Avionics Insight

January 2019 Issue

SO WHAT'S NEW FOR 2019?

GoDirect Flight Planning from Honeywell Aerospace

Whether you are a dispatcher, Part 135 charter operator, or pilot, creating and filing flight plans is probably one of your least favorite tasks. It takes a lot of time to collect all the information, analyze it, and compile it into a plan; then you have to file that plan with ATC with the hope that you'll hear those magic words: "cleared as filed."

And, while today's apps have made the process a bit easier, there are still times, especially when planning an international trip, that you have to switch between multiple sources to gather all the routing and weather information you need. And you have to do it for all the altitudes you may want to request. All that just cranks the pre-trip anxiety meter up a few notches.

Hassles aside, the fact is that everyone has struggled with the varying complexities of flight planning since the days of the E6B simply because there was no better way. You did it the hard way because that was the only way.

Honeywell's new GoDirect Flight Planning app is the industry's first totally clean-sheet solution to simplifying the complexities of flight planning.

"What Honeywell did was recognize that flight planning was in need of a significant refresh that was new, faster, and more accurate," explained John Peterson, general manager, services and connectivity, for Honeywell Aerospace. "While it would have been easy to just update the GUIs [graphical user interfaces] or add new drop-downs, the engine driving it all would have still been the same old thing."

So instead of simply putting a new patch on the old application, Honeywell made the bold move to start from scratch and develop the first purpose-built flight planning engine to drive its new suite of flight-planning services.

Peterson explained that it took two years of work by a team of experts using the latest coding techniques, coding practices, and software tools to create the GoDirect flight planning engine, which is part of Honeywell's sentience network. The system provides the latest data security to every user, from airlines to Part 91 private operators. Each user's information is exclusive and security is assured.

So just what does Honeywell's new purpose-built engine do to ease the workload of schedulers, dispatchers, and flight crews? Simply, it eliminates a lot of the repetitive work and possible mistakes from flight planning.

Let's say you are planning a trip using one of the popular flight-planning apps or websites. After you load in all of your flight information, it takes perhaps six to 10 seconds to pull it all together and show you the routing for one given flight level. Not bad.

The problem is that if you want to check multiple altitudes against forecasted weather and winds, you have to repeat the process for each flight level or approach. That's when the time and workload start to really add up.

"We can provide eight to 12 routes at multiple flight levels and with multiple approaches and departures within 30 milliseconds," Peterson stated. "So you think about sitting down to plan a route and you put from/to in, select the aircraft you want to base the performance calculations on, and in less than half a second our new GoDirect Flight Planning Engine will be ready to serve you up to a dozen routing options to choose from based on time, fuel used, forecasted winds and weather—whatever you want."

Peterson said that while GoDirect's benefits are great for domestic U.S. trips, the ease and functionality is even more evident when you're planning international flights.

"European flight planning is complex, and we had to tackle that problem head-on to fix it," he said. "We have some compelling tools to do international routes—especially for when you are planning a trip from the U.S. to Europe. Using the same GoDirect Flight Planning Offering, you can look at over 90 percent of the routes commonly filed to Europe."

One early adopter of the GoDirect Flight Planning package is Detroit Metro Airport (DTW)–based Masco Corporation. Masco's flight department has been a Honeywell

GoDirect user for 20-plus years, according to Ben Tubbs, a four-striper on the company's Dassalt Falcon 2000LXS and its pair of Embraer Phenom 300s.

Typically, the fleet's trips are within North America, Tubbs said, but growing business interests in Europe are requiring more transatlantic flights. No matter whether it's a short flight or a multi-stage transatlantic mission, he added, GoDirect has greatly streamlined the flight-planning process.

"I can use my iPad to easily jump on the app and start building the next trip, one leg at a time," he said, adding, "Most of our domestic trips are two to four legs a day. That allows me to easily review each leg and make good decisions about that flight based on fuel burn, routing, or weather. It's also easy to get a recommendation from the GoDirect Flight Planning representatives regarding preferred routing."

"Once I have a large overview, I can start narrowing it down to build a Trip Kit for the day," Tubbs said. "Then, right before departure, I can use the Trip Kit to recheck all the data in real time. It's a great way to plan and to keep our entire team together so we are all working from the same information."

Tubbs said that while the newest version of GoDirect Flight Planning has proven to be an excellent tool for all of Masco Corporation's typical mission-planning needs, the speed with which GoDirect enables creation of a flight plan really pays off when unforeseen "pop-up" flights happen. That's true, he says, even when he's not near an Internet connection.

"I've been away from the airport and they call and say the passengers want to go now," Tubbs explained. "Before I leave, I can call GoDirect [Honeywell GoDirect Flight Planning Services] and give them all the information. And by the time I arrive at the airplane, they've got everything ready for me. They've even emailed me all the performance calculations for that trip—everything we need is there for us." GoDirect: prioritize your options

Every flight crew wants to fly the most direct route possible to their destination—saving time and money is what flying privately is all about. Peterson said that GoDirect will show you more "cleared as filed" route options than any other app.

Peterson explained that the system can auto-source the routing based on what is important to a particular flight profile. For example, if having routes that are commonly "cleared as filed" is a top priority, then those routes come up first. If, on the other hand, the goal is to choose routing based upon the shortest times, then those routes top the list. And all of that information is available on every route option.

"Because of the complex analytics, we use, we can keep track of all the routes that are typically cleared as filed," Peterson continued. "Then we aggregate those routes with our sophisticated analytics algorithm. So, say you want to go from New York to Los Angeles. GoDirect can tell you, based on everyone who has filed that flight plan in the business jet market, that 98 percent of the time, this route is cleared as filed. "If for whatever reason you don't want to select that particular routing, GoDirect will

show you a listing of other routes in descending order from the 98th percentile down.

"We want to turn all the old, time-consuming steps of creating a flight plan into just pushing a few buttons and picking the route that best fits your needs for that trip," Peterson concluded.

While the benefits to flight crews are obvious from the first time you see what GoDirect Flight Planning can do, Peterson stressed that the app's portfolio of capabilities also helps flight-department schedulers, dispatchers, and Part 135 charter-fleet operators provide the highest levels of efficiency and accuracy to support their operations.

"GoDirect lets dispatchers look at where their fleet is right now, where the weather is, and what the demand is—where their customers are and where they want to go," he said. "They can use the tool to do all of the flight planning and then it will automatically synchronize with the various flight crews out in the field. The automatic synchronization means less pilot/dispatcher interaction, so they can both spend more time doing what they need to do to plan safer, more efficient flights."

Said Tubbs: "Honeywell GoDirect Flight Planning has always been a capable tool for us. But as a flight department, we strive for continuous improvement in every part of our operation. That's one of our company's core values.

"Honeywell and the GoDirect Flight Planning Services have embodied that for us. Whether it is on an iPad, a laptop, or over the phone, we can quickly take care of even complex flight planning. On top of that, the team at GoDirect is responsive to our needs and is always available to our flight crews. I've never received that level of support from any other offering."

Honeywell | Aerospace
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Available for download now

2019 TRIG DESIGN PROPOSAL

TX56 AND TX57 NAV/COM

WE ARE DELIGHTED TO PREVIEW THE NEW NAV/COM FAMILY OF PRODUCTS, THESE WILL BECOME AVAILABLE IN Q1 2019

Trig's TX56 and TX57 Nav/Com units provide the ideal platform to update legacy avionics or equip your new aircraft. Slimline and highly efficient both Nav/Com models are housed within a superbly engineered case. At only 33mm high each unit saves valuable space yet contains an impressive selection of practical features for any pilot.

You might be a VFR pilot wanting VOR navigational back up, a flight school seeking an easy to use training platform or a serious VFR/IFR operator looking for reliable digital capabilities. Trig's 'better by design' approach has created a Nav/Com that meets all these requirements – it will enhance your navigation and communication throughout all phases of flight.

The TX56 family of products will be available with 8.33 kHz channel spacing or conventional 25 kHz spacing, with 10 Watt or 16 Watt transmit power. The TX56A and TX57A are 760 channel radio versions (non 8.33 kHz for use outside Europe).

- Slimline – only 33mm high
- Bright, clear display / simple user interface
- Unique 'Push Step' for faster tuning
- Dual Watch – monitor two com or two nav frequencies at the same time
- ETSO and TSO approval (pending)
- Stereo music / two place intercom
- 'Say Again' feature – allows playback of last transmission
- USB port on facia – upload over 200 com and nav frequency database (CSV file)
- VOR/ILS receiver – monitor a 2nd VOR
- Built in VOR/LOC converter
- Built in digital CDI
- Built in 40 channel glideslope receiver
- Highly efficient – no cooling fans or external cooling required
- Ideal retro-fit for legacy radios – unit is same height as an SL30
- Unbeatable quality – designed and manufactured in the U.K.
- Two year worldwide warranty

Push Step

The Nav/Com display is clear and bright, showing both primary and secondary frequencies along with airfield / VOR identifiers. A 'Push Step' knob allows the fastest change from 8.33 kHz to 25 kHz (TX56/TX57) or 25 kHz to 50 kHz (TX56A/TX57A)- so you can tune the Nav/Com quickly without compromising your look-out. Dual Watch feature allows you to monitor two Com or Nav frequencies at the same time – it's like having a second radio.

Say Again

The radio has a 'Say Again' feature. A single button press replays the last radio transmission. This feature is ideal for student pilots, but every pilot can get distracted, so it avoids the embarrassment of asking air traffic to repeat a message.

VOR

The Nav receiver is optimised to provide stress free operation. Both the TX56 and TX57 will decode Morse, identifying VORs or ILS. The Nav receiver can monitor a second VOR which significantly enhances route navigation. This means that a standby VOR radial can be displayed in addition to the primary VOR – allowing the pilot to quickly calculate an accurate position fix.

Built in CDI

The unit display features a graphical CDI (course deviation indicator) This allows the pilot to navigate without an external CDI. The TX56 also provides support for various display options, using a range of external cockpit instruments.

Once tuned the Nav receiver can identify the station by de-coding its Morse identifier, automatically identifying the selected VOR. Automatic centering of the CDI needle displays a direct bearing to a selected VOR for ease of navigation whilst the to/from button allows you to display the inbound or outbound radial.

Product Design

The Nav/Com's low profile design requires no external cooling fans. The compact size and features make it a great choice for both forward and retro-fit installations. Each Nav/Com is designed to easily integrate with legacy products, these include the popular SL30 which is the same height as a TX56. Customers replacing legacy KX155 and KX165 models will easily accommodate a TX56 in their stack, in all cases a TX56 tray will need to be fitted.

Frequently Asked Questions

Is the Trig stack Nav/ Com a plug and play retro fit radio?
The Trig stack Nav/Com is not a plug and play product. The product offer features such as, stereo intercom and support for stereo music. To exploit these features some re-wiring is required. However, the Nav/Com is shorter, lighter and comes with a Trig tray to make replacement of an existing radio as practical as possible. The installation manual provides wiring information on legacy Nav/Com to help configure the installation.

How do I create my USB frequency database?
Each Nav/Com is shipped with a Trig USB stick. This contains full instructions for the product in the form of the User Manual and Installation Guide - TX56/56A /TX57/57A.

The same Trig USB is used for uploading a frequency database, that you create. Each stick contains a sample database file. A PC or laptop is required with a USB port to configure and load the USB stick.

Once the USB is plugged in, open the CSV file that is saved on the memory stick. This file can be opened with either a notepad or spread sheet application, such as Microsoft Excel. This file has a few sample frequencies already saved. Follow the same convention and add all radio channels that you would like. The Trig USB enables you to create a unique database for yourself. You can save up to 250 frequencies on your Trig stack radio.

How do I load my database from my USB onto my Nav/Com?
Once you are happy with your database, save this to your memory stick. To load or save this to your Nav/Com, you need to put the memory stick into your radio's USB port when the unit is turned off.

Only when the Nav/Com is then powered on, it detects the USB stick and will offer to save or load your database. If there are data entries already on your radio you will be offered the choice to replace the whole database, or add entries from the USB stick. Similarly, if there is already a database on the USB stick you can either overwrite it or add the radio data to the existing file.

To return to normal Nav/Com operation, remove the USB device and switch the radio off and then turn it back on again.

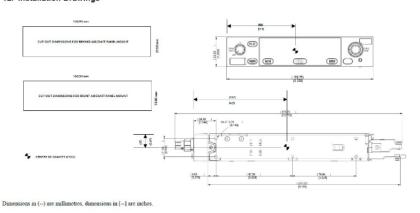In normal Nav/Com operation, the USB port is powered off.

Is there a Trig CDI?
Yes, Trig has the TI106 CDI which is ideally matched for the TX56/56A/57/57A

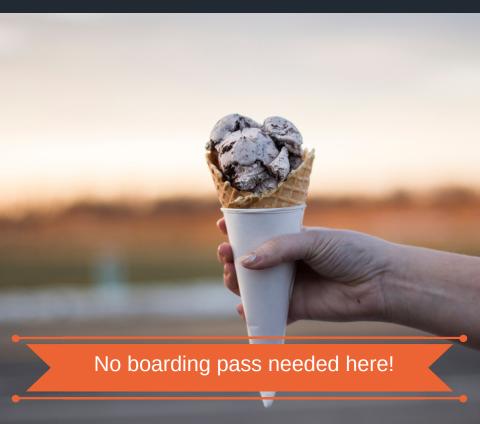| Specification	TX56 / TX56A Nav/Com	TX57 / TX57A Nav/Com
Type	Certified	
Certification	ETSO 2C128, 2C169a, 2C34f, ETSO 2C36f, 2C40c TSO-C128a TSO-C169a, C34e, TSO-C36e, C40c	
Compliance	ED-23C, ED-67, DO-186B, DO-178B Level B, DO-160G, DO-254 Level C	
Supply voltage (DC)	11 – 33 V	22 – 33 V
Typical consumption (at 14v)	(at 14V) receive: 265 mA transmit: 2A	(at 28V) receive: 140 mA transmit: 2.5A
Nominal Transmitter Power	10 Watt	16 Watt
Operating temperature	-20°C to +55°C	
Cooling requirement	no fan required	
Weight	1.1 kg / 2.42 lbs	
Dimensions (mm)	33 x W 159 x L 270 mm	
Installed depth in tray (mm)	230 mm long	
Dimensions (inches)	H 1.3" x W 6.26" x L 10.63"	
Installed depth in tray (inches)	9.05" long	

12. Installation Drawings

Dimensions in (--) are millimetres, dimensions in [--] are inches.

Before

After

No boarding pass needed here!
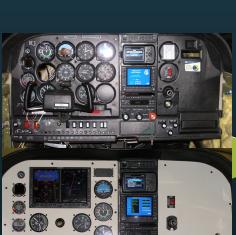
IT'S OUR YEAR TO CELEBRATE

20 Years ANNIVERSARY

A FEW PROJECTS
FROM THE PAST

AND MANY MORE
TO COME

THANK YOU FOR

YOUR SUPPORT

Textron Aviation enhances Cessna Caravan and Grand Caravan EX turboprops with new flight deck features

Textron Aviation Inc., a Textron Inc. (NYSE:TXT) company, is bringing enhanced flight deck capabilities to new production Cessna Caravan and Grand Caravan EX turboprop platforms. The features include new standard and optional equipment as part of Garmin's G1000 NXi next-generation integrated flight deck, which provides pilots with greater control and connectivity in the cockpit.

"The Cessna Caravan platform is renowned for its outstanding performance, payload and dispatch reliability," said Rob Scholl, senior vice president, Sales and Marketing. "Elevating the capabilities of the aircraft with advanced avionics ensures our customers have access to the latest technology needed to succeed as pilots and operators."

Options new to the Caravan series include Garmin's Enhanced Automatic Flight Control System (E-AFCS) with automated features designed to help pilots retain an optimal envelope. The added features include Electronic Stability and Protection (ESP), Underspeed Protection (USP), Emergency Descent Mode (EDM), Coupled Go-Around and an auto-level function.

Other options include Garmin's GSR 56 Iridium Satellite Data Transceiver Link, which provides near worldwide access to downlink weather services as well as satellite voice communication and text message capabilities.

Flight Stream 510 – now a standard feature in the Caravan cockpit – permits two-way flight plan transfers, and allows pilots to stream traffic, weather and GPS information from the flight deck to select portable and mobile devices where local regulations permit.

New standard equipment also includes dual audio panels with 3D audio capabilities that spatially distribute audio sources and simulate how the human ear naturally hears and processes directional sources. This feature allows flight crews to focus their attention on a preferred audio source and enhances situational awareness by reducing confusion or delayed response time that can occur when hearing multiple audio sources simultaneously.

The features will be available on all 2019 Cessna Caravan and Grand Caravan EX turboprops.

Garmin Gets Autopilot STCs for Cessna 208B, 210

Garmin is pleased to announce it has received Federal Aviation Administration (FAA) Supplemental Type Certification (STC) in several aircraft models for the GFC 500 and GFC 600 autopilots. The GFC 500 and GFC 600 deliver superior in-flight characteristics, self-monitoring capabilities and minimal maintenance needs when compared to older generation autopilot systems. The GFC 500 is intended for single-engine piston aircraft, while the GFC 600 is intended for high performance piston single/twin-engine and turbine aircraft that have a wide range of speed and performance characteristics.

New aircraft models approved for the GFC 500 autopilot include:
Cessna 210
Models: 210K, T210K, 210L, T210L, 210M, T210M, 210N, T210N

New aircraft models approved for the GFC 600 autopilot include:
Cessna 208B (cargo pod-equipped only)

The GFC 500 autopilot uniquely integrates with the G5 electronic flight instrument or a combination of both the G5 electronic flight instrument and the G500 TXi or G500 flight displays to provide pilots with an economical and modern autopilot solution. The GFC 600 is designed as a standalone autopilot and also boasts superior integration potential when paired with the G500 TXi/G600 TXi or G500/G600 glass flight displays, Garmin navigators, as well as a variety of third-party flight displays, instruments and navigation sources.

The full-featured GFC 600 and GFC 500 autopilots provide thousands of existing general aviation aircraft with a simple, light-weight, cost-effective autopilot upgrade path. The GFC 600 and GFC 500 incorporate solid state attitude with robust self-monitoring capabilities to provide superior autopilot performance, greater reliability and safety benefits that are similar to the popular GFC 700 autopilot. In addition to traditional autopilot capabilities such as altitude hold, vertical speed and heading modes, the GFC 600 and GFC 500 also include altitude preselect, VNAV(1), Level Mode, underspeed and overspeed protection and more. Pilots can also select, couple and fly various instrument approaches, including GPS, ILS, VOR, LOC and back course approaches when paired with a compatible GPS navigator.

As a standard feature on both the GFC 500 and GFC 600 autopilots, pilots receive Garmin Electronic Stability and Protection (ESP), which works to assist the pilot in maintaining the aircraft in a stable flight condition. ESP functions independently of the autopilot and works in the background to help pilots avoid inadvertent flight attitudes or bank angles and provides airspeed protection while the pilot is hand-flying the aircraft.

For customers who already have a G5 electronic flight instrument, the GFC 500 starts at a suggested retail price of $6,995(2) for a 2-axis autopilot. The GFC 600 autopilot is available for a suggested retail price of $19,995(2) for a 2-axis autopilot with electric pitch trim. Garmin continues to add additional aircraft models to the growing STC list for the GFC 500 and GFC 600 autopilots. To view the most up-to-date aircraft STC list, to view certifications that are expected to begin in the next 12-months, or to express interest in a specific aircraft make/model, visit: www.garmin.com/GFC500 or www.garmin.com/GFC600.

GARMIN GFC 600 PICTURED ABOVE

1. GTN navigator required   2. Installation not included

THE WINNERS ARE:
1.) Brightly Thooning, Age 11
from Homer, Alaska

2.) Jacob Vachowski, Age 6
from Seward, Alaska

3.) Garrett Finch, Age 5
from Seward, Alaska

The "low cost air carrier" experience.

WE ARE SO FULL IN COACH TODAY THAT WE RECOMMEND YOU ARRANGE A "SAFE WORD" FOR YOUR ROW IN CASE YOU NEED TO VOMIT OR USE THE LAVATORY ...

CHRIS MANNO

Write a word starting with the corresponding letter that has to do with aviation.

A	_airport_	N	_____
B	_____	O	_____
C	_____	P	_____
D	_____	Q	_____
E	_____	R	_____
F	_____	S	_____
G	_____	T	_____
H	_____	U	_____
I	_____	V	_____
J	_____	W	_____
K	_____	X	_____
L	_____	Y	_____
M	_____	Z	_____

I'M A PILOT PILOT PILOT PILOT I CAN FLY

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