Flying an Approach with the Garmin GTN 750

www.BruceAir.com

BruceAir at Wordpress
YouTube: BruceAirFlying

(c) 2014 BruceAir, LLC

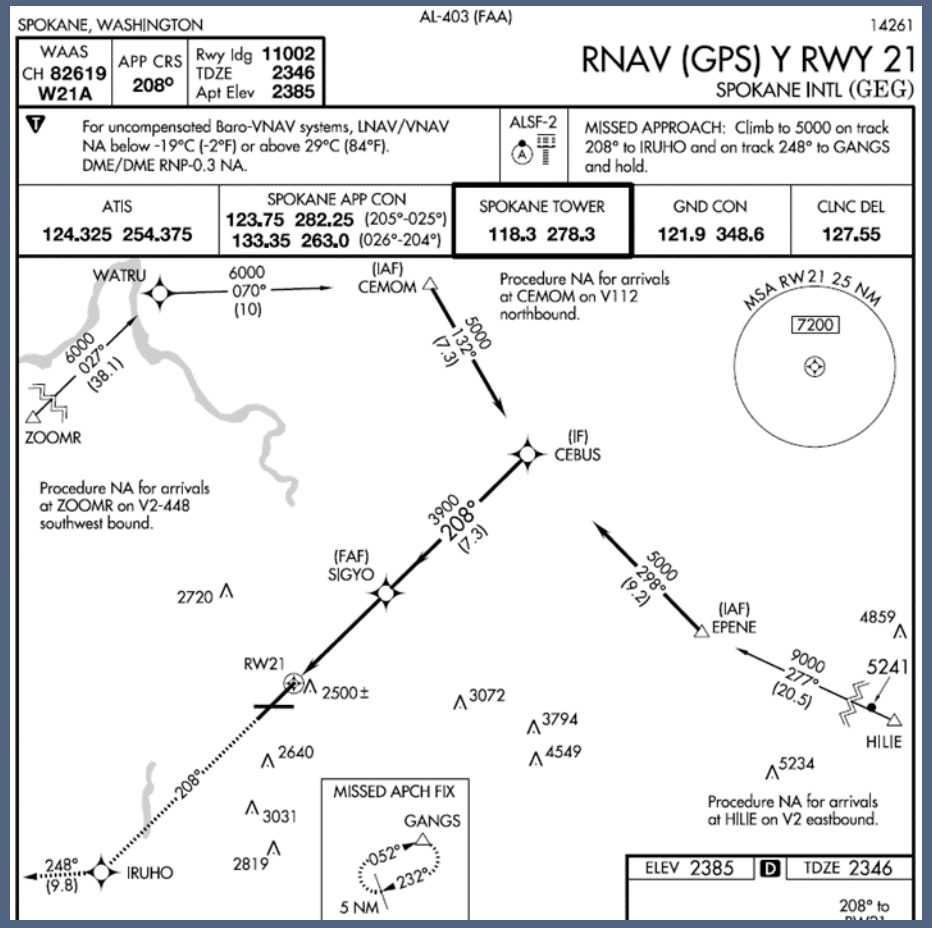
Using the Flight Plan Page

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

(c) 2014 BruceAir, LLC

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 navaids
- Technique applies to GTN, GNS, and G1000 series navigators
- Principles apply to all IFR-approved GPS navigators

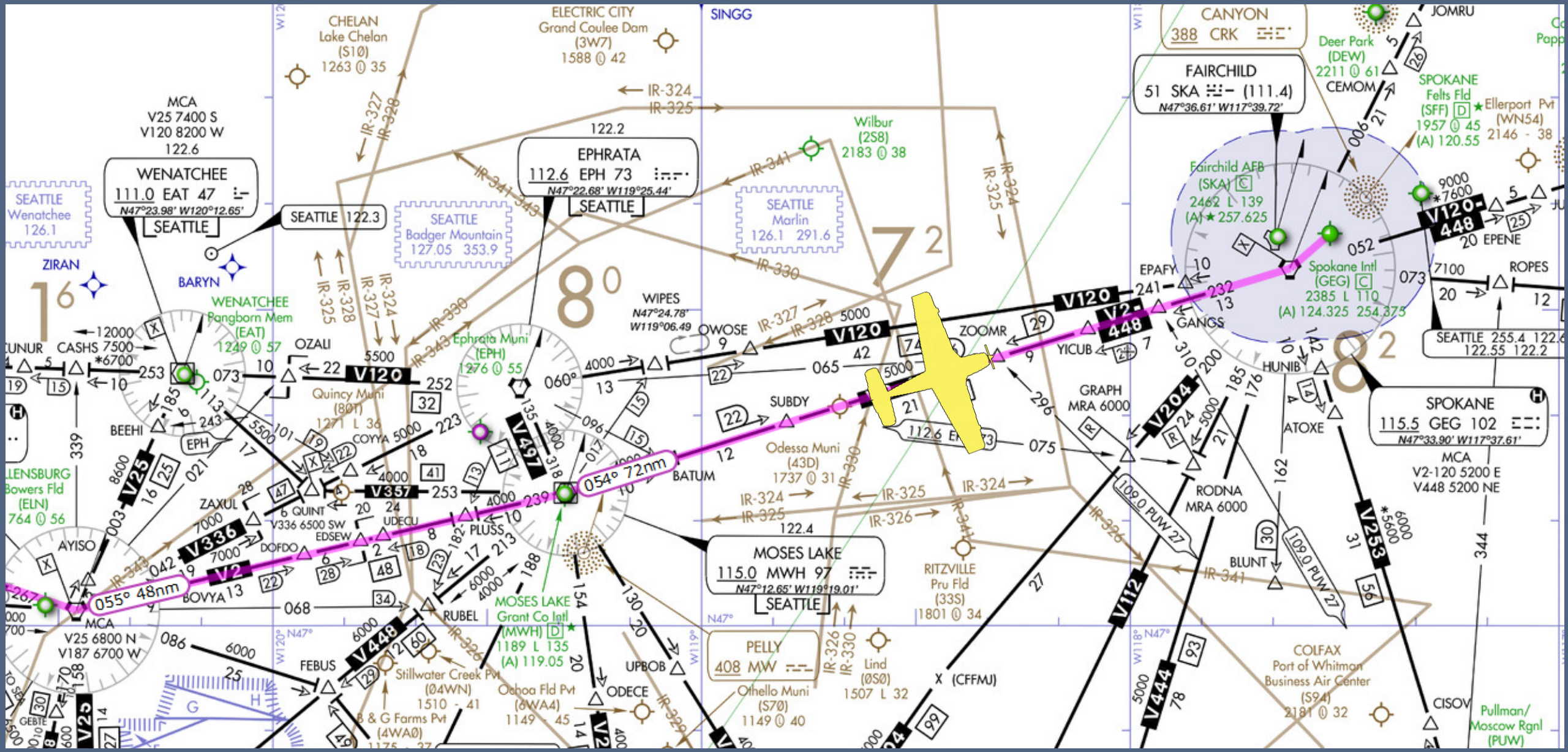


(c) 2014 BruceAir, LLC

Flight Plan: KBFI V2 KGEG

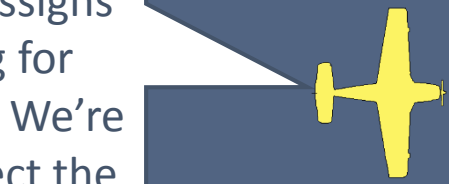
- We've flown the V2 airway across the Cascades
- We're approaching ZOOMR intersection on the airway
- We have received the ATIS, and we've told Spokane Approach that we want to fly the RNAV Y RWY 21 approach

(c) 2014 BruceAir, LLC



(c) 2014 BruceAir, LLC

Approach assigns a heading for sequencing. We're told to expect the approach.



SPOKANE, WASHINGTON

AL-403 (FAA)

14261

RNAV (GPS) Y RWY 21

SPOKANE INTL (GEG)

WAAS	APP CRS	Rwy ldg 11002
CH 82619 W21A	208°	TDZE 2346
		Apt Elev 2385

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	SPOKANE APP CON	SPOKANE TOWER	GND CON	CLNC DEL
124.325 254.375	123.75 282.25 (205°-025°) 133.35 263.0 (026°-204°)	118.3 278.3	121.9 348.6	127.55

WATRU

6000 070° (10)

(IAF) CEMOM

Procedure NA for arrivals at CEMOM on V112 northbound.

6000 027° (38.1)

ZOOMR

5000 132° (7.3)

MSA RW 21 25 NM

7200

(IF) CEBUS

Procedure NA for arrivals at ZOOMR on V2-448 southwest bound.

3900 208° (7.3)

(FAF) SIGYO

2720

5000 298° (9.2)

(IAF) EPENE

4859

RW21

2500±

3072

3794

4549

9000 277° (20.5)

5241

HILIE

2640

5234

208°

MISSED APCH FIX

GANGS

052°

232°

5 NM

3031

Procedure NA for arrivals at HILIE on V2 eastbound.

2819

248° (9.8)

IRUHO

ELEV 2385 D TDZE 2346

208° to

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.

(c) 2014 BruceAir, LLC

On any page, press Home

On the Home page, touch PROC

(c) 2014 BruceAir, LLC

Confirm the approach and touch Transition

(c) 2014 BruceAir, LLC

After selecting the transition, touch Load Approach.

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

(c) 2014 BruceAir, LLC

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

(c) 2014 BruceAir, LLC

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.

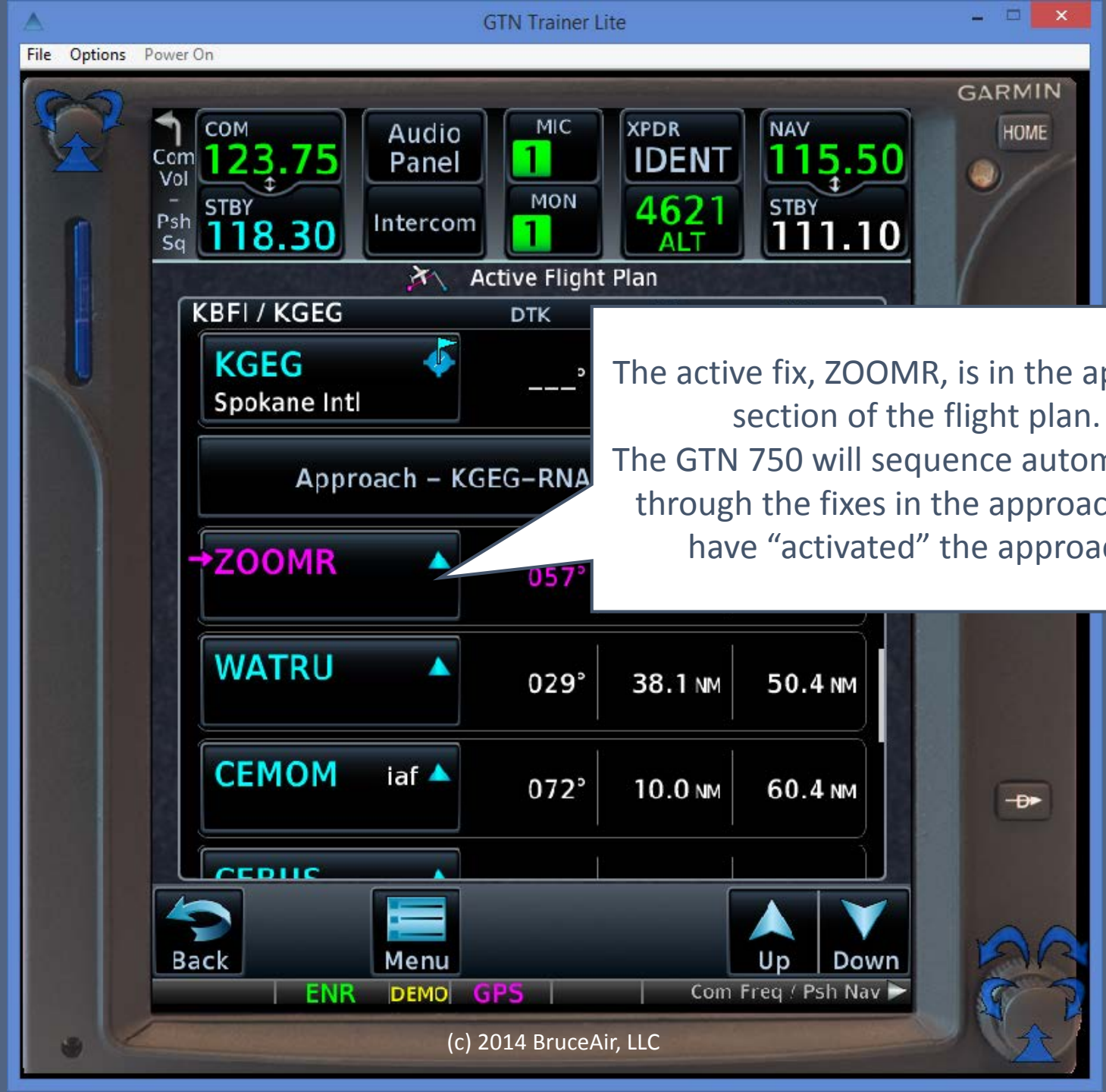
(c) 2014 BruceAir, LLC

Let's go direct to ZOOMR.

(c) 2014 BruceAir, LLC

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

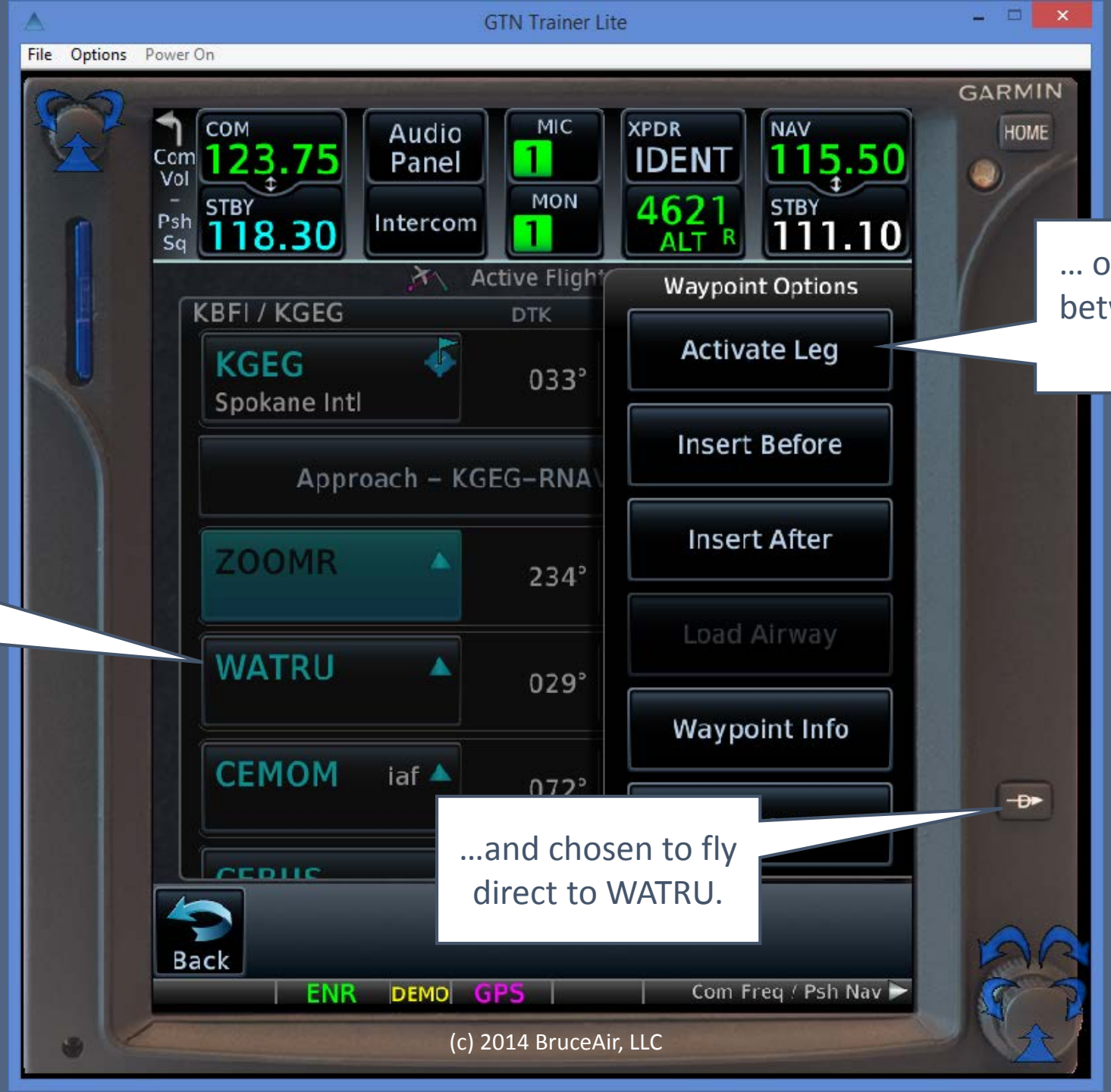
(c) 2014 BruceAir, LLC



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.

(c) 2014 BruceAir, LLC



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.

(c) 2014 BruceAir, LLC

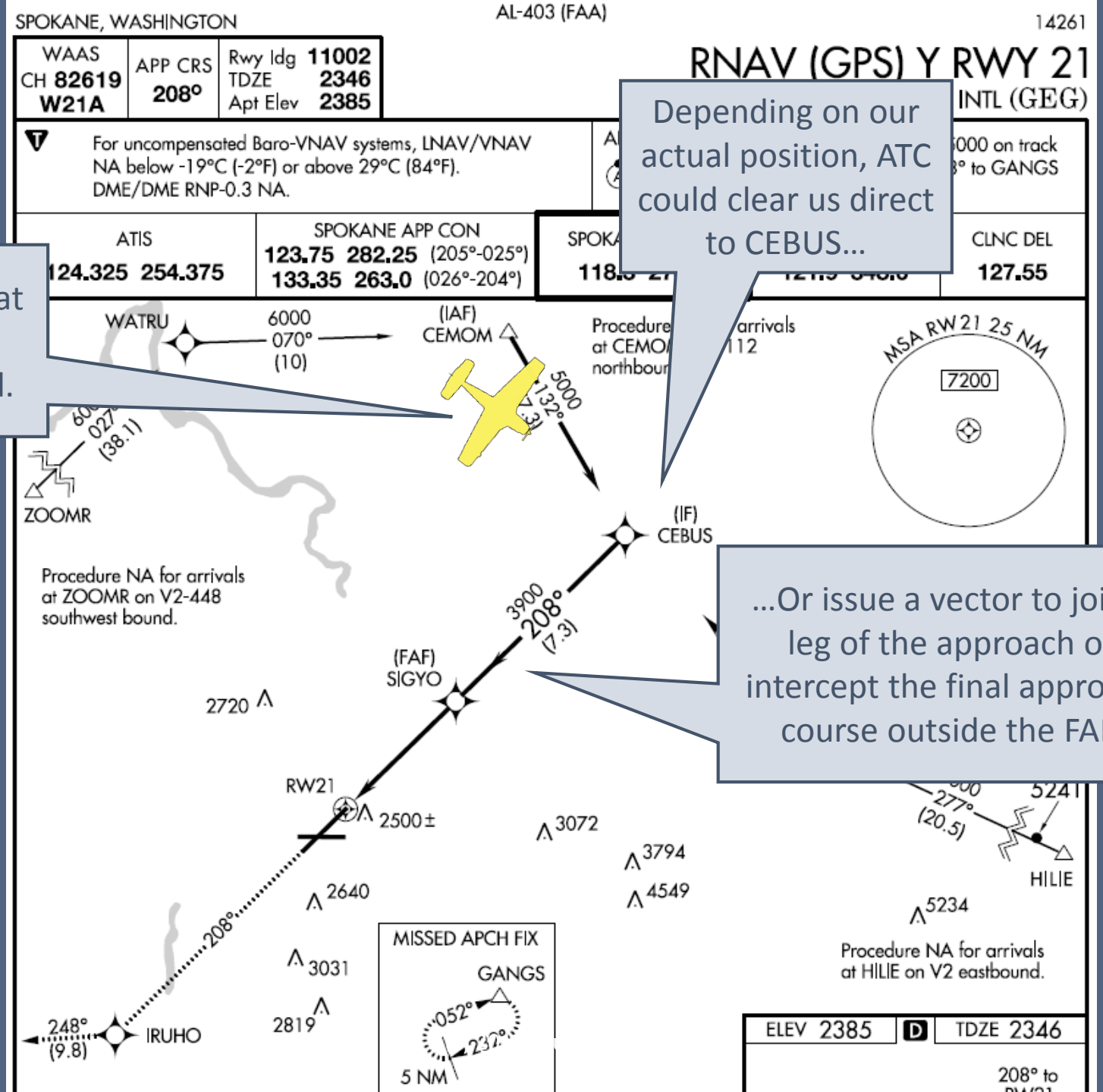
We're still on a vector from ATC. But the GTN 750 sequences through fixes in the approach portion of the flight plan as we fly near or between fixes.

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

(c) 2014 BruceAir, LLC

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.

(c) 2014 BruceAir, LLC



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.

(c) 2014 BruceAir, LLC

As we pass CEMON, 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.

Touch the CDI to display the Flight Plan page.

(c) 2014 BruceAir, LLC

(c) 2014 BruceAir, LLC

(c) 2014 BruceAir, LLC

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.

(c) 2014 BruceAir, LLC

As we turn to the assigned heading, the map shows the new active leg between CEBUS and SIGYO, which is the FAF. Activating a leg gives us a useful reference for the intercept. We're on a vector, so we're not proceeding direct to any fix on the approach.

(c) 2014 BruceAir, LLC

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

Note that the GTN 750 is annunciating LPV.

(c) 2014 BruceAir, LLC

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

We can intercept and follow the LPV glidepath.

(c) 2014 BruceAir, LLC

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

(c) 2014 BruceAir, LLC

Automatic sequencing continues until we reach the MAP.

(c) 2014 BruceAir, LLC

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.

(c) 2014 BruceAir, LLC

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.

(c) 2014 BruceAir, LLC

The GTN 750 guides us into the hold.

(c) 2014 BruceAir, LLC

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

(c) 2014 BruceAir, LLC

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.

(c) 2014 BruceAir, LLC

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/

(c) 2014 BruceAir, LLC