

GAINING LEVERAGE

Points for Replacing LORAN and Old GPS Receivers

BY GEORGE WILHELMSEN

In avionics, inertia is a terrible thing. Inertia, defined as the propensity of matter whereby it remains at rest, or continues in uniform motion, can be used just as well to define the typical attitude of an aircraft owner. Many of their decisions regarding avionics upgrades are mired in the inertia of the situation in a sense, since they don't want to part with "perfectly good equipment" in their minds when they think about their old LORAN receivers or first generation GPS receivers.

The problem with inertia in the avionics decision-making arena is simple: the pilot who knows their equipment and is happy with it is an object at rest, and unless acted upon by the right force, won't move to make an upgrade in their avionics. Our intent here is to provide a concise summary of the various points that your shop can use to get some leverage to get the customer moving in the right direction, and towards the installation of a new navigation solution.

LORAN

When you look for a technology with some strength and stamina, LORAN comes to mind. The system, which originally started out for marine navigation, and was eventually adopted for a period of time for aviation purposes, did a fairly good job at what it was intended to do. Over the course

of around 15 years, a good number of LORAN receivers were installed in aircraft, either as hand-held models or panel mounted units.

LORAN has a choir of fans that so far, have managed to keep it funded and alive, and the events surrounding September 11th only worked to further aid in keeping LORAN as a viable source. This is despite governmental efforts to cease funding the maintenance of the system, and plans in the airspace navigation plan to abandon LORAN by 2005.

All of this brings to mind an important point that many pilots are unaware of —that LORAN, while currently still alive, is in a constant fight to stay that way. What this comes down to for the LORAN pilot is simple: it would be better to get out from behind their LORAN unit now, while they can get a few dollars for it, than after the system ceases functioning when the funding is cut off, at which point it will become dead weight in their airplane.

Unfortunately, because of all the furor and legacy systems in service, nobody has been able to accurately predict when LORAN transmissions will end. Our best guess is that we'll see the switch get flipped in or around 2005, as the increasingly tight budget forces the government to stop funding, or at some point later in time when the technology becomes uneconomical to repair. Whether the former or the lat-

ter of these forces is successful is irrelevant—one or the other will eventually win, and LORAN will become a footnote in navigation history.

There are some other issues that need to be kept in mind regarding LORAN Systems that your sales team can use to further motivate aircraft owners to head towards the GPS systems that are available today. For example, there are no IFR-certified LORAN systems available. This is due to the effect of Precip-Static, which can disrupt the LORAN signal from being received while in flight in precipitation. Several firms did try to certify the LORAN for IFR flight, but were unable to get around this issue on a consistent enough basis to make the system stable and suitable for IFR operations.

Obsolescence is also becoming a concern for existing LORAN receivers. A good number of units on the market are now discontinued, and parts are becoming scarce. Even used units are becoming rare, which means if their system fails, they will not have a reasonable recourse to get it repaired. All of the above factors are playing into the current resale price of LORAN systems, which is currently a fraction of the original sale price, and headed lower.

Common GPS and LORAN Points

With the above ammunition, a good salesperson should be able to show the most hard-core LORAN owner the light. However, there are still more points that are common to the original early generation GPS receivers and LORAN receivers that can be used to further enlighten and motivate those aircraft owners. For starters, the human factors of today's GPS receivers are several orders of magnitude better than the best LORAN or early GPS receiver. This is regardless of the manufacturer—simply trying to figure out how to use a GPS receiver today is far easier than it ever was with the old equipment.

What this means to the pilot is that they will be able to get a lot more for their avionics dollar than they did when they originally purchased their old nav equipment. Think of it this way: the old equipment at times was "user hostile," with a lack of graphics interfaces, and at times, the need to punch in codes to get the units to function. Compare that with the text and map screens that are available today, and most pilots will be surprised at how easy it is to get around.

One way to see what has frustrated a pilot with their old gear is to know some of the features that were available in it, and then ask the pilot if they ever used it. Generally, the higher level the features were, the more difficult it was to make them easily accessible, which means many pilots may have seen those features demonstrated once or twice, but never were able to use them in flight.

With this backdrop, your sales team can then show them the various simulator systems, and demonstrate exactly how easy it really is to get to those features and to get value out of them. In doing so, they will show the pilot

where they can get value out of the current system, and will result in comments from the customer about how easy it is, and how they were never able to get their old LORAN/GPS receiver to do that when they wanted to, which will help the customer to understand why they need to make this change.

Another point that people think about is the value of a moving map display. Thinking back to the years before GPS, several upscale units did have a moving map, but there were still a fair number of text-based units on the market for LORAN and even early GPS receivers. The tactical awareness that can be gained from today's GPS receiver moving map displays is such a substantial improvement in pilot awareness that most pilots that have had the chance to fly behind such systems are reluctant to fly without them. This is even more true of the color moving map displays, which further supplement the information with easy to understand color coding.

The moving map is one of the biggest advantages in airborne navigation today. Even with the RNAV units, which could be used to plot direct-to courses by using multiple VOR inputs lacked this advantage, which is why they can now be found selling for a fraction of their original cost. While needles and digital indicators are good and can be used to safely navigate, having the map in front of the pilot where it can do the most good answers an incredible number of questions, all with a single glance.

Unavailable New Features

The current generation of GPS systems has features that the first generation and LORAN systems will never be able to have. For example, many of

the new GPS receivers have airborne weather available in one form or another. With this weather information superimposed on the map, your pilots will gain yet another tactical flight advantage, since they will be able to use the weather to stay clear of hazardous weather conditions.

More and more of the new GPS receivers are coming with terrain awareness options. Whether they are rudimentary in nature and not certified, or fully certified TAWS Class B systems, they are working to help pilots avoid ground-based perils. These terrain solutions provide even more information and the ability to avoid problems for both VFR and IFR pilots.

Speaking of obstructions, several of the GPS receivers even have a Traffic Information System (TIS) interface available, and can be interfaced to show TCAS/TCAD traffic if desired. This allows the GPS receiver to show traffic on their moving map displays. More weather information is available in the range of atmospheric, with L3 Avionics lightning interfaces available to provide lightning data which can be shown on the moving map.

The avionics industry is very forward-looking, which means that these advances are employed on the current, state of the art technology only. Thus, the existing fleet of legacy first generation GPS and LORAN equipment is not subject to upgrade, and in most cases, lacks the processor power needed to be able to be upgraded. Considering the size and speed of the processor that is in use these days on the state-of-the-art multi-function GPS systems, you can easily see how it is not financially reasonable to upgrade these legacy systems.

Continued on following page

GAINING LEVERAGE

Continued from page 29

More Functions

The multi-function GPS receivers have grown from the simple GPS/com to GPS/nav/com systems with WAAS capability. This approach can be used to help pilots in cockpits that are space limited by allowing them to see that they can get much of this power into the same space as their old nav/com. Thus, what was a problem before with owners who didn't want to relocate their nav/com into a knee-busting position on the bottom of the panel has been solved through greater integration.

When you look at the cost of installing a stand-alone nav/com and even a GPS receiver, the price points of these combination units, whether they are GPS/com or GPS/nav/com, fare quite favorably. Better yet, the human factors of the new units with their new features is very good, and are almost transparent to many pilots who have flown behind vintage avionics.

There are other interfaces as well, which can add to the value and utility of the new GPS system. These include a connection to the fuel computer, which provides nearly FMS capabilities to the light single and twin cockpit. For even more functionality, the Air Data Computer interface provides accurate indications of true airspeed, winds aloft, and even Mach speed, for those pilots who are interested.

We have covered a great deal of ground, ranging from the issues that have driven LORAN and older GPS receivers to technological obsolescence, to the new features and abilities of the equipment that have made them more useful as well as easier to use. Together, this combination of the limits of the existing legacy equipment and the nearly boundless capabilities of the latest generation of equipment to hit the market work together to pro-

vide the right motivation that most prospective buyers will need to make the decision and commit to the installation of new equipment.

When used carefully, your team will be able to use this information to help educate the customer, and in doing so, help them to see what the right decision is. Of course, there are always a number of hard-liners, who will operate their existing equipment until smoke is generated or until it fails completely, and due to their nature, the best intent and efforts will be for naught. This cannot be helped, and in the long run, taking the time to inform them of the future may build a better trust when their equipment eventually fails, causing them to return to your shop for the replacement project.

For those pilots who are looking for the right reasons to replace their older LORAN or GPS receiver, this information will not fall on deaf ears, and will help to move them in the direction of a sale. This in turn can only have a positive impact on your sales, technician utilization and bottom line, as your team will be able to have greater success in landing those increasingly elusive sales. □