Department of Defense Department of Navy

Finding of No Significant Impact for Countermeasures Testing and Training on the Point Mugu Sea Range, Ventura and Santa Barbara Counties, California

Pursuant to the Council on Environmental Quality regulations (40 Code of Federal Regulations § 1500-1508) implementing procedural provisions of the National Environmental Policy Act (NEPA) and Navy NEPA regulations (32 CFR Part 775), and Chief of Naval Operations Instruction 5090.1D, the Department of the Navy (DON) gives notice that an Environmental Assessment (EA) has been prepared in accordance with DON policy. Based upon Findings of No Significant Impact, an Environmental Impact Statement (EIS) is not required for Countermeasures Testing and Training on the Point Mugu Sea Range, California.

Proposed Action: The Countermeasures Testing and Training Program will support Department of Defense (DoD) directives on the development of countermeasures systems vital to the National Defense through Research, Development, Acquisition, Testing, and Evaluation (RDAT&E). These requirements are for operationally realistic maritime and land engagements. The DON must continually develop and maintain state-of-the-art countermeasures that can be deployed in realistic threat environments to effectively defend against modern weapons systems and the possibility of adversarial attacks by land, sea, or air. The Proposed Action would consist of five components of countermeasures testing and training: lethal and non-lethal directed energy (i.e., high-energy lasers and high-power microwave systems); small arms; missiles; flares; and electronic support systems. Shooter locations addressed in this EA include land, ocean surface, and airborne platforms at Point Mugu (including R-2519; Alpha, Bravo, Charlie, and Nike-Zeus Pads; Buildings 738 and 761; Surfer's Point; and the Point) and San Nicolas Island (SNI) (including R-2535, Rock Crusher, Tender Point, Thousand Springs West, and Balloon Launch). All countermeasures operations will be scheduled and managed by Naval Air Warfare Center Weapons Division (NAWCWD). Implementation of the Proposed Action will occur continuously beginning in July 2014.

Public Participation: The DON filed a formal Notice of Availability for the Draft EA in the Ventura County Star on May 3, 4 and 5, 2013, initiating a 19-day comment period. The comment period was extended one week due to a major wildfire in the Ventura area the weekend of May 3, 2013. The comment period closed on May 31, 2013 with no written, verbal, or website comments received.

Alternatives Analyzed: Three alternatives were identified for the Proposed Action - Use of all proposed locations at Point Mugu and SNI (Alternative 1 or the Preferred Alternative), use of only the Point Mugu location (Alternative 2), and use of only the SNI location (Alternative 3). All three action alternatives include RDAT&E activities for directed energy, small arms, missiles, flares, and electronic support systems either on shore or in near shore waters. All action alternatives would use existing infrastructure and access roads, and none of the action alternatives would involve construction activities. Under the No-Action Alternative, no countermeasures testing and training would occur, though existing activities would continue.

Alternative to be Implemented: Alternative 1, the Preferred Alternative, is selected for implementation of the Proposed Action. It is the alternative that best meets the purpose and need of the Proposed Action. Implementation of the Proposed Action would have no significant impacts to the human or natural environment.

Environmental Effects and Mitigation Measures:

The EA focused on resources potentially affected by the proposed action: geology and soils; air quality; maritime sediments and water quality; noise; biological resources; cultural resources; airspace, land, and water use; public safety; and hazardous materials. Each resource area is briefly discussed below.

<u>Geology and Soils</u>: Proposed Action activities with the potential to affect geology and soils include target placement, van placement, and personnel activities before and after events. No construction, excavation, filling, or grading activities are part of the Proposed Action. Site topography would not be altered in any way, nor would the placement of equipment affect site drainage or cause erosion. Vehicles and equipment would be restricted to existing concrete pads, roads, leveled surfaces, previously disturbed areas, and access roads. No activity would occur on Point Mugu's or SNI's beaches. Flares would be dispensed over water and would not come into contact with soils. No ordnance would be released onto land surfaces. Targets, for laser and High-Power Microwave (HPM) activities, would be aboveground and would have no direct or indirect effects to the land surface. Except for plastic sabots and aluminum pushers from the Close-in Weapons System (CIWS) munitions, debris from small arms firing, missile launches, flares, and targets would fall into the nearshore waters of Point Mugu or the Sea Range and would not affect terrestrial resources. Long-term effects on soil properties from the sabots and pushers are not expected because aluminum is an abundant component of rock and soil, and the plastic sabots are inert. Therefore, implementation of the Proposed Action would not have significant impacts to geology and soils.

<u>Air Quality</u>: The estimated emissions associated with the Proposed Action would be below *de minimis* threshold levels for conformity for the South Central Coast Air Basin (Ventura County, excluding SNI). The Proposed Action would conform to the Ventura County Air Pollution Control District State Implementation Plan and would not trigger a formal conformity determination under Section 176(c) of the Clean Air Act. Since SNI is categorized as an attainment/unclassified area by the United States (U.S.) Environmental Protection Agency, it is not subject to the General Conformity Rule. A Record of Non-Applicability was prepared by the DON. Implementation of the Proposed Action would not have significant impact on air quality.

Marine Sediments and Water Quality: The Proposed Action would not result in changes to water chemistry, turbidity, or the amount of light in the water column within the project area. The use directed energy target, shooter, or electronic support system sites would not result in any discarded material or direct impacts to marine sediments or water quality. Toxic materials produced by laser and high power microwave would be self-contained and not released into the environment. Solid, hazardous constituents resulting from small arms rounds, missiles, flares, and surface and air targets use would be distributed over the Sea Range and R-2519. Flares typically burn out prior to ground or water impact. With the exception of flares, most of the solid material would be dense settling to the ocean floor, where it would be covered with sediment, coated by chemical processes (e.g., corrosion), or encrusted by marine organisms. The large volume of water in the Southern California Bight, combined with the constant circulation, currents, and

large geographic dispersion area of the expended materials, would quickly dilute any leached hazardous substances and would likely be well below background concentration levels. Therefore, implementation of the Proposed Action would not result in significant impacts to marine sediments and water quality.

<u>Noise</u>: Increased aircraft, missile, and small arms activity would result in intermittent loud noises, but relatively small increases in overall noise levels in the project area. The majority of the increased airfield activity (aircraft types and use) at Point Mugu would be consistent with the existing Mugu Airfield environment, although a greater proportion would occur over the nearshore environment. The 2002 Sea Range EIS/Overseas EIS (OEIS) stated that a "notable increase" in noise levels would require aircraft operations to increase by 10% to 20%. Assuming the proposed increase of 320 aircraft sorties is proportional to the 2002 EIS/OEIS increase, the aircraft activity at Point Mugu is expected to only increase by 7.4% and would not be considered notable.

Minimal noise data are available for small arms firing. A worstcase scenario is the use of the CIWS firing from a vessel moving forward through the water. An area of 4,994 square feet (ft^2) (494 square meters $[m^2]$) would be exposed to noise of 145 decibels (dB) sound exposure level (SEL) re 20 micropascals (μ Pa²s). This is an overestimate of the impacts from a stationary system firing from shore. CIWS activities would occur in areas that currently experience loud noise events from aircraft overflights and from missile and target launches. In addition, ambient noise from wind and wave action may exceed 100 dB.

At Point Mugu, missile launching and small arms firing would occur at Alpha Pad, Bravo Pad, Nike Zeus, and Charlie Pad. Missile launches currently occur at Bravo Pad and Charlie Pad. Missile and rocket launching is likely to produce the greatest sound compared to other countermeasures activities. The Rolling Airframe Missile (RAM) is the loudest missile system proposed and is used as a worst case scenario. A peak sound pressure of 147 dB have been measured at RAM launch sites with pressures averaging 112 dB less than 2,300 ft (700 m) from the launcher and decreasing to an average of 109 dB less than 6,500 ft (2,000 m) away. Sound from RAM is brief in duration (seconds). Targets and missiles depart the launch site rapidly and head away from sensitive noise receptors. Therefore, the implementation of the Proposed Action would not result in significant noise impacts.

<u>Biological Resources</u>: The Proposed Action will occur adjacent to habitats of the western snowy plover, California least tern, and the light-footed clapper rail on Point Mugu and adjacent to snowy plover, black abalone, white abalone, and southern sea otter habitats on SNI. Federally endangered large cetaceans (blue, fin, sei, and humpback whales) occur on the open ocean portions of the Sea Range. The increased directed energy usage, electronic support systems activity, air operations, aerial and surface targets, missiles, small arms rounds, and flares would represent only marginal increases to current activity levels. Protective measures are included in the Proposed Action that limit the timing and execution of events to ensure impacts to biological resources are avoided or reduced. These measures include:

Measures to protect listed birds for use of the CIWS and other similar small arms include:

- CIWS testing and training will not occur when snowy plover, least tern, or light-footed clapper rail nests are within 500 ft (152 m) of the operational area.
- Pre- and post-operation surveys for all listed species nesting within 1,000 ft (305 m) of testing or training sites will be conducted to confirm no abandonment occurred due to testing or training.
- 3) The CIWS will only be fired at aerial targets flying at normal operating altitudes well above the horizon to reduce potential of striking typically low-flying birds such as snowy plovers.
- 4) Before the CIWS is fired, the Navy will require as standard procedure that no listed species or other wildlife are present between the shooter site and the target or immediately behind the target. A qualified biologist will monitor the hazard area to ensure that the CIWS system is not fired if and when wildlife is present in the line of fire or expected debris pattern.
- 5) To maintain integrity of listed species habitat, following each CIWS test event, a search will be conducted to pick up and properly dispose of debris that has fallen between the firing point and the water's edge.
- 6) If wintering snowy plovers are roosting adjacent to a selected pad at Point Mugu or Tender Point when utilizing CIWS, the location would change to an alternative pad/location if operationally feasible.

Measures to protect marine mammals are as follows:

- Prior to scheduling the use of a particular site, NAWCWD will contact the Navy's Natural Resources staff at Point Mugu or SNI for current information regarding the occurrence of marine mammals at sites under consideration. Within 24 hours prior to commencing testing and training activities at these sites, a qualified biologist familiar with the behavior of marine mammals and their use of shoreline habitats in the testing and training area will search for marine mammals within and adjacent to the testing and training area. Test activities will be postponed, relocated, and/or monitored by the qualified biologist as necessary to ensure that the activities do not result in any "take" (as defined under the MMPA) of marine mammals.
- 2) Testing and training activities will be scheduled to avoid the marine mammal breeding and pupping seasons whenever operationally feasible. When breeding/pupping marine mammals are within 100 yards (91 m) of proposed activities, access to the test facilities will be restricted to necessary operational activities only.
- 3) Missiles and targets will not be launched at low elevation on low azimuths that pass close to beach haulout sites.
- Multiple missile or target launches in quick succession over haulout sites will be minimized, especially when young are present.
- 5) Testing and training activities will be scheduled to occur during daylight hours whenever operationally feasible.
- 6) The results of biological monitoring will be included in an annual report that will be submitted to the appropriate NMFS contact summarizing activities related to this project on SNI.

Measures to protect terrestrial listed species and other wildlife for all countermeasures operations are as follows:

- A biologist will conduct regular nesting surveys of the affected area to determine location of nests prior to operations, and to determine potential for disturbance due to operational activity, and ensure if nests are found that all required protective measures are adhered to.
- Countermeasures testing and training with a potential to impact snowy plover, least tern, or light-footed clapper rail nests will not be conducted within 500 ft (152 m) of active nests.

- 3) Pre- and post- operation surveys for all listed species nesting within 1,000 ft (305 m) of testing or training sites will be conducted to confirm no abandonment occurred due to testing or training. Observations will be made as close to the activity as operational and safety constraints allow.
- 4) If deemed safe by operational personnel, occupied nests visible within 1,000 feet (305 m) of countermeasure training or within 1,000-2,000 feet (305 - 610 m) of CIWS deployment would be monitored during operations to monitor behavior of incubating birds.
- 5) A Navy biologist will educate operational personnel about sensitive habitats and how to implement avoidance and minimization measures, delineate any areas adjacent to the site that should be avoided, and attend operationally related meetings as needed.
- 6) Before directed energy systems, missiles, and/or other projectiles are fired, the Navy will require as standard procedure that no listed species (or other wildlife) are present within the hazard area between the shooter site and the target or immediately behind the target. A qualified biologist will monitor the hazard area to ensure that the countermeasures system is not fired if and when wildlife is present in the line of fire or expected debris pattern.
- 7) If operationally feasible, biologists will monitor adjacent light-footed clapper rail habitat when countermeasures with a potential to produce high decibel noise are utilized, to document any disturbance to clapper rails.
- 8) Within 24 hours of countermeasures testing or training that is planned to occur at Pt. Mugu when least terns are present (generally April 1 to September 15), a qualified biologist would identify locations where least terns are known or likely to forage in the nearshore area, and the Navy would ensure that targets are not deployed in or over those areas.
- 9) Surface targets will not be located within intertidal zones of SNI or Point Mugu.
- 10) Project vehicles and equipment will be restricted to existing concrete pads, leveled surfaces, and paved or dirt access roads.
- 11) At all nearshore testing and training sites, van placement for air-to-air flare activities will be restricted to existing concrete pads, leveled surfaces, and paved or dirt access roads that lead to nearby beaches; vehicles will not be allowed to drive onto any beach.

- 12) If night-time operations are necessary, permanent outdoor lighting will include shielding designs to ensure light entering adjacent nesting habitat is minimized.
- 13) At all times, trash collection containers will not be placed on site and the area will be maintained trash free to reduce attracting predators.
- 14) A Spill Prevention, Control, and Countermeasure Plan will be in place to minimize the potential for an oil or hazardous substance spill, to prevent any spill from leaving the confines of the area and impacting listed species habitat, and to ensure that the cause of any spill is corrected.
- 15) Unless operationally necessary, personnel will not occupy the testing and training areas between dusk and dawn and the area will remain dark (no artificial lighting) to reduce the potential for adverse impacts to listed species in adjacent natural habitat.
- 16) All portable equipment brought to a test site will be removed upon test completion.

Terrestrial wildlife and marine birds may be temporarily displaced to nearby areas by noise or visual stimuli associated with project activities, particularly missile launching and small arms firing (including use of the CIWS). However, there would not be a significant increase in the overall intensity of the same type of test and training activities currently conducted at Point Mugu and SNI. Any disturbance would be highly localized and temporary.

The relatively small increase of expended material within the Sea Range would not likely result in any harm to marine mammals. Use of the CIWS and other small arms may result in downrange impacts due to the fallout of bullets as well as the aluminum pushers and plastic sabots that are part of the munitions. Impacts are unlikely and not expected to result in negative impacts to habitats or wildlife. The possibility of CIWS rounds or debris injuring a marine mammal offshore is extremely limited. The possibility of marine mammals being hit by falling debris on the Sea Range, including rounds from the CIWS, was analyzed in the Point Mugu Sea Range EIS/OEIS and is generally remote: based on the tempo provided in the EIS, only one serious marine mammal injury or death is expected in approximately 285,060 years (Navy 2002). Both the tempo and total area covered by proposed CIWS use for the Proposed Action are far less than that analyzed in the EIS/OEIS. Countermeasures testing and

training activities would be scheduled to avoid the marine mammal breeding and pupping seasons when operationally feasible. Implementation of the proposed action would not likely result in any harm or harassment of marine mammals and no "takes" of marine mammals. There would be no expected effect or impact of the Proposed Action on sea turtles given the rare occurrence of protected species in the area and the low likelihood of the activities impacting these species.

The DON prepared a Biological Assessment and consulted with the U.S. Fish and Wildlife Service (USFWS) on potential impacts to listed species. USFWS issued a Biological Opinion, which concluded the Proposed Action will not jeopardize the continued existence of subject listed species (20 March, 2014, ref. 08EVEN00-2013-F-0475). Therefore, there would be no significant impacts to biological resources from implementation of the Proposed Action.

<u>Cultural Resources</u>: The DON consulted with the State Historic Preservation Office (SHPO) regarding potential impacts to cultural resources. SHPO concurred that the proposed activities will not adversely affect cultural resources (22 March 2013, ref. USN_2013_0215_001). Therefore implementation of the Proposed Action would have no impact on cultural resources.

Airspace, Land and Water Use: Increased laser and electronic support systems activity, the addition of air operations, targets, missiles, small arms rounds, and flares would represent only marginal increases to current activity levels. Dispensing of flares over water would be consistent with current military testing and training activities at the Sea Range. No airspace modifications or changes to the existing relationship of the DON's special use airspace with federal airways, uncharted visual flight routes, and airport-related air traffic operations are required for the Proposed Action. The airspace over and out to approximately 3 nautical miles (nm) (5.6 kilometers [km]) around SNI is restricted. All offshore activities would be located within established, designated airspace warning areas. A Notice to Airman (NOTAM) would be published prior to activities being conducted in the offshore airspace of the Sea Range. All project activities would be postponed until airspace within the project area was clear of non-participating aircraft. Any operations that could create hazards to aircraft would be coordinated with the Federal Aviation Administration to ensure that non-participating aircraft are not in the hazard area.

Similar coordination with the Laser Clearinghouse would also occur whenever laser or HPM testing and training creates potential hazards to satellites.

Land use associated with the Proposed Action would be consistent with current land uses and designations at all project areas. Project activities would take place at locations previously designated for such activities. Temporary personnel at testing and training events, laser and electronic support systems activity, air operations, missile launches, and small arms firing would represent only marginal increases to current activity levels conducted at Point Mugu and SNI.

Access to portions of Point Mugu and SNI would be temporarily restricted during testing and training operations pursuant to existing safety procedures. Activities associated with the Proposed Action would be coordinated so that they do not interfere with existing uses at SNI. Activities associated with the Proposed Action would involve temporary closure of The Point at Point Mugu, and temporary placement of vans at the project site. The vans would be removed after each event, so there would be no permanent change to land use. Closures of portions of Point Mugu, SNI, and their nearshore waters are common. Public access of the waters within approximately 300 to 400 yards (274 to 366 meters) of Point Mugu is denied, as are the waters within 300 yards (274 m) of SNI. Waters within 3 nm (5.6 km) of SNI may be closed to all access on an as-needed basis. Regular activities at other parts of Point Mugu (e.g., Administration), SNI (e.q., Nicktown) and on areas of the Sea Range not associated with testing and training activities would be allowed to continue.

Military training, fishing, and recreational uses offshore from the vicinity of a test site at Point Mugu or SNI would be limited during testing and training activities for safety purposes. Areas beneath or near flight paths of missiles and targets would be cleared of non-participating vessels for each event. These area closures are consistent with existing closures during other Sea Range events and would not increase the annual number of closure days. Furthermore, the Proposed Action would not affect any fish populations or fish habitat and all offshore uses associated with the proposed testing and training are consistent with military testing and training activities. The DON prepared a detailed Coastal Consistency Negative Determination analysis and submitted it to the California Coastal Commission for concurrence with the DON's conclusion that the implementation of the Proposed Action is consistent to the maximum extent practicable with the Coastal Zone Management Act. The California Coastal Commission concurred with this determination (16 July 2013, ref. ND-0207-13). Therefore, implementation of the Proposed Action would not result in significant impacts to airspace, land, or water use.

<u>Safety and Occupational Health:</u> Countermeasures testing and training would not involve weapons or directed energy systems being intentionally directed at military or civilian personnel on the Sea Range or within surrounding restricted areas. Kinetic weapons used in the Proposed Action include small arms (projectiles up to 5 inches (in) [13 centimeters (cm)] in diameter) and missiles (e.g., rocket-propelled grenades, surface-to-air missiles, air-to-surface missiles). Onshore and offshore areas within and just outside the launch azimuth boundaries are cleared for safety purposes during each target or missile launch. Onshore clearance involves military personnel, while offshore clearance could involve vessels or aircraft (recreational and commercial). NAWCWD issues NOTAMs and Notice to Mariners 24 hours in advance of any DON activity requiring exclusive use of an area.

The storage and handling of munitions and explosives would be conducted in accordance with ammunition and explosive safety policies and operating procedures. Safety interlocks, administrative controls, and hazard safety zones would be incorporated with all weapons delivery activities, minimizing the potential for release of explosive devices. Hearing protection would be required for all personnel when the noise level is above 85 dB-.

By implementing strict health and safety procedures, NAWCWD scientists and engineers conducting high energy laser and HPM testing and training would be well beyond distances that could result in injury from either continuous-wave or pulsed lasers and associated beam and non-beam effects; the general public would be even farther away from testing and training activities. NAWCWD's Health and Safety Program minimizes the potential for personnel injury and includes the use of automatic and manual mechanisms to cease testing or training. Therefore, implementation of the Proposed Action would not have significant impacts on the health and safety of test and training personnel or the public.

Hazardous Materials: The potential environmental effects of expended RDAT&E materials are primarily associated with the toxicity of hazardous constituents to marine biota. Hazardous materials (e.g., benzene, toluene, xylene, naphthalene, ammonia perchlorate, magnesium, red and white phosphorus, etc.) may be contained in manned and unmanned systems, fuels, ordnance, and expended materials including outer casings, propellants, batteries, explosives, and flares. Heavy metals include lead, cadmium, mercury, chromium, zinc, copper, and manganese. Shells are composed of steel, brass, copper, tungsten, and other metals, all of which are relatively inert. Live 5-inch (12.7 cm) shells are typically fused to detonate within 3 ft (0.91 m) of the water surface. Less than 1% of these materials consist of toxic metals such as lead. Most of the expended materials are inert and dense, and will settle to the bottom. Shell fragments, unexploded shells, and non-explosive ordnance rapidly decelerate in the water and settle to the ocean floor. Expended materials will eventually be covered by sediment, coated by chemical processes (e.g., corrosion), or encrusted by marine organisms (e.q., barnacles).

The presence of shell casings in the sediments would not be expected to substantially affect water quality because brass would undergo slow corrosion, even in a salty environment, and leached substances would be quickly diluted by ocean currents. Most of the ammunition expended during activities involving small arms fire is comprised of steel, with small amounts of aluminum and copper. Steel practice bullets may release small amounts of iron, aluminum, and copper into the sediments and the overlying water column as the bullets corrode. All three elements are widespread in the natural environment, although elevated levels can cause toxic reactions in exposed plants and animals. Any elevation of metals in beach sand or ocean sediments would be restricted to a small zone around the bullet, and any release to the water column in the ocean would be quickly diluted.

Many studies have been conducted investigating the potential environmental effects of flare use. Based on studies considering quantities of flares used in military training, no acute or cumulative chemical effects were anticipated on terrestrial environments. No significant unresolved issues related to chemical effects of flare materials on soils or consequently on plants, animals, or groundwater were expected. No adverse effects were found for flare usage in marine environments, including incidental flare duds falling into marine environments. The only chemicals that have been detected in flare ash samples were magnesium, boron, and chromium. None of these chemicals were found to be at levels of concern.

Infrequently, a recoverable target may be lost. In those cases, the hazardous materials of concern include propellant, petroleum products, metals, and batteries. Small concentrations of fuel and ionic metals released during battery operation could enter the water and contaminate limited areas; however, they are not considered a source of substantial environmental degradation. Most target fragments will sink quickly in the ocean. Expended material that sinks to the ocean floor will gradually degrade, be overgrown by marine life, or be incorporated into bottom sediments. Floating non-hazardous expended material may be lost from target boats and will either degrade over time or wash ashore as flotsam. For the purposes of this EA, it is assumed that targets would yield no measurable impact on the environment within the study area because the majority of targets would be recovered after use, the majority of expended materials are inert, and expended target materials would be buried in bottom sediments.

In the 2002 Point Mugu Sea Range EIS/OEIS (Navy 2002), it was assumed that 16,225 pounds (lbs) (7,375 kilograms [kg]) of hazardous materials would be distributed equally over an area of 33,300 square miles (mi²) (86,249 square kilometers [km²]) yielding an annual dispersal rate of 0.48724 lb/mi² (0.08551 kg/km²). The Sea Range EIS/OEIS concluded that this rate of distribution would have no significant impact on the environment. Using this same assumption, the proposed action deposit 538 lbs (244 kg) with an annual hazardous material deposition rate of 0.0162 lb/mi² (0.00283 kg/km²), or only 3.32% of the total analyzed in the Sea Range EIS/OEIS. Therefore, hazardous wastes or materials managed and generated under the proposed action would pose no significant impacts.

<u>Cumulative Impacts</u>: Potential cumulative effects of the Proposed Action in combination with other past, present, and foreseeable actions were analyzed and found to be not significant. Therefore, implementation of the Proposed Action would result in no significant cumulative impacts. Finding: After review of the EA, which has been prepared in accordance with the requirements of DON regulations for implementing NEPA (32 Code of Federal Register § 775), the DON finds that implementation of the Proposed Action will not significantly affect the quality of the human environment. Therefore, preparation of an EIS is not necessary.

The EA prepared by the DON addressing this action is on file and interested parties may obtain a copy from Mr. John Ugoretz, Marine Biologist, Naval Air Systems Command, Naval Air Warfare Center Weapons Division, Building 53A, Code 52F00ME, 575 I Avenue, Suite 1, Point Mugu, California, 93042, Telephone 805-989-4852, or email john.ugoretz@navy.mil.

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