

**THE EVOLUTION OF SECURITY AT CALIFORNIA'S  
MARINE OIL TERMINALS**

By

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## **PREFACE**

The tragic events of September 11, 2001, and the threat of continued terrorist activity which could cause catastrophic damage to the nation's ports and infrastructure, changed the life of the marine oil terminal operator. On 9/10 security of his marine terminal was an afterthought at best. There were fences to keep the fishermen out. Lighting was for safety, communications were for the business of the terminal. Security planning, if done at all, was a paperwork exercise, designed to satisfy some requirement or complete a check-list.

9/11 changed all that. It made us rethink our security posture. Are we a target? If so, what is it that we want to protect? What are our goals regarding safety of our people and security of our terminals? Who is going to provide that safety and security? And finally, who is responsible to ensure that 9/11 doesn't happen to me? A new burden has been placed on the shoulders of the marine terminal operator. To ignore the security vulnerabilities of our marine terminals would be malfeasance but true security will be a departure from business as we have always done it. There must be infrastructure changes, labor concessions, especially in the area of identification, new technology and of course, a new mindset. I would hope that what we are doing in California might point the way to a safer, more secure environment for marine terminals throughout the country.

## **VULNERABILITY**

California is home to some 80 marine oil terminals which fall under the jurisdiction of the California State Lands Commission. Each of these facilities stores and is capable of transferring oil and liquid hydrocarbon products to and from tank vessels and barges. On average, 1.8 million barrels of oil or product are transferred at California's marine oil terminals every day. These facilities are located along the coast of California from Eureka in the North to San Diego near the Mexican border. The majority of these terminals are located in the ports and harbors of the state, while a few are located in the Carquinez Strait in the San Francisco Bay area, in the Santa Barbara Channel and in Humboldt Bay.

The major hazards at a marine oil terminal include fire, explosion and the potential for large quantities of oil to be spilled. These facilities are at

considerable risk from terrorist threats. Presently, it is fairly easy for unauthorized persons to infiltrate surreptitiously into the confines of a terminal and cause inestimable damage, either through fire and explosion or through the release of oil. Fires and explosions can be generated by the use of incendiaries, explosives or firearms. Unauthorized releases of large quantities of oil can easily be accomplished by opening a few strategic valves and allowing an uncontrolled quantity of oil to flow into the marine environment. All marine oil terminals have pipeline manifolds that terminate at the dock face. Manifolds are connected by pipelines to oil storage tanks. In some cases, the tank storage facilities (tank farms) are located several miles away from the dock. The flow of oil between the dock and the storage tanks is controlled and regulated by strategically situated valves. Any of these components is vulnerable to intentional acts that can cause great destruction.

Additional risks of fire, explosion and release of huge quantities of oil may be realized by encroachment from the waterfront side of the dock. A recent example of such terrorist act was the bombing of USS COLE from a small boat in the port of Aden, Yemen, on October 12, 2000. The attack killed 17 sailors, wounded more than twice that number and occasioned considerable damage to the ship's structure. A similar attack on a tanker or barge carrying volatile hydrocarbon liquids can cause an immensely greater degree of devastation than the attack on the USS COLE.

The consequences of an act of sabotage on a tanker or barge and the potential for causing immeasurable damage can best be illustrated by the fire and explosion aboard the tanker SS SANSINENA in the Port of Los Angeles, California, on December 17, 1976. The SANSINENA, a fairly small tanker by today's standards, had discharged most of its cargo of crude oil. The empty tanks, though, were full of explosive vapors when a spark caused a tremendous explosion that broke the ship in two, virtually destroying the marine oil terminal and causing significant damage to the port. An explosion on a modern tanker more than twice the size of the SANSINENA with tanks full of volatile oil or hydrocarbon products could have incalculably greater consequences.

Apart from the physical and environmental damage that can be caused by the events described above, there is potential for a disastrous economic impact. Any one of the incidents described above could in turn cause the closure of a port and the shutdown of all its facilities. The ports of California are the western gateway to the United States and they cater to a high volume of commerce and trade. For example, in 2001 the Ports of Los Angeles and Long Beach alone hosted almost 5700 large vessels and generated close to \$200 billion in trade. This activity generates large revenues for the coastal cities and the state and also provides gainful employment to a large sector of the population. A terrorist act resulting in

the closure of the Los Angeles/Long Beach Port Complex would impact the economies of the State of California, the United States and even the world as a whole.

## **INITIAL FINDINGS**

California State Lands Commission (CSLC), Marine Facilities Division (MFD), took immediate action to assess the security posture of marine oil terminals under our jurisdiction. We found that we had very little information available concerning what the individual terminals were doing with regard to security. A telephone survey a day after the terrorist attack confirmed our worst fears. Most marine oil terminals in the state were in no way prepared to prevent or deter a terrorist threat.

Within a week we developed a 13-point checklist based on the Navy/Coast Guard Physical Security Survey of high security facilities within the Department of Defense (DOD) and the Department of Transportation (DOT). Using that checklist we did a physical survey of each marine oil terminal to establish a security profile for each facility. This survey clearly demonstrated that there was little, if any, guidance to terminal operators on how to protect a marine terminal from a terrorist threat, or even to assess a terminal's vulnerability to terrorist activity. As a result of the physical survey we found that:

1. Few terminals have a designated security officer with specific responsibilities listed.
2. None specifically conduct security surveys to determine security status of terminal.
3. Written security procedures ranged from a one-line statement that a security watch was at the gate to a much more definitive explanation of procedures in place.
4. Fences and boundaries of the terminals are maintained and kept clear of foreign objects and foliage.
5. A number of terminals have video cameras that monitor the entrances and critical areas within the terminal.
6. Lighting in the terminals is primarily installed for operational evolutions. Perimeter lighting and outboard lighting of vessels is limited or nonexistent.
7. Communication between the vessel and the terminal is primarily associated with the oil transfer evolution. Additional security requirements have not been addressed.
8. Most terminals have some form of identification requirements utilizing various forms of identification, i.e. union card driver's license, contractors ID. None had a specific issuance of terminal security cards or background checks.

9. Some terminals had established security agreements with neighboring facilities. There has been no formal coordination between various regulatory agencies and the terminals concerning security.
10. Terminals did not have an established cascading security readiness level system in place, however most had taken additional steps to enhance their day to day security posture in relation to the increased threat.

In some cases the location of the storage tanks adjacent to public roads presents a critical problem. Many marine terminals are located in or near major metropolitan areas with tank farms often intertwined with roads, bridges or factories. This close access increases the risk of terrorist activity. In this light, some terminals have noted unusual activities along their access roads and reported such incidents to local authorities. We are aware of at least three such incidents, the most egregious being a delivery truck (Federal Express) stopping along a fence line on a public road alongside a tank farm. Four men, who appeared to be from the middle east, exited the truck, none wearing the normal Federal Express uniform. After about five minutes they drove off. The marine terminal caught this on video and reported the incident, including the license number of the truck, to the authorities. A similar incident with an automobile happened at the same location.

We found that another major vulnerability of most marine terminals appears to be an attack from the waterside of a vessel while conducting a transfer. This waterside accessibility makes it difficult to apply the kinds of security found at airports or other high-risk locations. With the United States Coast Guard setting security zones in certain areas of the harbor, including marine oil terminals and establishing a cascading system of readiness levels, the responsibility for waterside security of a marine terminal falls mainly on the US Coast Guard. Finally, and most importantly, it was determined that there was a need for immediate guidance to assist the marine terminal in achieving a minimum level of security.

## **COLLABORATION**

Our response was to work closely with the United States Coast Guard (USCG) and the Marine Transportation Systems, Port Security and Terrorist Task Force subcommittee, to formulate security standards for all port facilities. The Coast Guard has authority over all marine facilities in the United States while the California State Lands Commission has jurisdiction over marine oil terminals, a subset of marine facilities, in the state of California. A security template was developed to address the basic security needs of marine facilities, including marine oil terminals, under CSLC jurisdiction. Once the basic template was developed, it was determined that

regulations similar to 33 CFR Part 128, Security of Passenger Terminals, must be put into place for all marine facilities. The prospect of developing such regulations at the federal level would, at best, take years to complete. Frankly, we at CSLC didn't feel that we had that kind of time.

We determined that the most expedient way to improve security at marine oil terminals would be to write emergency regulations, followed by permanent regulations. On the other hand, the Coast Guard issued guidelines which will be discussed in this paper. The California State Lands Commission recognized the urgency of the situation and was able to put emergency regulations on the street in a very short period of time.

### **EMERGENCY REGULATIONS**

The emergency regulations establish minimum security parameters at all marine oil terminals. These regulations became effective March 7, 2002, and require that each marine oil terminal operator:

1. Conduct an initial comprehensive physical survey;
2. Implement a security program that provides for the safety and security of persons, property and equipment on the terminal;
3. Formulate a marine oil terminal security plan that includes practices and procedures, responsibilities of the security officer, physical security measures, i.e., communications, lighting, fencing, terminal access control, the security organization and a training program;
4. Appoint a marine oil terminal security officer to take responsibility for security matters;
5. Implement and maintain a marine oil terminal security plan within 60 days of the effective date of the regulation, and advise the Marine Facilities Division that the plan is complete.

When notified that a plan is complete, the Marine Facilities Division conducted a general on site inspection to determine if that security plan and the actions taken to implement it meet the requirements laid out in the emergency regulation. These inspections have been completed and we found that the marine oil terminals have taken the terrorist threat as real. All have enhanced their procedures as well as their physical barriers to ensure that access is limited to authorized personnel.

### **U.S. COAST GUARD GUIDELINES**

The Coast Guard opted to issue an instruction from the Pacific Area level ordering the various Captains of the Port (COTP) to send out orders which recommend certain security precautions. Guidance for these orders

as well as the emergency regulations was taken from the results of the multi-agency surveys (Marine Transportation Systems, Port Security and Terrorist Task Force subcommittee), as well as in-house work. It appears that the USCG instruction and our own emergency regulations mirror each other, with the guidelines being more prescriptive. Additionally, the guidelines have a cascading system of readiness levels that requires additional security as the threat increases.

At level I, a threat, though possible, is not likely. The level increases to II when intelligence indicates that terrorists are likely to be active within a specific area or against a type of vessel or terminal. The highest level, III, is reached when the threat of an act against a vessel or terminal is probable or imminent and intelligence indicates that terrorists have chosen specific targets. When everything is settled these levels may be modified to comply with the national standards. I believe a problem exists, in that even though the USCG states that their instruction has a backbone in law through the COTP order authority, it has no regulatory basis.

1. The guidelines require that each COTP conduct security assessments to ensure that facility operators are taking the necessary security precautions to protect the facility from sabotage.
2. The areas of particular concern are physical property security, personnel security, vehicle access and egress, vessel security (while moored to a facility), and rail security.
3. The specific points covered are identification procedures, access control, internal security, perimeter security, lighting, electronic security systems, training and the security plan.
4. The guidelines are intended to provide general security guidance for the COTP and the marine oil terminals are expected to meet or exceed them.

The Coast Guard is presently working on a Navigation and Vessel Inspection Circular (NAVIC) which will export the contents of the guidelines nationally. This is expected to take place in the very near future. In the longer term, the Coast Guard is considering writing regulations based on the guidelines, thereby cementing them into law.

## **STATE OF CALIFORNIA PERMANENT SECURITY REGULATIONS**

MFD in conjunction with a technical advisory group made up of terminal operators, industry experts, port authorities, The U.S. Coast Guard and other law enforcement agencies, developed a draft of statewide Permanent Security Regulations. These regulations were made available for public comment in late August 2002 and we expect them to become effective early in 2003. These permanent regulations will require more stringent provisions

for protection against terrorist activity. They are based on detailed assessments of the threat at each terminal as well as information gleaned from other security recommendations and guidelines developed by various organizations. As we have always done, we will work closely with the regulated community in the implementation of the permanent regulations. The first draft of these regulations is on the street for public comment. We expect these regulations to become effective early in 2003.

## **LESSONS LEARNED**

What have we learned about marine terminal security that we didn't know a year ago? We know that only the military terminals had a formal security plan with a designated security officer, they all have that now. We know most terminals have fencing and barriers that meet with these requirements, a few terminals have had to add barbed or razor-wire topping. We know most terminals have adequate lighting that satisfies the requirement, a few terminals have had to provide extra lighting at entry points to the terminal. We know most terminals have entry control with a security guard post and gate shack. A small number of terminals (4 or 5) do not have this facility, since they are located within a port where the port provides entry control. We know all large and medium sized terminals have an entry control system. A few small terminals having a small number of permanent employees (less than 15 persons) do not have identification badges or passes. Visitors to the terminal may be controlled by screening their driver's licenses. We know all terminals are required to have a means of communication for their transfer operations. Existing means of communications are being extended to cover security arrangements without any additional cost. We know that initial training in security awareness for employees involves approximately four hours. This includes a walk around the terminal to familiarize personnel with security arrangements. Ongoing training of short duration during mandatory safety meetings would ensure a high standard of security awareness among terminal personnel. As you can see, we have learned a lot, but there is so much more to learn. As we have completed our plan reviews and audited each terminal's security arrangements, our knowledge and experience in the marine oil terminal security arena has blossomed.

## **CONCLUSIONS**

What, you may ask, should I, a marine oil terminal operator do now? Where do I start? What resources are available to assist me in developing an effective security program for my facility?



I would say to you, take responsibility for the security of your terminal, no one knows better the operation, vulnerabilities and dangers than you. Decide what it is that you want to protect. Determine what you have in place right now and start there. Assess the risk, what is the likelihood of an attack and what would be the consequences? Write and implement a plan and don't be afraid to adjust it as necessary. The core of any effective security program is the plan. Does it work, if not fix it. Update, integrate and review data constantly. Reassess risk, review and audit the plan, manage change, all these are needed to properly secure your terminal. Use all the help you can get, security is not an exact science, there are many thoughts and opinions, use those that fit your situation. Remember, we are all in this together, assist and cooperate with your neighbor. Together, and only together will we be able to defeat this scourge that threatens to destroy the very freedoms that our nation was built on.

If there is any way that we at the California State Lands Commission, Marine Facilities Division can assist you, please do not hesitate to call. Additional information can be found on the California State Lands Commission web site at [www.slc.ca.gov](http://www.slc.ca.gov). I can be reached at (562) 499-6348 or by e-mail at [hopel@slc.ca.gov](mailto:hopel@slc.ca.gov).