

# ICOM IC-M100 VHF RADIO

- TURN ON
  - Circuit breaker ON
  - Press VOLUME knob in
  
- TUNE CHANNEL ON DIAL
  - Press button marked DIAL
  - Rotate dial to channel number
  
- SET CHANNEL INTO MEMORY
  - Press FUNCTION button, then hold MEMORY READ [MR] button until MEMO blinks.
  - Turn dial to desired memory number (memory bin into which you put a channel number), then press FUNCTION button.
  - Turn dial to desired channel number, then press FUNCTION button.
  
- SCAN MEMORY CHANNELS
  - Press FUNCTION button, then MR button.
  - Rotate [SQUELCH] CONTROL button CW to close squelch.
  - Press FUNCTION button, then SCAN button
  - To stop scan, press FUNCTION button, then turn dial to desired memorized channel
  
- RETURN TO DIAL CHANNELS
  - Press DIAL button
  - Turn dial to desired channel
  
- TRANSMIT MESSAGE
  - Press and hold button on microphone to talk
  - Release button on microphone to listen

# ICOM IC-M120 VHF RADIO

- TURN ON
  - Circuit breaker ON
  - Press VOLUME knob in
- TUNE CHANNEL ON DIAL
  - Press button marked DIAL
  - Rotate dial to channel number
- SET CHANNEL INTO MEMORY
  - Press MEMORY button until memory number flashes
  - Turn dial to desired memory number (memory bin into which you put a channel number)
  - Press MEMORY button until channel number flashes
  - Press DIAL, then turn dial to desired channel number
  - Press HI/LO button to change power setting, if desired
  - Press MEMORY button
- SCAN MEMORY CHANNELS
  - Press MEMORY button
  - Press SCAN button
  - To stop scan, press MEMORY button then turn dial to desired memorized channel
- RETURN TO DIAL CHANNELS
  - Press DIAL button
  - Turn dial to desired channel
- TRANSMIT MESSAGE
  - Press and hold button on microphone to talk
  - Release button on microphone to listen

## SEA 222 HF/SSB RADIO

- TURN ON
  - Circuit breaker ON
  - Rotate volume knob clockwise until click
- SELECT CHANNEL: Enter two or three digit number followed by ENTER
- PROGRAM CHANNEL
  - Press '8' eight times or until display shows PROGRAM
  - When display shows 'BIN # ?' enter number (10 to 99) and push ENTER
    - If BIN is already full, display shows BIN FULL
    - To override, push any number button once
    - To choose another BIN, wait for display to show 'BIN # ?'
  - Enter transmit frequency to one decimal place and push ENTER
  - Display will show A3J; push ENTER
  - Enter receive frequency and push ENTER (if same, just push ENTER)
  - If necessary push ENTER; display will eventually show 'BIN # ?'
  - Repeat for other channels and frequencies
  - When done, wait for display to show a frequency (timed release)
- SELECT LISTEN-ONLY FREQUENCY: Enter frequency in kilohertz to one decimal place; push ENTER
- TUNE ANTENNA TO TRANSMIT
  - Select channel (see above)
  - Make sure coax switch set to antenna (if weather fax aboard)
  - Push microphone button and speak loudly into microphone
  - Voice-activated tuning occurs; \* in display means success
- TRANSMIT MESSAGE: Same as VHF

# FURUNO D FAX WEATHERFAX

- TURN ON
  - Circuit breaker ON
  - Press POWER button.
- SELECT STATION
  - Press CH button; move cursor with horizontal arrows; change value with vertical arrows.
  - For NMF (USCG Marshfield MA) set 56\* in the three left slots; for CFH (Halifax) set 57\*. The \* selects the best available frequency.
- UPDATE STATION FREQUENCY(IES)
  - Press RCL/ PGM twice and use vertical arrows to make “Update CH FREQ?” appear in window.
  - Press ENT and data entry for station will appear.
  - Use horizontal arrows to move cursor and vertical arrows to change values to enter the station zone and station numbers, e.g., 57 for CFH.
  - Use horizontal and vertical arrows to view frequencies for each channel (third number). For channel 0, window will display “570N CFH xxxxx.” Use arrows to change xxxxx to frequency in kilohertz., e.g., “04271.”
  - Press ENT to store frequency.
- SET TIME
  - Press RCL/PGM twice, then ENT. Display reads “Set Clock?” followed by “Set CLOCK xx:xx.”
  - Use horizontal arrows to move cursor, vertical arrows to change values. Press ENT.
- RECEIVE WEATHER FAX (ALL, MANUAL)
  - Press MODE; scroll using vertical arrows until “Manual Start?” appears in window; press ENT.
  - Note that you may have to adjust SPD/ IOC or PHASE; see tech reference manual.
- CREATE SCHEDULE
  - Press RCL/PGM twice; scroll with vertical arrows until “SET Schedule?” appears.
  - Press ENT and schedule data appears, e.g., “57\*N CFH \* xx:xx xx:xx” for Halifax.
  - Use horizontal and vertical arrows to move cursor and change values for station and start and stop times. Get times from Reed’s Nautical Almanac. [Set clock to GMT if use GMT times in programs.]
  - Press ENT and the message “SET” will acknowledge acceptance.
  - Up to 16 programs may be in the schedule. See tech reference manual to update existing or remove programs.
- RUN SCHEDULE
  - Press MODE; scroll to see “TIMER ON” in the window; press ENT.

# RAYTHEON R20 RADAR

- **TURN ON**
  - Circuit breaker ON
  - Press STDBY button
- **TRANSMIT/ RECEIVE**
  - Press XMIT button after 1.5 minute warmup.
- **SELECT RANGE AND TUNE FOR RANGE**
  - Hold RANGE button until buzzer sounds, then press UP or DOWN arrows (upper right buttons) for range (displayed in nm after R (lower left corner)).
  - Hold TUNE button until buzzer sounds, then press UP/ DOWN buttons to max sea clutter return.
- **SELECT GAIN, SEA CLUTTER AND RAIN CLUTTER LEVELS**
  - Hold GAIN until buzzer sounds, then press UP/DOWN until light speckles over all screen.
  - Hold VRM or EBL button until buzzer sounds, then press UP/DOWN button to move VRM or EBL to target.
  - Hold SEA CLUTTER or RAIN CLUTTER button until buzzer sounds, UP/DOWN to adjust SEA CLUTTER or RAIN CLUTTER to reduce returns in center and edge of screen, respectively. Remember that reduced clutter also reduces valid targets.
- **OPERATE VARIABLE RANGE MARKERS (2) AND ELECTRONIC BEARING LINES (2)**
  - Read bearing and range for active VRM and EBL in upper left and right corners.
- **OPERATE ALM, BRIL, SHM, SELECT BUTTONS**
  - Hold ALM until the buzzer sounds to active alarm, then press UP/DOWN to set distance for alarm.
  - Depress BRIL button to cycle through levels of brightness for screen and panel illumination.
  - SHM erases ship's heading marker on screen while button held.
- **SELECT AND SET BUTTONS**
  - Press SELECT button to adjust Fixed Rings (F), Interference Rejection (I), Expansion (E), Hold (H), LORAN C LAT/LON (L), or Time Differences (T); repeat press until appropriate letter appears reversed in color
  - Press SET to change the ON/OFF choice.
  - FIXED RINGS turns ON/ OFF range rings on screen; distance between rings displayed in nm after RR in lower left corner.
  - INTERFERENCE REJECTION stops curved lines and large Xs on screen from other similar radars in use nearby.
  - EXPANSION enlarges target size on scope.
  - HOLD freezes the display while SET button is pressed.
  - LORAN C displays LAT/LON in lower right corner of screen; value from an external source.
  - TIME Difference display TDs in lower right corner of screen; values from an external source.

# RAYTHEON R20X RADAR

- TURN ON
  - Circuit breaker ON
  - Press STDBY button
- TRANSMIT/ RECEIVE
  - Press XMIT button after 1.5 minute warmup.
- SELECT RANGE AND TUNE FOR RANGE
  - Press UP or DOWN arrows (upper right buttons) for range (displayed in nm after R (lower left corner)).
  - Turn TUNE knob until max number of boxes lit (lower left corner).
- SELECT GAIN, SEA CLUTTER AND RAIN CLUTTER LEVELS
  - Turn gain up until light speckles over all screen.
  - If necessary, adjust SEA CLUTTER and RAIN CLUTTER to reduce returns in center and edge of screen, respectively. Remember that reduced clutter also reduces valid targets.
- OPERATE VARIABLE RANGE MARKERS (2) AND ELECTRONIC BEARING LINES (2)
  - Press quickly VRM or EBL button to turn current line on or off.
  - Press and hold VRM or EBL to switch between line 1 and 2.
  - Press expanding arrows button to move VRM out; contracting arrow button to move VRM in.
  - Press curved arrow buttons to move EBL CW or CCW.
  - Read bearing(s) and range(s) for active VRM(s) and EBL(s) in upper left and right corners.
- OPERATE MODE, LL/TD, WP, ENHANCE, IR, SHM, RR, ALM, BRIGHT/DIM BUTTONS
  - If LORAN active, MODE button repeats heading in True or Magnetic.
  - If LORAN/GPS is activated, LL/TD button repeats location on screen; WP button repeats bearing and distance to active way point.
  - ENHANCE enlarges target size on scope.
  - IR (interference rejection) stops curved lines and large Xs on screen from other similar radars in use nearby.
  - SHM erases ship's heading marker on screen while button held.
  - RR turns ON/ OFF range rings on screen; distance between rings displayed in nm after RR in lower left corner.
  - ALM activates entry/ exit alarm for toroid or smaller portion of toroid defined by VRMs and EBLs.
  - BRIGHT/ DIM button allows variable backlighting of buttons and intensity of screen display. Push once for BRIGHT, again for DIM, then use arrow keys in upper right for up or down.