

# Flying an Approach with the Garmin GTN 750

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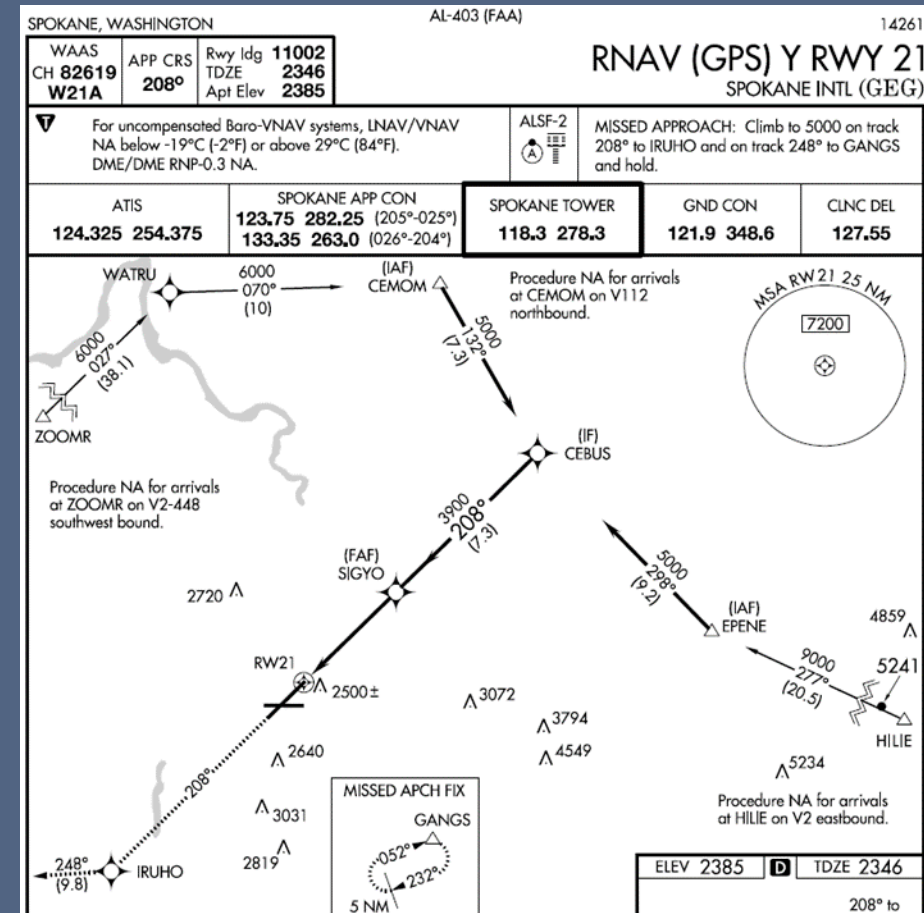
# Using the Flight Plan Page

- Use the Flight Plan page to “activate” the approach
  - Direct-To a fix or
  - Activate a leg
- Avoid Vectors-to-Final option



# RNAV (GPS) Y RWY 21 at Spokane, WA (KGEG)

- Example: RNAV (GPS) Y RWY 21 approach at KGEG
- Same basic technique works for any type of approach
  - RNAV (GPS)
  - ILS, VOR, or other procedure based on nav aids
- Technique applies to GTN, GNS, and G1000 series navigators
- Principles apply to all IFR-approved GPS navigators



# Flight Plan: KBFI V2 KGEG

- We've flown the V2 airway across the Cascades
- We're approaching ZOOMR intersection on the airway
- We have received the ATIS, and we've told Spokane Approach that we want to fly the RNAV Y RWY 21 approach







WAAS CH <b>82619</b> <b>W21A</b>	APP CRS <b>208°</b>	Rwy Idg <b>11002</b> TDZE <b>2346</b> Apt Elev <b>2385</b>
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# RNAV (GPS) Y RWY 21

SPOKANE INTL (GEG)

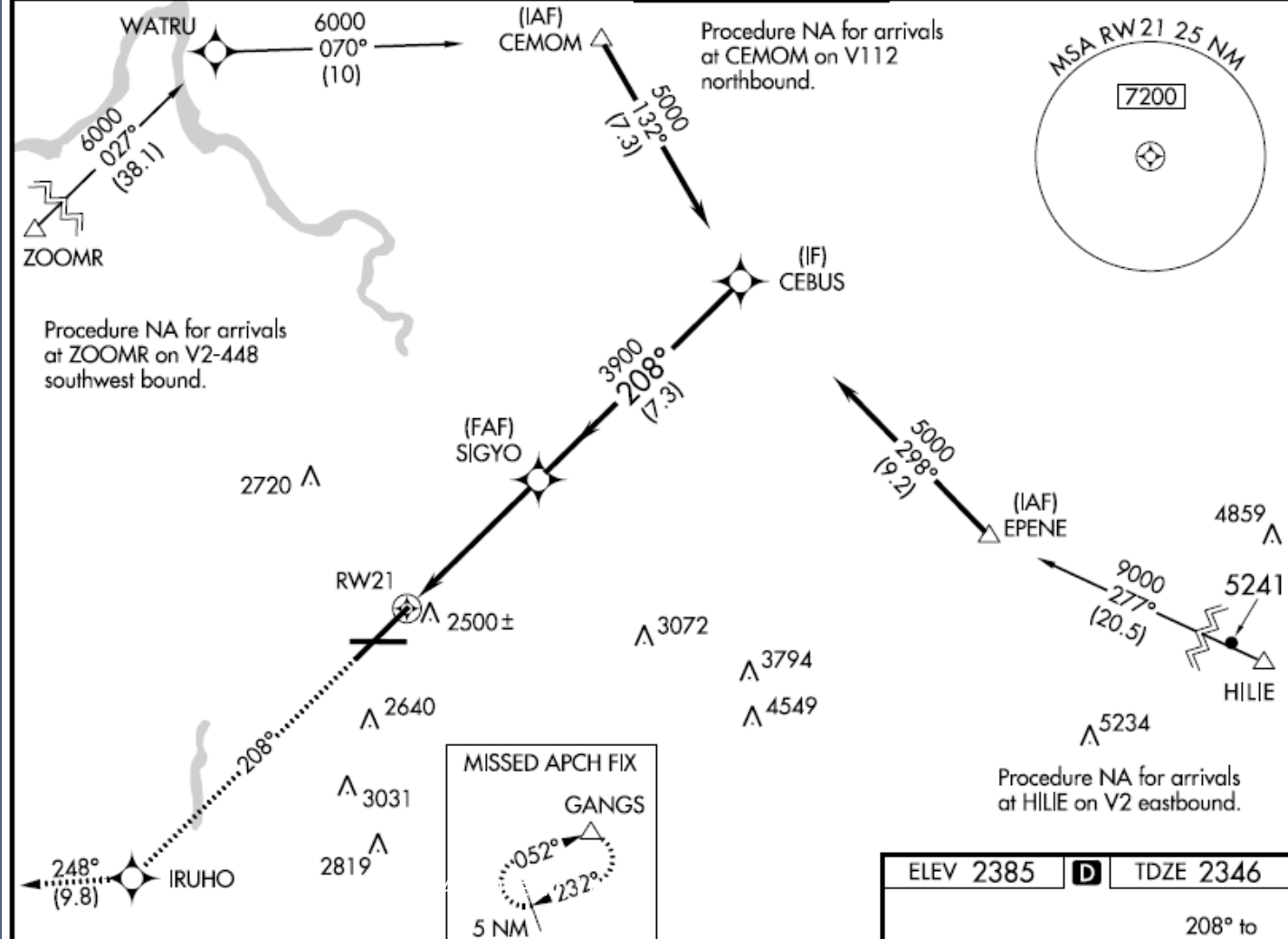
**▽** For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -19°C (-2°F) or above 29°C (84°F).  
DME/DME RNP-0.3 NA.

ALSF-2 

MISSED APPROACH: Climb to 5000 on track 208° to IRUHO and on track 248° to GANGS and hold.

ATIS <b>124.325 254.375</b>	SPOKANE APP CON <b>123.75 282.25</b> (205°-025°) <b>133.35 263.0</b> (026°-204°)	<b>SPOKANE TOWER</b> <b>118.3 278.3</b>	GND CON <b>121.9 348.6</b>	CLNC DEL <b>127.55</b>
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Approach assigns a heading for sequencing. We're told to expect the approach.



ELEV 2385	<b>D</b>	TDZE 2346
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208° to  
RWY 21

# Avoid Vectors-to-Final

- Although we're receiving vectors, we shouldn't use the vectors-to-final option
- Instead, load an approach and choose a transition based on a fix appropriate to the direction from which we're arriving.

## AIM 5-4-6:

Selection of "Vectors-to-Final" or "Vectors" option for an instrument approach may prevent approach fixes located outside of the FAF from being loaded into an RNAV system. Therefore, the selection of these options is discouraged due to increased workload for pilots to reprogram the navigation system.





On any page, press Home

On the Home page, touch PROC





Com Vol  
-  
Psh Sq  
COM 123.75  
STBY 118.30

Audio Panel  
Intercom

MIC 1  
MON 1

XPDR IDENT  
4621  
ALT R

NAV 115.50  
STBY 111.10

HOME

PROC - Approach

### Select Approach - KEGG

ILS 03

ILS 21

RNAV 03 Y GPS LPV

RNAV 07 Y GPS LPV

RNAV 21 Y GPS LPV

Touch the approach you want to fly



Back



Up



Down

ENR

DEMO

GPS

Com Freq / Psh Nav



COM 123.75  
STBY 118.30

Audio Panel  
Intercom

MIC 1  
MON 1

XPDR IDENT  
4621 ALT R

NAV 115.50  
STBY 111.10

PROC - Approach

Sequence			
SIGYO	▲ (f)	210°	30.0 NM
RW21	▲ (m)	210°	4.7 NM
2546 FT		210°	0.3 NM
HUNUD	▲	210°	2.7 NM
GEG	⦿ (h)	215°	2.9 NM
Hold		032°	0.0 NM

Airport: KEGG  
Approach: RNAV 21 Y GPS LPV  
Transition: Vectors

Channel / ID: 82619 W21A  
Load Approach  
Activate Approach

Cancel Chart In Out

ENR DEMO GPS Com Freq / Psh Nav

Confirm the approach and touch Transition

COM 123.75  
STBY 118.30

Audio Panel  
Intercom

MIC 1  
MON 1

XPDR IDENT  
4621 ALT R

NAV 115.50  
STBY 111.10

PROC - Approach

Sequence	Altitude	Distance
ZOOMR	0°	0.0 NM
WATRU	029°	38.1 NM
CEMOM	072°	10.0 NM
CEBUS	134°	7.3 NM
SIGYO	210°	7.4 NM
RW21	210°	4.7 NM
2546 FT	210°	0.3 NM
HUNUD	210°	2.7 NM
CEG	215°	2.9 NM

WATRU  
CEBUS  
KGEG  
ZOOMR

10 NM

Airport: KEGG  
Approach: RNAV 21 Y GPS LPV  
Transition: ZOOMR

82619 W21A

Load Approach  
Activate Approach

Cancel Chart In Out

ENR DEMO GPS Com Freq / Psh Nav

After selecting the transition, touch Load Approach.

We are outside ZOOMR, so choose that fix as the transition.



Com Vol - Psh Sq

COM 123.75	Audio Panel	MIC 1	XPDR IDENT	NAV 115.50
STBY 118.30	Intercom	MON 1	4621 ALT R	STBY 111.10

## Active Flight Plan

KBFI / KEGG	DTK	DIS	CUM
<b>KEGG</b> Spokane Intl	033°	4.9 NM	48.5 NM

## Approach - KEGG-RNAV 21 Y GPS LPV

<b>ZOOMR</b>	234°	33.6 NM	82.1 NM
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<b>WATRU</b>	029°	38.1 NM	120 NM
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<b>CEMOM</b> iaf	072°	10.0 NM	130 NM
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SERVIC



Back



Menu



Up



Down

ENR

DEMO

GPS

Com Freq / Psh Nav

Loading an approach simply adds all of the fixes for the approach to the Active Flight Plan, below the destination airport.



The screenshot displays the GTN Trainer Lite interface. At the top, there are several instrument displays: COM 123.75 (STBY 118.30), Audio Panel, MIC MON, XPDR IDENT 4621 ALT R, and NAV 115.50 (STBY 111.10). Below these is the 'Active Flight' section showing a flight plan from KBFI / KEGG to DTK. The flight plan includes waypoints KEGG (Spokane Intl, 033°), ZOOMR (234°), WATRU (029°), and CEMOM (iaf, 072°). A 'Waypoint Options' menu is open, showing buttons for 'Activate Leg', 'Insert Before', 'Insert After', 'Load Airway', 'Waypoint Info', and 'Remove'. A 'Back' button is visible at the bottom left. The bottom status bar shows 'ENR DEMO GPS' and 'Com Freq / Psh Nav'. The Garmin logo and 'HOME' button are in the top right corner.

Waypoint	Frequency / Angle
KEGG Spokane Intl	033°
ZOOMR	234°
WATRU	029°
CEMOM iaf	072°

To “activate” the approach, touch a fix in the approach section of the flight plan.

You can activate a leg between two fixes in the approach...

... Or choose to navigate direct to the fix.

The interface displays various flight instruments and controls. At the top, there are frequency displays for COM (123.75), STBY (118.30), NAV (115.50), and STBY (111.10). There are also buttons for Audio Panel, Intercom, MIC, and MON. The main display area shows a list of waypoints: KBFI / KEGG, KEGG (Spokane Intl), ZOOMR, WATRU, CEMOM (iaf), and CEBUS. A 'Direct To' window is open, showing the selected waypoint ZOOMR with the following details: NW USA, Bearing: 057°, Distance: 13.6 NM, Position: N 47°25.53' W 118°18.56', and Course To: 057°. At the bottom, there are buttons for Cancel, Remove, and Activate. The status bar at the very bottom shows ENR, DEMO, and GPS indicators, along with an 'Edit Wpt / Psh Activate' button.

Let's go direct to ZOOMR.



Com Vol - Psh Sq

COM 123.75

STBY 118.30

Audio Panel Intercom

MIC 1

MON 1

XPDR IDENT

4621 ALT R

NAV 115.50

STBY 111.10



The map shows the fixes for the approach starting at ZOOMR. Verify the sequence of waypoints with the plan view on the approach chart.



Back



Menu



CDI



OBS



In



Out

ENR

DEMO

GPS

Com Freq / Psh Nav

The screenshot shows the GTN Trainer Lite interface. At the top, there are several digital readouts (DROs) for COM (123.75), STBY (118.30), Audio Panel, Intercom, MIC (1), MON (1), XPDR IDENT (4621 ALT), NAV (115.50), and STBY (111.10). Below these is the 'Active Flight Plan' section, which shows the route from KBFI to KEGG. The active fix is ZOOMR, which is highlighted in pink. Below ZOOMR are other waypoints: WATRU, CEMOM, and CEBUS. The bottom of the screen features a 'Back' button, a 'Menu' button, and 'Up' and 'Down' arrow buttons. The status bar at the bottom indicates 'ENR DEMO GPS' and 'Com Freq / Psh Nav'.

COM 123.75  
STBY 118.30  
Audio Panel  
Intercom  
MIC 1  
MON 1  
XPDR IDENT 4621 ALT  
NAV 115.50  
STBY 111.10

Active Flight Plan

KBFI / KEGG DTK

KEGG  
Spokane Intl

Approach - KEGG-RNA

→ ZOOMR 057°

WATRU 029° 38.1 NM 50.4 NM

CEMOM iaf 072° 10.0 NM 60.4 NM

CEBUS

Back Menu Up Down

ENR DEMO GPS Com Freq / Psh Nav

The active fix, ZOOMR, is in the approach section of the flight plan. The GTN 750 will sequence automatically through the fixes in the approach. You have "activated" the approach.





If you had passed ZOOMR, you could have touched WATRU...

... or activated the leg between ZOOMR and WATRU.

...and chosen to fly direct to WATRU.

COM 123.75  
STBY 118.30

Audio Panel  
Intercom

MIC 1  
MON 1

XPDR IDENT  
4621 ALT R

NAV 115.50  
STBY 111.10

Active Flight Plan

KBFI / KEGG DTK DIS CUM

Approach – KEGG–RNAV 21 Y GPS LPV

ZOOMR	▲	---	---	NM	---	NM
WATRU	▲	030°	3.7	NM	3.7	NM
CEMOM	iaf ▲	072°	10.0	NM	13.7	NM
CEBUS	▲	135°	7.3	NM	21.0	NM
SICVO	f-f ▲					

Back Menu Up Down

TERM DEMO GPS Com Freq / Psh Nav

We're still on a vector from ATC. But the GTN 750 sequences through fixes in the approach portion of the flight plan as we fly near or between fixes.

Note that the GTN 750 has switched from ENR to TERM mode.





Even if we're not tracking to a fix or directly between fixes, the GTN 750 sequences through the approach waypoints, giving us good situational awareness.

WAAS CH <b>82619</b> <b>W21A</b>	APP CRS <b>208°</b>	Rwy Idg <b>11002</b> TDZE <b>2346</b> Apt Elev <b>2385</b>
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# RNAV (GPS) Y RWY 21

INTL (GEG)

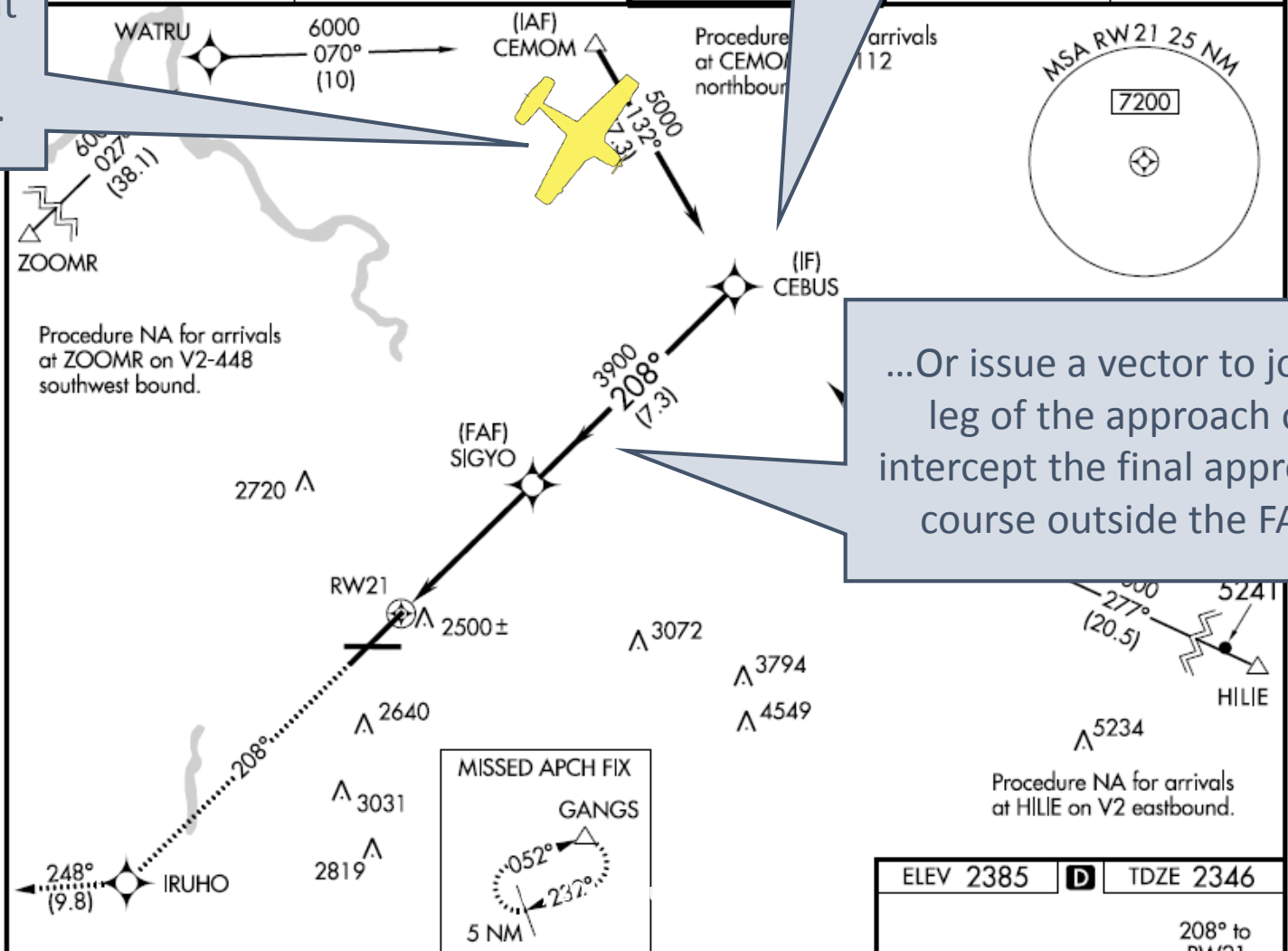
▼ For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -19°C (-2°F) or above 29°C (84°F).  
DME/DME RNP-0.3 NA.

ATIS <b>124.325 254.375</b>	SPOKANE APP CON <b>123.75 282.25 (205°-025°)</b> <b>133.35 263.0 (026°-204°)</b>	SPOKANE <b>118.5</b>	CLNC DEL <b>127.55</b>
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Now, assume that ATC is about to turn us inbound.

Depending on our actual position, ATC could clear us direct to CEBUS...

...Or issue a vector to join a leg of the approach or intercept the final approach course outside the FAF.





# Direct-to-Fix Approach Clearances

- A recent update to the AIM and other FAA guidance allows ATC to reduce vectoring of RNAV-capable aircraft.
- Note that the change applies to both conventional and RNAV procedures.

## AIM 5-4-6

RNAV aircraft may be issued a clearance direct to the IAF/IF at intercept angles not greater than 90 degrees for both conventional and RNAV instrument approaches.

Controllers may issue a heading or a course direct to a fix between the IF and FAF at intercept angles not greater than 30 degrees for both conventional and RNAV instrument approaches.

As we pass CEMOM, ATC issues a shortcut vector toward the final approach course and clears us for the approach. The vector will have us join the final approach course between CEBUS and SIGYO, so let's activate the leg between those fixes.

The screenshot displays the GTN Trainer Lite interface. At the top, there are several instrument panels: 'Audio Panel' with 'Intercom' and 'MIC' buttons; 'XPDR IDENT' showing '1200 ALT R'; and 'NAV' showing '115.50' and 'STBY 111.70'. The main display is a map showing a flight path with waypoints CEMOM, CEBUS, and SIGYO. A pink line indicates the current flight path from CEMOM to CEBUS. A callout box points to the CEBUS waypoint. At the bottom, there is a flight plan display showing 'CEMOM → CEBUS → SIGYO' and 'DIS to Dest 18.5 NM'. Below the flight plan are buttons for 'Back', 'Menu', 'CDI', 'OBS', 'In', and 'Out'. The bottom status bar shows 'TERM DEMO GPS' and 'Com Freq / Psh Nav'. The Garmin logo and 'HOME' button are visible in the top right corner.

Touch the CDI to display the Flight Plan page.

The interface displays a flight plan for route KBFI / KEGG to DTK. The waypoints are:

Waypoint	Type	Distance
WATRU		---
CEMOM	iaf	---
CEBUS		135°
SIGYO	faf	210°
RW21	map	210°

The 'Waypoint Options' menu for the selected waypoint includes:

- Activate Leg
- Insert Before
- Insert After
- Load Airway
- Waypoint Info
- Remove

At the bottom of the screen, there is a 'Back' button and a status bar with 'TERM', 'DEMO', 'GPS', and 'Com Freq / Psh Nav' indicators.

Touch SIGYO...

...and touch Activate Leg.



Activate Leg?

CEBUS → SIGYO  
faf

OK

Confirm the action,  
and touch OK.

Cancel

TERM DEMO GPS Com Freq / Psh Nav

COM 123.75  
STBY 118.30

Audio Panel  
Intercom

MIC  
MON

XPDR IDENT  
1200 ALT R

NAV 115.50  
STBY 111.70

GARMIN HOME

Active Flight Plan

KBFI / KEGG	DTK	DIS	CUM
WATRU ▲	---	--- NM	--- NM
CEMOM iaf ▲	---	--- NM	--- NM
CEBUS ▲	---	--- NM	--- NM
SIGYO faf ▲	210°	9.9 NM	9.9 NM
RW21 map ▲	210°	4.7 NM	14.6 NM

Back Menu Up Down

TERM DEMO GPS Com Freq / Psh Nav ▶

The Flight Plan page shows that the leg between CEBUS and SIGYO is active.

The GTN 750 is still sequencing through fixes in the approach section of the flight plan.





Com Vol - Psh Sq

COM	123.75	Audio Panel	MIC	XPDR	NAV
STBY	118.30	Intercom	MON	IDENT	115.50
				1200	STBY
				ALT R	111.70

We're about to intercept the final approach course outside of SIGYO.

DIS 4.7 NM

ETE 01:54

NEXRAD:US Age: ---

CEBUS → SIGYO → RW21

DIS to Dest 9.5 NM

Time 15:03 UTC

Auto 2.5 NM

Note that the GTN 750 is annunciating LPV.

Back

Menu

CDI

OBS

In

Out

LPV

DEMO

GPS

Com Freq / Psh Nav

Com Vol - Psh Sq

COM	123.75	Audio Panel	MIC	XPDR	NAV
STBY	118.30	Intercom	MON	IDENT	115.50
				1200	STBY
				ALT R	111.70

We're established inbound on the final approach course, about to cross SIGYO, the FAF.



We can intercept and follow the LPV glidepath.

ORMAC Time 15:04 UTC

CEBUS → SIGYO → RW21

DIS to Dest 5.7 NM

2.5 NM

Back Menu CDI OBS In Out

LPV DEMO GPS Com Freq / Psh Nav



Com Vol - Psh Sq

COM 123.75  
STBY 118.30

Audio Panel  
Intercom

MIC ON

XPDR IDENT 4621 ALT R

NAV 115.50  
STBY 111.10

Active Flight Plan

KBFI / KEGG	DTK	DIS	CUM
CEBUS ▲	___°	___ NM	___ NM
SIGYO faf ▲	___°	___ NM	___ NM
RW21 map ▲	210°	2.8 NM	2.8 NM
2546 FT	210°	0.3 NM	3.1 NM
HUNUD ▲			

Back Menu Up Down

LPV DEMO GPS Com Freq / Psh Nav

As we pass the FAF,  
the approach  
continues to the  
MAP.



Automatic sequencing continues until we reach the MAP.

The interface displays a flight path on a map. The path starts at a point labeled 'SIGYO' and proceeds north towards 'RW21'. The map shows various terrain features, including the 'SPOKANE RIVER' and several airports like 'WAVIX', 'YOCUG', 'OPTIY', and 'OXOJO'. The path is marked with a magenta line and blue arrows.

At the top, there are several data fields:

- COM: 123.75 (with 'Com Vol - Psh' indicator)
- STBY: 118.30
- Audio Panel / Intercom
- MIC: 1 (with 'MON' indicator)
- XPDR: IDENT
- 1200 ALT R
- NAV: 115.50
- STBY: 111.70

On the right side, there is a 'HOME' button and a 'GARMIN' logo.

At the bottom, there are several control buttons: 'Back', 'Menu', 'CDI', 'OBS', 'In', and 'Out'. Below these buttons, there are indicators for 'LPV', 'DEMO', and 'GPS'. The bottom right corner shows 'Com Freq / Psh Nav'.

Additional information on the map includes:

- DIS: 1 NM
- ETE: 01:15
- Time: 15:05 UTC
- SIGYO → RW21 → crs 210°
- DIS to Dest: 3.1 NM
- Scale: 1.5 NM

The image displays the Garmin GTN Trainer Lite interface. At the top, there are several status boxes: COM 123.75, STBY 118.30, Audio Panel, Intercom, MIC 1, MON 1, XPDR IDENT, 4621 ALT R, NAV 115.50, and STBY 111.10. The main display area shows a map with a central waypoint GEG 27. A large black message box is overlaid on the map, containing the text: "Missed Approach Waypoint Reached", "Automatic Waypoint Sequencing Suspended", and two buttons: "Remain Suspended" and "Activate GPS Missed Approach". A white callout bubble points to the "Activate GPS Missed Approach" button. Below the map, there is a status bar showing "Time 16:10 UTC", "SIGYO → RW21 → crs 210°", and "DIS to Dest 0.2 NM". At the bottom, there are mode indicators: LPV, DEMO, GPS, and SUSP. The interface also includes a "Back" button and a "HOME" button.

COM 123.75  
STBY 118.30  
Audio Panel  
Intercom  
MIC 1  
MON 1  
XPDR IDENT  
4621 ALT R  
NAV 115.50  
STBY 111.10

DIS 0.2 NM  
ETE 00:04  
NEXRAD:US  
Age: ---

**Missed Approach  
Waypoint Reached**  
Automatic Waypoint Sequencing  
Suspended

Remain Suspended    Activate GPS Missed Approach

Time 16:10 UTC  
SIGYO → RW21 → crs 210°  
DIS to Dest 0.2 NM

Back

LPV DEMO GPS SUSP    Com Freq / Psh Nav

If you go missed, make sure that you have started to climb and have confirmed the first steps (minimum altitude before a turn, heading, etc.) on the missed approach *before* you activate the GPS Missed Approach.





After initiating the missed approach and confirming the initial climb and heading, we can resume automatic sequencing and fly the missed-approach portion of the procedure.





The GTN 750 guides us into the hold.

The screenshot displays the Garmin GTN Trainer Lite interface. At the top, there are several digital readouts: COM 123.75, STBY 118.30, Audio Panel, Intercom, MIC, MON, XPDR IDENT, 4621 ALT R, NAV 115.50, and STBY 111.10. A central screen shows a list of waypoints, with 'ZOOMR' and 'KALW' visible. A pop-up window for 'KALW' is open, showing details: 'Walla Walla Regl', 'Walla Walla, WA', 'NW USA', Bearing: 181°, Distance: 86.9 NM, and Position: N 46°05.69' W 118°17.34'. Below the pop-up are buttons for 'Cancel', 'Remove', and 'Activate'. At the bottom, there are status indicators: TERM, DEMO, GPS, SUSP, and a button for 'Edit Wpt / Psh Activate'.

And we can decide on Plan B, in this case, a diversion to Walla Walla, home to many outstanding wineries.

# Key Points

- An approach is essentially a set of waypoints.
- Loading an approach adds the fixes in the procedure to the current flight plan, below the destination airport.
- If you choose to navigate direct to a fix, or activate a leg between fixes in the approach section of the flight plan, you have “activated” the approach.
- The GPS navigator will sequence through the fixes in the approach section of the flight plan.
- Loading an approach early, with a fix based on the direction from which you’re arriving, gives you good SA as ATC issues vectors, and you’re ready to proceed direct to any fix that ATC is likely to assign, or activate a leg for reference as ATC vectors you toward the final approach course.



# More Information and Help

- Download the free Garmin training syllabus (click the image for the PDF).
- Download the free GTN trainer from Garmin.
- Download more references from my Aviation Documents folder at OneDrive.
- Visit my blog at WordPress: <http://bruceair.wordpress.com/>

