LORAN 2006
THE STATE OF PLAY

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So far it's been a busy year for LORAN in 2006….and the year's barely 4 months old.

The most significant recent event came out on CNN on 21 April. The Atlanta office of the Justice Department announced the FBI had in custody two Muslims who had been discussing terrorist actions against the US. One item under discussion: an attack on GPS to disrupt transportation and communications.

This is the first public revelation of the threat to all nations-not just the US-set out in the famous Volpe Center Report of 2001 and confirmed by the proposed European Radio Navigation Plan (ERNP) of 2004. Note that the ERNP listed 135 present uses of GPS in Europe, barely 40 of which would continue after loss of GPS/GNSS.

We in the International Loran Association told you so.

2006 is a critical year for the safety and security of all nations. Because 2006 is the year of decision for the long term use of LORAN. Under a long standing interagency agreement the decision to continue LORAN for the long term will be made by DOT, DHS, and other agencies, as stated in the latest Federal Radio Navigation Plan, cleared by the Coast Guard. In fact, this decision process was reaffirmed in a paper, cleared by a higher policy office, by a Coast Guard officer at the ILA Convention in October in Santa Barbara, Ca.

In Europe, the proposed ERNP lists LORAN as a "core" technology with an extremely favorable cost/benefit ratio. Security is obviously the top reason for including LORAN. Hopefully the European Commission will address the ERNP, and with it the pan-European adoption of LORAN, in late 2006.

Next, the worldwide E-Navigation program placed before the IMO by a group of leading maritime nations including the UK, Norway, the Netherlands, Japan, Singapore, and the United States. Repeat: the United States, i.e. the Coast Guard. The E-Navigation Proposal has been described earlier by Brian Wadsworth of the UK Ministry for Transport, so I won't go into detail. Suffice it to say that a dissimilar radio navigation signal to GNSS is needed for reasons of safety (it was sent to the IMO safety committee), security, and cost saving. And the only radio navigation signal not dependent on GNSS is….E-LORAN. So the E-Navigation Proposal is an endorsement for world-wide use of LORAN.

The cost saving aspect of E-navigation deserves mention. The world's providers of aids to navigation charge fees to users for the services. Large vessels primarily pay these substantial fees. And most of the costs they pay are for physical aids to navigation such as buoys, bells, lights, etc. Some 80% of the aids to navigation costs to the Trinity House, UK, authorities lie in the routine hauling, scraping, painting, replacing, and relocating these traditional aids. If a totally reliable nav signal can be provided-and GNSS does not qualify-many of these expensive aids can be withdrawn in favor of way points on an electronic chart. GNSS plus LORAN would provide such a reliable nav signal. The cost saving appeal to ship-owners is obvious.

Now the bad news. In February the DHS, on behalf of the Coast Guard, proposed to Congress that the 24 LORAN stations in the US be terminated on 1 Oct, the towers dynamited, and the land sold off. This is a big mistake by a cadre of very smart and competent people.

In explaining this proposal the Coast Guard, of course, recognized the possible loss of GPS. The vessels, large and small, could then revert to traditional, non-radio forms of navigation such as clock and compass (Dead Reckoning), ships radar, celestial navigation, fathometers, and the like. To my knowledge the implications of this reversion has never been discussed with any marine user group by the Coast Guard's safety office (now renamed "Prevention" to reflect the new first priority-homeland security). The safety aspects of non-radio navigation will be addressed in more detail, and with more authority, by Capt. Bill Brogdon, a boat driver, navigation writer, and past president of the ILA.

In April, after reflecting on the Coast Guard's unexpected proposal to Congress to ignore existing agreements and terminate LORAN, the DOT wrote DHS reminding them of the prior agreement to jointly come to a decision. A schedule was set out to come to agreement by the end of calendar year 2006.

The reaction to the shut down proposal to Congress is of interest. The boating user groups have rejected it out of hand. Both the National Boating Federation, representing 6 million boaters through its affiliated groups, and Boat USA, are formally on record in support of the long term continuation of LORAN.

In the aviation world a new, powerful supporter of LORAN had emerged. On 1 May the famous Aircraft Owners and Pilot's Association (AOPA), representing 408,000 fierce and politically active small plane owner's, has come out for the continuation of LORAN. In a letter to FAA Administrator Marion Blakey, AOPA urged the immediate development of standards, low cost avionics, and even an international council to guide development of LORAN for present and future users of positioning, navigation, and timing applications. For AOPA, the appeal is FAA cost avoidance and better service. Aviation has lots of backup radio navigation systems but they are frightfully expensive, they are past their sell by date, and replacement will cost many billions which FAA does not have. If aircraft, over time, adopt a LORAN chip and a 6 inch flat antenna, 1100 VOR/DMEs, 1000 NBBs, and some 400 radars can be decommissioned. LORAN can provide a replacement service for aviation, mariners, and all other users, including telecom, for less than $20 million. How the LORAN off proposal got by the DHS staff and OMB is beyond me.

There is a dimension of GPS/LORAN service of importance: precise time. GPS provides an excellent Stratum 1 time signal which is used in many marine and aviation applications. GPS time dependence, astonishingly, now extends to the internet, power distribution systems, cell phones, financial transactions, and wire line and wireless communications. If GPS is lost to terrorist jamming attacks much of our cyber dependent economy will come to a halt.

LORAN provides a powerful, dissimilar precise Stratum 1 time backup to GPS. Mike Lombardi of NIST will be heard on LORAN timing. Timing service may be the most important role of all to our national economy for LORAN.

The immediate future in 2006 will be very important to LORAN and to our increasingly GPS dependent economy. In light of the outpouring of user support, and the movement of other nations toward protection from terrorist attack provided by LORAN, I am now optimistic of the future. I predict that the Congress will not permit DHS/Coast Guard to kill LORAN. In fact, I predict that DHS/CG will take a broader look at the LORAN issue and will join DOT in green lighting LORAN for the long run.

We have now passed a tipping point. LORAN is gathering momentum in the US and worldwide.

LORAN is the best friend GPS ever had. 2006 is the year for LORAN.