



# BLOODHOUNDS: guards of the Point Mugu Sea Range

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Most people know the coast line of Los Angeles from the TV series *Baywatch*, with Pamela Anderson and her friends guarding the Malibu beaches. But just about 22 miles west of these peaceful beaches, other guards perform a serious job as well: safeguarding the Point Mugu Sea Range. The men and women of VX-30 keep sailors, merchant vessels and unwanted aircraft out of the waters and airspace of the range to avoid any disasters while tests are being performed. Keeping guard is one of main missions of VX-30. Gathering information during tests and doing test work themselves is also part of the daily business of the 'Bloodhounds'.



## POINT MUGU SEA RANGE

The Point Mugu Sea Range is the United States' largest sea range used for research, development, testing and evaluation. It consists of 27,278 nautical square miles of ocean area and military Special Use Airspace. The Sea Range is located in the Pacific Ocean, neighbouring the Naval Base Ventura County (NBVC), California, and provides the US Navy with a unique maritime test location. Air, surface and subsurface range areas are available, as well as about 221,000 nautical miles of extended range areas. VX-30 is stationed at NBVC, which is home to three main facilities: Point Mugu, Port Hueneme and San Nicolas Island. The base includes a deep water port, a railhead and an airfield.

Top of page: Orion NP-3D '300' taxis back to the VX-30 platform at Naval Base Ventura County. Above, left: A Bloodhounds KC-130F, seen from the Missile Park outside NBVC.

Right, from top: One of VX-30's S-3B Vikings in a paint scheme from 1942 to commemorate the Battle of Midway, the turning point of the war in the Pacific; KC-130F cockpit view; KC-130F 'Bloodhound 403' ready for the next flight over the Point Mugu Sea Range; Old fashioned analog 'clockworks' in the NP-3D Orion; Bedroom inside a VX-30 Orion.

## MISSION

The mission of VX-30 is research, development, testing and evaluation of fixed-wing and rotary aircraft, manned and unmanned. The unit also provides support for this kind of operations performed by other units or clients. The squadron primarily performs system tests and is specialised in mission planning systems. In fact the unit is the centre of excellence for the Joint Mission Planning System (JMPS): every specific platform has its own JMPS. It includes hard- and software to plan a mission and it provides functionality that is unique for the particular aircraft or weapons system. The pilot plans the mission on the computer, takes the 'digital' mission to the aircraft, inserts it into the mission computer and flies the mission. VX-30 tests these mission planning systems for all the flying platforms of the US Navy.

Another branch the Bloodhounds work on is electronic warfare; for example, developing and testing the self-defence system of the AH-1 Cobra helicopter. This happens at the level of information-processing laboratory. Testing of the hardware itself is done elsewhere. VX-30 is also involved in testing sonar buoys. For this work, the squadrons' S-3B Vikings are used. Buoys are produced in lots. During one week in every month, the quality of a produced lot is tested. If the results of the tests are positive, the buoys will be sent to the fleet.

## UNMANNED PLATFORMS

Testing and supporting tests of unmanned systems results in the biggest growth of the work for the squadron. One of the platforms which is tested is the RQ-21A Blackjet. VX-30 performs payload testing for this Boeing in situ unmanned air vehicle (UAV). A new development within the unit is testing the MQ-8C Fire Scout. On 31 October 2013, Northrop Grumman Corporation and the US Navy successfully completed the first flight of this helicopter, which is the unmanned version of the manned Bell 407 helicopter. The Bloodhounds also support testing the Northrop Grumman MQ-4C Triton. The MQ-4C is the US Navy equivalent of the Air Force Global Hawk, an unmanned surveillance aircraft. The unit heads out to the factory at Palmdale, California, and accompanies the Triton to Edwards Air Force Base, where the actual testing takes place. The FAA requires that the unmanned vehicles be escorted.

## ONE SQUADRON, THREE MANNED PLATFORMS

Besides the unmanned MQ-8C, VX-30 operates three types of manned aircraft: the KC-130F Hercules, the NP-3D Orion and the S-3B Viking. All aircraft are used for surveillance and clearance before and during dangerous test activities on the Sea Range. Besides transport, the KC-130F is used for air-to-air refuelling of aircraft that are conducting tests over the range. The Orions provide telemetry data during missile testing, and the Vikings are mostly in use for surveillance and testing sonar buoys.





Above: KC-130F used for transport and air-to-air refuelling. Above, inset: NP-3D '340' celebrated its 50th birthday in 2013.

## SURVEILLANCE AND CLEARANCE

The most important activities of VX-30 are surveillance of the range and giving clearance to conduct test activities. If, for instance, the US Navy or Air Force want to practice or test in a particular area, the Bloodhounds' aircraft get into action and enable their radars to detect vessels and send these away. The S-3 is preferred for the surveillance duties. Thanks to their agility and speed, the Vikings are able to quickly locate, identify and warn various vessels, so operations can take place as planned. During tests with Boeing's X-51 Waverider, an unmanned scramjet that reached Mach 5.1 during one of its test flights, the unit also provided clearance. In connection with the long distance of the Waverider's test trajectory, VX-30 had to use three different types of aircraft for clearance, with the NP-3D Orion for the long haul.

The number of warnings depends on many factors, such as the weather and time of year. The average is six warnings per week. There are two types of violators. The first category is large merchant ships. These ships usually comply with the rules because they are run by real professionals. The ship crews are cooperative when they are warned to leave the area. The other category is small (fisher) boats. These tend to be less cooperative. The fishermen don't like to be sent away because this interferes with their earnings. The VX-30 crew calls the ships by radio but if a boat has a small crew, they may not hear the radio when they are outside the captain's cabin to retrieve the nets. In that case, the Bloodhounds sometimes have to make a low pass over the ship to get the crew's attention. Occasionally, heavy language has to be used to persuade a ship to leave. Some boats are notorious and the VX-30 crews can easily recognise these vessels by their form. Sailboats are the most difficult boats to get out of the area. When there is little wind, a sailboat can only slowly move out of the area. But often, the VX-30 aircraft are hours in advance of the actual operations present over the range in order to ensure the area is free at the moment the action is planned.

## SUPPORT FOR MISSILE TESTS

VX-30 frequently operates from Forward Operating Locations, like those in Hawaii, Alaska, Guam and Japan. For support of NASA missions, the unit deploys to NAS Jacksonville, Florida. Deployment operations often mean making long missions. Only the flight to the destination can take up to six hours. But also requests for help arrive from closer to home, like from the 30th Space Wing at

Vandenberg AFB, California, when this USAF unit needs support for missile testing. Clients for the Bloodhounds are Department of Defence customers as well as non-Department of Defence customers. The main customer is the Missile Defence Agency. For support of missile testing, VX-30 mostly uses the NP-3D Orion. The VX-30 Orions are packed with instruments and take care of telemetry data collection and retransmission; time, space, position information; and high-resolution optical collections. The NP-3Ds have a stabilised gyro-controlled photo-optical system on board, called Cast Glance. This system provides high quality, high-resolution precision video and images that can be transmitted real time over a long distance to ground stations. The crews image flights of missiles and record data so the performance of missiles can be analysed. To get the information as soon as possible to the client, the data is put on CD and DVD in the plane so the customer can start evaluating once the NP-3D touches down. Through telemetry, the crew keeps an eye on the missile during its flight. When there is danger that a test goes wrong, the crew can detonate the missile from the NP-3D.

Right now, VX-30 has four Orions with the Cast Glance system on board. One of them is not operational at the moment because it is receiving new wings at the Boeing plant in Marietta, Georgia. Orion '300' is the primary aircraft to support missile testing because it has the best configuration for the work to be carried out. The NP-3D has a crew of 14 people. Because missions can be long, there are even sleeping places located in the back of the aircraft.

## FUTURE

VX-30 is in a crazy phase at the moment. The S-3B, already phased out in the US Navy from operational duty, is the youngest type of aircraft in the squadron. These Vikings prove to be a very efficient platform for the work in VX-30. Looking at the Orions, NP-3D '340' is the oldest plane in the squadron's inventory. In 2013, it celebrated its 50th birthday. The squadron is in the process of recognition for the succession of Cast Glance and telemetry. Maybe newer P-3s or ex-commercial aircraft will be used to replace the old Orions. In November 2013, a new NP-3D arrived for the period of one year. VX-30 is also trying to replace the older C-130s with younger ones. And with reason: there is enough test work to be done. There are plenty of customers that like to get threat profiles thrown at them and there is enough work in testing more pods and tow targets. **PW**