



AIRCRAFT OWNERS AND PILOTS ASSOCIATION

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August 31, 2007

Lt. Michael Herring
LORAN –C Program Manager
Coast Guard

Re: USCG Docket Number 2007-28460

Dear Mr. Herring:

On behalf of more than 413,000 general aviation pilots, the Aircraft Owners and Pilots Association (AOPA) submits the following comments to the United States Coast Guard's (USCG) request for public comments on the Programmatic Environmental Impact Statement (PEIS) on the future of the Long Range Aids to navigation (LORAN) Program. AOPA recommends that before attempting to answer this programmatic question about strategies to run the Loran system, the USCG needs to answer much more fundamental questions about Loran's performance, affordability, and adequacy as a backup source of positioning for general aviation's navigation and dependant surveillance needs in the transition to the Next Generation Air Transportation System (NextGen).

For the aviation community, the future use of Loran is exclusively within the context of a backup source of positioning, used for both navigation and Automatic Dependant Surveillance Broadcast (ADS-B). Pilots do not require a fully redundant positioning system, but they desire an optional backup, and it needs to perform well enough to allow them to continue flying for short periods of time during Global Positioning System (GPS) outages.

Over the past decade, nearly all pilots have stopped relying on Loran –C, partly because the USCG continues to threaten decommissioning and partly because pilots found that using GPS for instrument operations was easier and more affordable than Loran. Today, pilots overwhelmingly use GPS for electronic navigation, and they feel GPS is reliable. Members report that the loss of GPS navigation is relatively infrequent. Therefore, it is clear that a backup positioning service needs to be carefully designed to meet the needs of general aviation, but not over-designed, which raises cost and reduces user interest. Although Loran appears to be one backup option, it is not likely the only option, and efforts are under way to identify other options as well, including inertial navigation systems.

Although nearly 90 percent of pilots use GPS, most have elected to keep their Very High Frequency Omni Range (VOR) receiver on their aircraft as a backup navigation source for several reasons, and three specifically relate to this discussion. First of all, VOR services are widely available and not under immediate threat of complete decommissioning. Although the FAA plans to reduce VOR by up to one-half by 2015, the VOR network has remained operational and suitable for both en route and non-precision approach operations continuously and reliably. Second, VOR meets most pilots requirements to serve as a backup navigation aid, including geographic coverage, low cost, and VOR's ability to provide non-precision approaches. In addition, a VOR receiver can also receive precision approach signals from Instrument Landing Systems (ILS). Last, VOR antennas are installed in nearly all general aviation aircraft, so the cost to retain VOR when installing GPS is minimal.

There are two major reasons why VOR may not be a suitable backup in the NextGen timeframe (2025 or beyond). First, the FAA intends to fully disassemble the VOR network within the next 20 years, and secondly the VOR does not appear to provide the necessary performance for area navigation and ADS-B, both of which are major cornerstones of NextGen. However, the future backup discussion needs to be brought into a more specific focus.

Research is required to identify the minimum performance attributes of a suitable backup system for general aviation be it Loran, inertial or any other system. Such research needs to be conducted in a partnership between government and industry. Therefore, we base the backup requirements for general aviation on observations of the needs of our members. It would appear that most members would view a backup system to require, at a minimum, the following performance parameters:

- Available for instrument operations throughout North America, and the Caribbean.
- Available 100 percent of the time.
- Where ground-based precision approaches are not available, accurate enough to fly non-precision GPS approaches, reducing the need for special Loran-specific approaches and supporting the FAA's performance-based navigation concepts.
- Capable of providing navigation guidance from en route to the start of a ground-based precision approach.
- Suitable for both en route and terminal navigation and surveillance in all airspace areas.
- Ample performance to continue uninterrupted for 30 minutes after GPS becomes unavailable.
- Add no more than 10 percent to the cost of a navigation or dependant surveillance system.

Without a doubt, there are other performance requirements that are not listed, but those listed serve as a good basis for initial evaluation of any backup capability specifically designed to meet the needs of general aviation. It would appear that at least on initial analysis, Loran meets or exceeds several of these requirements.

When evaluating the feasibility of using Loran in aviation, there are several technical, and performance issues as well as questions pertaining to the programs management. The technical issues that need to be addressed include:

- Successful integration of Loran into both navigation and ADS-B systems.
- The mitigation of precipitation induced static on all types of aircraft, including composite aircraft.
- The need for Loran correction signals that account for seasonal changes.
- Aircraft installation costs, including the need for antennas.
- Availability of Loran navigation signals and avionics in time to meet aviation's needs, estimated to be 2015 and beyond.
- Performance of all-in-view systems versus Loran chain systems.
- Cost for Loran receivers capable of instrument operations.

AOPA has also identified several critical programmatic questions that need to be considered by the USCG.

- If Loran is primarily retained to serve as an alternate timing source, are there additional costs to upgrade Loran to support aviation use?
- What is the level of risk that Loran cannot meet the necessary performance for aviation?
- When can Loran's signal become available for aviation use?
- Will the FAA partner with USCG to ensure Loran is suitable for aviation?

In order to move from talking about the future Loran to deciding once and for all as to whether Loran will be decommissioned or modernized, the technical and management strategies need to be identified, coordinated and approved by the FAA and in conjunction with the aviation community. Provided Loran can meet the minimum performance requirements for general aviation's backup needs, and if the technical and programmatic issues can be resolved, then it seems that the FAA, USCG and aviation industry need to develop an implementation strategy, which AOPA believes will affect the USCG's Loran management plans. Therefore, it's AOPA's recommendation that instead of seeking to answer the questions posed in this Notice, the USCG and FAA need to research, identify and address the more fundamental issues and questions first.

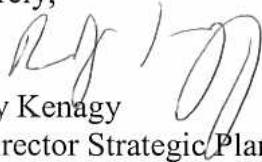
Lt. Michael Herring

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While on initial assessment it appears that Loran may be a suitable backup system for general aviation in the NextGen timeframe, it is clear that several issues and policy questions remain. The future need for Loran hinges on these issues and questions, and they should be addressed before asking users to comment on various management strategies. If you have any additional questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Randy Kenagy', with a stylized flourish at the end.

Randy Kenagy
Sr. Director Strategic Planning
Government Affairs