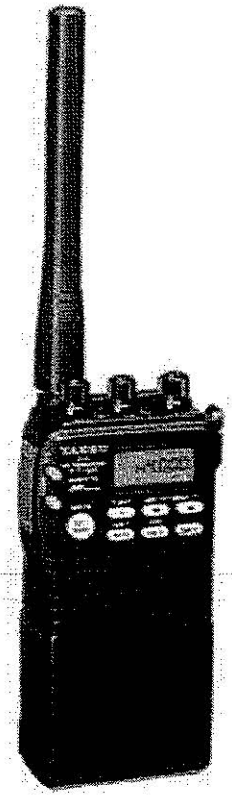
YAESU



FT-26

VHF Hand-Held Paging Transceiver

FT-26 2m Hand-Held FM Paging Transceiver

The FT-26 is an ultra compact FM handheld for the 2-meter amateur band offering a vast array of features made possible by the newest manufacturing miniaturization methods and microprocessor control. Transmitter power output is user-selectable in four levels, up to five watts (when used with a 12-volt battery pack or DC supply). The FT-26 offers a whole new range of battery preserving features, and a wealth of selective calling/paging features designed to revolutionize the way you operate.

The sculpted die-cast alloy rear case/heatsink and thick high-impact polycarbonate plastic front panel and battery cases provide professional-grade ruggedness desirable for demanding applications. Rubber gasket seals around all external controls and connectors keep out dust and rain or spray, assuring years of reliable operation even in harsh environments. The LCD (Display) has selectable lighting modes, and shows six frequency digits and all programmable functions, plus a bargraph meter for signal strength and power output. An external DC supply jack is provided on the top panel for powering the transceiver from an external 5.5- to 16-volt DC source, and will also charge a Ni-Cd battery pack connected to the transceiver. A 36-mm diameter loudspeaker provides low-distortion receiver audio, and VOX circuitry is included for hands-free transmit/receive control with the optional YH-2 headset.

Fifty-three freely tunable memories have complete programmability and scanning features, such as independent tx/rx frequencies or programmable offsets, programmable subband limits for band scanning, selectable scan skip for busy channels, scan resume on carrier drop or after 5-second pause, priority monitoring and 1-touch instant-recall CALL channel.

Memories can be easily copied between the microphone jacks of two transceivers using an optional cloning cable. Channel steps are selectable from 5, 10, 12.5, 15, 20 or 25 kHz; and 1-MHz steps are always available. A 1750-Hz burst tone generator is provided in European versions (in place of squelch override in other versions), and the FTS-17A CTCSS (Continuous Tone-Controlled Squelch System) option with 38 standard tones, storable in each memory independently, can be installed in all versions. With the FTS-17A, a CTCSS Bell feature can be set to sound a paging alert tone when tone squelch opens.

In addition to the 4-level power output selection and built-in battery charger, unique battery charge life extending features include Yaesu's ABS (Automatic Battery Saver), which monitors operating history and optimizes the save duration accordingly; selectable 10-, 20- or 30-minute APO (Automatic Power Off) to turn off the radio after a period of inactivity; selectable always-on or 5-second display and keypad illumination; and even the capability to disable the BUSY lamp.

The revolutionary DTMF (Dual-Tone, Multi-Frequency) -based selective calling and private paging capabilities are controlled entirely from a few keys on the front panel. You can select any of 999 3-digit ID codes for your transceiver, and then have your receiver stay quiet until your code is received (from any standard DTMF-equipped transceiver). Upon receiving the DTMF ID code, you can have a synthesized paging beeper sound (once, or repeating 5 times), and also have the squelch open, or not, as desired. Additionally, in the page mode, when your ID code and a 3-digit ID code of the calling station are received, your display shows his code, so you know who is calling. Six 3-digit code memories are provided for storing your ID plus those of 5 other frequently-called stations or groups you wish to monitor (autopatching facilities are not available).

Please read this manual carefully to become familiar with the features of the FT-26.

Specifications

General

Frequency range (MHz):
144 ~ 148 (vers. A1, B2)
144 ~ 146 (vers. B1)

Channel steps: 5, 10, 12.5, 15, 20 & 25 kHz

Std. repeater shift: ± 600 kHz (programmable)

Emission type: G3E

Supply voltage: 5.5 to 16 V DC

Current consumption:
7 mA Auto Power Off
19 mA Stby (Save ON);
130 mA Receive @ 7.2V,
200 mW AF out;
170 mA Receive @ 12V,
500 mW AF out;
1200 mA Transmit (5W);

Antenna (BNC jack): YHA-17 rubber helical

Case size (WHD): 55 × 146 × 33mm w/FNB-27

Weight (approx): 430 grams with FNB-27

Receiver

Circuit type: Double-conversion superhet

IFs: 17.7 MHz & 455 kHz

12-dB SINAD Sensitivity:
better than 0.158 µV

Adjacent channel selectivity:
> 60 dB

Intermodulation: > 65 dB

AF output (@ 12 V, for 5% THD):
0.5 watts @8 Ω

Transmitter

Power output (@ 12 V):
5, 3, 1.5 and 0.5 watts

Frequency stability: better than ± 10 ppm

Modulation system: variable reactance

Maximum deviation: ± 5 kHz

FM Noise (@ 1 kHz): better than –40 dB

Spurious emissions:> 60dB below carrier

AF distortion (@ 1 kHz):
< 5%, w/3.5 kHz dev.

Microphone type: 2-kΩ condenser

Burst tone: 1750 Hz (except vers. A1)

Specifications may be subject to change without notice or obligation.

Accessories & Options List

Rechargeable Ni-Cd Battery Packs

FNB-25	7.2 V, 600 mAh
FNB-26	7.2 V, 1000 mAh
FNB-27	12 V, 600 mAh
FNB-28	7.2 V, 700 mAh

Compact 15-hour Chargers

NC-18B	117 VAC, for FNB-27
NC-18C	220/234 VAC, for FNB-27
NC-28B	117 VAC, for FNB-25/-28
NC-28C	220/234 VAC, for FNB-25/-28
NC-34B	117 VAC, for FNB-26
NC-34C	220/234 VAC for FNB-26

NC-42 1-Hour Desktop Quick Charger for all above FNB packs

FBA-12 Battery Case for 6 AA-size Dry-Cells

CLIP-3 Belt Clip

BC-1 Bottom Cover (for use without Battery)

CSC-53 Soft Case for FT-26 w/FBA-12/FNB-25

CSC-54 Soft Case for FT-26 with FNB-28

CSC-55 Soft Case for FT-26 w/FNB-26/FNB-27

E-DC-5 Cig. Lighter DC Cable/Noise Filter

MMB-49 Mobile Hanger Bracket

$MH\text{-}12_{A2B}$ Hand Speaker/Microphone

$MH\text{-}18_{A2B}$ Miniature Hand Speaker/Mic

$MH\text{-}19_{A2B}$ Earpiece/In-Line Miniature Mic

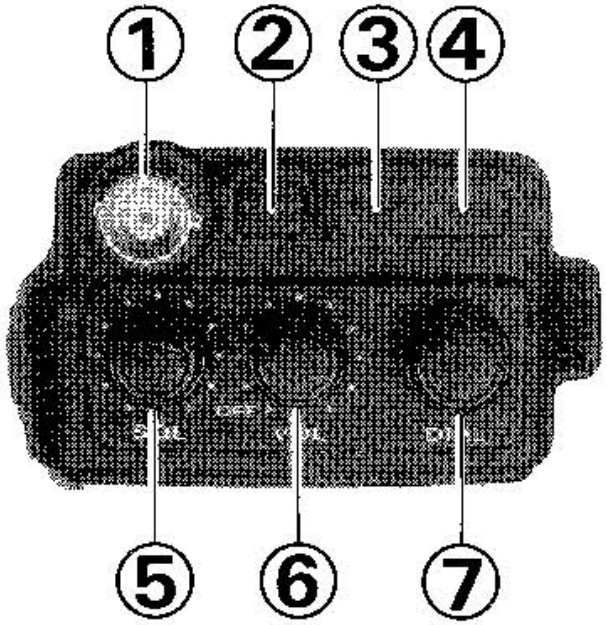
YH-2 VOX Headset

YHA-17 Rubber flex antenna

FTS-17A CTCSS Subaudible Tone Squelch Unit

Availability of accessories may vary: some accessories are supplied as standard per local requirements, others may be unavailable in some regions. Check with your Yaesu dealer for changes to the above list.

Controls & Connectors



Top Panel

(1) Antenna Jack

This BNC jack accepts the supplied YHA-17 rubber flex antenna, or another antenna designed to provide 50-ohm impedance on the 2-meter band.

(2) **EXT DC** Jack (under rubber cover)

This 3.5-mm coaxial jack accepts an external source of 6.5 to 16 volts DC (center contact positive) to operate the transceiver, and to charge a Ni-Cd battery pack if installed on the bottom of the transceiver.

Note: the protective rubber cover over the jacks must be pulled up (by the tab at the right end) to access the jacks. Press it back over the jacks when they are not in use, to protect the inside of the transceiver from dust and water.

(3) **EAR** Jack (under rubber cover)

This 2-conductor, 3.5-mm mini phone jack provides audio output for an optional earphone or speaker/mic (impedance is 8Ω). The internal loudspeaker is disabled when this jack is used.

(4) **MIC** Jack (under rubber cover)

This 2-conductor, 2.5-mm phone jack accepts microphone input from an optional microphone or speaker/mic (impedance is 2-kΩ). The internal microphone is disabled when this jack is used.

(5) **DIAL** Rotary Selector

Use this 20-position switch to tune the operating frequency, or select memory channels and other programmable settings such as tuning steps and paging codes, according to the function selected by the front panel keys. This knob also duplicates the normal functions of the ▲ and ▼ keys for convenience.

(6) **VOL/OFF** Control

This control adjusts the volume of the receiver. Turn it fully counterclockwise (into the click stop) to turn the transceiver off.

(7) **SQL** Control

This knob sets the threshold level at which received signals (or noise) open the squelch. It should normally be set just to the point where noise is silenced (and the **BUSY/TX** lamp on the front panel is off) when the channel is clear.

Side & Front Panels

(1) Monitor (Burst), **PTT** & **LAMP** Switches (under rubber cover)

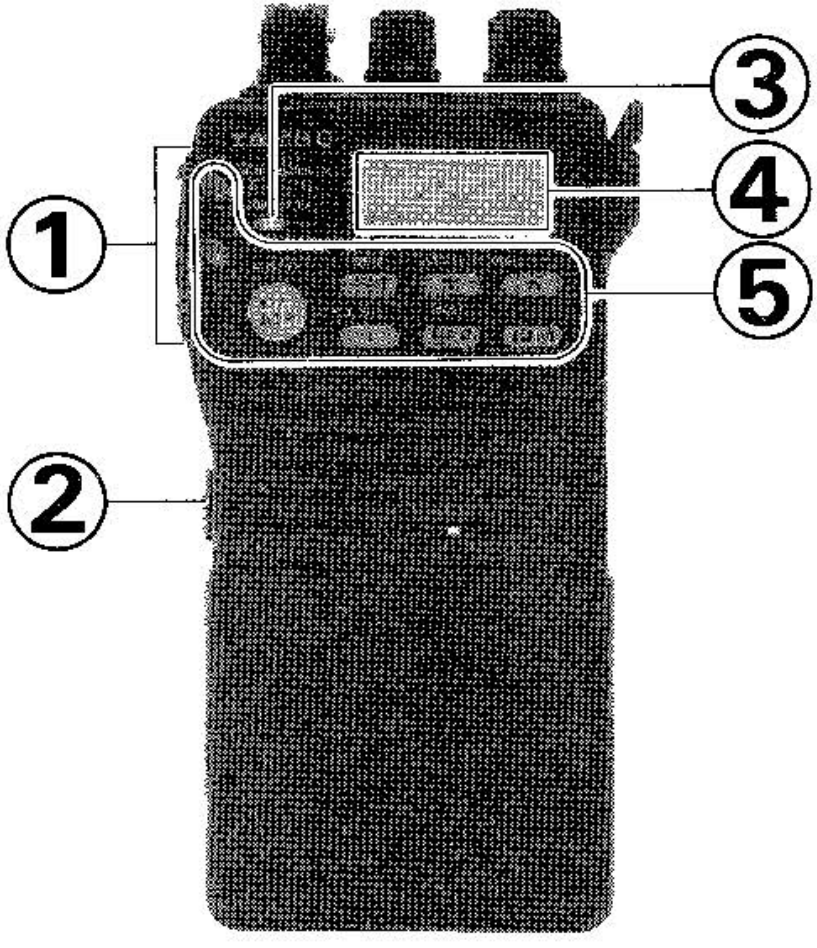
The three buttons under the rubber cover are activated by pressing the ridges at the top (Monitor/Burst) or bottom (Lamp) of the cover, or the center of the cover (PTT),

The rubber cover over the switches is intended to be permanent, and allows the switches to be operated underneath without removal.

In the US version, the (upper) Monitor/Burst switch opens the squelch momentarily without disturbing the squelch settings. In the European version, this switch activates the 1750-Hz burst tone generator to transmit the tone (the PTT switch does not need to be pressed to transmit the tone).

Press and hold the (center) PTT switch while speaking across the front of the transceiver to transmit (the microphone element is near the lower right corner of the panel. The **BUSY/TX** indicator glows red while transmitting.

Press the (lower) **LAMP** switch to illuminate the display and keypad when operating in the dark. Pressing only this switch activates the lamp for 5 seconds. Press the **F|M** key first if you want the lamp to stay on (until you press the switch again).



(2) Battery Release Button

Slide this mechanical button upward to install a battery pack, and to release the battery for removal.

(3) **BUSY/TX** Indicator Lamp

This LED indicator glows red when transmitting, and, unless you disable it, green when the noise squelch is open (the channel busy) during reception.

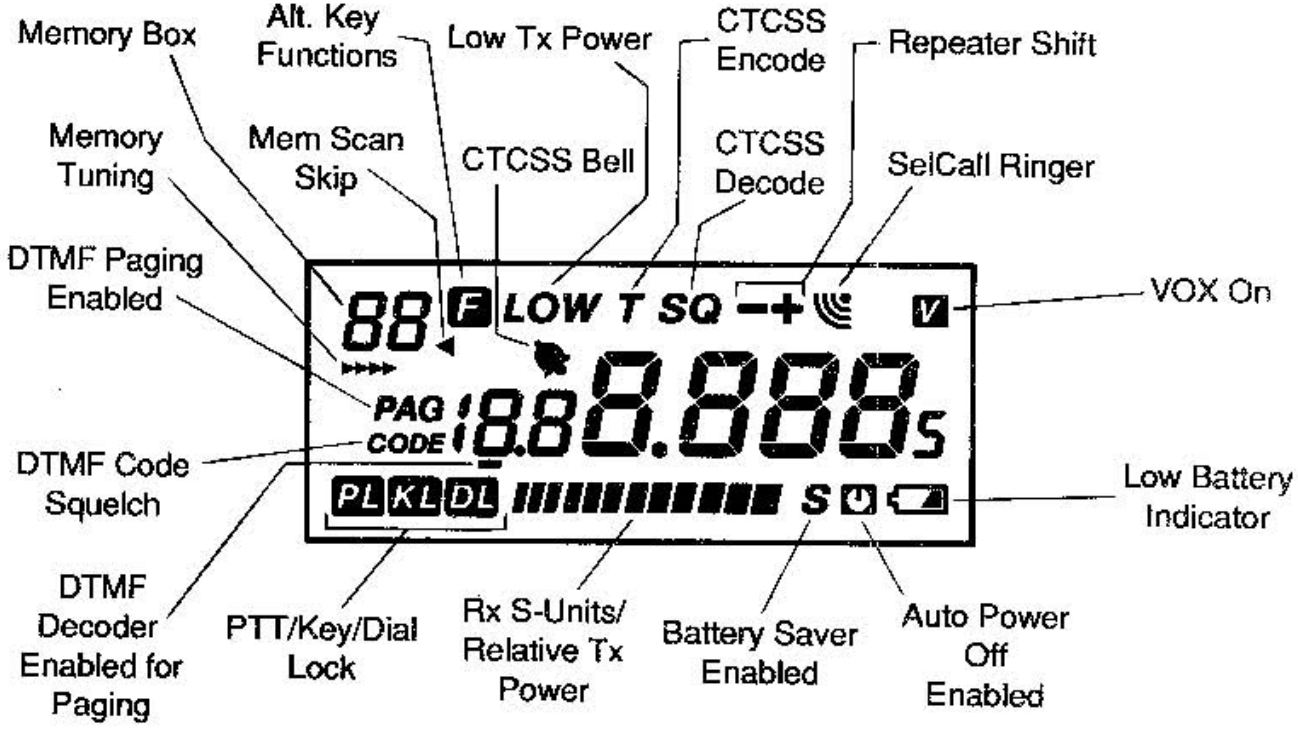
(4) Liquid Crystal Display

The display shows current operating conditions as indicated on the next page.

(5) Nine Rubber Keys

These keys select the various operating features of the transceiver during reception. One or two beeps will sound whenever one of the keys is pressed (unless the key beeper is disabled). The labels on the faces of the keys indicate their primary functions, while the adjacent labels on the panel indicate alternate functions, which are activated by pressing the **F|M** key first, and then the other key within four seconds. In this manual, we will refer to these functions by the alternate label

(above the key), prefixed by "F|M → " to remind you to press F|M first. For example, F|M → ▲ indicates that you should press the F|M key, followed by the ▲ key within four seconds. Most of the keys also have a third level of function, for setting various parameters. This "setting" level is activated by pressing first the F|M key, then the RPT (SET) key, and then one of the other keys. We will refer to these setting functions by prefixing the main keyface name) with "F|M → SET →". The key functions are summarized in the table on the next page (by key), and by function on the *FT-26 Operator's Quick Reference Card.* These are described in detail in the *Operation* chapter.



Key Functions

Key/ Button	Normal Function	Alternate Function (after F/M) "F" displayed for 5 seconds	Setting Function (after F/M SET RPT) "SE" displayed for 3 seconds
H/L (C)	Jump to CALL Channel	Toggle High/Low Transmit Power (Low: select level L1/L2/L3 with Dial)	Toggle VOX on/off (requires YH-2 Headset)
CODE (P)	Toggle SelCall/Sql Modes: Paging → Code Squelch → CTCSS Bell → off	Activate DTMF Code Memory Selection & Setting (see rightmost column of Table).	Display 1-touch pager status (F/M turns on/off), and DTMF code transmit delay (Dial selects 450/750 ms).
LAMP	Light Display for 5 seconds, or turn off illumination if on.	Light Display until same button pressed again.	same as Normal Function
SKIP D/ MR	Toggle Dial/Memory Modes	Toggle Scan Skip (Memory Mode only)	Display/set Auto Pwr Off status (change with this and Dial)
SET RPT	Toggles Repeater Shift direction: –/+/off (simplex)	Activate Setting Functions of this and other keys	Display/set Repeater Offset (change with Dial), and Toggle Auto Rptr Shift (F/M key)
MT MHz ▼	Tune down 1 step or Memory Channel	Dial Mode: step down 1 MHz Mem Mode: Activate Memory Tuning	Lock/Unlock Keypad("KL")/PTT("PL") (press this key at least twice!). Also use ▲ key to toggle Dial lock ("DL") w/"KL"
MHz ▲	Tune up 1 step or Memory Channel	Dial Mode: step up 1 MHz Mem Mode: same as Normal Function	Display/set DTMF Pocket Bell & No. of Rings (change with F/M & Dial)
TSET T	Toggles CTCSS Enclode/Decode Mode: T/(T SQ)*/off, or cancels CTCSS Tone Freq. Display, if active.	Toggle Display/setting of CTCSS tone freq. and "b" if key/button beeper enabled (Dial and F/M to change)	Display/set Busy LED enable/disable (left, toggle with F/M), and Power Saver Off/ABS/1:1/1:2/1:3 (set by Dial)
PRI REV	In split operation only: Toggle Reversed Tx/Rx Frequencies. Direction sign blinks while reversed.	Activate Priority Monitoring (D/MR deactivates)	Display/set Scan Resume Mode ("5" or "P" in Memory Box), & Tuning Steps (change with F/M & Dial, resp.)
F/M	Momentary: enables alternate funcs of other keys (middle column of Table). Hold ½-sec., then press again to store display into memory.	Cancel Alternate Functions of other keys (also automatic after 5 seconds).	Toggles status of some features (1-touch paging, Pocket Bell, Busy Lamp, ARS, Scan Resume Mode)

* requires FTS-17A Tone Squelch Option

Accessories

Batteries & Chargers

The FT-26 requires the FNB-27 twelve-volt rechargeable Ni-Cd battery pack for the full 5-watt transmitter power output. However, where slightly lower maximum power output is practical, the FBA-12 dry-cell battery case (1.5 watts) and the 7.2-volt FNB-25, FNB-26 and FNB-28 Ni-Cd packs (2 watts) offer smaller size, lighter weight or extended battery charge life. Also, the 7.2-volt Ni-Cd packs may be recharged while attached to the transceiver, using the **EXT DC** jack on the top. Any Ni-Cd pack should be fully charged before it is used with the transceiver for the first time.

Three types of chargers are available: 15-hour compact chargers, the NC-42 1-hour Desktop Quick Charger and the 15-hour internal charging circuit powered by the E-DC-5 Cigarette Lighter Plug Adapter and an external DC voltage source.

Different 15-hour compact chargers are required for different packs:

Ni-Cd Pack	Voltage	Capacity (mAh)	Compact Charger
FNB-25/-28	7.2	600/700	NC-28A
FNB-26	7.2	1000	NC-34A
FNB-27	12	600	NC-18A

Make certain that you use the correct compact charger for each pack. Each compact charger is available with a "B" suffix for operation from 117-VAC, or with a "C" suffix for operation from 220 ~ 234-VAC.

NC-42 *1-hour Quick Charger*

The NC-42 is a universal AC mains battery charger with quick and trickle charging modes for all of the FNB series Ni-Cd packs listed above. It comes wired for the mains voltage in the area sold. The quick mode is automatically selected initially, to bring the battery pack up to full charge as fast as safely possible using a Δ-V sensor. A red LED lights during quick charging, and when the pack approaches full charge, the charger reverts to the trickle mode (green LED), to prevent self-discharge. The quick mode recharges a completely discharged bat-

tery in about 1 hour, depending on temperature.

E-DC-5 Car Cigarette Lighter Plug/Adapter

The E-DC-5 connects the **EXT DC** Jack on top of the transceiver to a car lighter, to provide operating and battery charging voltage from the automobile electrical system or another DC source (see box this page). Be careful to avoid overcharging. *Use only with 12-volt negative-ground electrical systems.*

FBA-12 Dry-Cell Battery Case

The FBA-12 dry-cell battery case may be used with six "AA"-size (UM-3) batteries. Maximum power output is about 1.5 watts. Use alkaline cells for best performance.

Caution! *The FBA-12 must not be used with rechargeable cells.* It lacks the necessary thermal and over-current protection circuits provided in the FNB series.

One or more of the above may be supplied with the transceiver. If you need a battery, contact your Yaesu dealer. We do not recommend the use of any other type of battery with the FT-26, and using another type may affect your warranty.

Operating & Charging with an External DC Supply

The E-DC-5 or another cable with a 3.5-mm coaxial plug that matches the **EXT DC** Jack can be used to operate the transceiver from a source capable of providing 1.5 amperes at 5.5 to 16 VDC.

To charge a battery through this jack, the supply voltage must be at least 2 volts higher than the nominal battery voltage (9.2 volts for the FNB-25, -26 and -28, or 14 volts for the FNB-27). Charging time depends on the battery capacity and state of charge, and is typically 18 hours for the FNB-25 and -27, 21 hours for the FNB-28, and 30 hours for the FNB-26, when fully discharged. Be careful to avoid overcharging a battery pack when using an external DC supply: when a battery is fully charged, disconnect it and install a BC-1 bottom cover on the transceiver to protect it.

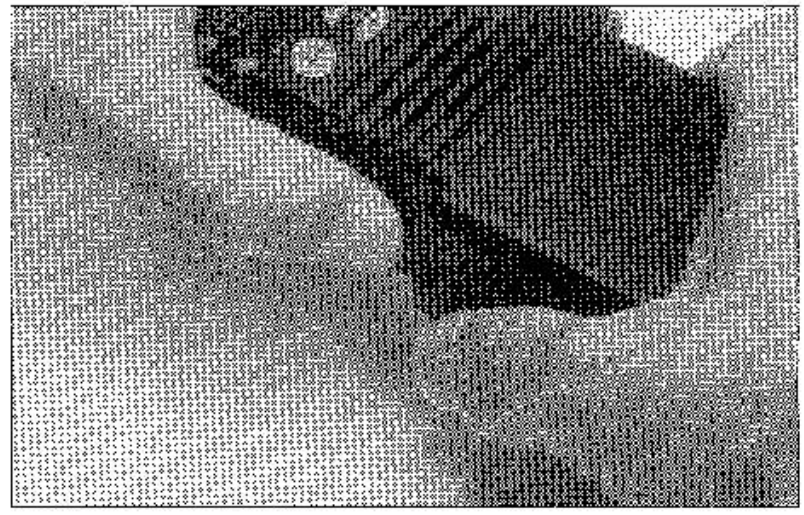
Battery Removal & Replacement

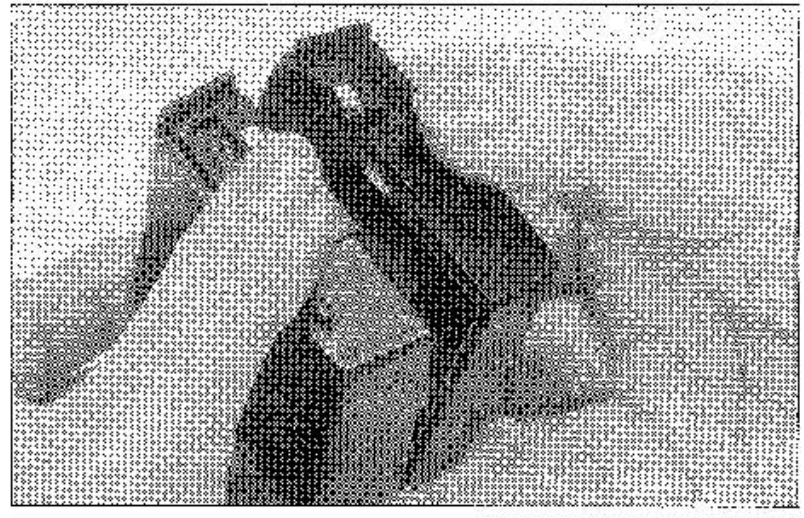
- ❒ Make sure that the **VOL** control is set into the **OFF** click-stop, and remove the protective soft or hard case, if used.
- ❒ Grasp the transceiver with your left hand, so your palm is over the speaker and your thumb is on the Battery Release Button.
- ❒ Move the button in the direction indicated by the arrowhead, while using your right hand to slide the battery case toward the side with the button. The battery case should slide smoothly out of its track.

To open the FBA-12 battery case, place your thumbs on the tracks on top of the case and gently pry the tracks apart. Always replace all six batteries, paying attention to the polarity indicated inside the case.

✘ *Do not attempt to open any of the rechargeable Ni-Cd packs, and do not install rechargeable cells in the FBA-12, as they could explode if accidentally short-circuited.*

To replace the battery case or Ni-Cd pack, repeat the second and third steps above, simply sliding the battery case in the other direction after aligning the shorter side of the battery case with the track below the Battery Release Button.





MH-12A2B & MH-18A2B Speaker/Microphones

A Speaker/Mic can increase operating convenience and extend communications range. Each is equipped with a dual plug connector which mates with the **EAR** and **MIC** jacks on the top panel of the transceiver, disabling the internal speaker and microphone. The cable allows the transceiver to be left clipped to your belt, or to be held above obstructions for better performance. Also, using a speaker/mic for mobile operation allows the transceiver to be left in the MMB-49 Mobile Hanger.

Hold the Speaker/Mic close to your ear during reception; or connect an earphone to the plug on the Speaker/Mic, attenuating the audio from its loudspeaker. To transmit just hold the Speaker/Mic close to your mouth and close the PTT switch on the microphone.

MH-19A2B Earpiece/Microphone

The MH-19A2B works like the speaker/mics described above, but consists of an earpiece and in-line microphone/PTT switch element. The earphone is inconspicuous and ideal for monitoring in noisy or crowded areas, while the microphone has a clip for attaching to a shirt or jacket collar. Press the PTT switch on the microphone to transmit.

YH-2 VOX Headset with Boom Microphone

The YH-2 connects to the **EAR** and **MIC** jacks in the same manner as the speaker/mics. It consists of a headband-supported earphone and attached boom microphone, allowing hands-free operation when VOX operation is activated in the transceiver.

Antenna Considerations

While the supplied YHA-17 rubber flex antenna is convenient for short-range operation, the standard BNC jack allows use of a higher gain antenna to extend range in base or mobile operation. Any antenna used with the FT-26 should have an impedance close to 50 ohms on the 2-meter band. If a feedline is used, it should be good quality 50-Ω coax. Obtaining a proper fit with some BNC plugs may require removing the rubber gasket around the antenna jack on the transceiver.

Operation

This chapter describes the various transceiver functions in a tutorial manner. After studying these descriptions, keep the *FT-26 Operator's Quick Reference Card* handy in case you need to refresh your memory.

Preliminary Steps

Before operating the transceiver for the first time:

- ❒ Charge the battery pack completely (if using Ni-Cd batteries) as described on page 10. If using an FBA-12 dry-cell battery case, install the batteries as described on page 12.
- ❒ Connect the YHA-17 rubber flex antenna to the antenna jack on the top of the transceiver. *Never operate the transceiver without an antenna connected.*
- ❒ If you have a Speaker/Mic, we suggest you do not connect it until you are familiar with basic operation.
- ❒ Before proceeding, please read the *Controls & Connectors* chapter, if you have not already, to familiarize yourself with the functions of the controls.

When the front panel keys are pressed during reception, one or two beeps will sound. The keys are disabled during transmission.

As mentioned before, references to alternate key/button functions have "F|M → " in front of the (white) key name to remind you to press the F|M key first momentarily, and then the key nearest that white label within five seconds (while "F" appears in reverse letters above the leftmost frequency digit on the display). In some cases we will include the name on face of the key itself in parentheses after the white label name, just to help you find it (this does not mean you should press it twice). Also, don't hold

Low Battery Indicator

When battery voltage drops below about 6.5 volts, the low battery icon will appear at the lower right corner of the display, indicating the battery pack should be recharged or batteries replaced. If you continue operating, the icon will blink, and transmitter operation will be disabled.

the F|M key down, as that will give you a different result, and don't press two keys as the same time (except when storing a separate transmit frequency with the PTT switch). When a key should be held down (as opposed to just pressed momentarily) the instructions will say so. Don't be too concerned about these descriptions of multiple key sequences and the following descriptions of timers - they are much easier to learn (by doing, which we will get to shortly) than to describe.

A five-second timer starts when you press F|M, and automatically restarts when you turn the selector knob or press an arrow key. Pressing any other key will shut off the timer as the resulting change in operation occurs. There is also a three-second timer that starts when you press F|M → SET (the RPT key), and automatically restarts only when you press a key that displays something new or actually changes a setting. When this "setting" timer is activated the display is blanked, except for "*SE*" appearing in the memory box. If you don't press another key in three seconds, the setting mode is cancelled and the display returns to normal.

A key beeper provides useful audible feedback whenever a button is pressed, at a level determined by the volume control. Each key has a different beep pitch, and each function has a unique beep combination. For example, when you press one of the arrow keys, you will hear a low-pitched beep followed by a high-pitched beep if you pressed the up arrow, or a high-pitched beep followed by a low-pitched beep if you pressed the down arrow. You can disable the beeper as described in the box above, but we recommend keeping it enabled while getting to know the controls.

Key Beeper

You can toggle the key beeper on and off by pressing F|M → T → F|M → T. If you lock the keypad (page 17) and have the beeper enabled, pressing a key will sound a different musical note for as long as it is held.

If you have trouble getting the transceiver to work as described, see *In Case of Problems*, on page 37.

Squelch Setup

❒ Set the SQL control fully counterclockwise, rotate the VOL control out of the click-stop

and adjust for a comfortable volume on the noise or received signal.

- ❒ The **BUSY/TX** indicator will glow green to indicate that the squelch is open, unless you have disabled it (page 40). If a signal is present, turn the **DIAL** selector on the top panel to a channel with only noise.
- ❒ Adjust the **SQL** control just to the point where the noise is silenced and the LED is extinguished. (If the **SQL** control is set further clockwise, sensitivity to weak signals will be reduced.)

Now, whenever a signal reaches the receiver strong enough to open the squelch, the **BUSY/TX** indicator will glow green.

Note that while receiving, one or more bargraph segments may appear along the bottom of the display, indicating signal strength of received signals. This is not affected by the squelch setting, so even squelched signals can give some indication. If more than one or two bargraph segments appear while the squelch is closed, try reducing the squelch control setting (if you want to hear weak signals).

The squelch override switch on the North American version (the upper ridge on the rubber cover on the left side) allows you to check for channel activity beneath the squelch level and to adjust the volume without having to adjust the squelch: just press the switch to open the squelch.

Frequency Selection Modes

Dial Mode

This mode is for tuning or scanning the band when looking for a channel on which to operate, when you don't have a specific frequency in mind. In this mode, the selector knob and arrow keys each tune the band in the selected step size, or in 1-MHz steps, and the scanning function tunes in the selected step size.

Memory Mode

This mode is mainly for operating on specific frequency channels known in advance (and programmed into the memories). For example, after storing the frequencies of your local repeaters into memory channels, you can confine operation to those channels by selecting the memory mode. In this mode, the selector knob, arrow keys and scanning function select sequentially from stored memories. The FT-26 gives you 53 memories, each of which can store repeater shift direction, CTCSS settings (if the

FTS-17A option is installed), and separate receive and transmit frequencies.

Each memory has a *Memory Tune* mode, in which you can tune just like the dial mode, and store the resulting retuned memory into the same or another memory. This and other special functions that apply to the memory mode are described later, but you will want to keep these terms in mind.

You can tell at a glance which frequency selection mode is active by looking in the shaded memory box at the upper left corner of the display. If the box is empty, you are in the dial mode. If you see a small number or an "*L*", "*U*" or "*C*" in the box, you are in the memory mode.

The large round **D/MR** key toggles between the dial and memory modes. While in the memory mode, your previous dial mode selections are preserved. Also, when you switch from the dial to the memory mode, the last-selected memory is recalled.

Finally, if you find that you don't need the dial mode, you can configure the FT-26 for the simplified *Memory-Only* mode, as described in the box on page 24.

Key, PTT & Dial Locking

The PTT switch, keys and Dial knob can each be "locked" (disabled), to prevent inadvertent transmissions or misadjustments. Three small indicators (***PL***, ***KL*** and ***DL***, respectively) at the bottom left corner of the display indicate when controls are locked. The **F|M** → **SET** → ▼ sequence gives you control of the locks for 3 seconds, during which you can press ▼ again repeatedly to step through PTT and key locking combinations, and off (no indicator). If the key lock (***KL***) is first enabled, the Dial lock (***DL***) can be enabled by the ▲ key, afterwhich these two locks will toggle together with the ▼ key.

Remember, to disable all locks regardless of state, press **F|M** → **SET** → ▼ and then ▼ again as many times as necessary to clear the lock indicators.

You will want to enable the locks if you hand the radio to someone who might disturb your settings. Pressing the keys while locked causes different musical notes to sound for as long as the key is held, but only the unlocking sequence affects operation.

Frequency & Step Selection

You can select a new operating frequency from either the dial mode or by retuning a memory. For now, we suggest using the dial mode. If you see a memory number in the memory box, press the **D/MR** key to switch to dial mode. There are two ways to select your operating frequency: by the **DIAL** selector on the top, or with the ▲ and ▼ keys. You can press and hold the ▲ or ▼ key for continuous tuning, but when you release the key you must press it again momentarily (to stop, and prevent scanning). One-megahertz steps are also available: just press **F|M** → ▲ or **F|M** → ▼ (and hold the arrow key for repeated stepping), or press **F|M** and rotate the **DIAL** selector.

Default channel (tuning) steps are 5 kHz in A versions, and 25 kHz in B versions. To select another step size, press **F|M** → **SET** → **REV** (quickly), and then turn the selector knob for the desired steps. See the box on the previous page if the keys or knob fail to operate.

Transmitting

Press **F|M** → **H/L** (the yellow **F|M** button followed immediately by the small button at the upper left) so that "*LOW*" appears at the top of the display to select low power output (see box).

Transmitter Power Selection

The **F|M** → **H/L** key sequence selects either high power, or one of three possible low power settings: "L1", "L2" or "L3", displayed for 3 seconds after making a selection. Also during selection, the bargraph meter indicates the relative power level for transmission. Note that the lowest level also draws the least current, and so provides the longest battery charge life.

To change the low power level, press **F|M** → **H/L** and then **H/L** again, if necessary, so that one of the low levels is displayed. Then turn the selector knob to choose a different low level. After making the selection, wait a few seconds for the display to return to normal.

	@7.2 Volts		@12 Volts	
	watts	mA	watts	mA
L1	0.5	400-600	0.5	600
L2	1.5	500-1000	1.5	850
L3	2	500-1000	3	1100
Hi	2	1000	5	1500

To transmit, wait until the channel is clear (**BUSY/TX** LED off), then squeeze the **PTT** switch on the side of the transceiver while speaking into the microphone (near the bottom right of the front panel). During transmission the **BUSY/TX** indicator glows red, and the bargraph shows relative transmitter power output. Release the **PTT** switch to receive.

If you find that more power is required, you can select another power setting as described in the box on the previous page. However, we recommend using the lowest power level necessary to maintain communication to both maximize battery life and minimize possible interference to other stations.

If using a European version, press the upper ridge of the rubber pad on the left side (that is, just above the **PTT** switch) to transmit a 1750-Hz Burst Tone to access repeaters that require it.

Repeater Splits

The FT-26 offers three methods to set up split frequency operation for repeaters: manual, automatic and independently stored transmit/receive frequencies. Both manual and automatic methods shift the transmit frequency above or below the receive frequency by a programmable offset. This offset is preset at the factory to 600 kHz. Note that only one offset at a time can be used with the manual and automatic methods. Use the independent transmit frequency method when you want to store other offsets, such as frequencies of repeaters with non-standard splits. This is described later under *Storing Independent Transmit Frequencies.*

To activate the standard shift manually, just press the **RPT** key: once for minus shift, again for plus shift, and again to return to simplex. A small "–" or "+" sign will appear near the top center of the display to indicate the current shift direction, if any.

Example: To operate through a 146.34/146.94 MHz repeater:

- ❒ Tune the display to 146.94 MHz (to receive on the output frequency).
- ❒ Press **RPT** once. A "–" should appear at the top of the display (if not keep pressing **RPT** until it does).
- ❒ When the channel is clear, press the PTT switch and send your callsign. The display shifts to 146.34 MHz while you transmit.

Of course this example only works if the offset is set to 600 kHz, as supplied from the

factory. If it is not, you can change it as described next.

With repeater split activated, you can temporarily reverse the transmit and receive frequencies by pressing the **REV** key. Use this to display the transmit frequency without transmitting, and to check the strength of signals on a repeater uplink frequency (to see if you can work them direct). The repeater shift sign blinks while reverse split is selected. Press **REV** again to return to the normal shift direction.

Setting Standard Repeater Offset

As just mentioned, repeater offset is preset to 600 kHz. If you need to change the offset, first read the following steps, and then try them:

- ❒ Press **F/W** → **SET** → **RPT** (the same key) to display the current offset in MHz, to three decimal places.
- ❒ *Within three seconds of the above,* select the desired offset with the selector knob or arrow keys.
- ❒ Wait three seconds for the display to return to normal.

You probably want to keep the repeater offset programmed to the most commonly used split in your area. If you're not sure what that is, leave it set to 600 kHz.

Automatic Repeater Shift

The ARS (Automatic Repeater Shift) feature in the FT-26 activates repeater offset automatically whenever you tune to a standard repeater subband. With this feature enabled, a small "–" or "+" at upper center of the display indicates that repeater shift is active (without your having to press **RPT**), and closing the push-to-talk switch changes to the (shifted) transmit frequency. The subband range over which ARS operates may or may not be preset at the factory for your set. To determine whether it is, try the following procedure. If you cannot get the "*A*" to appear, see the *ARS Range Setting* box on the next page.

The ARS function is disabled at the factory. To enable it:

- ❒ Press **F/W** → **SET** → **RPT** (the same key) to display the ARS status (along with the repeater shift offset) in place of the primary frequency. An "*A*" appears to the left of the shift offset number when ARS is enabled.
- ❒ Now you can press the **F/W** button (alone) to toggle ARS on and off.

ARS Range Setting

If you cannot get the ARS function to operate, and the "*A*" does not appear when you try to enable it, you may need to set the ARS range:

- ❒ Hold the **RPT** key while turning the radio on. The display should show a blinking "*1*" in the memory box.
- ❒ Use the arrow keys and dial knob to select the low edge of the repeater subband on the display. The ARS resolution is 100 kHz, so your selection should be a multiple of this (or the next lowest 100-kHz multiple will be used).
- ❒ Press **D/MR**. The blinking number in the memory box will change to "*2*".
- ❒ Retune the display to the top edge of the repeater subband, as in the second step.
- ❒ Press the **RPT** key to set the required shift direction. If most repeaters require CTCSS, press the **T** key to activate the encoder ("*T*" displayed).
- ❒ Press **D/MR** to finish, and return to normal operation.

- ❒ Press the **RPT** key alone to return the display to the operating frequency.

As already mentioned, you can use the manual shift method (**RPT** key) at any time to select a new shift state, whether ARS is activated or not. However, if you change frequency with ARS activated, manual repeater shift selections are cancelled.

Simple Memory Storage

The FT-26 offers 53 programmable memory channels, labelled 1 through 50, L, U and C. Each can store separate receive and transmit frequencies or repeater shift, and CTCSS tone data (if the FTS-17A option is installed). Memory C (the CALL channel memory) can be recalled instantly by the small **C** key at the upper left, and memories L and U can be used to store programmable subband limits, described later, in addition to general purpose operation.

To store a frequency in memory:

- ❒ Select the desired frequency (and repeater split manually, if desired) in the dial mode as already described.
- ❒ Press and hold the **F|M** key for ½-second (until a second beep sounds). A memory

number or letter appears blinking in the memory box for the selected band.

- ❒ Within five seconds of pressing **F|M** turn the **DIAL** selector or press the ▲ and ▼ keys to select the desired memory for storage. If you select one that was already being used, it will be overwritten with new data in the next step.

- ❒ Press **F|M** once more momentarily to store the displayed data into the selected memory. The memory label will stop blinking for a second, and then disappear as operation continues in the dial mode.

If you timed out, nothing new will have been stored in the memory. Simply start again.

Example: Store the 146.34/146.94 repeater data in memory 5.

- ❒ First perform the steps in the example on page 19 to set up the desired frequency and offset on the dial.

- ❒ Press and hold the **F|M** key for ½-second to display the memory label (blinking) in the memory box, then do the next step within 5 seconds.

- ❒ Turn the selector knob or press the arrow keys, if necessary, so that "5" (the memory number to store) blinks in the memory box.

- ❒ Press **F|M** again, momentarily. That's it. The dial data has been stored in memory 5, and you are left operating on the dial.

To confirm that this worked, turn the selector knob to change the dial frequency (to anything new), then press **D/MR** to change from dial to memory mode. The numeral 5 should appear in the memory box, and 146.94 (the receive frequency) should appear on the display. As mentioned before, you can press **REV** to confirm the transmit frequency of 146.34 MHz.

You can use any memory (except C, the CALL channel) with the same result. Memory C requires a slightly different procedure. Notice that pressing **D/MR** from the dial mode always recalls the *last stored or used* memory.

Recalling Memories

In confirming the results of the last example, we used the **D/MR** button to change from the dial mode to the memories after they were stored. The memory label appears in the memory box at the upper left corner of the frequency display whenever operating on a memory.

When more than one memory has been stored, you can select a memory for operation with either the selector knob or the ▲ and ▼ keys. If you use the arrow keys, press and release the key for each memory: if you hold the key down for ½-second, memory scanning will start. In any case, only prestored memories are displayed: empty memories are skipped. To exit the memories and return to dial mode, press **D/MR**. If you have everything you need stored in the memories, you may prefer to activate *Memory-Only Operation*, as described in the box on the next page.

Call Channel Memory

Although invisible to the memory recall methods just described, the CALL channel memory can be instantly recalled by the small **C** button at the upper left. "*C*" appears in the memory box. The factory default for the CALL channel memory is the bottom edge of the band. You can reprogram it from the dial with any frequency and repeater state, or even a separate transmit frequency.

To store the current dial frequency/repeater state in the CALL channel memory, hold the **F|M** key for ½-second to display something in the memory box, then press the **C** button. To store a separate transmit frequency in the CALL channel, after storing the receive frequency, tune the dial to the transmit frequency and repeat the above, but this time holding the PTT switch when you press the **C** button.

Storing Independent Transmit Frequencies

All memories can store an independent transmit frequency, for operation on repeaters with non-standard shift. To do this:

- ❒ Store the receive frequency using the method already described under *Simple Memory Storage* (it doesn't matter if a repeater offset is active).
- ❒ Tune to the desired transmit frequency.
- ❒ Press and hold the **F|M** key for ½-second to display a label in the memory box again.
- ❒ Press and *hold* the PTT switch while pressing **F|M** once more momentarily (this does not key the transmitter).

Whenever you recall a separate transmit frequency memory, "– +" appear together near the top center of the display. Again, you can press the **REV** key to display the transmit frequency, and the shift symbols will blink. You can also press the **RPT** key to cancel repeater shift (temporarily).

Memory-Only Operation

After storing memories, you can press and hold the small C button at the upper left while switching the transceiver on, to activate Memory-Only operation. The display will not show any frequency, but just "*CH*" followed by a memory label. All of the memory features described up to now can be used, as well as memory scanning, DTMF features and CTCSS (if the FTS-17A is installed). The functions of the keys are vastly simplified, however:

- ❒ The C (H/L) key only selects power output. With low selected, you can choose the level with the arrows or selector.
- ❒ The P (CODE) key only selects DTMF/CTCSS paging modes (described later).
- ❒ The REV (PRI) key only activates priority monitoring (also described later).
- ❒ The arrow keys and selector knob select memories for operation.

All of the other keys on the front panel are disabled! To exit Memory-Only operation, repeat the same steps used to enable it.

After storing a memory with a separate transmit frequency, if you rewrite the receive frequency in the same memory, the separate transmit frequency is deleted.

Memory Tuning

While receiving on a recalled memory, you can retune it and change other memorized settings (like repeater shift) by first pressing the F|M → MT (the ▼ key) sequence. A line of four tiny arrowheads ("▸▸▸▸") appears under the memory label in the memory box, and you can tune in the same ways as described before (including the 1-MHz steps). You can store the new frequency and settings in the current, or another memory. Just press and hold F|M for ½-second, select the new memory (if desired), and press F|M again momentarily. Operation remains on the (new) memory as the old memory (if different) reverts to its original state.

After retuning a memory, if you don't want to save your changes, just press D/MR: once to return to the original memory data, or twice if you want to leave the memories and return to the dial mode.

Hiding and Erasing Memories

As already mentioned, storing data into a memory overwrites previously stored data. However, if you regularly move from one area to another, you may want to use different memories in different places or at different times. With the FT-26, you can choose to make available different sets of memories without having to rewrite them from scratch. This is done by masking certain memories so that they are hidden from operation, and unmasking them only when desired.

To mask a memory,

- ❒ Recall the memory to be masked.
- ❒ Press and hold the **F|M** key for ½-second (until the memory label blinks).
- ❒ Press the **D/MR** key. This causes the display to change to memory 1, and the previously selected memory to be no longer selectable manually, or by scanning (described later).

To unmask a hidden memory for operation,

- ❒ Recall any memory.
- ❒ Press and hold the **F|M** key for ½-second (until the memory label blinks).
- ❒ With the Dial selector or arrow keys, select the memory number to be restored.
- ❒ Press the **D/MR** key (*not* **F|M**!).

When you have hidden some memories, be careful not to overwrite them accidentally. If you do, you will not be able to recover the previous contents.

Scanning

Before starting the scanner, make sure the **SQL** control is set to squelch off the noise on a clear channel. You start and stop scanning with the ▲ or ▼ key. Just press and hold either key for more than ½-second to start the scanner. If the transceiver is in the dial mode, band scanning will result. Otherwise, if a memory label is displayed, only the memories will be scanned.

The scanner pauses when a signal opens the squelch, and the decimal point on the display blinks. When band scanning, a double beep will sound each time the scanner reaches the band edge, unless you have disabled the beeper (**F|M** → **T** → **F|M** → **T**). Scanning resumes according to how you set the scan resume mode, described in the box on the next page.

You can stop the scanner manually by pressing the PTT button, ▲ or ▼ key, or the D/MR button.

Memory Skip Scanning

When you have some very active channels stored in memories you may wish to skip them when scanning, but still have them available for manual selection. You can mark a memory to be skipped by pressing F|M → SKIP (the D/MR key) while receiving on the memory. A single tiny arrowhead appears just outside of the lower right corner of the memory box to show that this memory will be skipped during scanning (although you can still recall it manually).

To re-enable a scan-skip memory for scanning, just repeat the steps you took to disable it: select the memory manually, and press F|M → SKIP.

Scan Resume Mode Selection

You have a choice of two scan-resume modes: either *Pause* mode, in which the scanner pauses for as long as the carrier keeps the squelch open; or the *5-second* mode, in which the scanner pauses for five seconds and then resumes scanning whether the signal is still present or not. The 5-second mode is the factory default.

To change the scan-resume mode, press F|M → SET → REV → F|M. A small "P" or "5" at the left side of the display indicates the current mode for three seconds.

Programmable Subband Limits

Besides band and memory scanning, the FT-26 can be set to tune or scan only the frequencies between two frequency limits of your choice (with the selected channel steps). These limits are stored in the special memories labelled L (lower) and U (upper):

- ❒ Store the lower edge of the desired scanning range in memory L, and the upper edge in memory U.
- ❒ With either memory U or L recalled, press the F|M → MT key sequence to enable memory tuning, as described previously (the four tiny arrowheads must be visible below the memory box). The frequencies stored in memories L and U now limit your tuning and scanning range to the resulting subband. If either ARS or manual repeater shift is acti-

vated, repeater offset is applied automatically when you transmit (even if the resulting transmit frequency is outside the subband limits).

Note: The frequency resolution of subband limits is 100 kHz, although the channel resolution of memories L and U is the selected channel step size. Therefore the frequencies stored in both memories L and U are rounded down to the nearest 100 kHz for the actual subband limits. Since they are not limited to a specific frequency, you can still use the L and U memories for other purposes on any frequency within the 100-kHz range above the intended subband limit.

Example: To limit reception to 146.0 ~ 147.0 MHz (only applicable to certain transceiver versions)

- ❒ Tune the dial to *any channel between 146.000 and 146.095 MHz.*
- ❒ Hold the F|M key for ½-second, tune the selector knob so that L appears in the memory box, and then press F|M again momentarily. The displayed frequency is now stored to provide an effective lower subband limit of 146.000 MHz.
- ❒ Tune the dial to any channel between 147.000 and 147.095 MHz.
- ❒ Repeat the second step, selecting U in the memory box. This stores the effective upper subband limit of 147.000 MHz.
- ❒ Press D/MR to change to memory operation.
- ❒ Press the F|M → MT sequence to activate the 146.000 ~ 147.000 subband limits for tuning and scanning. Note that when scanning the subband, as with band scanning, a double beep will sound each time the scanner reaches the subband edge, unless you have disabled the beeper (F|M → T → F|M → T).

To cancel your subband limits and return to memory operation, press D/MR (if you are scanning or want to return to dial operation, you must press it twice). Pressing the C button also cancels subband limits as operation switches to the CALL channel.

Once you have stored the L and U memories, you can reactivate the subband just by recalling either memory and pressing the F|M → MT sequence. However, you cannot activate the subband when the L or U memories are marked for skip-scanning, or if either of these memories are masked (hidden).

Priority Channel Monitoring

The priority function automatically checks for activity on a memory every five seconds while operating on the dial or other memories. When the receiver detects a signal on the priority memory, operation automatically shifts to that memory while the signal is present (plus a few seconds). If you transmit while paused on the priority memory, priority monitoring ceases and operation stays on the priority memory.

To set up priority monitoring:

- ❒ Preset the squelch, and store the frequency to be monitored in a memory (this must be memory 1 if you will be operating on other memories during priority monitoring).
- ❒ Press **D/MR** to operate in the dial mode, or else select the memory you want to operate on, and then press **F|M → PRI (REV)**.

A "*P*" appears in the memory box, and about every five seconds the displayed frequency shifts to the priority memory briefly while the receiver checks for a signal.

As long as no signal appears on the priority memory to open the squelch, you can tune, scan, transmit and receive on the dial, or select and even scan other memories (although no memory labels are displayed). If a station you wish to talk with appears on the priority memory, press the PTT switch momentarily while receiving their signal, to stop priority checking. Otherwise, when a signal appears on the priority memory, priority checking will pause and the decimal on the display will blink. Priority monitoring will resume according to how you set the scan-resume mode — either after a 5-second pause, or after the carrier drops. To cancel priority monitoring manually, press **D/MR**.

Note that you can use any other memory (besides memory 1) as a priority channel in the above procedure when you are going to be operating in dial mode. You cannot, however, switch between memory and dial operation without first cancelling priority monitoring (pressing **D/MR** cancels priority monitoring).

CTCSS Operation (with FTS-17A)

The FT-26 can be used to access repeaters that require a CTCSS (continuous, subaudible) tone, and to silently monitor for calls on busy channels, when the optional FTS-17A CTCSS Unit is installed. The encode ("*T*") function superimposes a subaudible tone (at a frequency too low to be heard) on the transmitted carrier. The decode ("*T SQ*" — tone squelch) function

monitors receiver audio through a narrow filter at the same subaudible frequency, keeping the squelch closed until you receive a matching tone. Installation instructions are on page 44.

To check or set the current CTCSS tone frequency, press **F|M → TSET** (the same as the **T** key) to see the tone frequency displayed in Hz. To change the selected tone frequency, turn the **DIAL** selector or press ▲ or ▼ until the display shows the tone frequency you require (the display will step through the standard EIA tones, listed in the table below). Press **T** again alone to return to the operating frequency display when the desired tone frequency is displayed.

To activate CTCSS functions press the **T** key when the operating frequency is displayed. With one press, "*T*" (encode) appears at the top of the display and the tone generator is activated for transmission. Press **T** again and both "*T*" and "*SQ*" (decode) will be displayed together as the tone squelch system is activated for both transmit and receive (only incoming signals "encoded" with the matching tone frequency open the squelch). Pressing **T** once more turns off tone squelch features.

FTS-17A Tone Frequencies (Hz)			
67.0	100.0	141.3	203.5
71.9	103.5	146.2	210.7
74.4	107.2	151.4	218.1
77.0	110.9	156.7	225.7
79.7	114.8	162.2	233.6
82.5	118.8	167.9	241.8
85.4	123.0	173.8	250.3
88.5	127.3	179.9	
91.5	131.8	186.2	
94.8	136.5	192.8	

You can store different CTCSS tones (and encode/decode states) in each memory in the same manner (and at the same time) as storing operating frequencies. Later, to change the tone or state stored in a memory, just recall it, reset the tone frequency or function, and store the memory again.

"CTCSS Bell" Paging

CTCSS Bell operation is an extension of the CTCSS encode/decode function just described: incoming subaudible tones open the squelch. However, it adds two features to make this type of semi-private operation more convenient:

- The CTCSS Bell mode displays a small bell near the center of the display. When you receive a matching CTCSS call the small bell on the display blinks to indicate you received a call. So by looking at the display you can tell if a call came in while you were busy with something else. You cannot tell, however, who called.

That requires the DTMF Paging mode, described later.

- If you are waiting for a call, it is sometimes convenient to have the transceiver "ring" to get your attention. By activating the ringing function, you can have the transceiver ring like a telephone either once, or five times.

Note: The *CTCSS Bell* function and the *"Pocket Bell"* mode of DTMF Paging, described in the section after this, are entirely different.

To activate the CTCSS Bell:

❒ Tune to the desired frequency.

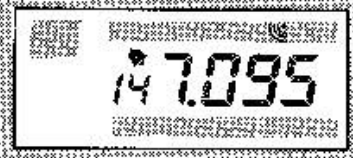
❒ Select a CTCSS tone frequency using the **F|M** and **T SET** keys as described on the previous page, if you have not already.

❒ When you expect to receive calls from stations using tone squelch (decoding, or CTCSS Bell), activate tone squelch encode/decode operation as described above, so you will not miss calls when you turn off the CTCSS Bell later to reply.

❒ Press the small **P** button (just in front of the PTT switch). Repeatedly pressing this cycles through the following paging mode/displays:

Ringer Alerting Tone

If you want the transceiver to ring when a selective call (CTCSS Bell, or DTMF Page) is received, check for a small ringing icon near the upper right (as shown below). If present, the ringing function is enabled.



To check or change the state of the ringer, press **F|M** → **SET** → ▲, and turn the selector knob or use to arrow keys to select 0, 1 or 5 rings (at the right). When the ringer is enabled, the first incoming call will cause the ringer to sound, and after you reply, a short timer will prevent the ringer from sounding again, as long as the other station responds to your transmissions within about two seconds. Otherwise, the ringer will sound again at the start of his transmission. To prevent this, you can disable either the ringer (set to 0 rings) or switch to normal CTCSS tone squelch (**T SQ**) operation by pressing the **P** key to turn off the special decoders.

- DTMF paging ("PAG" displayed at the left),
- DTMF tone-coded squelch ("CODE" displayed at the left),
- CTCSS Bell paging (the small bell icon near the center of the display, if the FTS-17A is installed), and
- No paging (none of the above symbols).

❒ Select the CTCSS Bell mode.

Now all incoming calls without a matching CTCSS tone will be ignored by your receiver. Any call received with the matching CTCSS tone will cause the bell icon to blink and the transceiver to ring (if enabled) as the squelch opens while the caller transmits. The bell icon continues to blink until you manually reset it (by pressing the PTT switch to transmit, retuning, or pressing **D/MR**). Note that the other station does not need to be using the CTCSS Bell function to call you: they can use normal CTCSS encode-only (or encode/decode) functions of their transceiver.

You cannot store the CTCSS Bell mode selection in a memory (although you can store CTCSS tone frequencies and the encode/decode state).

DTMF Paging & Code Squelch

The FT-26 includes a DTMF tone encoder/decoder and a dedicated microprocessor providing paging and selective calling features under DTMF control. This allows you to place a call to a specific station or group, and to receive calls directed only to you or groups of your choice.

The paging and code squelch systems use 3-digit numeric codes (000 ~ 999), transmitted as DTMF (Dual-Tone, Multi-Frequency) tone pairs. There are seven Code Memories (entirely independent of the 50 channel memories) in which to store 3-digit DTMF paging codes.

With DTMF paging or code squelch activated, the 100's-of-MHz digit of the operating frequency is replaced by a Code Memory number (0 ~ 6). In its most common function, the receiving station remains silent until it receives one of the stored 3-digit codes. Then the squelch opens so the caller is heard, and in the paging mode, the ringer can be set so the transceiver also rings like a telephone (see the box on the previous page). When you close the PTT to transmit, the same three prestored DTMF code digits are transmitted automatically. In the paging mode, three more DTMF digits are sent, representing your personal station identification.

Like the CTCSS Bell system described above, the DTMF paging and code squelch systems are selected by the P key in front of the PTT switch. Either "PAG" or "CODE" appears on the display when DTMF paging or code squelch is activated, respectively, and the 100's-of-MHz frequency digit is replaced by a Code Memory number (0 ~ 6). You can select which Code Memory is active using the ▲ and ▼ keys.

DTMF Code Squelch

The code squelch mode is very simple. Both you and the other station communicate using the same 3-digit DTMF sequence, sent automatically by the FT-26 at the start of every transmission. Your receiver normally remains silent to all signals that are not prefixed by your selected 3-digit code. When you receive the tones, your squelch opens and stays open until a few seconds after the end of their transmission.

In the code squelch mode, you must first store and then manually select the one Code Memory holding the 3-digit DTMF code required to open your squelch (as described on the following pages). Also, in the code squelch mode, Code Memories 1 ~ 6 always function the same — the distinctions and special settings described below for the paging mode do not apply.

In either code squelch or paging modes, any DTMF-equipped station can call you (they can use a DTMF keypad to send the three digits if you are in code squelch mode, or six digits if you are in paging mode).

DTMF *Paging*

In the DTMF paging mode, you can receive signals that are prefixed with any of up to six different 3-digit codes (per band), according to the way you program the Code Memories. When you receive a paging call, the selected Code Memory changes automatically, and the display responds in one of two ways, depending on how you stored the paging code:

Individual Codes

These are personal ID codes to identify each station uniquely. You store one of these for your ID, in Code Memory 1. You can store up to five other Individual Codes of stations you call often, in Code Memories 2 ~ 6. When someone else transmits your Individual Code your display shows "0" in the Code Memory position (that is, the 100's-of-MHz position), with the other station's Individual Code appearing to the right so you can see who called.

Group Codes

This type of code identifies a group of stations. You would generally share a Group Code with other club members or friends. When you receive a call with a Group Code the Code Memory number (2 ~ 6) in which you stored that 3-digit Group Code appears in the Code Memory position on your display, with the 3-digit Code number to the right.

Note that for a Group Code, the display does not show the ID and code of the caller, but those of the group instead. Code Memories 2 ~ 6 can be used to store either Individual Codes (for calling purposes only) or Group Codes (for both calling and receiving), as you desire.

With either type of page, the *PAG* indicator starts blinking when a page is received, and continues until you reset it. This lets you know if someone called while your attention was elsewhere.

Remember, with code squelch operation (but not with paging), you can only receive a call on the currently-selected Code Memory, and the display does not change when a call is received. So for code squelch, as mentioned before, the Individual/Group distinction does not apply (although you must still store the 3-digit Code Memories).

Storing Code Memories

The first thing to do before using the paging or code squelch systems is to store your Individual Code in Code Memory 1.



- ❒ Press **F|M → CODE** (the **P** key) to enable the Code setting mode. The frequency display is replaced by a blinking Code Memory number at the left, and the corresponding 3-digit Code ("000", if not used before) at the right.
- ❒ Turn the selector knob to select Code Memory 1 (this digit can be set to 0 ~ 6, with 0 being "read-only", and 2 ~ 6 programmable with group or other individual's IDs). Code Memory 1 is for your personal DTMF paging ID Code.
- ❒ Press the ▲ key. The Code Memory number will stop blinking, and the next digit to the right will begin to blink. This is the first digit of the 3-digit DTMF Code to store.
- ❒ Turn the selector knob to select a DTMF Code digit between 0 and 9, corresponding to the

first digit of the personal ID code for your station on this band.

❒ Press the ▲ key again to cause the next digit to the right to blink, and again turn the selector knob to select the next digit of your ID code.

❒ Repeat the above step to set the last digit.

At this point, if you want to go back and change one of the three code digits, you can press the ▼ key to step backwards through the code digits.

❒ Press the P key to return the display to its normal paging mode (that is, the operating frequency with the 100's-of-MHz digit replaced by the Code Memory number).

Your ID Code is now stored in Code Memory 1.

You can use the same procedure to store the Memory Codes of other individuals or groups in Code Memories 2 ~ 6, but with an additional feature. Generally, you store another station's ID Code so you can page them, but do not want to have *your* transceiver ringing every time someone else calls *them*. On the other hand, you store group codes with the intention of receiving any pages to the group (so you want your squelch to open and the transceiver to ring, if paging).

During the Code Memory storage procedure described above, when storing Code Memories 2 ~ 6, you have an opportunity to decide whether your transceiver should respond to incoming paging calls on a particular Memory Code. After pressing F|M → CODE to activate Code setting, and while the leftmost (Memory Code) digit is blinking, you can press the F|M key to toggle DTMF squelch paging capability on and off. When on, that is, when the decoder is enabled to receive paging calls with this Code Memory, a tiny underbar appears beneath the digit.



If you are setting a Group Code, you want to have the underbar on, and if setting another station's Individual Code, you want it off. As already mentioned, this distinction does not apply to code squelch only (non-paging) operation — the underbar will not affect it.

Note that the underbar is displayed permanently on Code Memory 1, since this is your own ID (that you will always want to receive when paging is activated). Also, the underbar never appears on Code Memory 0, since this Memory

slot is reserved for display of the ID of incoming paging calls.

Once you have stored your own ID Code in Code Memory 1, you can activate the paging or code squelch functions from the normal frequency display by pressing the P key. As mentioned in the CTCSS Bell procedure, repeatedly pressing this key combination cycles through DTMF paging ("PAG" displayed), code squelch ("CODE" displayed), CTCSS Bell paging (the bell icon displayed), and No paging (none of the above symbols).

Replying to a DTMF *Page, and Resetting*

Now you are ready to receive DTMF Paging calls directed to you. Any DTMF-equipped station can call you by sending your 3-digit code, followed by their 3-digit ID Code. If you monitor with the code squelch activated ("CODE" displayed), your squelch will open when you receive your ID Code. If you are monitoring with the DTMF Paging feature activated ("PAG" displayed), the transceiver reacts according to how you stored your Code Memories, as described above. The transceiver rings unless you have turned off the ringer, as described in the box on page 30. Also see the box at the right on Pocket Bell Paging.

Pocket Bell Paging

You can use the transceiver to duplicate the function of a "Pocket Bell Voice Pager", that is, receipt of your DTMF code (stored in Code Memory 1) can cause the ringer to sound (if enabled), but *not* open the squelch. This can be convenient if you are in a situation where a voice call would be inappropriate. To enable the DTMF Pocket Bell function (that is, to disable the squelch opening on receipt of a DTMF page), press F|M → SET → ▲, and F|M, again so that "PO" is displayed at the left (the number to the right is the ringer setting). Press the same key sequence to re-enable the squelch ("–" displayed).

If you press your PTT switch after receiving a call, the Code (either Individual or Group) is transmitted automatically, and if paging is enabled, your ID Code is sent.

To respond to an individual call, where your display shows Code Memory 0, pressing your PTT switch causes your transceiver to transmit your ID Code and the other station's ID Code automatically (that is, the one displayed in

Code Memory 0), and resets the pager to receive another call.

You may want to switch from paging to code squelch mode once contact is established. Just press the **P** key once, so that "*CODE*" appears. Either you or the other station will also have to select Code Memory 1, so that you will both be using the same DTMF code (either, but not both, stations must reselect their Code Memory). This can be done easily if the *Code Memory Selection Shortcut*, described at the right, is activated: just press **▲**.

With Code Squelch activated in this manner, you will hear three DTMF code digits transmitted when you press your PTT switch. These digits are those stored in the Code Memory currently displayed in place of the 100's-of-MHz digit, and they will open the squelch of the other station. Therefore, at the start of each transmission, you must wait a second or two after pressing the PTT switch for the DTMF code to be sent (you will hear it in your speaker).

When you finish your conversation, if you need to reactivate DTMF Code Paging, press the **P** key three times until "*PAG*" is again displayed.

DTMF Code Delay, and Code Memory Selection Shortcut

When calling other stations with DTMF paging or code squelch, particularly through repeaters, you may find some are unable to receive your calls. This can be caused by their receiver squelch not opening fast enough (after receiving your carrier) to allow all of the DTMF codes to be received and decoded. To correct this problem, you can set a longer delay between the time your transmitter is activated and the time that the first DTMF digit is transmitted.

Press **F|M** → **SET** →**CODE** (the small **P** button) and turn the selector or press an arrow key to select either 450 or 750 ms delay. Also, while displaying the delay, you can toggle arrow Code Memory selection with the **F|M** key. When enabled ("*On*" displayed), the arrow keys can be used to select Code Memories during DTMF paging or code squelch operation. When disabled ("–" displayed), the arrow keys tune the operating frequency, and you need to press **F|M** →**CODE** before you can change Code Memories.

In Case Of Problems

Don't worry if you find FT-26 operation somewhat complicated at first. The small number of controls belies the variety of features that are available, and most keys have more functions than are indicated by their labels. So it is not difficult to get lost, at least until you have had the chance to learn the various functions of the display and keys. This section provides some tips to help you navigate the various display and key modes.

If the display shows nothing at all, check the power switch (**VOL** control), and if necessary, remove the battery pack and check that the contacts are clean. If all appears to be physically in order, recharge or replace the batteries.

The state of the display tells a lot (but not all) about the current state of operation. The display can take on a a great many different states, but most of them are temporary and will time out after a few seconds, returning to the operating frequency. Exceptions are the displays for Memory-Only operation (page 24) and CTCSS tone frequency (if the FTS-17A is installed, page 29).

Fortunately, the display includes many symbols and function indicators to let you know what is going on as long as power is applied, so it is well worthwhile to study the display diagram on page 8 carefully. For example, if the frequency display changes unexpectedly when you transmit (or if "*Err*" appears), check for a small "+" or "–" near the top center of the display, indicating repeater shift is enabled.

Attempting an illegal command (such as activating the tone squelch when the FTS-17A is not installed), will usually do nothing, and no beep will sound. However, nothing happens when you press a key for even legal commands if the keys are locked: check for "**KL**" (key lock) or "**PL**" (PTT lock) at the bottom left corner of the display. If you see one of these, press **F|M** → **SET** → **▼**, and keep pressing **▼** until the lock symbols are cleared.

If you still cannot enter data, check to see if the **BUSY/TX** LED is red, indicating that the transceiver is transmitting. Releasing the PTT switch should return the set to receive. If still nothing happens, switch the transceiver off, and then back on.

If the 100's-of-MHz digit is weird (that is, not 1) or behaves strangely when you try to tune, check for either "PAG" or "CODE" at the left side of the display, indicating that DTMF paging or code squelch is active. If so, press the small **P** key in front of the PTT switch, several times if necessary, to clear these symbols and return the frequency display to normal.

If the display is completely blank, or if it shows all segments at the same time, you may have inadvertently started memory cloning - just switch the transceiver off and back on to clear it.

As a last resort, if you are unable to gain sensible control of the transceiver, reset the CPU as described in the next section.

To avoid confusion resulting from inadvertent button presses, set the keypad lock on as described on page 17 if you leave the transceiver unattended while it is on. Remember to set the lock back off when you wish to enter data.

Resetting the CPU

The FT-26 has two levels of resetting. Both clear all memories, channel step and repeater shifts to their factory defaults. Level 2 also clears ARS limits.

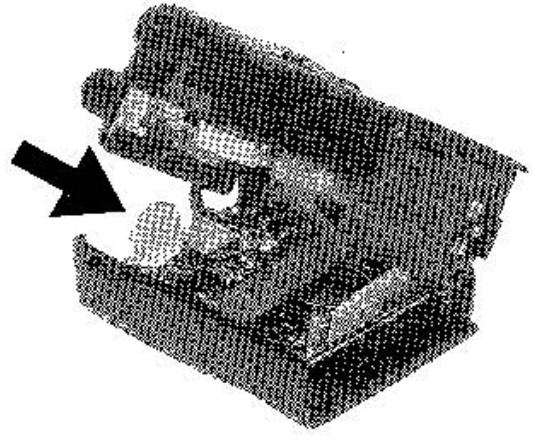
Reset Level 1: Press and hold both **T** and **REV** keys together while turning the transceiver on.

Reset Level 2: Press and hold the **D/MR**, **T** and **REV** keys while turning the transceiver on, then reset your ARS limits (page 21).

Memory Backup

Normally, a lithium cell inside the transceiver retains all settings and memories while power is off or disconnected. If this battery ever needs replacing, the transceiver will be found to have lost its memories, although it will still operate properly.

The photo below shows the battery location on the inside of the front panel. It should be replaced only be an Yaesu-authorized technician to ensure that it is installed properly.



Extending Battery Life

How long the batteries last between charges or replacement depends largely on your operating habits, and how you care for the battery pack (if using a Ni-Cd pack). The FT-26 offers a variety of ways to conserve battery power, and thus to extend the life of each charge. Knowing how to use these features can be critical in emergencies.

APO (Automatic Power-Off)

Obviously, turning the set off when not in use saves battery life, and can also prevent damage that might result to the batteries if they are over-discharged. The FT-26 provides the APO system to turn itself off after 10, 20 or 30 minutes of key inactivity. As shipped from the factory, APO is disabled, but you can easily activate it by pressing **F|M → SET → D/MR → D/MR** and turning the selector knob to choose the time-out time (in minutes). When APO is activated, a tiny clock icon appears near the bottom right corner of the display, and a timer starts every time you press a key. If you don't press any keys for the selected time-out period, the clock icon begins to blink, and if you have the key beeper activated (page 15), it will play a few bars of Beethoven's "Ode to Joy" (to let you know that it's about to turn off). If you don't press a key in the next 30 seconds, the transceiver turns (almost) off — actually, everything is turned off except for the display, which shows "*OFF*". After that, you must switch the transceiver off and back on again for use. If you need to monitor for a long period, or if using an external DC supply, you can deactivate the APO feature by pressing the same keys as above, so the display shows "*OFF*").

Automatic Battery Saving

Monitoring with the receiver squelched requires about one third the power of listening to unsquelched noise, so you will naturally want the keep the squelch closed as much as possible. The FT-26 includes the Battery Saver system originated by Yaesu to reduce current drain by another 120% or more during squelched monitoring. This feature turns off the receiver circuitry three seconds after the squelch closes or the PTT is released, and then turns it on for 300ms periodically to check for incoming signals. When the Battery Saver is enabled, a small "*S*" appears near the bottom right corner

of the display, which blinks when the saver is functioning. In the FT-26, you can select monitor/sleep ratios of 1:1, 1:2 and 1:3, or you can select the enhanced Power Saver function called ABS (Automatic Battery Saving), which senses how often the squelch opens and dynamically selects a monitor/sleep ratio according to recent operating history. The ABS mode is enabled as supplied from the factory. You can check or change the monitor/sleep ratio or disable the Power Saver by pressing F|M → SET → T and turning the selector knob (to change the current setting). The setting is displayed at the right, and the selector knob (or arrow keys) can choose between OFF, ABS, 1-1, 1-2 or 1-3. We suggest keeping the Power Saver enabled when operating with a battery, but when you use the FT-26 for packet, you should disable it.

BUSY LED & Beeper Disable

The BUSY LED is provided to help you set the squelch control, and in letting you know when the channel is busy, so you don't transmit on top of other signals. However, it draws about 5 milliamperes when lit, and thus can contribute significantly to battery drain when monitoring an active channel. If you need to preserve power in such circumstances, you can disable the BUSY LED by pressing F|M → SET → T → F|M. This will display the BUSY LED status at the left (either "- -" or "*On*", and the Power Saver setting at the right. You can re-enable the BUSY LED at any time by pressing the same key sequence again.

Similarly, the keypad beeper draws several milliamperes when enabled, so you may want to disable it (by pressing F|M → T → F|M → T) if you need to conserve power while using the keys a lot.

Selective Calling

Obviously, if the operating frequency is quiet the squelch will not open often, and power drain will be minimized, particularly if the Power Saver is active. Unfortunately, it is not always possible or practical to confine your activity to quiet frequencies. The DTMF selective calling (code squelch, and DTMF paging) features provided with the FT-26 can be used to essentially make a quiet channel out of an otherwise busy one. When either of these features is active, the squelch will only open (and the BUSY LED light, if enabled) when a signal is prefixed by a 3-digit DTMF code sequence that matches one you have stored in the DTMF Code Memories (see page 33). This can be used to extend battery life considerably.

In cases where you may need to monitor many stations, or some that are not equipped with DTMF encoders but do have CTCSS, the FTS-17A Tone Squelch option can also be used to create your own quiet channel on a crowded frequency.

VOX, Speaker/Mics & Earphones

When actually receiving a signal, using the lowest possible volume setting minimizes current drain. You can hold the transceiver up to your ear and reduce the volume to the minimum, but it may be more convenient to use an earphone (or the MH-19A2B Earpiece/Mic) and keep the transceiver clipped to your belt, particularly in noisy environments. If you want to have both hands free, use the YH-2 Headset and activate VOX (Voice-actuated transmit/receive switching) operation by pressing **F|M** → **SET** → **C** → **C** (the small key at the upper left of the front panel), so that the display shows "*On*". Pressing **C** the first time displays the on/off state of the VOX circuit in the transceiver, and pressing it the second time changes the state. When the display returns to normal, a small "*V*" appears in the top right corner of the display when the VOX is enabled. Press the same keys again to turn the VOX off when not using the YH-2.

Transmitter Power

If power conservation is important, you should use the lowest transmitter power possible to maintain adequate communications. As described on the box on page 18, the FT-26 offers a choice of four levels of power output: one "Hi", and three low — "L1", "L2" and "L3".

Notice that the L1 setting uses about 40% of the power required by the Hi setting, so it is a good idea to develop the habit of always using the lowest setting possible, and switching to high power only if low power fails to get through. If you live in a location where high power is almost always needed, consider replacing the antenna with a higher gain type instead of opting for high power (the effect on transmissions is the same). Make sure that any external antenna is designed for 50 ohms impedance at the operating frequency.

Battery Care

As the battery discharges, the voltage drop when transmitting increases. When battery voltage drops to around 6.5V, the low battery indicator will appear at the bottom right corner of the display, indicating the batteries should be replaced or recharged as soon as possible. As battery voltage drops further, the indicator will

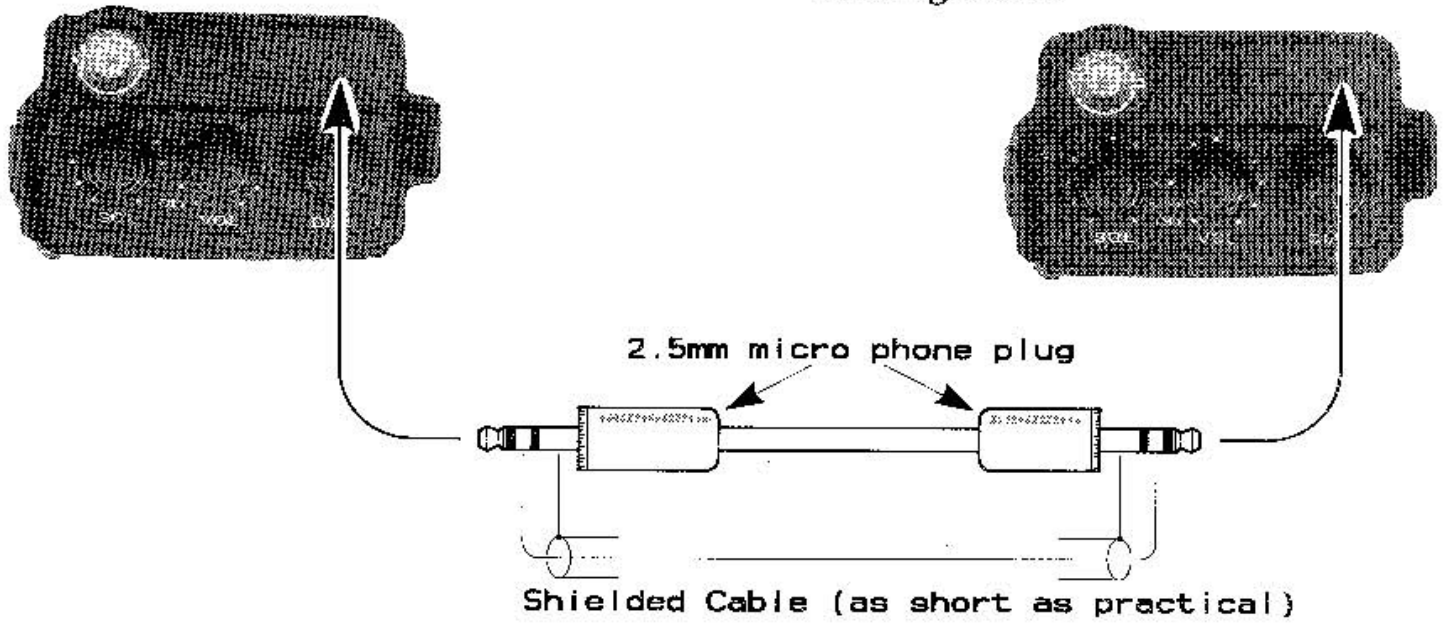
begin to blink, and transmission (and operation of the controls) will no longer be possible.

If using rechargeable batteries, switch the transceiver off as soon as the low battery indicator begins to blink. Leaving it on could overdischarge the cells and destroy the pack. On the other hand, recharging Ni-Cd batteries often, with little use in between charges, can degrade the charge capacity and useful life of the cells. The best way to get the most out of your Ni-Cds is to use the battery pack just until the low battery indicator comes on, and then immediately give the pack a full recharge. Unfortunately this is not always convenient, since it can be hard to tell exactly when the charge will run out. One solution to this problem is to carry an extra, fully-charged pack with you if you do not wish to have operation interrupted.

Memory Cloning

A special function of the FT-26 allows memories stored in one transceiver to be transferred to another set without re-entering data from the keypad. This function requires a user-constructed cable to connect the **MIC** jacks on the two transceivers as indicated in the diagram below.

- ❒ Turn both transceivers off, and then press and hold the **F|M** keys while turning the power on. All segments of the displays will be blinking.
- ❒ Press the ▼ key on the destination transceiver (the display will stop blinking, and either go blank, or show all segments).
- ❒ Press the ▲ key on the source transceiver. When the data transfer is complete, the displays should return to normal. If "*Err*" appears on the display, or if the displays do not return to normal, recheck your cable and then turn both transceivers off and try again.
- ❒ Turn both transceivers off and remove the cloning cable.



FTS-17A Tone Squelch Unit Installation

The FTS-17A is a subaudible CTCSS (Continuous Tone-Controlled Squelch System) Encoder/Decoder, which offers programmable selection of 38 tones for transmission, and matching filter/detectors for reception. Transmit-only ("*T*", or encode) and transmit/receive ("*T SQ*", or encode/decode) modes are selectable from keys on the transceiver. Installation is described here, while Tone Squelch operation is described beginning on page 28.

- ❒ Make sure the transceiver is off. Remove the hard or soft case, if used, and the battery pack as described on page 12.
- ❒ Remove the four screws affixing the battery mounting plate on the bottom of the transceiver and carefully lift and then rotate the plate 180°.
- ❒ Locate 10-pin connector J1003 inside the bottom of the transceiver, and press the FTS-17A onto it as shown below, solder side out.
- ❒ Replace the battery mounting plate and its four screws, and the battery pack.

