

Product Spotlight:

The Kachina MP-25 Manpack HF Transceiver

***A Bundle of Features In A Compact Package
Aimed At Military And Survival Users!***

Military and paramilitary groups in many areas of the world are relying heavily upon a communications arsenal consisting of equipment drawn from a surprisingly narrow selection of makes and models. The reason for this is that their requirements are so exacting that it's not easy to randomly select a piece of equipment off a dealer's shelf and cross your fingers while hoping it will be able to do the needed job, no matter how well it may perform in non-critical applications.

Some of the considerations taken into account include versatility, reliability, maintenance and repair, ease of operation, universal availability, and (of course) the ruggedness of the equipment. If it can't take a beating or work after being dropped or exposed to moisture and extremes of heat and cold then it is less than useless. The reason it is less than useless is because until the military unit finds out the equipment isn't going to work (either properly or at all), it may be acting under the delusion that it has the ability to communicate. In a critical situation, it's a rather unpleasant surprise to find that you're out of contact with those who may need your help, or those who can be summoned to bring you help, or that you no longer have the ability to send or receive recon information, or warnings, or request supplies, or whatever.

The world's major powers have spent vast sums developing equipment that seeks to (and usually does) meet the stiff needs of personnel communicating during combat. While some of this equipment eventually reaches the surplus market either in used or new condition, the more desirable gear isn't available in sufficient quantities to meet the needs of many who need the sets.

When it comes to high frequency (HF) communications, a great many military and paramilitary groups have zeroed in on an American-made commercially available manpack transceiver called the Kachina MP-25. Having achieved a worldwide reputation, MP-25's are in use everywhere you look, from Central America to the caves of Afghanistan. Since the MP-25 looks to have become the manpack of choice, we decided to track it to its source and find out why it



The 110-volt power pack for the MP-25.

shows up so often in *Time* and *Newsweek* photos, as well as on the TV news.

After some amount of inquiries, we finally located Kachina's international representative (who also handles the Gulf Coast area), Charles Frost of Mission Consulting (3618 Macon Place Court, Houston, TX 77082). We asked Frost to explain what all the fuss was about—why the MP-25 was in such high demand around the globe and why many folks are saying that it's a better rig than some of the manpacks used by major military forces.

Frost took a "see for yourself" attitude, furnishing us with descriptive literature; he even offered us the opportunity to use an MP-25 on the air and check out its receiver and transmitter!

What It Is

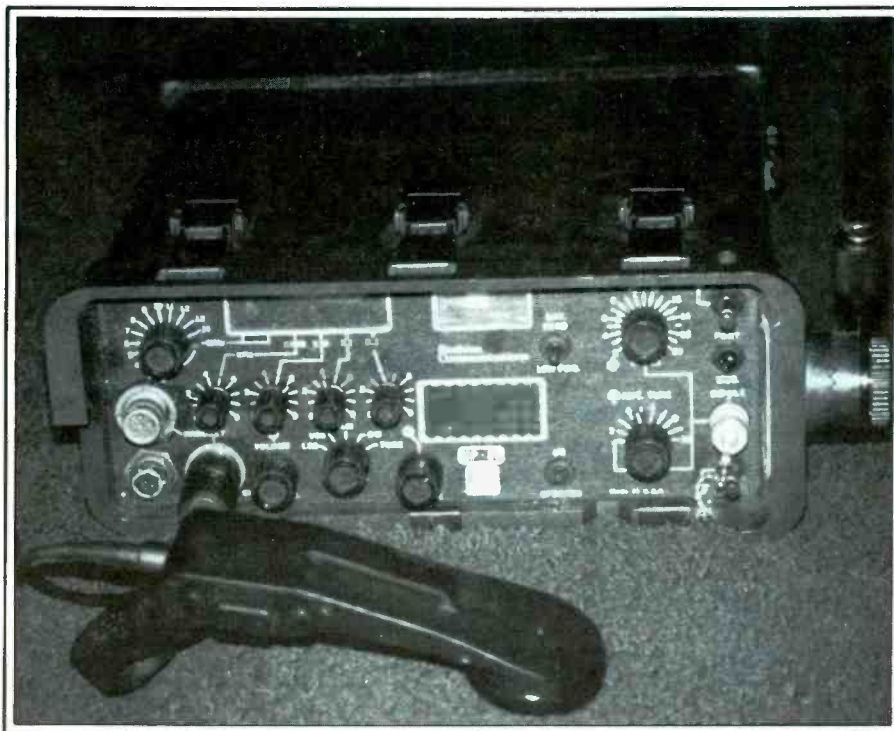
The MP-25 is a 25-watt SSB synthesized portable transceiver covering the 2 to 15 MHz frequency range in 100 Hz steps. Lightweight (about 13 lbs. with internal nickel cadmium battery pack), it is immersible and features a built-in speaker and antenna tuner. Also, it meets American military standards (MIL-STD-108). In addition

to USB/LSB operation, the MP-25 even operates in AM (6 watt carrier) and CW (10 watts, internally adjustable) modes. There is also a 6 watt low power SSB selector.

While the Kachina MP-25 is intended primarily for tactical military and defense communications, its rugged construction and ability to be used under extreme conditions have also made it popular for industrial applications (such as at remote mining locations, oil-drilling sites, etc.). Survivalists like it, too!

When operated with its optional battery pack, collapsible whip antenna, and carrying bag, the set is a completely portable HF radio station that can be carried into the Arctic or a jungle, or set up anywhere for instant communications. A power supply/charger and longwire/dipole antenna can also be used for permanent or semi-permanent base station operation; a mobile mounting bracket and provision for operation from a 12 VDC vehicle battery allows for mobile operation.

The MP-25's chassis is made of iridized aluminum, reinforced with aluminum crossmembers (these serve as structural support and also as RF shielding). The drawn-alumi-



The MP-25 with its handset.

num case is of one-piece design intended to reduce the chance of water seepage. Both the case and the unbreakable front-panel are water-tight and the MP-25 will remain fully operational after being submerged to depths of up to 3 feet. The PC boards are treated with an anti-fungus and fire-retardant coating. Modular construction permits the PC boards to be easily replaced.

The Innards

The frequency stability of the transmitter is ± 100 Hz from -10°C to $+55^{\circ}\text{C}$. Side-band suppression is better than -50 dB. Spurious output is -50 dB with reference to a 25 watt level.

Receiver sensitivity is $.5\mu\text{V}$ while selectivity is better than 2.4 kHz at -6 dB, less than 5 kHz at -60 dB. Image rejection is better than -90 dB. Signal-to-noise is better than 10 dB for $.5\mu\text{V}$ input signal.

There is a front-panel meter that indicates relative incoming signal strength and outgoing transmitter power, battery voltage, and (when the MP-25 is being tuned up on a new frequency) the meter indicates reflected power. An LED frequency readout is illuminated while frequencies are being changed.

You select any frequency by adjusting five knobs until the desired frequency appears (to the tenth of a kHz) in the display. A clarifier permits $+50$ Hz receive frequency adjustment. An audio tone lets the operator know if the frequency change was so large that the PLL has gone out-of-lock.

The antenna is tuned and peaked by means of two front panel controls. Using the meter, the entire frequency change and retune process can take less than a minute. If it isn't desirable to use the set's built-in loud-

speaker, a switch feeds the audio into the MP-25's handset.

On The Air

Of course, depending upon where and how the MP-25 is used, it may be necessary (or at least advisable) to obtain a license for the transmitter. Naturally, no license is required for using only the receiver. Within the United States, you can use it without any problems on any of the Amateur Radio Service bands between 20 and 80 meters

providing you have a Ham ticket. It might well be licensable in other services in the United States, covering (as it does) frequencies used for maritime, aeronautical, point-to-point, CAP, MARS, and other services. Indeed, the MP-25's receiver (using only the collapsible whip antenna mounted atop the set) pulled in two-way communications and broadcast stations operating between 2 and 15 MHz. Plenty of incoming signals were on the maritime simplex channels, and the 20 meter ham band was wall-to-wall signals during the afternoons.

Since I have an Amateur license, I did try the rig for some two-way work on the 40 meter (7 MHz) band in the evening. No problems there, either. I hooked it to my beam and worked a dozen stations at various distances. Everybody said the MP-25 sounded great!

I didn't try any brutal torture tests on the MP-25, but the rig wasn't at all flustered when I accidentally knocked over a large glass of water on my operating desk. Wish I could report the same rosy results for everything else on the desk that went for a swim that time!

Let me note that I was impressed with the "feel" of this rig, and there's a gutsy "macho" look to it that I liked. Having had several years worth of combat and other critical communications experience in my knapsack, I'd say that the Kachina MP-25 can hold its own with the best of 'em and compares favorably with top American, Canadian, and Israeli combat commo gear I've used.

No wonder it has earned a special niche for itself with military and paramilitary organizations, and even with survivalist groups. **PC**

Reviewed by F.X.F., North Dakota

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