
- This is one of the more complex features of the GFC700, be sure to study all about it before using VNV



# FLC - Flight Level Change (button aka IAS on some variations of the Garmin AP)

- Lets you climb (or descend) at an airspeed you can define with either the Nose UP/DN buttons or with CWS (the temporary AP override button on the control strick)
  - On *climbout*, use **FLC** you don't want to use the VS button as the airspeed will start to bleed off post-TO power adjustments and decreasing performance at higher altitude
  - On descent, VS is usually used (e.g. 500 fpm). You can also use the FLC button to descend at a desired airspeed if you wish



### **GA – Go Around** button (left side of left throttle handle)

- Disengages the AP, turns on FD, and commands a constant pitch angle and wings level in GA Mode displayed on AP status bar
  - If an approach procedure is loaded, this switch also activates the missed approach when the selected navigation source is GPS or when it is VOR/LOC and a valid frequency has been tuned
- Can also be used on takeoff to provide an FD bar set for TO

### TAS - Traffic Advisory System



A TAS module is mounted in the back of the aircraft and works with two small antennas on top and bottom of the aircraft.



That unit provides real-time traffic monitoring and advisories to the

TIS portion of the GTX345 ADS-B for a more complete traffic picture - especially in remote areas - as it's not radar-coverage limited or dependent on ground-based systems.



#### **Headset connectors**

The original GA (General Aviation) connectors in 2RD have been replaced by cables with powered LEMO connectors. Since the vast majority of GA pilots uses headsets with the popular GA big plug/small plug combo, LEMO  $\rightarrow$  GA adapters have been added to all four connectors.

You will find the front headset connectors on the side near the window, and in the rear on the side of the seats near the windows – **please leave the connectors where they are - don't pull on those cables**. One benefit of no longer having cables in the center console is that entanglement with the trim wheel is no longer possible.

#### XM Radio control buttons



Volume and channel of the SiriusXM Radio (available on the MFD via **AUX** > **XM** Satellite > RADIO) can be controlled from that MFD page, or more conveniently using the two dedicated buttons on the center console, just behind the trim wheel.

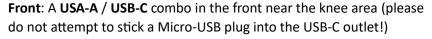
A music input connector is also available nearby if you would like to connect your mobile device with a cable.

#### **USB Chargers**

2RD has USB chargers in all four corners of the cabin:











**Back**: Two **USB-A** outlets are behind each back seat on the sides, near the windows.

There are two USB circuit breakers; one for the front and one for the back. Needless to say, the more you connect, the more you need to watch the impact on the electrical system.

## **Brakes / Tires**

The brakes on 2RD have been upgraded to Beringer brakes with fixed caliper and floating brake rotor, reducing the likelihood of the brakes locking up. That said, please apply the same technique as with the original brakes to avoid flat spots and tire blow outs:

- above 50 KTS: easy on the brakes, apply mainly aerodynamic braking
- below 50 KTS: normal braking.

The tires are sturdier and tubeless, which also helps reduce the likelihood of a blow out.

# Documents to download to your EFB

Documents to download to your EFB	T
<b>AFM</b> DA42 with Garmin GFC 700	
AFMS S03 DA42 with Garmin GFC 700: Ice Protection System	
Cockpit Resource Guide	
Pilot's Guide	
Website with more general information and links to more AFM Supplements and Product Guides	

# Revisions

Version	Date	Changes	Author
1.0	11/19/2023	First draft	Sven Freitag
1.01	11/20/2023	Added AFMS S03	Sven Freitag

I have reviewed and und	derstand the contents of this doc	ument:
Date	Name	Signature