tween the fixed and moving booms should be 2-1/2
inches to provide adequate clearance.

The safety cable is an optional item. It is
attached to the rear of the traveling boom so that
when the antenna is stowed, it is attached to a
ground anchor. The combination of the mast
spreader and the safety cable provides the equiva-
 lent of top-of-the-mast guy ing. This, together with
the mechanical clamp, assures that as long as the
tower stays up, so will the antenna. – Norman
Fleet, WASHUV, 293 E. Madison Ave., Elmhurst,
IL 60126.

CALCULATOR LOGIC

Technical Editor, QST:

While the “New Apparatus” section of QST is
not really the proper place to discuss calculator
systems but a bit disappointed that
W1CER did not touch upon the difference be-
 tween “algebraic” and “reverse Polish notation”
types in his write-up of the National Semi-
 conductor show in Boston on August 1975, it

To anyone considering the purchase of a
calculator for mixed expressions commonly (and
not so commonly) used in electronics, I’d suggest
considering an RPN type with register stacking.

Some rather misleading advertising has come
forth by calculator manufacturers of late. In the
case of some “algebraic” types, one cannot obtain
the “sum of products” and the “product of sums”
with equal facility. Nor can one really perform the
functions as he would “write the formula.”

The algebraic type literally solves by pro-
gramming “two plus two equals four.” The RPN

type more nearly follows “the sum of two and two
is four.” Risking oversimplification, I believe here-
in lies the basic difference between the two types.
In my opinion the latter the (RPN) is much more
very versatile.

In RPN, the summing, multiplying or dividing
functions are performed after the quantities are
entered. This, along with the register stack capa-
 bility as mentioned by W1CER, permits solution of
most mixed expression equations without resorting
to memory storage and recall or writing down of
intermediate answers. – W. H. Pitchback, WHS,
Old Comers Rd., Chatham, MA 02633.

A TALE OF QRN – ELECTRIC
FENCE STYLE

Technical Editor, QST:

Identifying and locating the interference from a
post-control fence charger was only the beginning
of the problem. The arcinc-ac roar that blanketed
the 80-, 40-, and 20-meter bands sure was a puzzle.
At first, the rhythmic 32-times-a-minute roar sug-
gested someone was cranking a neon sign, so I would cruise the business district
looking for something with that beat. Although the
interference was loudest along the power lines, I
never chance across a hot wire. It would help to
localize the source. Also, just about the time I was
ready to sell the gear the interference would stop
and maybe not show up for a week or two. And
just when I would start to think it was only a
passing nightmare it would come back.

Not having much luck with the business area,
I thought I would drive in the opposite direction
toward a pumping station at the edge of a ravine. I
did notice the sound seemed to get a littler louder
as I passed a house on the next street from mine,

so I decided to get a portable radio and explore
that area on foot. I had been using the car radio up
to then. Sure enough the sound increased as I got
closer to the house. When I put the radio near the
service feeder and the electric meter, the set nearly
ripped itself apart. But after getting permission
from the owners, I found nothing in the house, so I
decided to follow the power line across the street.

Again, the portable radio roared in anguish as I
passed a guy wire bracing the light pole. I asked
the people in that house if the rhythmic roar had any
familiarity, and the owner said he would check
something in the basement. Lo and behold, he
snapped a switch and the roar went completely
away. He then went back down and turned the
switch on. The roar started again. Then he escorted
me to his greenhouse in the backyard and pointed
to a monster with one red eye and one white eye
balefully blinking 32 times a minute – his fence
charger.

I had no trouble in convincing him to let me
take the thing to the shop. There I wasted no time
in wiring a line filter bypassed with a 0.05-
µF capacitors from a junk TV set. Then I hurri-

The fence consisted of a rectangle of aluminum
wire about 100 feet on a side and about six inches
off the ground. The wire was mounted on plastic
“hobbins” nailed to a stump or fence post.

Disconnecting the fence would stop the inter-
ference, so a cracked or leaky insulator came to
mind. Following that idea, I opened the line at the
first corner and left only the first 100 feet
connected. No interference. When the second
hundred feet was connected, the noise started up
again.

At the noise disappeared. To further pinpoint the
problem, I opened the remaining 50 feet at the
middle and testing was done on the 175 feet.

Trying the additional twenty five feet brought
back the noise.

I quickly nailed two new insulators to the fence
posts and restrung that offending 25 feet of line on
them and reconnected it to the main feed line.

Guess what – the noise came back! This sure was
a puzzler – with 150 feet of fence line not a trace of
QRN but connecting the additional newly in-
sulated line of 25 feet would bring on the noise.

Repeated the test a dozen times, seeing and hearing
the results but not believing it. By this time I was
in such utter confusion I decided to retreat and
reshop

In an attempt to eliminate one variable, I got a
power transformer from an old TV set, connected
the ac line cord to the primary and wired a couple
of terminal strips, so I could feed that fence line
from the secondary either with 400 or 800 volts ac
in series with a 25-kΩ resistor. I figured I could get
some idea of the leakage current by reading the
toltage drop across the resistor. I noticed that with
400 volts on the fence line there was no noise, but
with 800 volts the noise came back. I also noticed
that the leakage, if any, was too slight to give any
indication. This was the total 400 volts of fence
line.

(Continued on page 65)
Wondering if 400 volts of ac through a 25-kΩ resistor was a big enough jolt to discourage any possum, beaver, or woodchuck from raiding the garden, I decided to test the fence for "joltage" myself since I was wearing rubber gloves. Not the slightest tickle. Back to the greenhouse to measure the voltage, thinking the series resistor had opened up, but no, the voltage reading the line after the resistor still read 400, and shorting the resistor to ground gave an arc, so I knew the resistor was okay.

Taking the voltmeter to the far end of the line, I got a reading of about 80 volts, so I started to follow the fence line around, taking spot readings, in spite of my being able to see that the line was solid and clear of all objects. I finally arrived at the start of the line — and there it was! When the fellow had installed the line he had started by putting in a turnbuckle with the thought perhaps of keeping the line taut by tightening up on the turnbuckle. In fact, I had noticed it before and had even turned it, since I am a turnbuckle turner by instinct. At any rate, corrosion was the cause of the problem — one eye of the turnbuckle read 80 volts and the other eye read 400. Jumping the turnbuckle with a piece of aluminum wire cured the problem and the fence charger was put back in service. There's been no trace of noise since. P.S. Apparently it took the capacitance of 175 feet of fence line to cause the charger to break down the insulating effect of the corroded turnbuckle.

John Labaj, W2YW, 12 Park Place, Elmhurst, NY 12054.