

Partnership = Success

Vessel Traffic Service Los Angeles-Long Beach Harbor (California, USA)

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ABSTRACT: VTS for LA/LB Harbor has provided a practical example of new approaches to VTS management, environmental protection, and promoting maritime safety and security. Through application of new technology and unique management policies – and operating within a government/private sector “joint-venture partnership” – this VTS has been successful in ensuring the megaport complex at LA/LB Harbor is one of the safest, cost-effective, reliable, efficient, and respected in the world.

INTRODUCTION

On 1 March 1994, a unique Vessel Traffic Service (VTS) came on line, serving America's busiest intermodal seaport complex. Nearly 10 years and over 275,000 vessel transits later, Vessel Traffic Service for Los Angeles-Long Beach Harbor (VTS-LA/LB) has received national and international praise and support as a very successful model for future Vessel Traffic Services.

This article answers the following questions as regards the VT-LA/LB:

- What makes the VTS-LA/LB unique?
- What was the genesis of this venture?
- Has VTS-LA/LB been successful?
- How does it support new approaches towards promoting maritime safety and security?
- What are the benefits of a joint-ventured “partnership” Vessel Traffic Service?

UNIQUE ASPECTS

VTS-LA/LB is America's first, and only, joint-ventured government and private sector partnership for running a VTS. The VTS has brought together all maritime stakeholders in a common effort to facilitate safe, secure, efficient, reliable, and environmentally sound marine transportation at

America's busiest and biggest intermodal seaport complex.

This joint-ventured partnership includes:

- Marine Exchange of Southern California (a non-profit organization, founded in 1923, representing the local commercial maritime interests);
- United States Coast Guard's Captain-of-the-Port/Marine Safety Office/Group, for Los Angeles-Long Beach Harbor;
- Port Authorities (2) for the Port of Los Angeles (POLA) and the Port of Long Beach (POLB)
- State of California's Office of Spill Prevention and Response (OSPR)
- Pilot Services (2) for LA/LB Harbor (Jacobsen Pilot Service for POLB, and the Municipal Pilot Service for POLA)

Staffing: Both Marine Exchange and Coast Guard personnel, who together provide a three-person watch operating 24 hours daily, conduct the daily operations for VTS-LA/LB jointly. The USCG staff is made up of qualified Petty Officers who have extensive seagoing and/or previous VTS experience. The Marine Exchange's VTS civilian staff (administrative and operational) has included: licensed/documented mariners with seagoing experience; retired USCG and USN staff with previous VTS and/or seagoing experience (including command assignments); as well as others with extensive "local knowledge" of harbor and coastal waters and with previous experience aboard small commercial and private craft operating in this region.

Training: All Marine Exchange and Coast Guard personnel at VTS-LA/LB receive extensive training prior to taking on their responsibilities as Vessel Traffic Specialists (watch-standers) for monitoring, facilitating, advising and coordinating all covered commercial vessel traffic operating in the VTS Area of Responsibility (AOR) -- which extends seaward 25 nautical miles from the federal breakwaters and the two entrances to LA/LB Harbor. This training includes sea passages with pilots and masters, day trips aboard Harbor tugs and passenger ferryboats, orientation sessions at

port authorities and marine terminals, and specific VTS simulator training sessions. The VTS training process takes nearly a year before a Vessel Traffic Specialist (watch-stander) is fully qualified. All watch-standers at VTS-LA/LB are also certified on a national level by attending the Basic VTS Training Course conducted by the U.S. Coast Guard at the Maritime Institute of Technology and Graduate Studies (MITAGS), located near Baltimore, Maryland. Extensive additional training, experience, and qualifications are required to become a "VTS Watch Supervisor", which can take another year (or more) to attain.

Funding: The overall operating cost for VTS-LA/LB is funded by the maritime industry through collection of "VTS Users' Fees" -- which are mandated by state law, and required by Port Tariffs -- and which are applied to all arriving vessels. Those "arrival fees" currently range from \$180 for the smallest freighter (or tug and tow), up to \$340 for the largest tanker or container ship. Additionally, a "mil rate charge" of \$0.0015 is applied against the vessel's "Gross Registered Tonnage" (GRT). Meantime, a modest "flat rate monthly fee" is applied to "local vessels" (tugs/tows and passenger ferry service to Santa Catalina Island; vessels engaged in port constructions projects; vessels certified to carry 50 or more passengers and engaged in "whale-watching", sport fishing, coastal sight-seeing tours, etc.) recognizing their frequency of calls, as well as their somewhat limited financial resources. The entire VTS user fee structure was developed after several meetings with industry to reach consensus on both the fee amount and applicability to specific vessels.

Reimbursement to USCG for Billets: In the beginning of the "partnership", through a unique contractual arrangement between the U.S. Coast Guard (USCG), California's Office of Spill Prevention and Response (OSPR), and the Marine Exchange of Southern California, user fees also paid for the Coast Guard staff assigned, which amounted to nearly \$280,000 annually for six (6) billets. When the contracts expired in September of 1998 -- and after several Congressional hearings were held to determine the future of this "grand experiment" -- VTS-LA/LB was determined to be the "permanent solution" for providing VTS at LA/LB Harbor, and declared to be a "National Model" for other ports to study and emulate. The U.S. Coast Guard decided at that time to absorb the cost of all their personnel assigned at VTS-LA/LB for the future, in an effort to further enhance the

government/private sector partnership, and to facilitate a solid management of VTS users' fees in the years to come.

Operations: VTS-LA/LB operates 24 hours a day, 7 days a week, 365 days a year, ensuring the approaches to the Ports of Los Angeles and Long Beach (and the offshore oil transfer moorings at El Segundo in nearby Santa Monica Bay) are safe, secure, efficient, reliable and environmentally sound. VTS-LA/LB also monitors and facilitates the U.S. Navy traffic moving in and out of Anaheim Bay, location of the Seal Beach Naval Weapons Station.

High Stakes: The Ports of Los Angeles and Long Beach conduct nearly 200 billion dollars of trade annually. VTS-LA/LB plays a major role towards protecting that trade by providing professional and responsible Vessel Traffic Service for the thousands of vessels arriving from around the world to conduct international commerce at America's busiest, and most important, intermodal transportation hub. The stakes are high -- LA/LB Harbor handles more than 65% of all containerized Pacific Rim cargos moving to/from west coast ports; and on a national level, LA/LB Harbor accounts for over 40% of ALL containerized cargoes moving through American ports. Any marine accident (or terrorist attack) could potentially shut down the port complex -- and this is completely unacceptable. Disruption of this vital trade link at LA/LB Harbor would have serious negative impacts extending all across the nation and potentially costing billions of dollars in losses to the market place, and resulting in serious unemployment and economic hardship everywhere. Such negative economic impacts were felt, indeed, throughout the country during the labor-management disputes in October of 2002, when the docks at LA/LB Harbor were shut down for nearly two weeks. It took months for the local region (and many other parts of the country), to recover from that short disruption. Imagine what a long-term shutdown of the harbor complex might do if a serious accident occurred, including the potential for serious infrastructure and environmental damages....

GENESIS OF VTS-LA/LB

MX History: In 1923, the Marine Exchange was formed to aid the Los Angeles-Long Beach maritime industry and waterfront business community in reporting when ships arrived so that they could conduct their business and trade.

Lookouts were posted with telescopes, signal flags, and flashing signal lights -- scanning the horizon for ships and, upon spotting and identifying the vessels, made arrangements to handle each ship as it arrived in port (i.e. alerting the agents, pilots, tugs, stevedores, labor unions, terminals, vendors, Port Authorities, Immigration/Public Health and US Customs, among others). This brokering of information to the maritime community helped improve the efficiency of the port complex immensely, and it remains the centerpiece of the Marine Exchange's function today.

Maritime Information Clearinghouse: The need for this type of information continues into the 21st Century with the Marine Exchange recognized and respected as the "Maritime Information Clearinghouse" for all who deal in international trade and who "work the waterfront" in Southern California. Today's Marine Exchange provides vital information on vessel arrivals, departures, and shifts within the Harbor; the location of vessels at anchor or at dock; specific vessel details as to its size, tonnage, cargo carried, hull type, propulsion, flag, ownership, etc.; where the vessel came from, where it is destined, who operates it, what agent is used, and other important data. This information is provided to nearly 300 subscribers that use this information and data daily to conduct their business at Los Angeles-Long Beach Harbor (as well as at the two nearby ports of San Diego and Hueneme). In addition, the US Coast Guard (as partners in VTS-LA/LB) has real time access to this information to assist them as the "waterways managers" of the port. The Marine Exchange's computerized database on vessel activity, statistics, and information is one of the most comprehensive found at any port today.

Vessel Traffic Advisory Service (VTAS): In 1981, after several near miss situations and a minor collision (all of which occurred outside the federal breakwaters), the maritime community and the US Coast Guard asked the Marine Exchange to establish a Vessel Traffic Advisory Service (VTAS). Under the VTAS program, basic information was offered to all arriving and departing ships (name of vessel, and "last reported route direction"), alerting the masters of the situation around them. A rudimentary use of radar and VHF-FM radio communications were employed. Participation was informal, voluntary and non-regulated. A modest fee was assessed upon each arriving/participating ship to cover the cost of running the VTAS. It proved to be an important tool that improved traffic safety for

vessels approaching the port complex, outside the breakwaters. Although the VTAS enhanced safe navigation, there were still occasional "close calls" and frequent confusion between ships. VTAS, after all, was not mandatory, not regulated, and had no enforcement powers. Both industry and government recognized that some additional steps would have to be undertaken to remedy these shortcomings.

Federal & State Mandates for VTS at LA/LB Harbor: After the *Exxon Valdez* oil spill in Alaska in 1989, the role of USCG Vessel Traffic Services (VTS) in preventing marine casualties had renewed Congressional interest. The Coast Guard was directed to evaluate ports around the country to see where VTS operations should be placed. LA/LB Harbor was eventually identified as a port where a USCG-run VTS was needed to minimize risk; however, federal procurement timing and limited federal funding made it clear that such a VTS would not come to fruition for several years in this region. Meantime, under the State's Oil Spill Prevention and Response Act of 1990, LA/LB Harbor was mandated by state law to install a formal, regulated, and mandatory VTS "at the earliest".

A Partnership is Born: When it became apparent that the USCG would be unable to produce a VTS program at LA/LB Harbor for several years, the State's Office of Spill Prevention and Response (created by the OSPR Act of 1990) initiated steps to speed up the process by helping to establish an "interim vessel traffic service" for the Los Angeles-Long Beach seaport complex. The interim operation was to address and provide Vessel Traffic Service until the anticipated Coast Guard VTS came on line. The Marine Exchange was then asked to upgrade their VTAS into a formal, mandatory, regulated VTS program - with US Coast Guard participation. Agreements were made between OSPR, USCG, the Marine Exchange, and the two local Port Authorities to move forward with this unique concept.

VTS-LA/LB Goes On Line: With help from financial grants provided by the Ports of Los Angeles and Long Beach, and a low-interest loan from the State of California, commercial-off-the-shelf (COTS), state-of-the-art, radar and electronic tracking processing systems were procured. The entire program was established for less than 1 million dollars and currently operates on an annual budget of 2.3 million dollars - which includes both VTS and Marine Exchange functions and

operations. This joint-venture partnership amongst the Coast Guard, the port authorities, the State of California, the pilot organizations, the Marine Exchange and the local maritime industry resulted in VTS-LA/LB coming on line on March 1, 1994.

VTIS vs. VTS: The original title "VTIS" (for Vessel Traffic Information Service) was used in lieu of VTS (Vessel Traffic Service) to differentiate this particular "partnership VTS" from the "traditional VTS" (which is operated by Coast Guard personnel and federally funded). But that initial name also demonstrated the wealth of ship and harbor information ("I") available from the Marine Exchange and which was (and still is) offered to all mariners in the system. In all other aspects, the approach towards providing vessel traffic management by this joint-ventured "VTIS" was virtually identical to all other VTS operations in America. It did the same job, followed the same national operational guidelines and procedures, had the same Captain-of-the-Port authority, reported to the same USCG oversight command in Washington, and was bound by the same international standards for training, enforcement and operations. Hence, in 1999, when it was determined that our "partnership VTS" was to be the long-term solution for LA/LB Harbor, the "VTIS" name was dropped in favor of "VTS".

VTS-LA/LB PROGRESS

A "Value Added Service": Since 1994, the Marine Exchange, the State of California, the two port authorities, the two pilot organizations, and the USCG have strengthened this unique partnership. VTS-LA/LB is no longer considered an "interim solution", but rather, the long-term answer for the port complex. Likewise, the port and waterways stakeholders have all come to regard VTS-LA/LB as a viable solution, and a "value added service", for improving navigation safety, enhancing traffic efficiency, and increasing environmental protection in this region.

The "Hammer Award": On November 19, 1997, the Marine Exchange of Southern California and the USCG's Marine Safety Office were presented the prestigious "Hammer Award" by then-Vice President Al Gore, on behalf of the U.S. Department of Transportation, to recognize and honor their outstanding achievements for establishing America's first (and only) joint-ventured, government/private sector partnership VTS operation. VTS-LA/LB was cited by the Vice President as being "...an excellent example for

others to study and emulate as we continue to work together to 're-invent government' for the future benefit of all Americans."

El Segundo Expansion: In 1998, through state legislation (and a \$500,000 State grant), a remote radar/communications facility was brought on line at the ChevronTexaco refinery in El Segundo, which now provides VTS-LA/LB the ability to monitor and facilitate vessel traffic in Santa Monica Bay - including the tracking of tankers moving in and out of the offshore oil terminal moorings and anchorages there. That expansion also permitted VTS-LA/LB to monitor recreational craft, small commercial fishing boats (and other "non-participating vessels") plying those waters; keeping everyone out of harm's way through timely and accurate advisory broadcasts on VHF-FM channel 14.

Transponder Technology: VTS-LA/LB has continually been on the cutting edge of new technology as well. An "Automated Dependent Surveillance System" (ADSS) was installed early on (in 1995) to track the tankers carrying Alaskan North Slope crude oil from Valdez, Alaska (which vessels were required by law at that time to use this equipment while transiting Prince William Sound, and that same gear worked well for tracking them off the California coast).

That system has since given way to the newly developed AIS (Automated Identification System) equipment that is now required by international law. This specialized equipment allows VTS to acquire and track ships independent of radar coverage, and provides more detailed information on the vessel's particulars as well. On a typical day, AIS targets can be picked up at 30-40 nautical miles; on some days, if radio propagations allow, AIS targets can be tracked out to 100 nautical miles.

VTS-LA/LB also employs other transponder technology for tracking "local vessels" (i.e. tugs, pilot boats, ferries, and the like) - such as the "meteor-burst" systems and the "kinematics" GPS spread-spectrum" systems. These transponder systems are tied into the "Pilot-Mate" carry-on units, with a free exchange of information, data, and vessel plots and positions constantly ongoing between pilots and the VTS.

"ASVTS": In addition, through its affiliation with the Maritime Information Service of North America (MISNA), the Marine Exchange is

experimenting with a unique "Automated Secure Vessel Tracking System" (ASVTS) that can track vessels globally (via satellite) as they move to and from LA/LB Harbor and across the high seas – thereby enhancing port security needs as well as commercial interests. Steps are currently underway to obtain federal funding for that project, as part of the new focus to "enhance maritime domain awareness", and to "extend the borders" in keeping with the post 9-11 focus we have in America today.

Visibility Unlimited: In addition to using state-of-the-art technology, the Vessel Traffic Specialists on watch at VTS-LA/LB have the added benefit of being able to visually assess vessel operations and movements in the approaches and outer reaches of the port. The Marine Exchange's Vessel Traffic Center is strategically located on Coast Guard property some 325 feet above sea level, overlooking Point Fermin Lighthouse, with an unobstructed view to seaward. On a clear day, ships can be seen at a distance of up to 20 nautical miles. Dana Point to the south and Santa Barbara Island to the west are also visible, nearly 40 miles in each direction

VESSEL TRAFFIC MANAGEMENT SYSTEM

In an effort to improve port operations, a new seamless Vessel Traffic Management System (VTMS) has been developed for LA-LB Harbor. VTMS enhances the exchange of radar data, voice communications, and vessel information to and from the Los Angeles and Long Beach pilot stations -- which each monitor and manage all vessel traffic in their respective port waterways (inside the federal breakwaters) -- and with the VTS, which facilitates and manages vessel traffic for all waters outside the port complex. With the VTMS in place by way of an "MOU" (Memorandum Of Understanding) -- signed by all interested parties, including the Coast Guard's Captain-of-the-Port and Marine Safety Office (COTP-MSO), both pilot organizations, OSPR, the two port authorities, and the MX-VTS -- all share, and work with, the same electronic vessel tracking picture, communications network, and database display. This allows for exchange of relevant, timely and accurate information between the VTS, the harbor pilots, the USCG's COTP/MSO Command, and with all vessel masters and operators transiting inside and outside the port complex. And as mentioned earlier, there is a "tie-in" amongst the VTS, the two pilot stations, and the USCG's Marine Safety Office, whereby data, plots, information, and displays are shared

continually – including AIS and other transponder systems – both on shore-side systems and "carry-on" units. VTMS has proven to be "the best of the best" for partnering the responsibility and duty in providing a "seamless VTS" from 25 miles out to sea, to the docks, and back out again.

VTS-LA/LB's "MEASURES OF SUCCESS"

Financial Success: From a financial perspective, VTS-LA/LB has been a tremendous success, operating under the non-profit status of the Marine Exchange of Southern California. VTS-LA/LB was established with less than one million dollars capital (within budget and ahead of schedule). During its first nine months of operation, it achieved an operating budget performance that allowed the VTS Users Fees to be lowered by 10% on January 1, 1995. In 1996 and again in 1997, VTS-LA/LB demonstrated its financial responsibilities to the maritime industry and key players of the partnership. It offered a 10% rebate on all VTS users fees paid in those fiscal years, amounting to over \$281,000 in credits to vessel operators/owners over that two-year period. This kind of fiscal responsibility has endeared the Marine Exchange and it's "partnership VTS" into the hearts of those who use and depend on VTS-LA/LB. We have since had to raise the rates on our VTS Users Fees, in keeping up with rising costs and expenses, but the industry has graciously accepted those adjustments with an overall attitude that they are receiving a "value added service" from our VTS in return.

Operational Success: From an operating perspective, VTS-LA/LB has been similarly successful. An analysis of vessel incidents that presented a risk to the port and the environment has revealed a reduction in overall "incidents". Highlighted in that study was a substantial decrease in vessel speed and maneuvering infractions, and a remarkable decrease in close quarters incidents. These measured reductions in risk are indicators of success with respect to our risk management goal. However, the number of mechanical problems experienced has risen. This is due to several factors, including better awareness by VTS Vessel Traffic Specialists, better reporting by vessel operators, and (early on) a significant number of "air start problems" in direct drive diesel plants. Whether the actual rate has gone up over time is less important than addressing the problem. As a result of these data, several vessel operating and inspection targeting procedures were developed, or modified, to address the increased risk of

mechanical failure problems. A report was issued to the maritime community for their information and use. That particular situation has improved dramatically today, with many fewer "air start" problems noted.

Efficiency Success: The Marine Exchange Vessel Traffic Center has thus evolved into the ports' "Maritime Information Clearinghouse", and plays a key role in ensuring the safe and efficient operation of the LA-LB Harbor complex. Moreover, Coast Guard personnel at VTS can facilitate more timely and informed decision-making when involving Captain-of-the-Port issues such as vessel holds, port security and homeland defense matters, oil spills, safety zones, drug interdictions, Port State Control inspections, and search-and-rescue operations.

Other Success Indicators: There are other indicators that rate VTS-LA/LB as a success. The maritime community sees the benefit of merging the Marine Exchange and VTS at one location, which provides information on all vessel traffic activity in the region. This co-location of the Coast Guard and the Marine Exchange represents the "shared commitment" to ensure safe, secure, efficient, and environmentally sound maritime operations at America's busiest intermodal cargo seaport complex. It is an example of "government - private sector partnership" at its best!

BENEFITS OF A GOVERNMENT/PRIVATE SECTOR VTS PARTNERSHIP

The benefits of a joint-ventured VTS are many. In recent years there has been concerted effort by the US Congress and the President to "reinvent government" for accomplishing more at less cost through government/private sector partnerships. VTS-LA/LB is a fine working example of this kind of partnership.

Some areas where a joint-ventured VTS has advantages over other private and/or government VTS's are:

Accountability: The US Coast Guard's role as a law enforcement agency has international recognition and has a pro-active impact on safety. Our jointly operated VTS uses both civilian and Coast Guard personnel to stand watches, reducing the number of government employees involved. The Coast Guard Captain-of-the-Port and his Marine Safety Office staff are involved on a daily basis with VTS to ensure Coast Guard waterways

management issues are properly addressed. Through VTS, both the Coast Guard and the Marine Exchange have shared their respective information databases and sources. The Coast Guard's focus is normally on safety, security, and environmental protection. The Marine Exchange's focus is typically on commercial efficiency and customer service. The combining of the Coast Guard's and Marine Exchange's information databases better ensures safe, efficient maritime procedures and practices, while promoting customer-service throughout the entire operations.

Cost Effectiveness Sharing space, equipment and personnel at VTS-LA/LB realize significant savings for the federal government and the American taxpayers. Moreover, the US Coast Guard enjoys substantial benefits from VTS-LA/LB with almost no budget impact. For example, VTS-LA/LB lends vital assistance with (and augmentation to) -

- New Homeland Defense and Port Security missions;
- Port State Control inspections;
- Search-and-rescue (SAR) operations;
- Law enforcement and interdiction activities (drugs and illegal immigrants)
- Oil spill response;
- Captain-of-the-Port "holds" and "orders" on vessels;
- Dissemination, monitoring and compliance with COTP bulletins and orders.

Procurement Savings: Another area where considerable savings in time and money can be realized is in the private sector procurement of state-of-the-art, worldwide proven VTS equipment. VTS-LA/LB recently upgraded its radar and electronic tracking equipment - which included not only the Vessel Traffic Center, but also included the two pilot stations, and the USCG's "Operations Center" at the Marine Safety Office - for approximately \$850,000. Had this project been under the federal procurement and acquisition requirements and restrictions, the cost could have easily been doubled (or more).

CONCLUSION

This article attempts to clarify and validate the "partnership approach" for running a VTS in today's world of financial restraints, re-invented government, and shared commitments. Our VTS

operation at the Ports of Los Angeles and Long Beach is a respected and valued operation, having been recognized and cited by the maritime industry, the port authorities, state/local/federal government agencies, pilot organizations and the waterfront business community as a significant "value added service" that has made our LA-LB Harbor complex one of the safest and most efficient operations in the world today.

All interested parties are welcome to visit the Marine Exchange's Vessel Traffic Center at Los Angeles-Long Beach Harbor.

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