APOLLO GX50/55 GPS
SAR Module Operations

CIVIL AIR PATROL

Introduction

- This presentation is designed to introduce the basics of the GX50/55 GPS
- Focus will be placed on use of the GX50/55 for CAP operations
- This presentation is not designed to replace hands on instruction or the owners manual
- Always use your Quick Reference Guide for assistance until you are proficient using this equipment

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GX50/55 Simulator

- The GX50/55 Deluxe simulator is available for download from the Garmin website

  http://www8.garmin.com/include/gxsimulator/SimulatorPopupGX.html

- You should use the simulator to gain proficiency before you get in the airplane

- Using the arrow keys on your keyboard you can fly the simulator

- The up and down arrows control speed and the left right arrows control direction

- Be sure that you have the SAR function checked under the options menu before you turn the simulator on

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Apollo Models

Apollo GX50 – IFR enroute & approach certified

Apollo GX55 – IFR enroute only

Apollo GX60 – Same as 50 plus com radio

Apollo GX65 – Same as 55 plus com radio

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Knobology

On / Off

Soft (Smart) Keys

Hard Keys

Large (Outer) Knob

Small (Inner) Knob

Data Card Slot

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Knobology

"Chapters" selected by the buttons and,

"Pages" viewed by scrolling with the large and small knobs

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SAR Setup Page

You may need to verify the SAR module is activated

- Press MAP to reach the map functions
- Turn the LARGE KNOB to go to Map Setup
- Turn SMAL L KNOB to go to SAR Setup
- Press SEL to activate the flashing cursor
- Turn the SMALL KNOB to set SAR MAP ON

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SAR Setup Page

For Parallel Searches using the Cell or LAT/LONG grid system set GRID TYPE to BASIC and POSITION to NW which covers all of the US

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SAR Setup Page

Grid displays while in the BASCI (Cell or Lat/Long) system

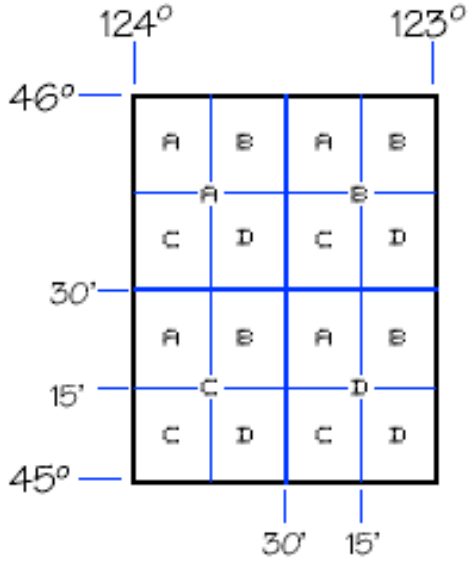
Basic Grid Type

GRD – No grid lines

GRD 1 – 60 minute grid lines

GRD 2 – 30 minute grid lines

GRD 3 – 15 minute grid lines



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SAR Setup Page

For Parallel Searches using the CAP Grid System set GRID TYPE to US and POSITION to:

- GSW for the DFW area
- SAT for San Antonio area
- ELP for El Paso area
- HOU for Houston area

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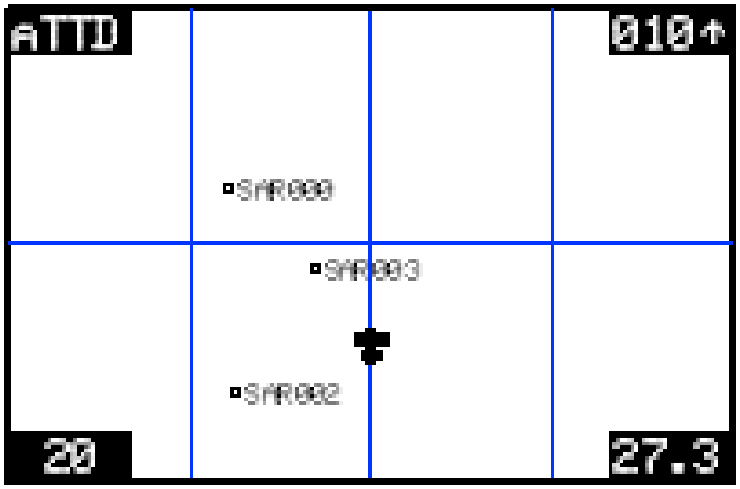
SAR Setup Page

Grid displays while in the US (CAP) system

GRID1



Map Display
Grid Lines
No Grid Number

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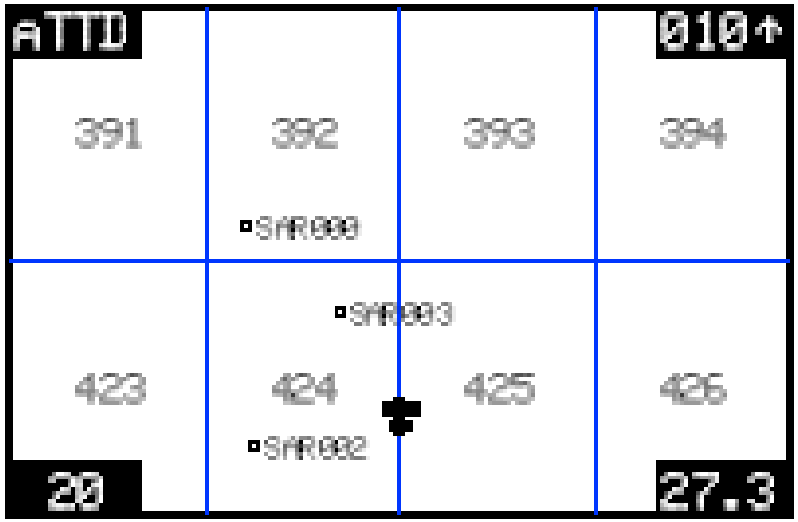
SAR Setup Page

Grid displays while in the US (CAP) system

GRID2



Map Display
Grid Lines
Grid Numbers

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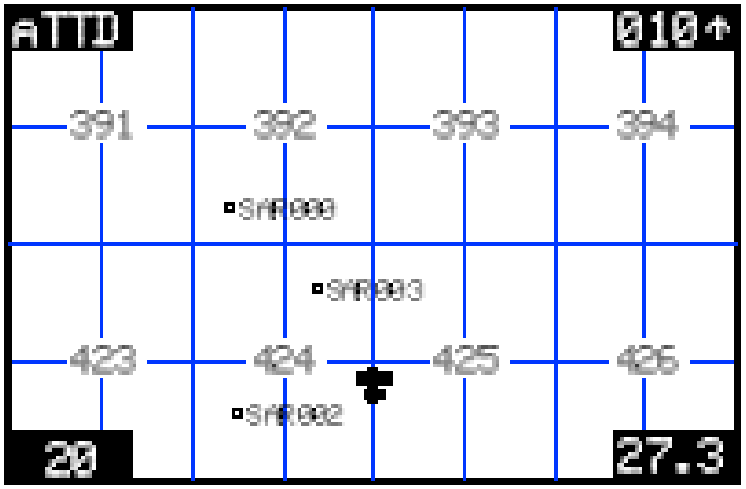
SAR Setup Page

Grid displays while in the US (CAP) system

GRID3



Map Display
Grid Lines
Grid Numbers
Quarter Grid Lines

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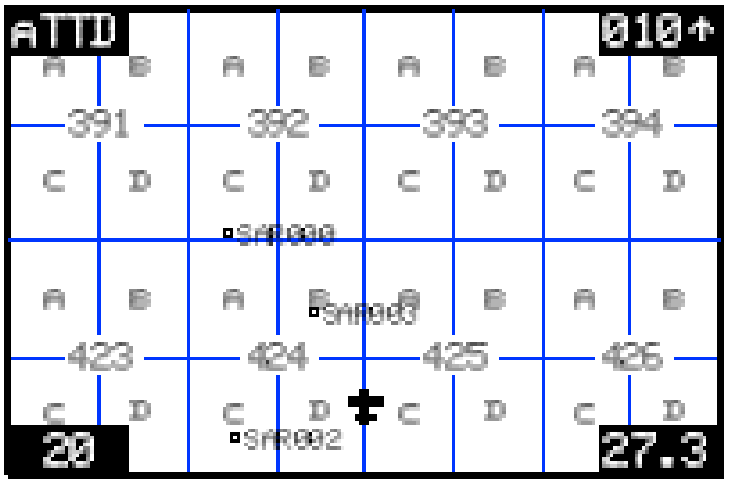
SAR Setup Page

Grid displays while in the US (CAP) system

GRID4



Map Display
Grid Lines
Grid Numbers
Quarter Grid Lines
Quarter Grid Letters

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SAR Setup Page

Set Route Line to YES

Set Map Orientation to TRACK
(Track Up)

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SAR MAP

GRD controls grid line display

MRK is used to mark a SAR position

PAT is used to select a search pattern

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Marking a SAR Find or Waypoint

While in the SAR screen press
the MRK soft key

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Marking a SAR Find or Waypoint

A screen showing your current position will appear and it will ask you to name this SAR Waypoint

Follow the same procedures as you would to name any other waypoint - Inner Knob to change, Outer Knob to move cursor, Enter to accept

Write down the SAR # and Lat / Lon on your log before you leave this screen. You want to be sure that you have an accurate record of all possible finds!

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Marking a SAR Find or Waypoint

Note that the SAR Waypoint that we just created does not show up on the SAR Map Screen when the grids are being displayed. To see it on the map, you have to either turn off the grid display or turn the Outer Knob to one of the other Map Screens.

Also note that the USR Soft Key has to be on to see user waypoints. It is found on page #2 of the Wide Screen or Split Screen Maps

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SAR Search Patterns

The SAR Module will automate the flying of four search patterns

- Route Search with offset
- Creeping Line Search
- Expanding Square Search
- Parallel or Grid Search

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Route Search Setup

NAV

FPL

CIVIL AIR PATROL

Route Search Setup

Turn Outer Knob to Create Flight Plan

Press SEL and enter a FPL name

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Route Search Setup

Turn Inner Knob
to select first letter

Outer Knob to move to next position
Repeat until done

Press Enter

Turn Small Knob

Press Select

Press Enter

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Route Search Setup

Select start point using Inner and Outer knobs

Press Enter when done

Once you have your waypoints loaded hit Select to accept the flight plan

Hit Enter to load next waypoint
Repeat last steps

Your Flight Plan is now loaded into the database and can be retrieved at any time

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Route Search Setup

Activate the Flight Plan (FPL)

NAV

FPL

Select

Turn Outer Knob to the desired flight plan

Enter to activate

Flight plan is now active

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Route Search Setup

Set the Route Offset

NAV

SEL

Outer Knob to Parallel Track

Use Outer Knob to move between fields – Inner Knob to change

Press Enter to complete setup

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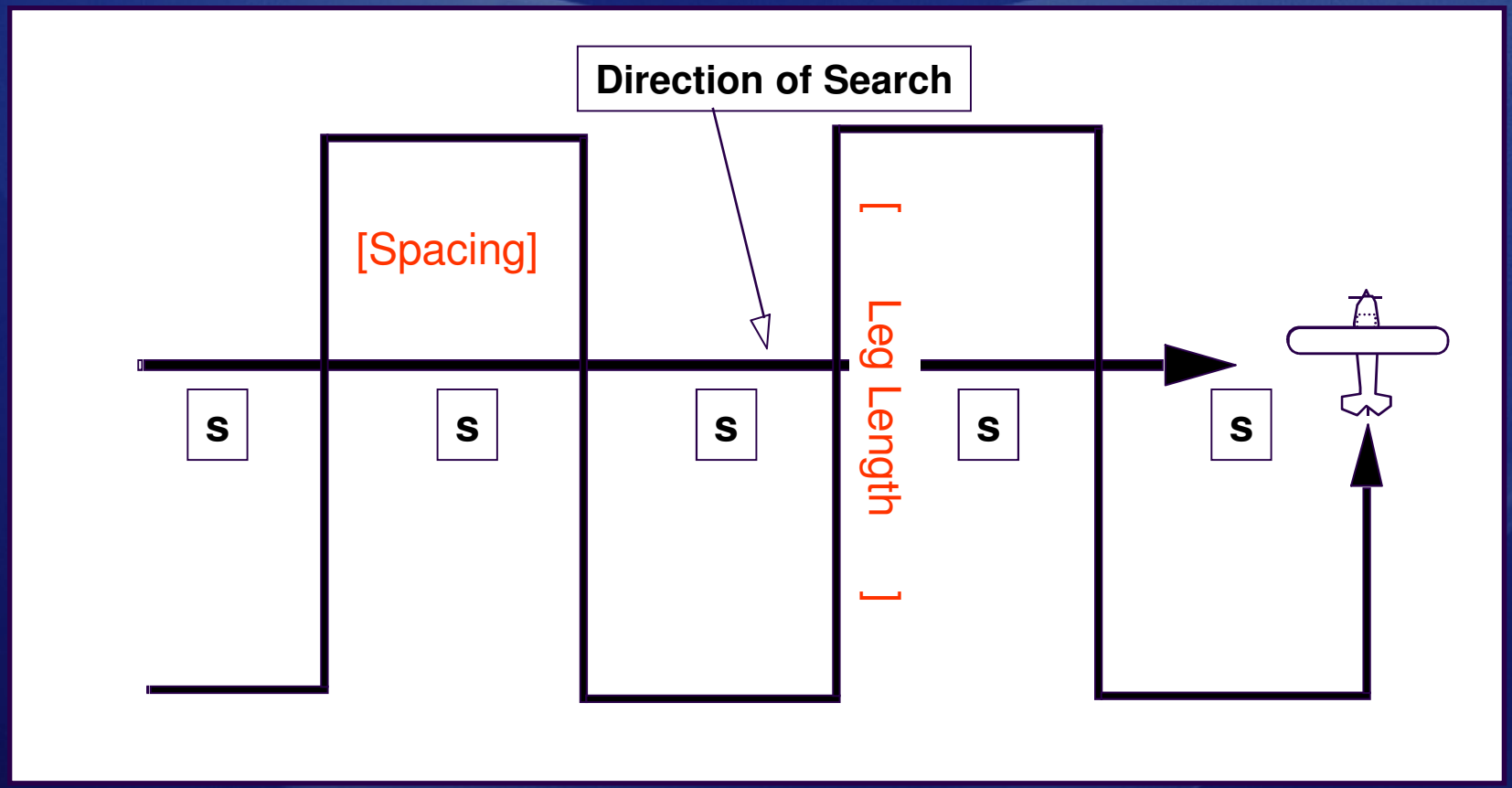
Creeping Line Search Setup



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Creeping Line Search Setup

Press the pattern soft key (PAT)

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Creeping Line Search Setup

Turn the Small Knob until you see Creeping Line Search Page

Press ENTER to select the Creeping Line pattern

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Creeping Line Search Setup

Press SEL to select a starting waypoint and enter the search parameters

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Creeping Line Search Setup

Press ENTER to accept the starting waypoint and enter the search parameters

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Creeping Line Search Setup

Turn SMALL KNOB to change the track spacing (0.2 – 5.0 NM)

Then BIG KNOB to move flashing cursor to Direction

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Creeping Line Search Setup

Turn SMALL KNOB to change the course heading (DIRECTION) you want to fly across and then ENTER to accept

Turn SMALL KNOB again to go to the next page for LEG LENGTH

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Creeping Line Search Setup

Press SEL to edit leg length

- Turn SMALL KNOB to change the leg length (0.1 – 9.9 NM)
- Turn LARGE KNOB to move flashing cursor to Start side
- Turn SMALL KNOB to select left or right side of your Direction

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Creeping Line Search Setup

Press ENTER to accept your start point and ENTER again to return to the map page where your Creeping Line search course will be displayed

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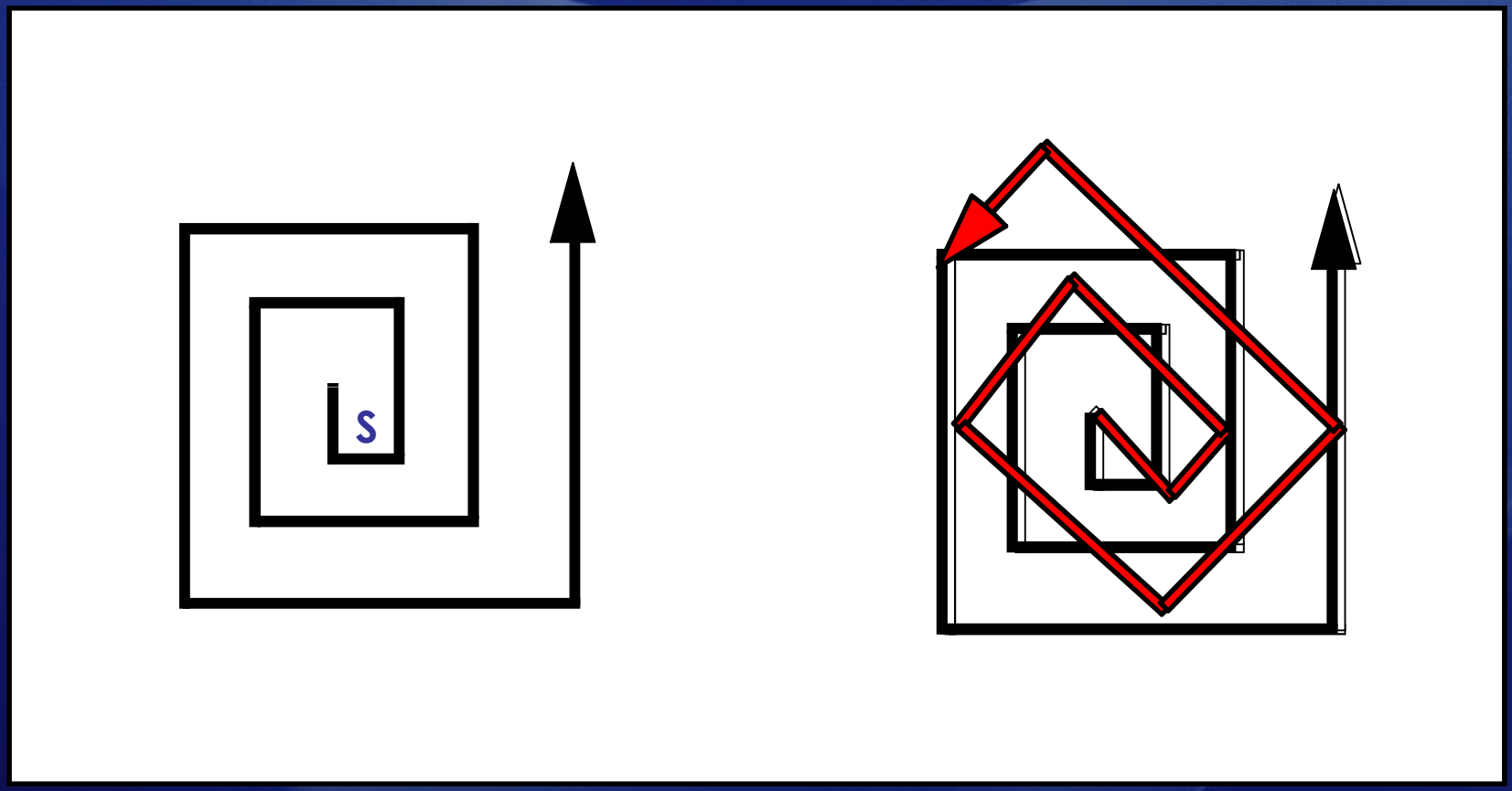
Expanding Square Search Setup

Spacing is constant but leg length increases with each turn



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Expanding Square Search Setup

In the SAR map page press the PAT soft key

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Expanding Square Search Setup

Turn the SMALL KNOB until you see the Expanding Square page then press ENTER

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Expanding Square Search Setup

Press SEL and then ENTER to select the start waypoint

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Expanding Square Search Setup

Turn SMALL KNOB to select the type of waypoint (APT, VOR, USER, etc.)

Turn LARGE KNOB to move the flashing cursor

Press ENTER to accept the starting waypoint

CIVIL AIR PATROL

Expanding Square Search Setup

Turn SMALL KNOB to set the Spacing (0.2 – 5.0 NM)

Turn LARGE KNOB to move the flashing cursor

CIVIL AIR PATROL

Expanding Square Search Setup

Turn SMALL KNOB to set the Direction of the first leg

Press ENTER to accept then press ENTER again to go back to the map page

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Expanding Square Search Setup

The Expanding Square is displayed on the map page and the data sent to the GPS CDI

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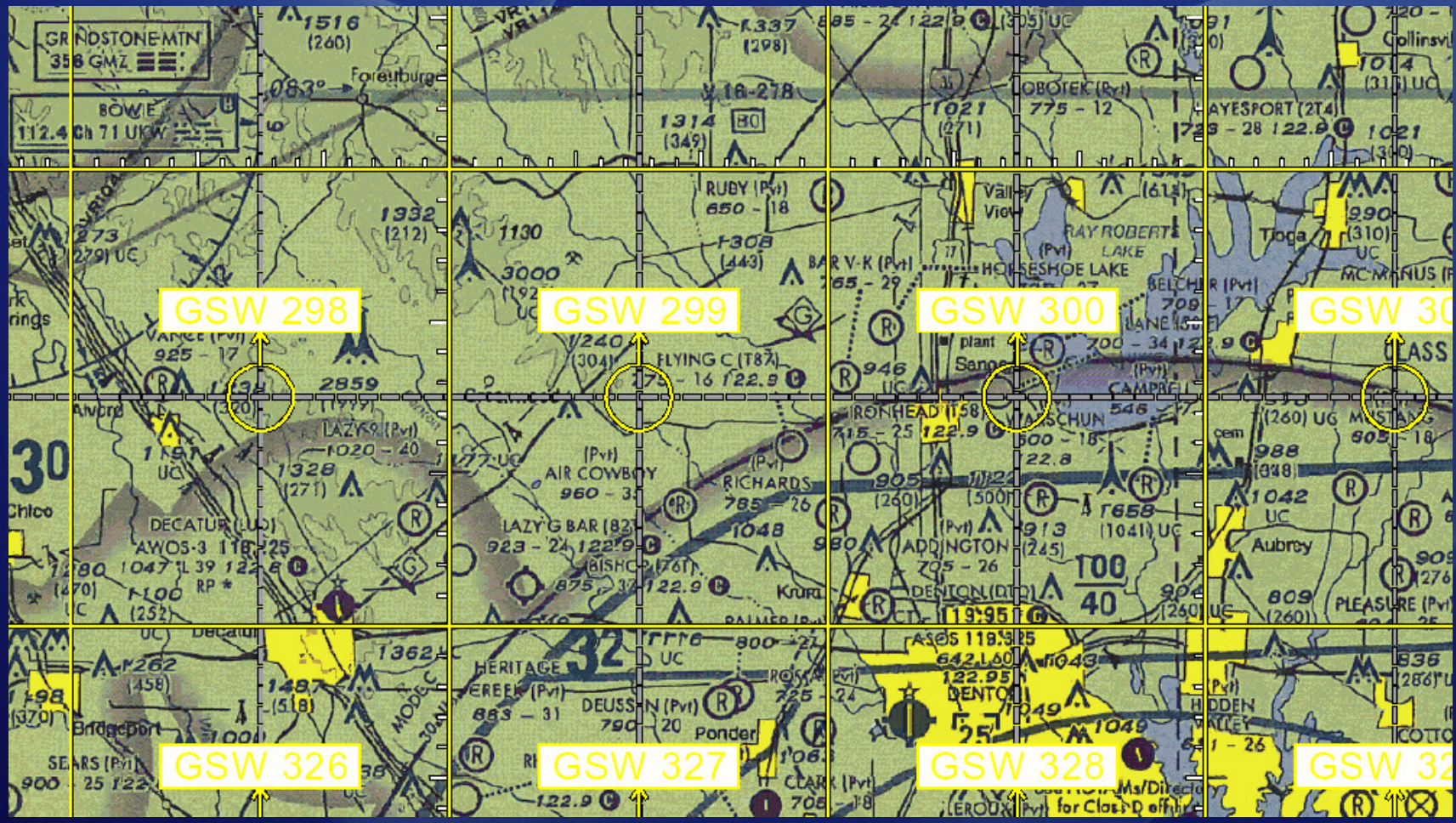
Parallel (Grid) Search Setup

CAP or Conventional Grid System



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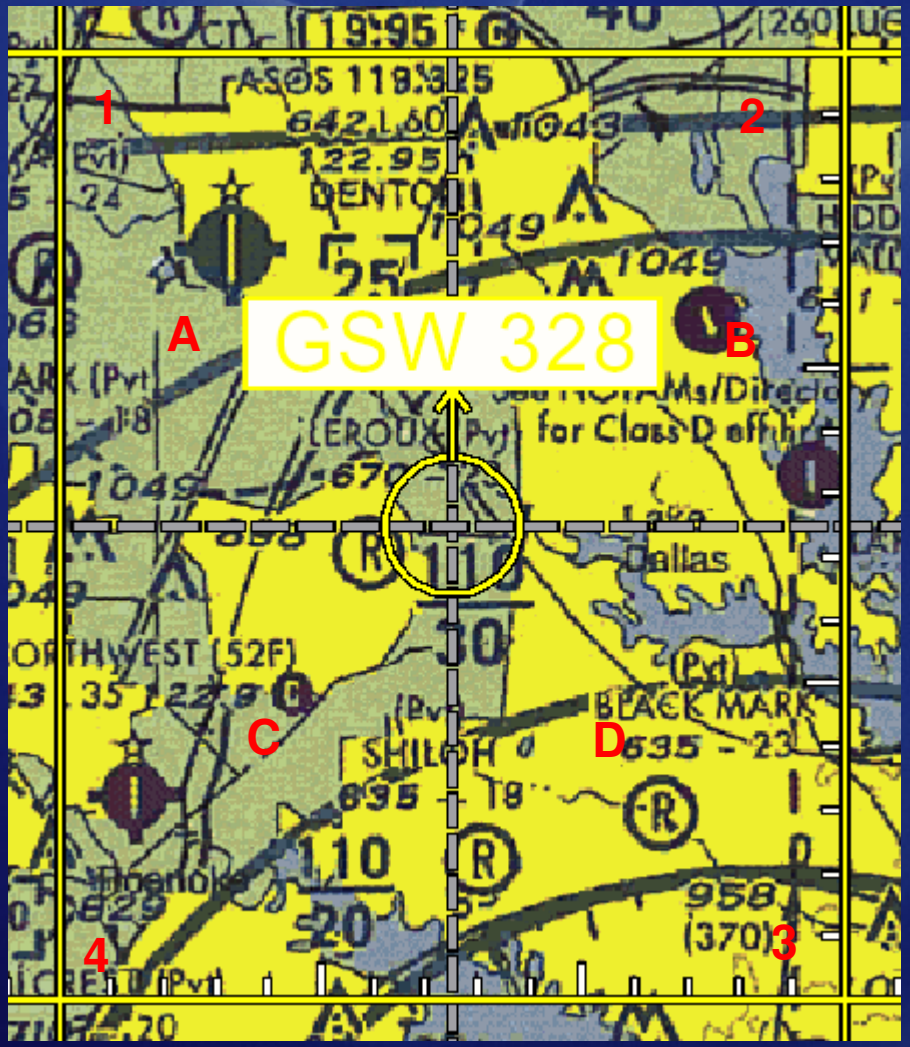
Parallel (Grid) Search Setup

CAP or Conventional Grid System



Full 15'x15' grid is subdivided into four 7.5'x7.5 minute grids labeled A-B-C-D

The Apollo SAR software further designates the entry point corners of the grid as 1-2-3-4

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Parallel (Grid) Search Setup

For Parallel Searches using the CAP Grid System set GRID TYPE to US and POSITION to:

- GSW for the DFW area
- SAT for San Antonio area
- ELP for El Paso area
- HOU for Houston area

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Parallel (Grid) Search Setup

Parallel Search using CAP Grid System

In the SAR map page press the PAT soft key

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Parallel (Grid) Search Setup

Parallel Search using CAP Grid System

Turn the SMALL KNOB until you see the Parallel Line page then press ENTER

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Parallel (Grid) Search Setup

Parallel Search using CAP Grid System

- Press SEL then use the SMALL KNOB to change data the LARGE KNOB to move the flashing cursor
- Set the Grid (and sub-grid if needed) and the entry point corner
  1 = NW, 2 = NE, 3 = SE, 4 = SW
- Set the track spacing (0.2 – 5.0 NM)
- Set the search track direction N/S or E/W

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Parallel (Grid) Search Setup

Parallel Search using CAP Grid System

Press ENTER to accept your entry and ENTER again to return to the map page where your Parallel Search is shown

The data is sent to the GPS CDI and the GPS will call your turns based on your current speed via the MSG function

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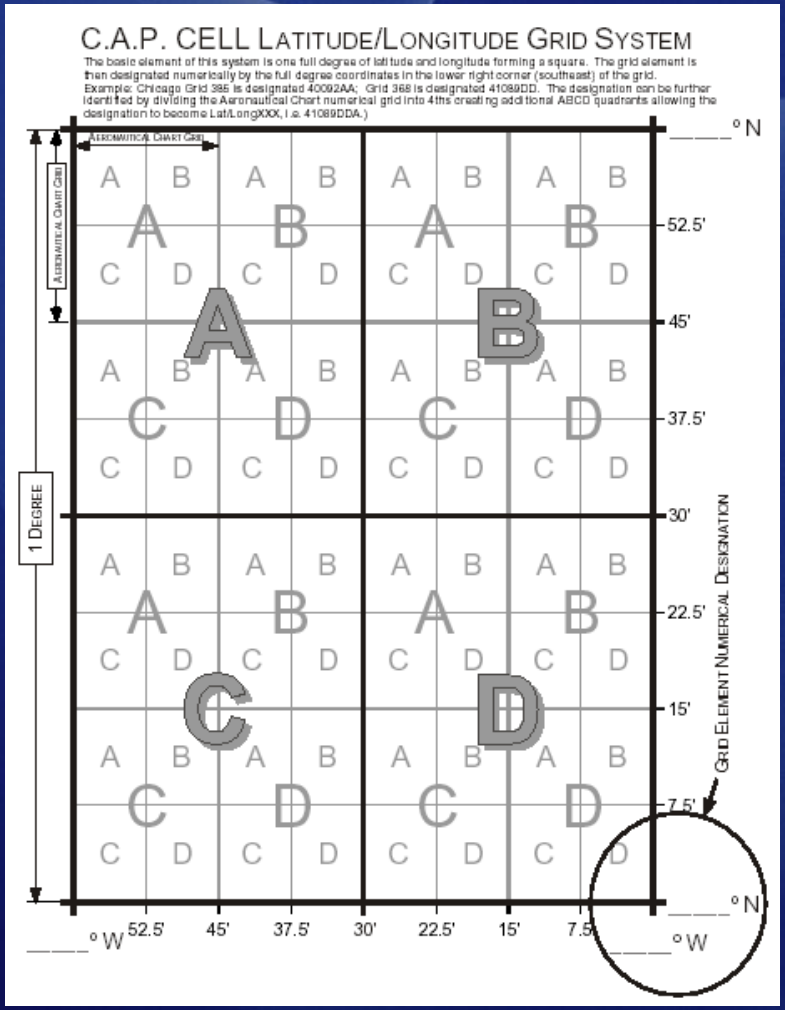
Parallel (Grid) Search Setup

New, Cell, or LAT/LONG Grid System



Currently used in Texas Wing

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Parallel (Grid) Search Setup

For Parallel Searches using Cell or LAT/LONG set GRID TYPE to BASIC and POSITION to NW which covers all of the US

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Parallel (Grid) Search Setup

Parallel Search using Cell Grid System

Turn the SMALL KNOB to the SAR Position page

Press SEL and use the SMALL KNOB to change the data and the LARGE KNOB to move the flashing cursor

Set the LAT/LONG to the 10^0 x 10^0 grid nearest your search area and press ENTER to accept

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Parallel (Grid) Search Setup

Parallel Search using Cell Grid System

In the SAR map page press the PAT soft key

CIVIL AIR PATROL

Parallel (Grid) Search Setup

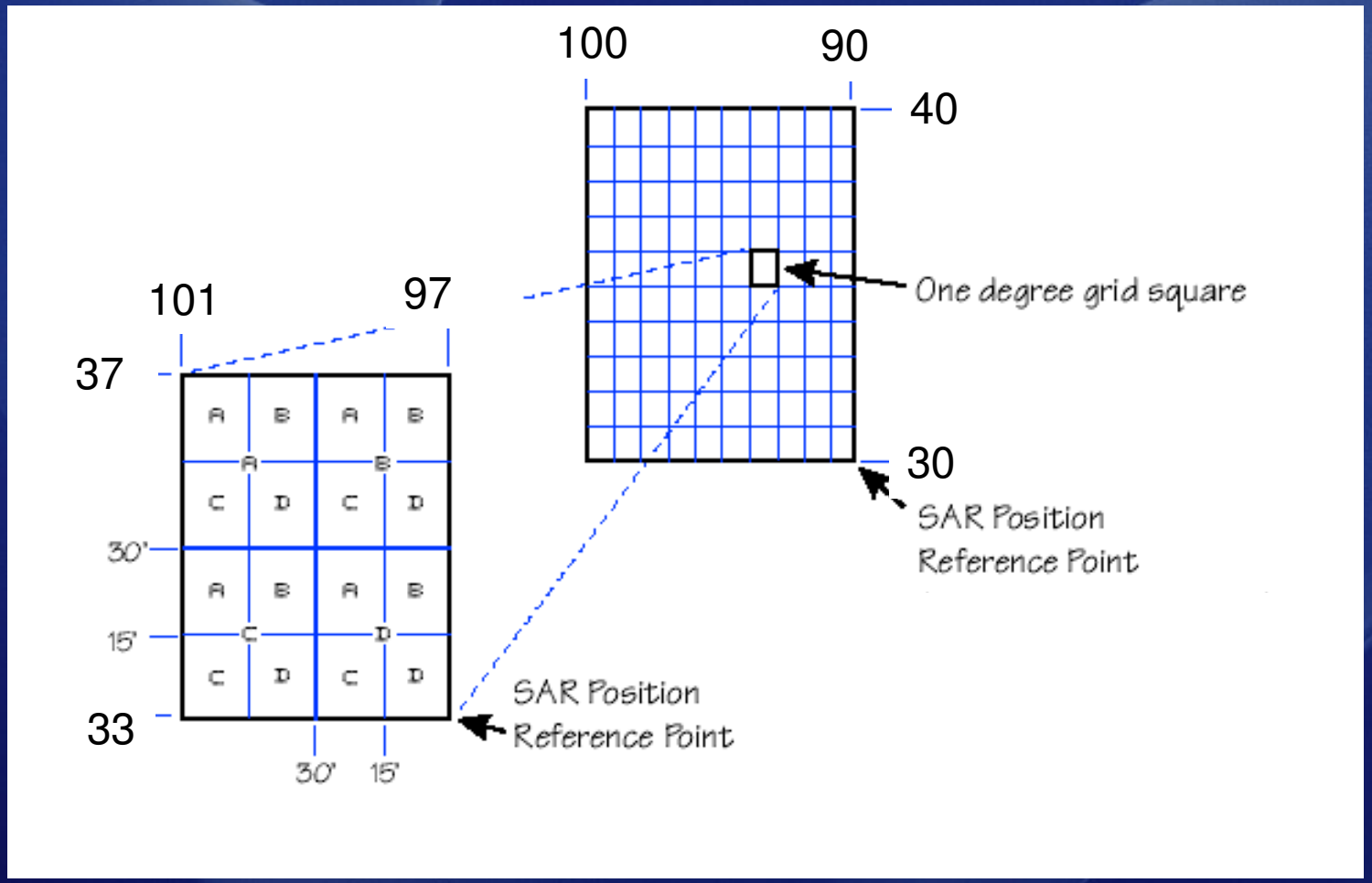
Parallel Search using Cell Grid System

Turn the SMALL KNOB until you see the Parallel Line page then press ENTER

CIVIL AIR PATROL

Parallel (Grid) Search Setup

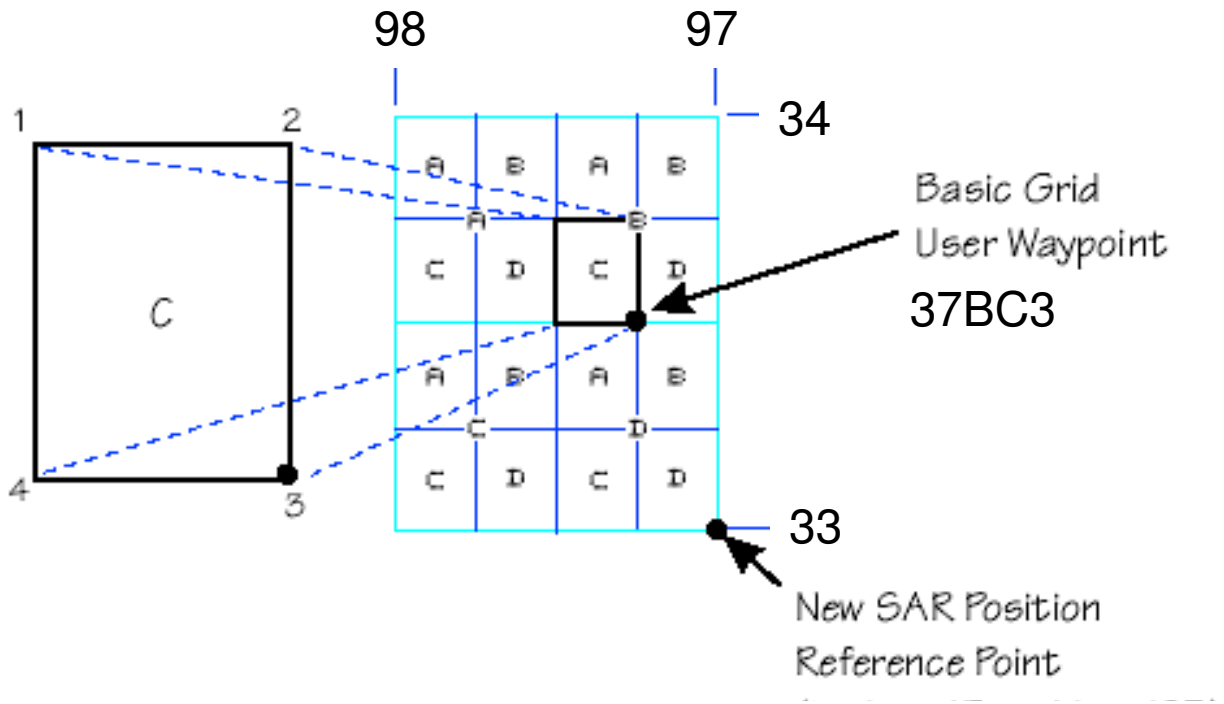
Parallel Search using Cell Grid System



CIVIL AIR PATROL

Parallel (Grid) Search Setup

Parallel Search using Cell Grid System



33 Lat and 97 Long

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Parallel (Grid) Search Setup

Parallel Search using Cell Grid System

- Press SEL then use the SMALL KNOB to change data the LARGE KNOB to move the flashing cursor
- Set the Grid to 37BC1
- Set the track spacing (0.2 – 5.0 NM)
- Set the search track direction N/S or E/W

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Parallel (Grid) Search Setup

Parallel Search using Cell Grid System

Press ENTER to accept your entry and ENTER again to return to the map page where your Parallel Search is shown

The data is sent to the GPS CDI and the GPS will call your turns based on your current speed via the MSG function

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Questions?

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