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Electronics — October 2002**By Ben Ellison****PC or Plotter?****Electronics Q&A****Can you tell me how to convert Loran numbers to GPS numbers? R.S., via e-mail**

There are several methods, but none are perfect. The problem is that old bugaboo of Loran, the Additional Secondary Factors (ASFs). ASFs correct for the fact that theoretical Loran readings, which are based on the speed of radio waves over salt water, are different from actual Loran readings when they travel over landmasses of various characteristics.

Since ASFs are fairly constant over time, they don't affect the repeatability of a Loran set. They don't even matter much for plotting positions using the Loran TD (time difference) lines overlaid on many charts, since the lines are adjusted for ASFs. Where they really matter is in the complex formulas used to translate TDs into latitude and longitude. Most Loran sets didn't have the computational horsepower to properly figure large databases of ASFs into these calculations; that's why we all learned to distrust those lat/long conversions and work with TDs. Even the many modern GPS units that can create a lat/long waypoint from input TD numbers may not do the best possible conversion.

There are PC software programs that can do the conversions using the full ASF databases (with corrections every five miles). Two I know of are Coastal Loran & GPS at www.weak-industries.com and LoranGPS at www.andren.com. Both can organize and map your waypoints, and the latter program can upload to the GPS units of several manufacturers (easier if you have a system as described in my column).

But even the best-tabulated ASF corrections are not perfect, so the best possible way to do your conversions is to fire up that old Loran set, go to each of your TD hot spots, and mark it using a differential or WAAS GPS. It will be time-consuming, but heck, you'll be boating instead of computing, and you could even drop a line over. (By the way, there's technology in development that promises to eliminate lat/lon conversion problems in the next generation of Loran; I'm hoping that it will also

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mean the end of those pesky TD lines on paper and raster charts.)
—B.E.

Got a marine electronics question? Write to Electronics Q&A, Power & Motoryacht, 260 Madison Ave., 8th Fl., New York, NY 10016. Fax: (917) 256-2282. e-mail: PMYElectronics@primediamags.com. No phone calls please.

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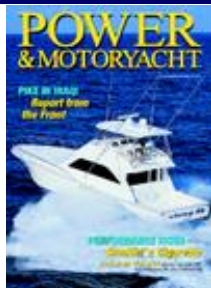
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