ADVANCED SAR Flight Checklist (C182T) G1000 Setup

WARNING: In Mid-Atlantic Region Proceed to Step 5—Critical Settings and waypoints must be maintained

1. **Restore MAP setup to factory settings**
   - From MAP display select **Menu**
   - Select **Map Setup** with Enter (**ENT**)
   - Ensure Map GROUP is displayed
   - Select **Menu**
   - Select **Restore All defaults**
   - Enter (**ENT**)
2. **Restore MDF AUX to factory settings**
   - Using **FMS** key
   - Select Page 4 (AUX-SYSTEM SETUP)
   - Press **DFLTS** *soft key* to restore defaults
3. **Delete all user Flight Plans**

   STOP: In Mid-Atlantic Region Flight Plans must be deleted individually…Critical Air Defense Flight Plans SHOULD NOT BE DELETED
   - **NOTE: You cannot delete the active Flight Plan**
   - Select **FPL** Page 2 (**FLIGHT PLAN CATALOG**)
   - Select **MENU**
   - Delete All
   - **ENT, ENT**
4. **Delete all USER WAYPOINTS**

   STOP: In Mid-Atlantic Region Flight Waypoints must be deleted individually…Critical Air Defense Flight Plans SHOULD NOT BE DELETED
   - Select **WPT** page
   - Select page 5 (**USER WAYPOINTS**)
   - Select **MENU**
   - Select **Delete All User Waypoints**
   - **ENT, ENT**
5. **Setting up Map Display settings**
   - From MAP display select **Menu**
   - Select **Map Setup** with Enter (**ENT**)
   - Ensure Map GROUP is displayed
   - Select ORIENTATION—NORTH Up
   - Select AUTO ZOOM—Off using FMS dial
   - Select LAND DATA—On
   - Select TRACK VECTOR—On (60 seconds)
   - Select WIND VECTOR—On

- Select NAV RANGE RING—On
- Select TOPO DATA—On (1500 NM)
- Select TOP SCALE—Off
- Select TERRAIN DATA—On (2000 NM)
- Select OBSTACLE DATA—On (20NM)
- Select FUEL RING—On
- Select FIELD OF VIEW—Off
- When done, only 3 **Off** setting will be seen

6. **Set Up Latitude and Longitude Grids**
   - From MAP display select **Menu**
   - Select **Map Setup** with Enter (**ENT**)
   - Ensure Land GROUP is displayed
   - Select **LAT/LON – TEXT—Med**
   - Select **LAT/LON – RNG—10 NM**
7. **Setting up the AUX Group Settings**
   - Using **FMS** key
   - Select Page 4 (AUX-SYSTEM SETUP)
   - Select **FMS** to activate cursor
   - Rotate **FMS** for **TIME FORMAT** to **UTC**
   - Select **NAV ANGLE** to TRUE (T)
   - Select **POSITION** to **HDDMMSS.S**
   - Select **MFD DATA BAR FIELDS** Group
   - Change **FIELD 1** to **GS**
   - Change **FIELD 2** to **DIS**
   - Change **FIELD 3** to **XTK**
   - Change **FIELD 4** to **BRG**
   - Select **MFD GPS CDI** Group
   - Change **SELECTED** to **0.3 NM**

SAR Search Methods

Note: There are several ways to fly most SAR Search Patterns. This chart outlines them. It is generally easier to fly using Method 1 listed. However, remember you may hand fly, or fly using the Heading knob to improve accuracy over the autopilot in many cases

Search Type	Method 1	Method 2	Method 3
Parallel Line	SAR software	WPT & FPL	Gridlines
Creeping Line	SAR software	WPT & FPL	
Expanding Square	SAR software	WPT & FPL	Gridlines
Sector Search	SAR software	WPT & OBS	
Route Search	FPL		

CAP Route Search:

1. Enter and save a flight plan
2. **FPL**
3. **MENU**
4. ® **FMS** to “Parallel Track”
5. Select offset direction (L or R)
6. Select offset distance (1.0 NM minimum)
7. Activate flight plan
8. Engage autopilot to NAV mode

CAP Grid Search:

1. Enter and save a Start waypoint
2. **FPL**
3. **MENU**
4. ® **FMS** to “Search and Rescue”
5. **ENT**
6. Select Start waypoint
7. Select “Parallel”
8. Set “Initial DTK” to first leg heading
9. Set “Initial Turn” to flow into Grid
10. Set “Leg Length” to stay in Grid
11. Set “Spacing” as required by POD (default 1 NM)
12. Set “Number of Legs” as required to cover Grid
13. Activate flight plan
14. Engage autopilot to NAV mode

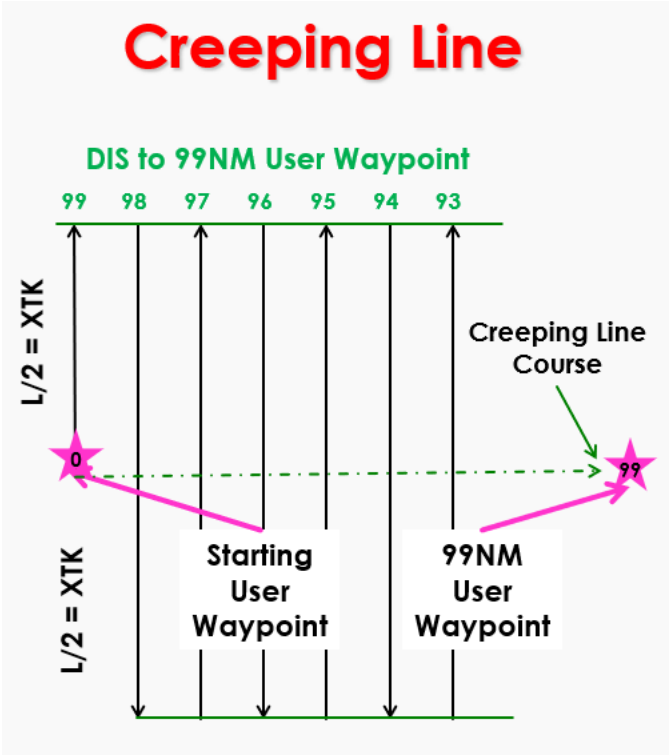
CAP Creeping Line Search:

Same as Grid except:

1. Start point should be offset from course
8. Set "Initial DTK" 90 degrees to course
9. Set "Initial Turn" to proceed on course
10. Set "Leg Length" to provide coverage

CAP Creeping Line Search--Alternate:

1. Determine true course between beginning point and end point of search from sectional
2. Insert a waypoint 99 miles beyond the start point of the creeping line, enter a flight plan from start to waypoint 99 miles beyond
3. Desired track for left offset of creeping line is DTK – 90°, Right offset of creeping line is DTK + 90°.
4. Approach the beginning point from the right side of the search course so that aircraft is established on creeping line track (DTK – 90°) prior to crossing search course.
5. When the Cross Track Error (XTK) readout indicates that the aircraft is at the Offset plus at least + 0.5 NM from the course line, perform a turn to intercept the reciprocal track (DTK + 90°)
6. Adjust the turn as necessary so that the aircraft is closer to the course end point by distance equal to track spacing
7. Continue this process until the search pattern is completed.



CAP Expanding Square Search:

1. Enter and save a Start waypoint
2. **FPL**
3. **MENU**
4. ® **FMS** to "Search and Rescue"
5. **ENT**
6. Select Start waypoint
7. Select "EXP SQR"
8. Set "Initial DTK" to first leg heading
9. Set "Initial Turn" as desired
10. Set "Spacing" as required by POD (default 1 NM)
11. Set "Number of Legs" as required
12. Activate flight plan
13. Engage autopilot to NAV mode

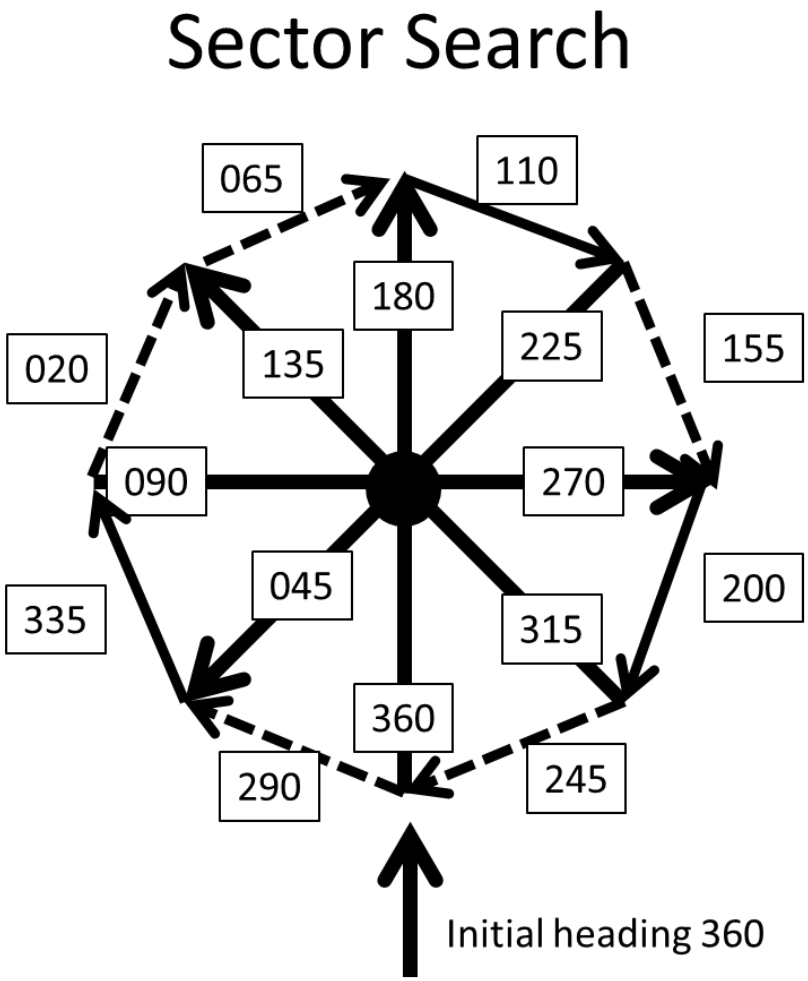
CAP Sector Search: The Sector Search may be flown two ways. Method One uses the SAR Software on the G1000 while Method Two is flown using the G1000 in the OBS mode.

Method One

1. Enter and save a Start waypoint
2. **FPL**
3. **MENU**
4. ® **FMS** to "Search and Rescue"
5. **ENT**
6. Select Start waypoint
7. Select "SECTOR"
8. Set "Initial DTK" to first leg heading
9. Set "Initial Turn" as desired
10. Set "Leg Length" as required (default 5 NM)
11. Activate flight plan
12. Engage autopilot to NAV mode

Method Two

1. Select the center point of the search as your destination in the G1000.
2. Fly using HDG mode to at least 1 NM south of search entry point.
3. Select the OBS mode using soft key and select CRS (using CRS knob) of 360 in GPS mode toward the point. You will note the magenta line ahead that is search course.
4. Arm NAV mode on G1000 and intercept the CRS line.
5. Once you pass the center point, the G1000 will continue to fly the same heading outbound. Once at least ½ NM outside your search area, turn to the referenced heading (110 Degrees) in heading mode.
6. Select CRS using CRS knob to second approach (225 degrees). As you approach the 225 CRS line, again activate NAV mode.
7. Continue to fly as shown, repeating items 5 and 6.



DF Operation (Becker)

1. **<u>ON/OFF button</u>:** Press
2. **<u>PAGE knob (top right)</u>:** Select “Emergency” or “Training” mode
    - Only enabled for 15 seconds after startup
    - *After mode is set, continue with checklist*
3. **<u>PAGE knob (top right)</u>:** Select “DF” Mode
4. **<u>Brightness:</u>** Adjust
    - Press and adjust REP button and PAGE knob
5. **<u>Frequency (lower right)</u>:**
    - Rotate -/+ button to select preprogrammed frequency
6. **<u>Frequency Adjust Only if Needed</u>:** (Normally Not Required)
    - Select page 6 using PAGE knob
    - Using VOLUME knob (bottom left) , select frequency to change
    - Using VALUE knob (bottom right), adjust values
    - Press STORE button twice to save
7. **<u>VOLUME knob (bottom left)</u>:** Adjust
8. **<u>SQUELCH knob (top left)</u>:** Adjust
    - Rotate to where static is barely eliminated

<u>DF presentations</u>:

-- PAGE knob *scrolls through pages 1-3*

-- All bearings are* RELATIVE *to aircraft heading

-- Solid circle is most probable bearing

-- Open circles are maximum limits of bearings

DF Reception Table

ALTITUDE FT AGL	DISTANCE NM
1500	16
2000	18
3000	26
4000	30
5000	32
6000	34
7000	44
8000	56
9000	63
10000	69

CAP FM Radio (TDFM-136)

1. **OFF/MAIN button:** Rotate Right to turn on
2. **Select Preset Frequency:**
   - The radio will set last frequency used or a preset
   - To select another preprogrammed frequency, use the 4/6 keys (arrows) to move to desired preset
3. **MN/GD Toggle:**
   - Determines which frequency you transmit in: MN—Main, or GD—Guard
4. **G1/G2:** Selects Guard One or Two (Note Guard is always monitored & shown in second frequency line
5. **HI/LO:** Selects high or low power on the radio (Normally set on low)
6. **Brightness:** Use the 2/8 (arrow) keys to select

Zulu Time Chart

LOCAL	EDT	EST	CDT	CST	MDT	MST	PDT	PST
Midnight	0400	0500	0500	0600	0600	0700	0700	0800
1 a.m.	0500	0600	0600	0700	0700	0800	0800	0900
2 a.m.	0600	0700	0700	0800	0800	0900	0900	1000
3 a.m.	0700	0800	0800	0900	0900	1000	1000	1100
4 a.m.	0800	0900	0900	1000	1000	1100	1100	1200
5 a.m.	0900	1000	1000	1100	1100	1200	1200	1300
6 a.m.	1000	1100	1100	1200	1200	1300	1300	1400
7 a.m.	1100	1200	1200	1300	1300	1400	1400	1500
8 a.m.	1200	1300	1300	1400	1400	1500	1500	1600
9 a.m.	1300	1400	1400	1500	1500	1600	1600	1700
10 a.m.	1400	1500	1500	1600	1600	1700	1700	1800
11 a.m.	1500	1600	1600	1700	1700	1800	1800	1900
NOON	1600	1700	1700	1800	1800	1900	1900	2000
1 p.m.	1700	1800	1800	1900	1900	2000	2000	2100
2 p.m.	1800	1900	1900	2000	2000	2100	2100	2200
3 p.m.	1900	2000	2000	2100	2100	2200	2200	2300
4 p.m.	2000	2100	2100	2200	2200	2300	2300	2400
5 p.m.	2100	2200	2200	2300	2300	2400	2400	0100
6 p.m.	2200	2300	2300	2400	2400	0100	0100	0200
7 p.m.	2300	2400	2400	0100	0100	0200	0200	0300
8 p.m.	2400	0100	0100	0200	0200	0300	0300	0400
9 p.m.	0100	0200	0200	0300	0300	0400	0400	0500
10 p.m.	0200	0300	0300	0400	0400	0500	0500	0600
11 p.m.	0300	0400	0400	0500	0500	0600	0600	0700
LOCAL	EDT	EST	CDT	CST	MDT	MST	PDT	PST

Grid Coordinate Chart