I. <u>THE MAXIRAN RADIOPOSITIONING SYSTEM</u>   (continued)

For the purposes of the following discussion, it is as-
sumed that there are now three Beacons utilized. Now
three circles are defined, instead of the two from the
discussion above. The third distance, from Beacon "C" to
the Interrogator (call it distance CI), defines a circle
of radius length CI centered about Beacon "C". The new
situation is illustrated in Figure 4. Notice that with
the three circles, there is only <u>one</u> location where all
three circles can intersect. This eliminates the ambig-
uity associated with using only two Beacons. Now there
is no I' to worry about. An additional advantage of
using three Beacons is illustrated in Figure 5. Now the
area of uncertainty has been <u>reduced</u> even though the
tolerance of Beacon "C"'s measurement isn't any better
than that of the other Beacons.

As the ship moves along, one or more of the Beacons may
become unusable for various reasons; out of range, too
small or too great an operating angle, etc. If addi-
tional Beacons are situated on shore, they may be inter-
rogated, as desired, to greatly expand the range and
usability of the system.