

# GARMIN REVOLUTIONIZES AVIATION CHARTING WITH SMARTCHARTS

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Garmin announced SmartCharts, a dynamic aviation charting solution that will provide pilots with a simplified and intuitive experience by producing clear and relevant data to depict a chart tailored for their specific flight operation. Initially available in the Garmin Pilot app, SmartCharts serves as the primary charting tool and allows pilots to view simplified terminal procedures, including instrument approach procedures, departure procedure, standard terminal arrival and airport diagrams.

Phil Straub, Garmin Executive Vice President and Managing Director, Aviation commented: "Terminal procedures have long been cluttered with outdated or superfluous information that may not be relevant to a pilot's flight, obscuring important details that could be easily missed. Garmin SmartCharts allows all pilots to quickly and easily tailor procedures to highlight the most relevant and key information in a simplified, optimized format to ultimately help to enhance safety and situational awareness."

## *Data-driven charting solution*

SmartCharts was developed from the ground up by collecting and digitizing data from global sources to create a consistent, standardized and scalable charting solution. Garmin utilized that data to build the clearest possible picture of information needed to successfully fly charted procedures via a new charting user interface. This interface, coupled with the digital data, allows SmartCharts procedures to automatically adjust and scale as the pilot zooms and pans within the chart, similar to Garmin's data-driven maps across its entire product line. This data also allows SmartCharts to highlight details and notes that could be easily overlooked and lost on traditional charts, reducing the potential for error. The ability to scale the chart creates a clearer picture of the information needed to fly instrument procedures. The digitized data also allows for adjustments to minima – such as minima height adjustments due to NOTAMs, alternate minimums, etc. – to be automatically calculated, minimizing mental math needed by pilots. This data is also used to create new Brief tabs, which show optimized briefing information presented when pilots need it during procedure reviews.

## *Simplified information*

SmartCharts is designed to help optimize pilot workflow by providing only relevant data and reducing workload. Users can make selections – like aircraft type, arrival/departure/approach transition fix, runway, and more – to simplify the chart down to the information that they need to see to successfully brief and fly that procedure. Starting with standard terminal arrivals and standard instrument departures, the user selects their aircraft type, the route transition they are flying, and the runway of intended use. This reduces depicted information to only show the routing, fixes, and crossing restrictions pertinent to their expected procedure. Quick Access buttons also reveal pertinent procedure information like briefing information, communications frequencies, graphical missed approach icons, and more so pilots can easily find and decipher needed information based on the phase of the procedure they are on.

During an approach procedure, approach minima are updated and presented to the pilot via easy selection buttons for aircraft category, approach type (e.g. ILS, LOC, LPV, LNAV, etc.) and other adjustments like local or other altimeter settings, inoperative airport lighting, flight director or HUD use, and more. Those selections then present only one minima number to reference, eliminating the need for mental math with traditional charts. Waypoints, legs, crossing restrictions and other details are then more clearly depicted on the chart as users make selections and adjustments. This ultimately removes unnecessary information from view, leaving the user with a single route in view to help reduce workload and the chance for errors.

After making selections on the chart, a simplified user-interface and layout allows for an intuitive briefing process. Pressing the Brief, COMs, and Missed Approach buttons on each procedure will quickly showcase necessary information during procedure setup and briefing, also meaning often-forgotten notes are now in the spotlight. Additionally, reselecting new transitions or the runway-in-use makes re-briefing these changes much faster and clearer, resulting in better situational awareness. Altitude and speed restrictions plus other pertinent details are clearly depicted on the SmartCharts plan view of approach, arrival and departure procedures.

In a first for the industry, the approach vertical profile view is geo-referenced<sup>1</sup> with the aircraft appearing on the profile at its altitude. This feature adds ultimate situational awareness of the aircraft position relative to the approach path, terrain and obstacles.

Garmin has been a long-time industry leader in making ground operations safer and simpler via

SafeTaxi® on products from integrated flight decks to Garmin Pilot. SmartCharts takes airport diagrams to the next level by adding additional visual information like airport lighting systems, hold short lines, other airport markings, windsock locations, and more. Like other SmartCharts procedures, airport diagrams also have Quick Access buttons at the top of the chart that showcase airport information like communication frequencies, runway information, and alternate minimums data. This design removes the need to memorize traditional airport symbols like non-standard alternate minimums and makes alternate minima details easily accessible.

### *SmartCharts data enables additional Garmin Pilot features*

Garmin Pilot now includes a Show with Minima procedure sorting feature on the airport tab to help pilots more easily find SmartCharts procedures. They can sort approaches by criteria such as lowest minimums by altitude or visibility and available approach lighting. This can aid pilots by saving time in finding an approach that gets them the lowest legal minima, for instance. Additionally, recently released Smart Binders will group the charts by type – approach, departure, arrival, or airport info – in the airport tab for easier and faster searching.

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