

After batteries, crystal(s) and antenna (telescopic or flexible) have been installed, your PRO-23 is ready to use.

Turn power on by turning VOLUME to the right. Turn SQUELCH to the minimum position to the far left. Set all the channel lock-out switches in the up position, toward the LED indicators. You should hear a rushing sound from the speaker.

Turn SQUELCH to the right until the background noise abruptly stops. You can't adjust SQUELCH properly while listening to a station, so wait signals cease. If you set SQUELCH correctly, the PRO-23 will appear "dead" until a signal comes in; when a signal comes in, the Squelch circuit will "open up" and you'll hear the signal. When the signal ceases, the Squelch circuit will "close" and cut out all sound until the next signal comes in.

If you want the PRO-23 to scan the channels continuously for the crystals you have installed, adjust SQUELCH as previously instructed, then set the SCAN/MANUAL switch to the SCAN position. The PRO-23 will constantly scan each channel in sequence; when a signal appears on one of the channels the receiver will lock onto that channel and you will hear the signal.

If you do not want automatic scanning on one or more channels, push the appropriate Channel Lock-Out Switch(es) down, or away from the LED indicator.

If you want to stay tuned to one channel only, set the SCAN/MANUAL switch to the MANUAL position (stop scanning) and then press MANUAL momentarily to advance to the channel you want to listen to (as indicated by the LED above that channel switch). For MANUAL scanning, the receiver can be either "squelched" (adjusted as previously indicated) or "unsquelched" (the SQUELCH control set to extreme left). For automatic scanning, SQUELCH must be set to eliminate the background noise.

#### MAXIMUM SENSITIVITY RANGE

This Receiver will function adequately down to 118 and up to 136 and from 144 to 174 MHz, but with reduced sensitivity at the upper and lower extremes. For maximum sensitivity on the VHF-Aircraft band the channel frequencies you choose should be within  $\pm 3$  MHz of 127 MHz (that is, in

the spread of 124 to 130 MHz). For the VHF Hi band, stay within +/-4 MHz of 153 MHz (that is, 149 to 157 MHz). The superior reception spread of 6 or 8 MHz (+/-3/4 MHz) can be moved up or down in either band of this Receiver (which should be attempted only by qualified Electronics Service Technicians who have adequately calibrated, precision test equipment).

#### TYPES OF SIGNALS YOU'LL BE ABLE TO MONITOR

Your community is alive with action constantly being reported on the airwaves. Your PRO-23 will automatically scan the airwaves to bring you that action-your police force at work, a fire truck on a mission, aircraft, Ham radio operators, highway and other emergency-type services, some industrial services, some transportation service (taxi, trucks, railroad), plus some government services. Lots of things are going on that most of us are never aware of. But, with the right frequency crystals in your PRO-23, you can monitor these exciting signals. You'll have to do a little investigating in your community to find out what services are active and their frequencies. You will find one of our books to be very interesting and helpful in this area: REALISTIC GUIDE TO POLICE, FIRE AND AIRCRAFT RADIO.

What to listen for and where? A specific answer is difficult. Each area of the country uses different frequencies. All we can do is give you some general pointers.

Find out if there is a local club which monitors these frequencies. Often a local electronics repair shop that works on the equipment can give you the channel frequencies used by local radio services. A volunteer police or fire employee can also be a good source of this information.

An interesting service is the Mobile Telephone. FCC has assigned channels to this service in the range of 152.51 to 152.81 MHz at every 0.030 MHz (channels are 30 kHz apart).

As a general rule on VHF, most activity will be concentrated between 153.785 and 155.98 and then again from 158.73 to 159.46 MHz. Here you'll find local government, police, fire and similar emergency services. If you are near railroad tracks, listen between 160.0 to 161.9 MHz for signals.

You can listen to communications between aircraft and airport control towers in the 118 - 136 MHz range.

If you live near the coast or the Great Lakes, another interesting service is Marine Radiotelephone. (It operates in the frequency range of 156 to 158 MHz.)

Some of the more interesting frequencies are:

- 156.8 MHz for calling and distress signals
- 156.3 MHz for intership safety, plus search and rescue
- 157.1 MHz U.S. Coast Guard Liaison
- 156.425 MHz non-commercial ship-to-ship/ship-to-coast/coast-to-ship

Other frequencies may be of special interest. Check with local Coast Guard offices.

#### NATIONAL WEATHER SERVICE RECEPTION

Continuous weather broadcasts are transmitted 24 hours a day in many parts of the country. If you are using a crystal set to one of the three channels assigned (162.55, 162.40 or 162.475 MHz), your PRO-23 will automatically lock-in on that channel, since the broadcasts are continuous. To prevent automatic locking, set the channel lock-out switch for that channel to the off position (down). When you want a weather report, set the lock-out button to the on position (up) for that channel. Check with your local FCC office or the Weather Bureau to find out which of the three frequencies (162.40, 162.55, or 162.475 MHz) is used in your area.

#### ACCESSORIES

Your PRO-23 can be powered from any source of 6 volts DC, negative ground, by connecting the external power source to the PWR jack. Using an AC adapter will save on batteries; so, if you intend to use the PRO-23 in a location where 120 volts is readily available and it does not need to be moved around, consider an adapter. Radio Shack has two power adapters which you might be interested in. Catalog Number 20-189 is an adapter for 120 volts AC, specifically designed for Radio Shack's pocket scanners. It provides 6 volts DC and can be used either as a Charger or an AC Adapter.

Catalog Number 270-1561 is a power adapter for plugging into a cigarette lighter socket in your vehicle and providing either 6 volts DC (positive or negative-set for tip negative). This will permit you to use the PRO-23 in your car or truck without wearing down your batteries. This adapter can also be used with either CHG jack (to recharge nickel-cadmium batteries) or with the PWR jack.

If you use our special DC auto adapter with this scanner, be sure to

1. Use the correct mating plug.

2. Use the 6V switch setting.
3. Use Negative tip polarity.