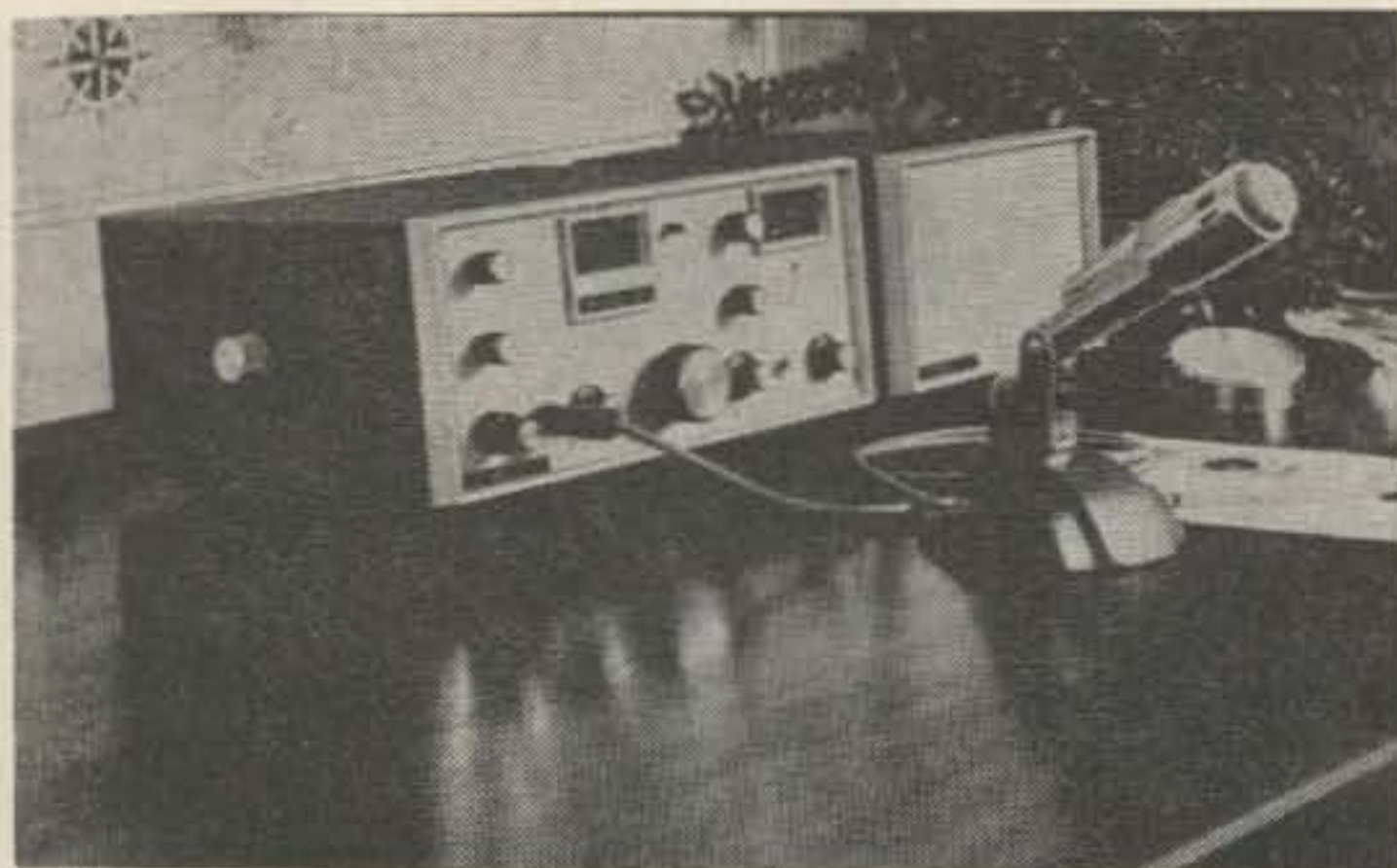




The NCX-3

Wayne Green W2NSD/1

The bands have been well occupied during recent months with speculation on the many new sidebands transceivers, and the new National NCX-3 tri-band job weighing in at \$369 seems to have created a particular stir. The Collins transceivers put enough fellows on the air with mobile SSB rigs to show us all that this was the way to live. The appearance of the Swan single band transceiver proved that a demand had been built up for lower priced transceivers, if you can call completely sold out production any kind of proof. National obviously forecast the trend some time ago and made every effort to come up with a package that would fill the bill.

Many of us have been wondering when National would return to making transmitters, an art form that they have left alone for over twenty years now. How many old timers remember the NTX-30 push-button exciter or the National 600 transmitter? I've got the power supplies and modulator from the old 600 and they are still in daily use driving my two and six meter kilowatts. I expect they will still be going as long as I can get on the air.

Being close to Boston there was little problem in cadging an early production model NCX-3 so we could find out how much of the design of this gadget came from the engineering department and how much from the advertising agency, where it would appear in the ads but not in the finished product, a design technique not unknown in the ham field. Exhaustive tests did not uncover any overstatement of the specifications in the National ads. Indeed, they were invariably on the modest side.

First impressions are important and I must admit to being quite favorably impressed by the trim good looks of the rig, its light weight, and its solidness. The solid extruded aluminum front panel with white anodized (very difficult to scratch) finish give not only the beauty of simplicity, but help considerably to make the unit extremely sturdy for stability.

The installation took about one minute, and consisted of plugging in the power cord, the speaker/power cable to the rig from the separate supply (model NCXA), the antenna and the mike. The back lit tuning dial and S-meter not only look great in the shack, but are particularly good for mobile operation where you want to have a minimum of glare and a maximum of see.

Peaking the Exciter-Tune and PA-Tune controls on the received signal and then loading the final to 300 ma was all that was necessary to tune up the NCX-3. Switching to SSB, I called in on a QSO and was pleased to get good signal reports from all hands. The VOX circuit and anti-trip circuit worked extremely smoothly, doing a lot better job than the earlier engineering model that I had checked a couple months ago. The redesigned VOX circuit and extra stage of anti-trip amplification allowed me to turn up the gain full blast and still have the VOX work when I spoke normally in the mike.

The bandspreaded Exciter-Tune and PA-Tune controls make the tuning quite uncritical and greatly simplify mobile operation where you don't want to fuss too much while zipping along. The main tuning control is a large knob driving the tuning condenser through a 45:1 miniature Velvet Vernier with

no trace of backlash or lost motion. Feels good.

The NCX-3 pulled in everything my NC-303 could. All drift disappeared after less than ten minutes of warm-up. The AGC on SSB was particularly good, with no thumps, even with the rf gain wide open. Selectivity, on both transmit and receive, is achieved by means of a 5.2 mc half-lattice crystal filter which is 2.5 kc wide at the 6 db point. The selectivity is just right for SSB.

The NCX-3 covers the 20-40-80 meter phone and CW bands, making it much more flexible than the single band transceivers. These are the bands that will be most usable for amateurs during the next few years while we are suffering from a lack of sun spots. They are the best bands for mobile sideband use due to the high level of present sideband activity in these bands.

Though the NCX-3 runs 200 watts PEP input to the 6GJ5's in the final using the NCXA power supply, I suspect many amateurs will, as usual, want to see what happens when they run up the voltage with their own supply and PEP it to nearly 400 watts. The tubes run black at 200 watts DC input, so I'll bet there is a lot more soup available there.

The transmit-receive process is all done by one relay, which cuts down on the probability of defunctation. This relay is quite quiet, being electrically silent on VOX (no noise audible whatever other than the mechanical "click") and a just barely noticeable "pop" on push-to-talk.

The VFO is completely shielded and is mounted on a solid $\frac{1}{8}$ " aluminum plate for stability. The PA is also shielded, a feature which not only helps keep down any trend towards TVI, but also keeps fingers from passing along electrocution to their owner. I feel that all rigs should have adequate protection built in to keep careless operators from suiciding themselves.

The ac supply (NCXA) is hernia heavy with its huge power transformer and two filter chokes. This one stays cool and has excellent regulation. I didn't try the dc supply as the rig was just on loan and I didn't want to make holes in the Porsche. It switches at 200 cycles (half the usual frequency) and gets away from the transistorized whine problem.

Though the NCX-3 is designed primarily for SSB operation, it does put out well when switched to AM. This changes the receiver over to an AM detector and you insert carrier in case you run across anyone that still can't figure out how to tune in SSB. Unlikely. On CW the VOX circuit gives very fast break-in

and less than half of the first dit is clipped even with the bug bugging away at 25 wpm. The VOX Delay control lets you adjust the time for receiver recovery from between words to between letters. No sidetone is provided so you have to use a separate CW monitor or know what you are doing without one. Simple matter.

The NCX-3 did a fine job here during our tests, was easy to operate and brought in very complimentary comments. It looks nice, works well, and is certainly reasonably priced. National has done a beautiful job on their return to the transmitter field after all these years.

I guess that the biggest problem that we had with the NCX-3 during our test was that just about every ham that dropped by to see the 73 headquarters ended up mostly seeing the NCX-3, giving it a few flings on the air and then getting mad when we tried to explain that this one had to be returned to National after the test and couldn't be sold to them.

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Solving the Bird Problem

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The radio amateur has made great strides in communications . . . RTTY, SSB, VHF, Moonbounce and project OSCAR are indeed a tribute to the fraternity. A glance through any amateur publication will reveal technical articles which command the respect of the most hardened professional. Even the average ham, who might be an English teacher or a lawyer by profession, has a working knowledge of electronics and is able to maintain his own equipment.

In spite of this, however, one phase of the art seems to be standing still. Little improvement has occurred in the CW segment of the hambands, and poor keying is as common as it was ten years ago, if not more so.

The arguments for and against CW will not be discussed here, as this is not the purpose of the article. I happen to enjoy CW personally, but amateurs compose a versatile, loose knit group and we all have our "druthers." Let it suffice to say that CW is efficient and CHEAP, and is therefore probably here to stay.

Considering recent advances in transmitter construction and design, it is difficult to understand the trend toward sloppy keying. The