

Programming And Flying The Gypsum Three

Programming approach, arrival and departure procedures into the Garmin 430/530 series is about as straightforward as it can get with panel-mounted avionics. In this case, we're headed from Eagle/Vail, Colo. (EGE), to Denver International (DEN). We'll be climbing to 15,000 as our cruising altitude. The first thing we need to do is set up a flight plan in the Garmin so it knows where we are and what we want to do. A screenshot of the results is presented in the image on the right, before we set up the data field to display the vertical speed required, or VSR. See the sidebar on the previous page on how to set up this flight plan.



As noted in the main text of this article, the minimum rate of climb required to maintain terrain and obstacle clearance with a 120-knot groundspeed on this DP is 1500 fpm. Once our flight plan is entered and we've selected the Gypsum Three departure from Runway 25, it's time to configure the data field to display the "Vertical Speed Required" data, or VSR, to see how well we're maintaining that minimum rate of climb. Here's how:

1. From the active Flight Plan page, displayed above, press **FPL** to return to the default NAV screen.

2. Use **UP** to bring up the Setup page. Press **DOWN** to display the cursor and scroll to "Data Field Configuration." Press **ENT**

3. Again, use **UP** to highlight "Configurable Data Fields." Press **ENT** to display the field choices.

4. Use **DOWN** to display VSR in the data field and in the description to its right. Press **ENT** then press and hold **CLR** to return to the default NAV screen.

5. Now comes the fun part. Press **VNAV** to bring up the VNAV configuration page. As noted earlier, we need to perform a 750 feet/nautical mile climb until reaching 10,500 feet msl before the fix listed in our flight plan as "DBL22." 10,500 feet (our target altitude) – 6536 feet (the field elevation at EGE) = 3964 feet of climb. Since $3964 \text{ feet} / 750 \text{ feet} / \text{nm} = 5.28533333333333 \text{ nm}$, we'll round this up to the next decimal, leaving us with 5.3 nm to climb from 6536 feet to 10,500. So, on the VNAV page, we specify 10,500 feet as our target altitude. Use **ENT** to enter it.

The first waypoint, NEPRY, will put us just east of Runway 25 at KEGE. Set the VNAV for 10500 msl, 5.3 nm AFTER KEGE. Make sure you've made the leg from NEPRY to KEGE the active leg before beginning the takeoff roll. As soon as we start our takeoff, the Garmin 430/530 displays the VSR to reach 10,500 feet msl before 5.3 nm from KEGE. At about 100 knots groundspeed, we lift off and the VSR displays approximately 1250 fpm. As we climb at about 120 knots groundspeed, the VSR is 1500 fpm. Soon, we safely cross 5.3 nm from EGE at or above 10,500 feet and we're on our way home. While the steps outlined here are customized for the Garmin 430/530, the same basic procedures will work for GPS units featuring a VNAV capability.