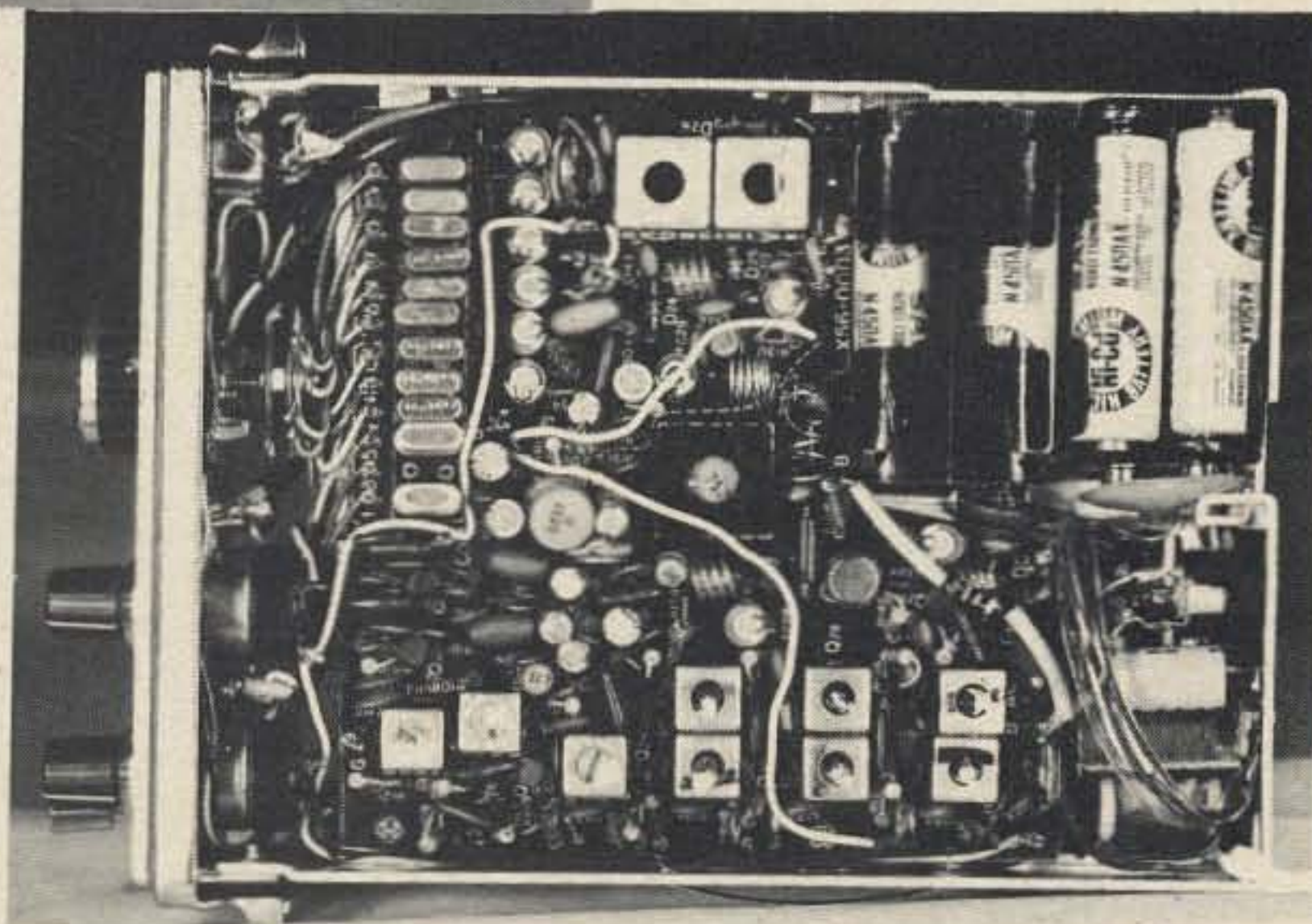




DRAKE TR-22

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Of all the FM units available to the ham today the Drake TR-22 is unquestionably the most versatile and is an exceptional buy. If you are just getting started in FM and are looking around for a really universal rig the TR-22 is the one that will work on base mobile or portable with nothing else needed other than the possible exception of a mobile or base antenna (if you're more than 25 miles from your nearest repeater). This little gem is the result of Drake getting it all together, and what a package it is, too. Here is a 6 channel unit that you can sling over your shoulder that has state of the art circuitry, a little slim hand mike with retractable cord, internal rechargeable batteries, with built in charger and an internal telescoping antenna.

Coming back from SAROC on a United flight we asked the captain if we could use the TR-22 in flight. Not only did he give us permission but he had us moved from tourist up to first class so we wouldn't be right over a wing that might mess up our radiation pattern. Having those 6 channels on the little

portable unit was a real joy, for as we left Las Vegas we said our goodbyes on 94 simplex and then switched to one of the local repeater channels. We talked the repeater out a hundred miles or so and then went back to 94 for a while. As we approached Denver we started hearing their 34/94 machine so we switched over to them. After a few QSO's we went the 28/88 route for some more. Upon arriving back at Boston's Logan airport it was even possible to hit the 73 repeater on 19/79 on top of Pack Monadnock Mountain some 70 miles distant. Admittedly our repeater is 2,000 feet in the air but 70 miles is still quite a haul with a watt and a half!

Before going out to SAROC we had crystaled the TR-22 up for the trip and with the popout case of the TR-22 it was a very simple matter to change the crystals around as they are all on top of the board right out in the open. Strapping is very easy, too, as each crystal has a terminal post right by it and jumpers go right in where they are needed. The transmitter warp trimmer capa-

citors are right by the transmit crystals and the receiver does not need any warp capacitors. Changing crystals is very easy because to get the TR-22 out of the case you don't even need a screwdriver. All you do is pull out the two little snap releases on the bottom of the case and the unit slides right out.

Using the TR-22 mobile is a snap as you only have to plug in the external dc power cord (so you save your ni-cads for portable operation) and plug in your mobile antenna. The little unit is so small that you can easily slip it into the glove compartment. Thus the chance of theft is greatly reduced. It takes only seconds to unplug the dc power cord and mobile antenna so you can take it with you if you don't want to leave it in the car. At this point you just pull up the internal telescoping quarter wave whip and you are working as a portable.

It is interesting to note that the TR-22 comes with a complete set of ni-cad batteries as part of the unit — not another accessory that you have to purchase. The same is true for the built in battery charger — it's all inside the unit with nothing else to buy. When you are at home just plug in the ac line cord and the batteries get recharged overnight. If you want to monitor at home or work the boys a little bit, the battery charger gives just enough current to operate the receiver so it doesn't pull your ni-cads down. Of course when you are listening with the ac plugged in, the ni-cads do not get charged until you cut the power switch off. If you transmit while you're at home then that additional current comes out of your ni-cad batteries. To check the condition of the batteries just turn the squelch control all the way counterclockwise and the S/ rf output meter gives you a battery voltage reading. This same little meter automatically works like an "S" meter on receive, so you can find a 'hot spot' if you're having trouble getting into the repeater. On transmit the little meter gives you a relative rf output indication so you know that you are getting out and also gives you some indication of how your batteries are doing under a heavy load. When your output power starts to fall off too much, a quick battery check will reveal that the batteries need a charge. The

ac power cord or any of the external power or antenna cords can be plugged right into the bottom of the TR-22, even when it is in its carrying case.

The Drake TR-22 is a very rugged trouble-free unit. Recently when the 73 repeater (19/79) pooped out up on top of Pack Monadnock and there was quite a bit of snow on the access road, we slung the little TR-22 over our shoulder before mounting the snowmobile in zero degree weather. While going up the mountain we got a little carried away and hit an ice ridge and a big wipe-out occurred. After sailing off the snowmobile I landed spread-eagled right on top of the TR-22! Picked myself up and checked back in with K1NUN with no problem at all. After finally getting up on top of the mountain we worked in unheated buildings for a couple of hours and all the while using the little rig. With this kind of use that our TR-22 gets, it has got to built like the proverbial brick house. The TR-22 has proved so reliable that Drake has had very little warranty work to do and as a result has held the \$195 price even though the U.S. dollar has been devalued by almost 20% in Japan.

Drake rates the TR-22 transmitter at 1 watt (conservative) but we keep measuring 1.5 to 1.6 on the Bird Termliner in our lab. The receiver is rated at less than 0.5 μ V but actual testing shows very near 0.3 μ V. The receiver is double conversion with an FET rf stage and a ceramic filter in the 455 kHz stage. The first i-f frequency is the standard 10.7 MHz. IC's are used for the second i-f limiter and also for the af output. The TR-22 utilizes all solid state switching (no relays) for maximum reliability. The instruction manual for the TR-22 is very complete and easy to understand. It contains all of the operating instructions, labeled schematics with voltage charts for all transistors and IC's, complete pc board pictorials that are also labeled, and complete crystal data.

The Drake TR-22 is a fantastic little piece of gear and one of the most versatile units we have ever seen with so many normally optional features built in as standard features. Its performance is as amazing as its low price. It is truly a universal rig.

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