Illustrations for the Garmin GNS 530 GPS Computer

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Chapter 2

Garmin GNS 530
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http://www.garmin.com

A **global positioning system** (GPS) **computer** allows you to enter the details of your flight plan. The GPS computer will provide many navigational services as you fly along your route.

Garmin

AMERICAS IFR
Aviation Database

Copyright 2002
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Cycle 9907

Effective   20-APR-02
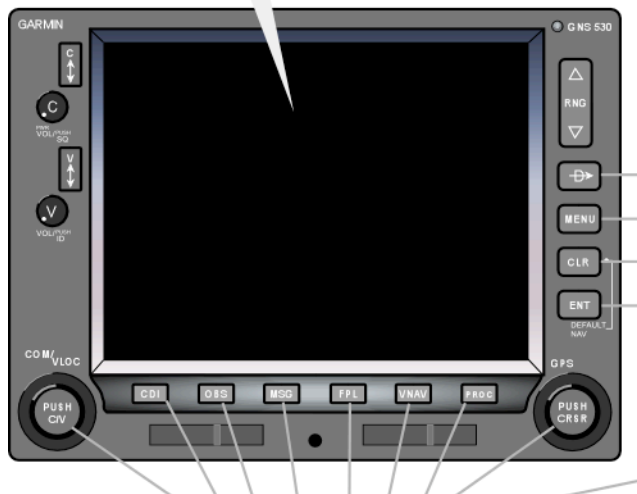Expires   18-MAY-02

OK?

Check the expiration date for the **navigation database** when the computer powers up. If the database is expired, don't use the computer for IFR navigation.

1

If the database is current, push the ENT button to answer the OK? prompt and continue.

2

Garmin

The **screen** on the front of the GPS computer serves as the monitor.

The **knobs** and **buttons** serve as the keyboard for the GPS computer.

Garmin

Pages appear on the GPS computer screen and present information related to a particular topic. For example, the **waypoint page** can display information about any chosen waypoint or airport in the navigation database.

Use the **outer knob** to select different pages. **1**

The name of the page you have currently selected is shown here. **2**

Extended pages show additional information about the same topic. **1**

The extended page you are viewing is displayed here. For example, this is the second extended page of the waypoint page. **3**
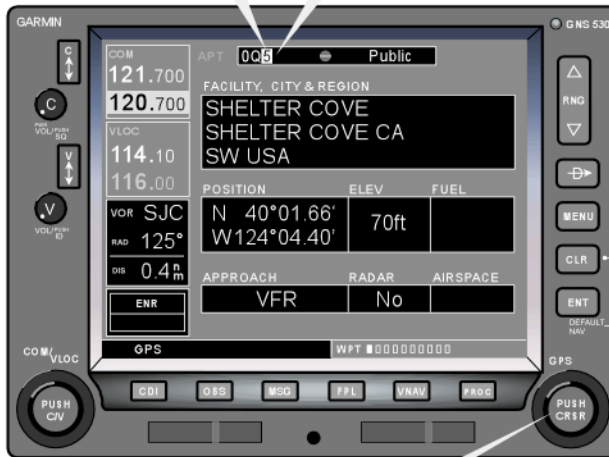
Use the **inner knob** to move between extended pages. **2**

Garmin

Use the inner knob to dial
letters and numbers.

3

Use the outer knob to move
the flashing cursor between
items on the page.

2

Press the inner knob to
engage **cursor mode**. A
flashing cursor will appear
over one of the items on the
page, indicating that it is
ready for editing.

1

Garmin

Press the FPL button to select the
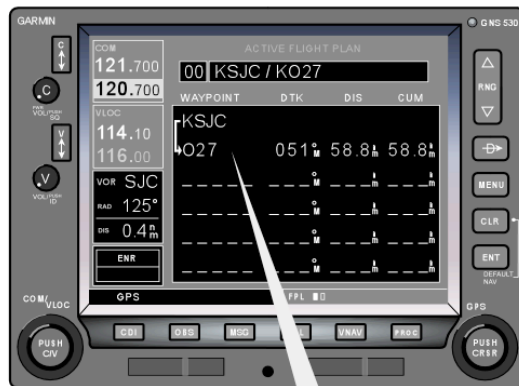**flight plan page**.

Garmin

The second extended page of the flight plan page contains the list of stored flight plans.

1

Press the MENU button to display your options, then scroll to the Activate Flight Plan?, and press the ENT button to make your selection.
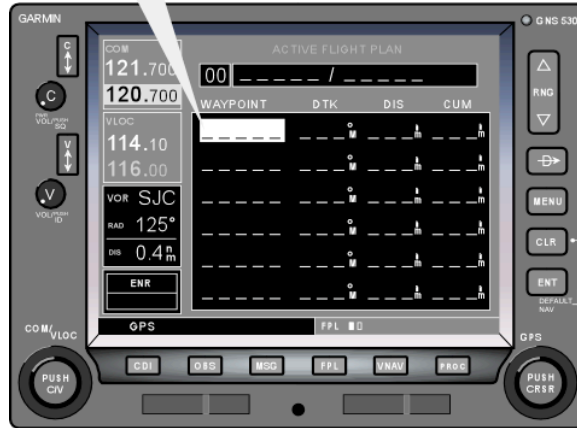
3

In cursor mode, scroll to the stored flight plan of your choice.

2

The waypoints in the stored route are moved into flight plan 0, and the stored route becomes the active flight plan.

4

Use the outer knob in cursor mode to highlight a line on the flight plan page. **1**

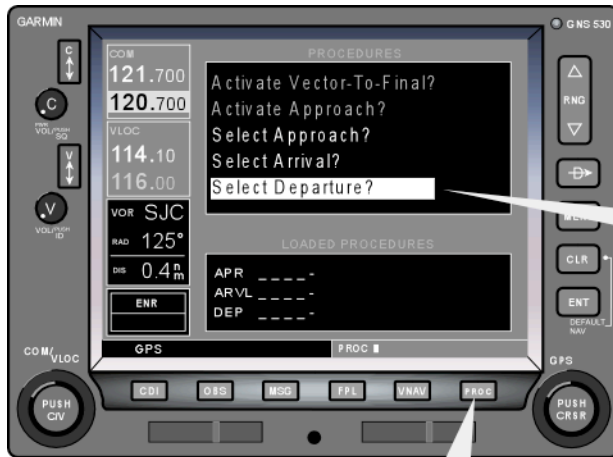Dial the name of the waypoint and press the ENT button. **2**

The waypoint now appears in your flight route and the computer is ready to accept more waypoints. **3**

Garmin

PROCEDURES

Activate Vector-To-Final?
Activate Approach?
Select Approach?
Select Arrival?
Select Departure?

LOADED PROCEDURES

APR ____-
ARVL ____-
DEP ____-

GPS   PROC

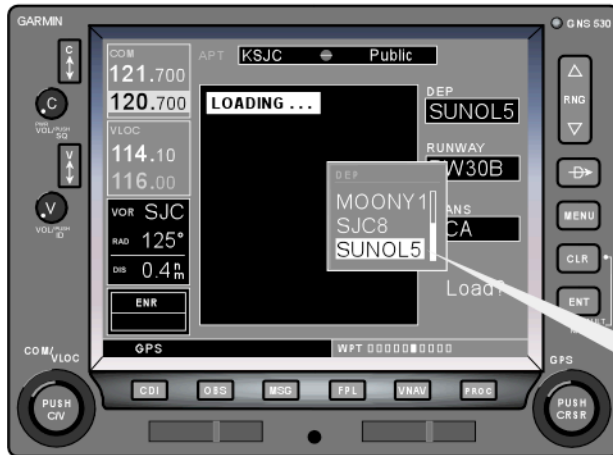CDI   OBS   MSG   FPL   VNAV   PROC

Choose the Select Departure? option from the menu.

2

Press the **PROC button** to access a list of options for choosing terminal area procedures.

1

APT KSJC   Public

LOADING . . .

DEP SUNOL5

RUNWAY W30B

DEP
MOONY1
SJC8
SUNOL5

GPS   WPT

CDI   OBS   MSG   FPL   VNAV   PROC

Choose your departure from the menu.

3

Select your departure
runway from the menu. **1**

Now select your depar-
ture transition. **2**

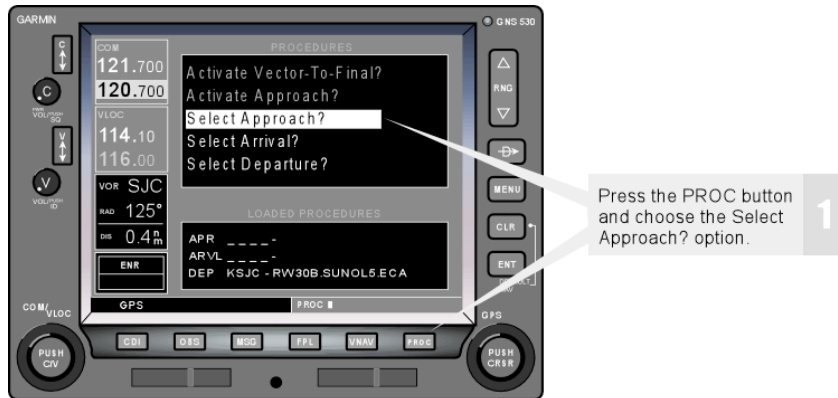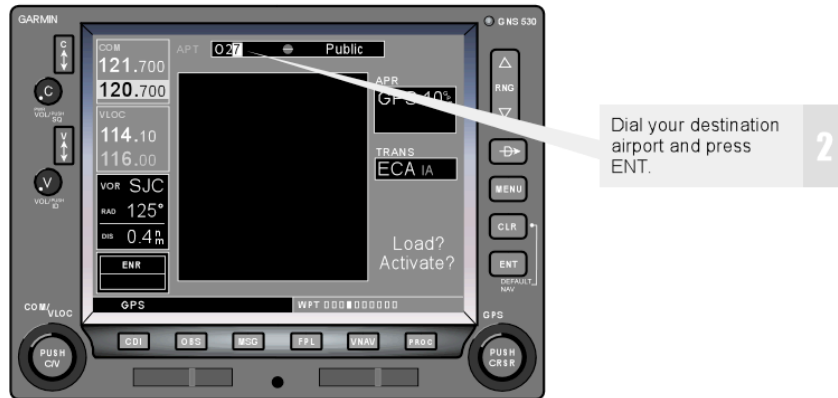Respond to the Load?
prompt to load all of your
selections into the active
flight plan.
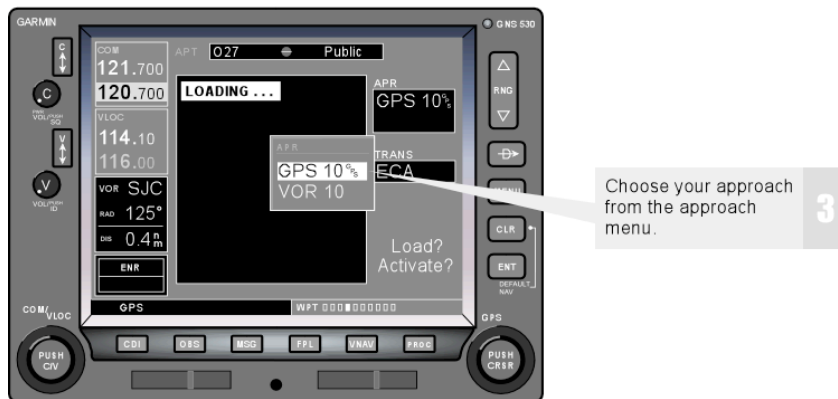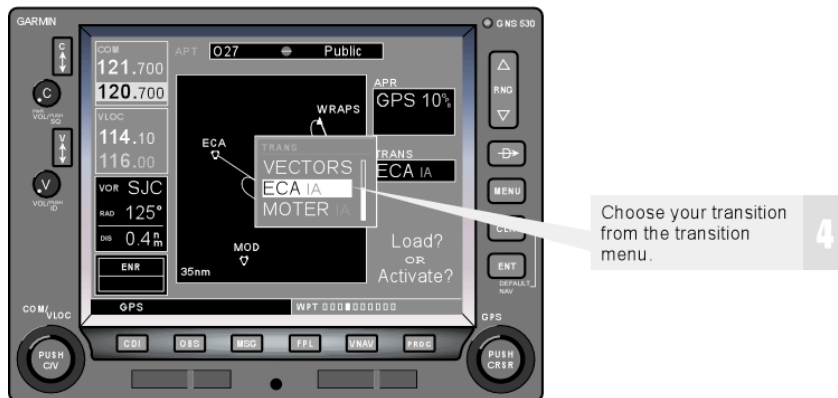
Press the PROC button and choose the Select Approach? option. **1**

Dial your destination airport and press ENT. **2**

Choose your approach from the approach menu. **3**

Choose your transition from the transition menu. **4**

Garmin

ACTIVE FLIGHT PLAN

00 KSJC / KO27

WAYPOINT	DTK	DIS	CUM
KSJC			
D303B	303°	1.8ₙₘ	1.8ₙₘ
SUNOL	010°	8.0ₙₘ	9.8ₙₘ
TRACY	049°	18.3ₙₘ	28.1ₙₘ
Approach	GPS 10		
ECA IA	049°	15.0ₙₘ	43.1ₙₘ

Review your flight plan on the flight plan page. In cursor mode, use the outer knob to scroll between the waypoints in the route.

1

Check the sequence of waypoints.

2

Check the distances between the waypoints.

3

2-17

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ACTIVE FLIGHT PLAN

00 KSJC / KO27

WAYPOINT	DTK	DIS	CUM
KSJC			
D303B	303°	1.8ₙₘ	1.8ₙₘ
SUNOL	010°	8.0ₙₘ	9.8ₙₘ
TRACY	049°	18.3ₙₘ	28.1ₙₘ
Approach	GPS 10		
ECA IA	049°	15.0ₙₘ	43.1ₙₘ

Check the desired tracks between the waypoints in your route by looking under the DTK column.

2-18

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Chapter 3

An **INTEG** annunciation here lets you know that GPS signal reception is no longer adequate. **1**

A **flashing message prompt** indicates that you have a **message** to read. Press the **MSG button** to read the message. **2**

MESSAGES

RAIM is not available

Press MSG to continue

The message will clearly indicate that there is a problem with the GPS reception. **3**

Garmin

The flight plan page lists the sequence of waypoints that make up your flight route.

The **active waypoint** is the one that the computer is currently working toward.

ACTIVE FLIGHT PLAN

00 KSJC / KO27

WAYPOINT	DTK	DIS	CUM
KSJC			
D303B	303° M	1.8 N m	1.8 N m
SUNOL	010° M	8.0 N m	9.8 N m
TRACY	049° M	18.3 N m	28.1 N m
Approach	GPS 10		
ECA IA	049° M	15.0 N m	43.1 N m

3-2

Garmin

The **desired track** to the active waypoint.

The **track** of the airplane over the ground.

The distance to the **active waypoint.**

DTK 303° m   TRK 303° m   DIS 1.80 N m

KSJC → D303B   ETE 1:25

GS 76 kt

Your **ground speed**.

The **course deviation indicator (CDI)** shows your position relative to the desired track to the active waypoint.

The **navigation page** shows you the name of the **active waypoint.**

3–3

Garmin

Press the **OBS button** to switch between the two different navigation modes.

1

Check to make sure you are in **Sequence mode** (a blank will appear here).

2

The **waypoint alerting** function provides a flashing message when you approach the vicinity of the active waypoint.

The **turn anticipation** function advises you to begin your turn to the desired track to the next waypoint in the flight plan.

The **waypoint sequencing** function makes the next waypoint in the flight plan sequence the new active waypoint.

Press the **CDI button** so that **GPS** is indicated. Your position with repect to the GPS desired track will be shown on the navigation indicator.

GPS means that the navigation indicator is slaved to the GPS computer.

VLOC means that the navigation indicator is slaved to the navigation radio.

Use cursor mode to edit the entries for your **target altitude** and your desired **descent rate** (VS Profile).

2

The computer calculates your **top-of-descent point**.

3

The **VNAV page** is accessed by pressing the **VNAV button**.

1

One minute prior to reaching the top-of-descent point you will get a flashing message prompt.

1

Press MSG to view the message, then MSG again to clear it.

2

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In terminal mode, the CDI sensitivity changes from 5.0nm to 1.0nm.

2

At 30NM from the airport, terminal (TERM) mode will be annunciated.

1

Garmin

When approach mode engages, the CDI sensitivity changes from 1.0nm to 0.3nm.

2

At 2NM from the final approach fix, approach (APR) mode will be annunciated.

1

Garmin

Chapter 4

On the flight plan page, use cursor mode to highlight the waypoint to which you would like to proceed direct.

1

Press the **direct to button**.

2

Press ENT two times to confirm your choice.

3

ECA is now the active waypoint. The computer has built a desired track from the present position of the airplane to ECA.

4

Garmin

Use cursor mode to high-light the waypoint you want to insert the new waypoint *before*.

1

Use the inner and outer knobs to enter the new waypoint's identifier. Then press ENT to confirm your choice.

2

The new waypoint is insert-ed into the flight plan.

3

Garmin

Use cursor mode to high-light the waypoint you want to delete, then press the **CLR button**.

1

Press ENT to confirm your modification.

2

Garmin

Press the PROC button and choose Select Approach.

1

Choose your new approach from the approach menu.

2

Choose your new transition from the transition menu.

3

Press the ENT button to load your approach into your flight plan.

4

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Use the outer knob to select the **nearest page**. The first extended page shows the nearest airports.

1

In cursor mode, use the outer knob to select the nearest suitable airport.

2

Press the direct to button, then the ENT button to make it the active waypoint.

3

Garmin

Chapter 5
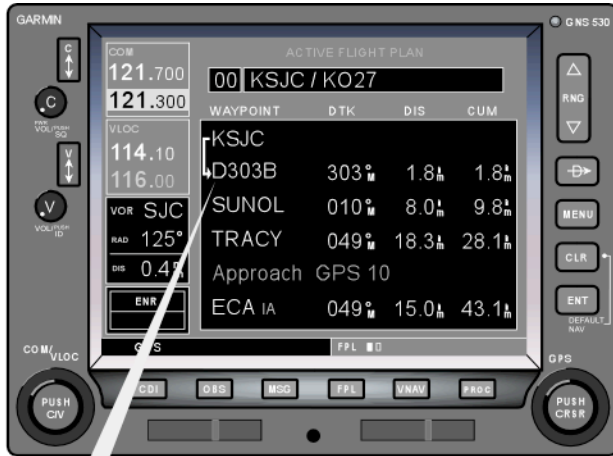
Instead of flying the assigned heading and intercepting the 009-degree radial, the simplified GPS route takes you to the 1.8 DME fix, then directly to SUNOL. ATC would not be pleased with this solution.

DO NOT USE FOR NAVIGATION

Garmin
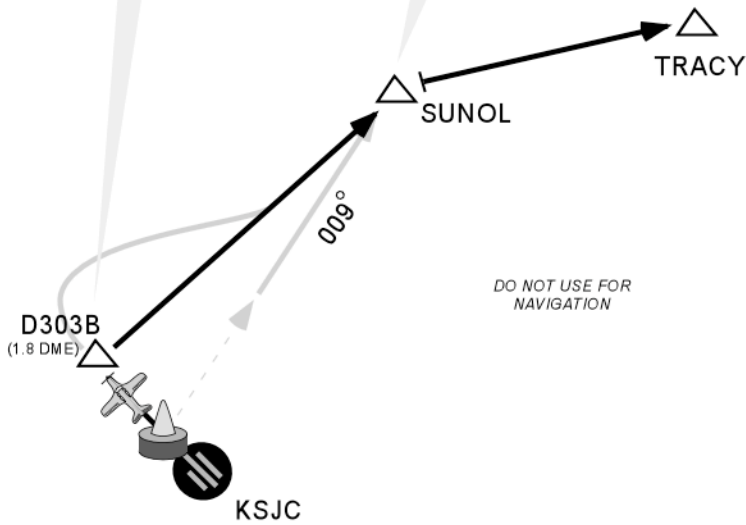
To switch to **OBS mode**, press the **OBS button**. OBS will be displayed above the button to indicate the mode change.

1

Once in OBS mode, use the **OBS selector** to dial the inbound course of 009°.

2

Garmin

ECA is the currently the active waypoint. You need to change this.

1

On the flight plan page, use cursor mode to highlight ELTRO, press the Direct-To button, and ENT to confirm.

2

ELTRO becomes the new active waypoint.

3

The computer now plans to take you directly to ELTRO, which is not quite what you want.

4

Garmin

The course you dialed in becomes the new desired track to the active waypoint.

3

Press OBS to switch to OBS mode.

1

Dial in the approach course on the CDI.

2

5-6

Press the PROC button and choose this option. **1**

Activate Vector-To-Final?
Activate Approach?
Select Approach?
Select Arrival?
Select Departure?

LOADED PROCEDURES

APR   O27   - GPS 10
ARVL _ _ _ _ -
DEP   KSJC - SUNOL5

ELTRO is now the active waypoint and the final approach course is set as the desired track. You will remain in Sequence mode throughout the approach. There is no need for mode switching. **2**

Dial in the approach course on the CDI. **3**
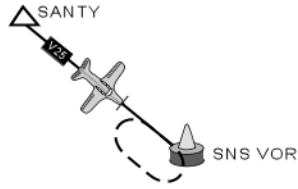
Switch to OBS mode prior to reaching SNS. **1**
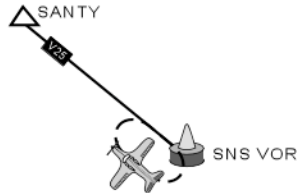
Fly the hold. SNS remains the active waypoint, even after passing it. **2**
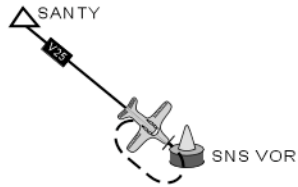
Switch back to sequence mode before reaching SNS. **3**
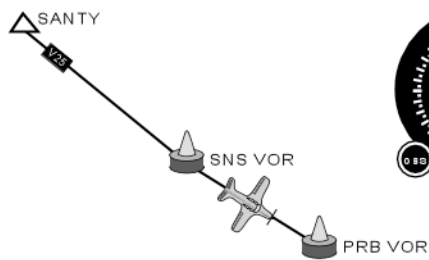
PRB now becomes the active waypoint and the flight continues. **4**

Garmin

You are approaching the initial approach fix in the sequencing mode as usual.

When you cross the initial approach fix, the computer sequences on to the final approach fix, and then automatically (and temporarily) switches to the non-sequencing mode. SUSP is annunciated. You can now turn outbound on the procedure turn.
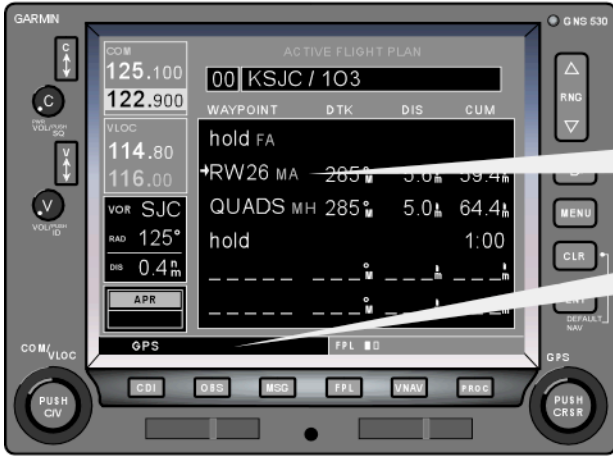

When you turn inbound, the computer automatically switches back to the sequencing mode. Crossing the final approach fix, the computer sequences to the missed approach point.

SNS VOR (hold fix)

6,000ft

1,900ft

CORYN (MAP)

KMRY

DO NOT USE FOR
NAVIGATION
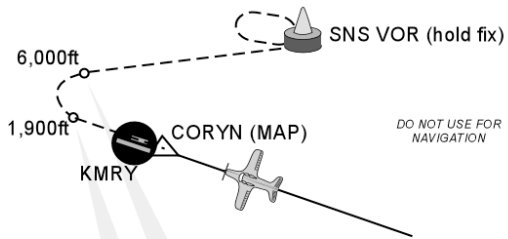
The computer has no way of representing climbs
and turns as waypoints. Consequently, the missed
approach point and the hold fix are the only way-
points from the missed approach procedure that
appear in the computer.
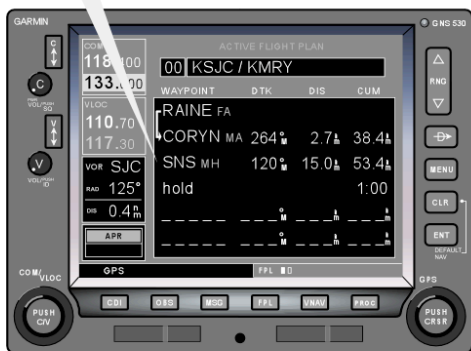
After reaching the missed approach point, the missed
approach point remains the active waypoint, and the computer
automatically switches to the non-sequencing mode (SUSP).

1
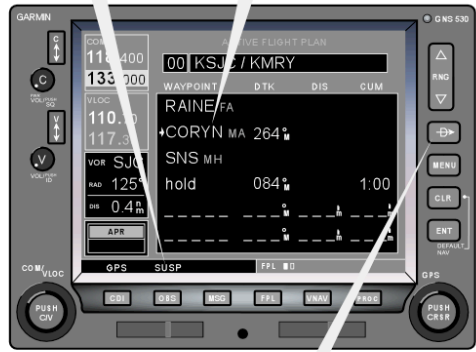
After executing the climbs and turns, you can use the direct
to function to proceed to the hold fix.

2
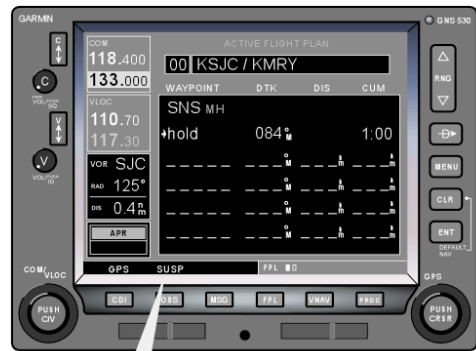
When you reach the hold fix, the computer will switch back
to the non-sequencing mode and allow you to fly the hold.

3

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