

The Beacon

Piedras Blancas Light Station Outstanding Natural Area

Vol. 7 Issue 2

April-June 2014



Piedras Blancas Fog Signal Building Update

by Jim Boucher, Park Manager

Restoration of the Piedras Blancas Fog Signal Building started in 2010 when lead based paint was removed from the exterior and interior brick walls. Since that time, the windows and entrance door have been restored. Attention is now focused on repairing the numerous structural cracks in the brick walls. Engineering tests have concluded that the cracked walls were a result of both settling and seismic activity. The foundation to the building is very shallow and was constructed on native sandy soil. Shoreline Engineering of Morro Bay was contracted by the Piedras Blancas Light Station Association (PBLSA) to develop a plan to reinforce the foundation. The plan consisted of injecting grout into the sandy soils around the inside and outside perimeter of the building to a depth of six feet. The grout hardens the soil and helps support the building. In addition a concrete curbing was installed around the exterior perimeter to hold the hardened soil in place and to direct water away from the building. The curbing is buried and is not visible. Wellsona Iron and Engineering of Paso Robles was contracted by the PBLSA to do the foundation upgrade. They also replaced the concrete walkway that connects the Fog Signal Building to the blacksmith shop. The walkway now replicates the original sidewalk constructed in 1909.



Above: Completed sidewalk replicates the original concrete walkway constructed in 1909 to connect the fog signal building and blacksmith shop.



Left: Archeologists meticulously sifted the soil prior to construction. One interesting item found was a piece of sewer pipe. When the fog signal building was constructed in 1905, there was a toilet and sink in one corner so the keeper would not have to leave the work place when nature called.



Above: Dan Murphy, working on rebar in the perimeter curbing.



Above: The concrete apron in front of the fog signal building was removed. David Cooper is using the jack hammer, Dan Murphy is operating the backhoe.



Above: Cement was poured into the replica sidewalk.



A joint publication of the Piedras Blancas Light Station Association and the Bureau of Land Management. The Piedras Blancas Light Station Association is a non-profit partner for the Bureau of Land Management. It provides support for the restoration, conservation, interpretation, and stewardship of the unique natural, historical, and cultural resources at the Piedras Blancas Light Station. © Copyright 2014



How far could the sound signal be heard?

Visitors frequently ask how far the fog signal could be heard. That is not an easy question to answer. There are aberrations in audibility. This subject was investigated extensively in the past. A section of *The Modern Light-House Service*, published in 1890, goes into lengthy detail about the subject.

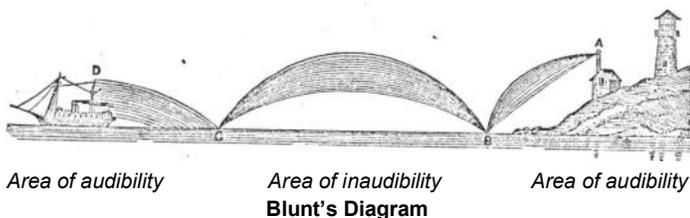
"The Light-House Board has known from the first that aberrations in audibility might occur near any fog signal."

In one test, the sound had the same intensity at 3/16 mile as at 6 miles, while it varied from 2-10 on a scale of 10 between those two points.

Equally perplexing is this statement: *"There are six steam fog-whistles on the coast of Maine; these have been frequently heard at a distance of 20 miles, and as frequently can not be heard at the distance of 2 miles, and this with no perceptible difference in the state of the atmosphere."*

The signal is often heard at a great distance in one direction, while in another it will be scarcely audible at the distance of a mile. This is not the effect of wind, as the signal is frequently heard much farther against the wind than with it...

The most perplexing difficulty, however, arises from the fact that the signal often appears to be surrounded by a belt, varying in radius from 1 to 1 1/2 miles, from which the sound appears to be entirely absent.. Thus, in moving directly from the station, the sound is audible for the distance of a mile, is then lost for about the same distance, after which it is again distinctively heard for a long time...with no surrounding objects to affect the sound."



There were several recommendations for the mariner, regarding sound, including

- Not assume he is out of hearing distance because he can't hear it.
- Not assume he is at great distance if he faintly hears it.
- Not assume he is near it because he hears it well.
- Not assume the fog signal has ceased sounding because he fails to hear it when within easy ear-shot.
- Not assume the aberrations that apply to one fog-signal apply to others.
- Not expect to hear it well over a point or island.

How far could the sound be heard? There was a great deal of variation. In some instances, sound could be heard as far away as 10 miles. According to the author of the article: *"Fog to my mind, and so far as my experience goes, is not a factor of any consequence whatever in the question of sound...That fog has no great affect can easily be understood when it is known that even snow does not deaden sound, there being no condition of the atmosphere being so favorable for the far reaching of sound signals as that of a heavy northeast snowstorm, due supposedly to the homogeneity produced by the falling snow."*

The bottom line is that sound was not a completely reliable warning signal, but better than nothing.

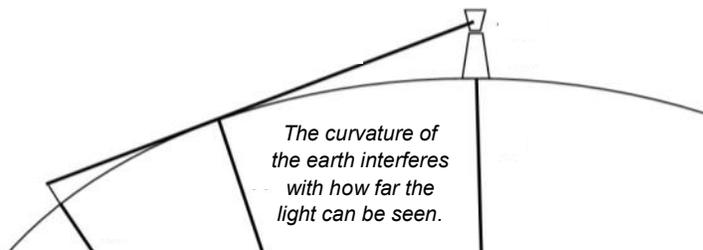
How well can sound be detected in terms of direction?

Determining the source of a sound can be difficult. A child coming in from school calls "Momma". She may reply, "Yes, I am upstairs," or wherever. The child can not determine the mother's location by the sound of her voice. Although this may not be the best example, due to reflection of sound off walls and from the strata of air differing in temperature and humidity, we can all think of instances of this problem. It can be difficult to determine the direction from which a bird call is coming. A flock of birds may fly directly toward a hunter after hearing a gunshot if he has kept out of sight and the flash of his gun gone unseen. (Information from *The Modern Light-House Service*, published in 1890.)

How far can the light be seen?

The range of visibility of a light in clear weather depends on intensity and height above water. You can see an electric light farther than you can see a candle, because its intensity is greater. The height of the light above water affects the distance it can be seen. We see in a straight line, but the surface of the earth is curved. When an object moves away from us, the lower portion soon gets below our line of sight and we only see the top of it. When the object gets far away we see over it. Therefore we see a lighthouse light much farther when it is high above the surface of the water. (From a Coast Guard training manual.)

The range of visibility also depends on condition of the atmosphere. Rain and fog reduce the range the light can be seen.



Information in manuals, referred to as "light lists", let the mariners know how far the light could be seen. At Piedras Blancas that distance listed varied over the years. One of the variables was the height of the light. When the upper three levels of the lighthouse were removed, the height of the light was lowered. However, as years went by vessels became bigger and higher, and the height of the observer changed.

From the 1873 light list we learn, at that time, the distance the light could be seen was figured considering the observer was at an elevation of fifteen feet above the sea level and there were "ordinary states of the atmosphere".

Here are samples of distances visible of the Piedras Blancas light from a sampling of light lists. Miles refer to nautical miles.

1879	19 miles
1890	19 1/4 miles
1908	19 1/4 miles
1912	19 miles
1933	19 miles
1945	19 miles
1950	18 miles
1964	18 miles
1975	25 miles
2000	10 miles (emergency light was of less intensity)
2002	21 miles (modern marine light installed)

Piedras Blancas birthday tour

On Saturday, February 15th, Piedras Blancas celebrated the 139th birthday of the lighthouse. The light was first illuminated on February 15, 1875. The date was observed with living history tours attended by a record breaking 160 visitors. Enactors in the lighthouse, fog signal building, and historic district portrayed life in 1908, the year the elevated water tower was completed. A replica of that 50 foot elevated water tower was constructed in 2013 and will be used for modern public safety communication.



Above left: Paul Beaver as a keeper painting and Linda Waring as a wife doing laundry—the old fashioned way. Above right: It took 21 volunteers and 2 staff to pull off the event. Thank you to everyone who helped and attended. A good time was had by all!

A Super Size Thank You!

by Abel Martinez

The Piedras Blancas Light Station annual holiday volunteer appreciation celebration event was held on December 14th, 2013. The weather was perfect and the view was fantastic, including the sighting of gray whale blows and a beautiful sunset, which ended with a green flash! Jim Boucher, Park Manager, presented highlights of the impressive accomplishments and ongoing work at the light station. Volunteers have logged over 100,000 hours for the Piedras Blancas Light Station and there are future exciting work projects ahead.

A smorgasbord of delicious food was donated by local businesses: Linn's, Robin's, Cavalier, Moonstone Beach Bar & Grill, Madeline's, Dragon Bistro, Lombardi's, Tea Cozy, El Chorlito's, JJ's Pizza, Manta Rey, Sebastian's Deli, Allocco's Italian Bakery, the French Corner Bakery, Soto's Marketplace, and the Cookie Crock Market. Everyone at this special celebration sends their sincere appreciation to these very generous and supportive local businesses...THANK YOU!

Kid's Corner

School field trips of the Piedras Blancas Light Station may be arranged for any grade level.



Above: Fourth grade students from Vineyard Elementary School pose on the lighthouse steps for a class photo. Do these students look like they enjoyed their visit?

Letters from school children who have visited the light station are priceless. Here are a few delightful comments from Monarch Grove fourth graders.

"The two things I like most was walking on the trail and going in the lighthouse. The best thing in the lighthouse was how the pulley crank would keep the light turning. And on the trail I liked looking at the native plants and the whale bones. Thank you. Jadan"

"The Piedras Blancas Light Station was a blast! You showed me a lot of things that I did not know about. My favorite part was when we got to see the sea otters with the binoculars. They were so cute and wonderful. I also liked to see the dolphins jumping up and down. I really liked to go and squirt out the water with the washing machine. I learned about that the lighthouse was named after a big rock that was white and it was on the ocean. I also learned there were different kinds of seals and I did not know there were different kinds of flowers. I enjoyed going to Piedras Blancas. From Sofia.

"Thank you for showing us all kinds of cool stuff. I learned about sea urchins and sea otters. Another thing is that when it was foggy they used sounds. First they used high pitched like EEEEE, then they used low like RRRRRR. Your tourist, Johnathan in the yellow group"

"My favorite parts were when we saw the sea otters, dolphins, and sea lions. I think that being a lighthouse keeper would be fun, to climb up the stairs millions of times, turn the light on when needed, and turn the light off when not needed. I think blubber is a funny word to pronounce. Very truly yours, Fiona"

Equally rewarding are comments from teachers.

"Every stop provided a very enriching experience. The students were engaged and excited to hear what the guides were going to say. The tour is outstanding and so very appropriate." Mrs. Kirby, Monarch Grove Elementary School



PBLSA Update

by Jack Morehead, Chair

Cathy Shusta, new PBLSA board member

A warm welcome to the association's new board member, Cathy Shusta. For those of you who haven't met Cathy, she's from southern California and her primary career was in Property Management. She has worked both as a consultant and "hands on" as Project Manager for numerous multi-family properties and shopping centers.

She has traveled the USA extensively, and has visited numerous Parks, Monuments, and Lighthouses. She (and her husband) served as seasonal summer rangers for the Forest Service in the Bridger/Teton area of Wyoming, assisting hundreds of hikers/rock climbers/campers venturing into the wilderness.



Cathy began her volunteer career in 1998 and has since spent her time teaching/tutoring/ministering to children, ages 4-18, for a variety of non-profit organizations. She moved to Santa Maria in 2012 and began volunteering with Central Coast Audubon, Morro Bay Bird Festival, Morro Bay Natural History Association, and Piedras Blancas. Her current interests include skiing, snow shoeing, hiking, bicycling, kayaking, camping, gardening, photography, and her grandsons. Welcome to the board Cathy!

Piedras Blancas Light Station Association board members welcome your comments or questions. 805-927-3719 or membership.pblsa@gmail.com
Board meetings are held at the Rabobank in Cambria, at 6:00 PM on the fourth Wednesday of every month,. The public is welcome.

Piedras Blancas Light Station Association
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Help restore and preserve Piedras Blancas Light Station by joining PBLSA!

All memberships include the quarterly newsletter and knowledge you are helping with restoration and maintenance of the light station. Complimentary tours are for the regular public tour.

- ___ \$50 Friend of the Lighthouse (1 complimentary tour)
- ___ \$100 Acting Keeper (2 complimentary tours)
- ___ \$250 Assistant Keeper (4 complimentary tours)
- ___ \$500 Principal Keeper (engraved brick)
- ___ \$1000 Superintendent of Lights (engraved brick & private tour for up to 6)

Name:

Address:

City:

State:

Zip:

Phone:

Email:

Please make check payable to PBLSA. You may also join online at www.piedrasblancas.org.
Thank you for your support!

Join us on the path to restoration!

Your purchase of a personalized, engraved brick will help with restoration of the light station. It will also be viewed by generations of lighthouse lovers, who will enjoy and appreciate your contribution.



Mail form to:
Piedras Blancas Light Station Association.
P.O. Box 127,
San Simeon, CA 93452
or order online www.piedrasblancas.org. To order by phone, call 805-927-3719.
Thank you!

Maximum of three lines. Each line can have up to 16 characters, including spaces and punctuation. All letters are capitalized. Not all three lines have to be used. You may purchase multiple bricks. Minimum donation \$100.

Line 1																			
Line 2																			
Line 3																			

I am paying by check (Made out to PBLSA) MasterCard or Visa

MC or Visa number: _____ Expiration date _____

Donor's name _____ Phone _____

Address _____

City _____ State _____ Zip _____

Are lighthouses still functional?

Frequently visitors ask if lighthouses are still used by mariners. The answer is yes. Recently, a young man visited Piedras Blancas Light Station as part of a college class. The group removed non-native vegetation and then took a tour. During the course of the tour he related a couple of his experiences sailing along the California coast. Thanks to Reid Brown for his help at the light station and for the delightful stories below.

"My first experience with using a lighthouse for navigation was the Point Reyes lighthouse. I had been in some heavy weather throughout the previous day and night when I saw it's light (approximately 2am), I wasn't sure what light it was at first because I didn't think I had traveled that far south, apparently the strong wind and massive waves carried me faster than I had thought. I was able to identify the lighthouse by it's light cycle therefore telling me I was in the vicinity of Point Reyes and my destination, Drakes Bay. Though I still had some miles to go, the beacon rejuvenated my spirit and gave me just a little bit more determination to get to the safety of the anchorage. In my mind I had cried out so many times "ARE WE ALMOST THERE YET?!?!?!?" and seeing that light gave me a solid "YES".

When I came across the Piedras Blancas light, it was late at night and I had been struggling to stay awake for hours. There was no wind and I was under engine power alone, I was so determined to get home since being gone for 4 years in the Navy I decided to make a sleep schedule with an egg timer I had on board: 15 minutes eyes closed, 15 minutes eyes open. With steady forward movement and a shoreline just a handful of miles away it was extremely important to stay aware of my surroundings, but with the moon shining as it was and the haze in the sky it was difficult to gauge the distance from shore by sight. This is where the Piedras Blancas lighthouse was my saving grace! I could clearly see the light and was able to use it to tell roughly how far offshore I was, plus as the hours passed it showed me my progress (all sailors love to see progress) as I moved onward towards my homeport of good ol' Morro Bay!"



Above and right: Students above are from Laurie McConnico's Cuesta Ecology class. The students above pulled non-native plants at the light station. Reid Brown, who wrote the above article, is on the far right.

The students to the right removed non-native plants from the elephant seal viewing area. Instructor, Laurie McConnico, is the fourth from the left. Thank you Laurie from bringing your classes to help at the Piedras Blancas Outstanding Natural Area.

Lighthouse neighbors

Point Pinos

Located in Pacific Grove, the Point Pinos Lighthouse is the oldest continuously operating lighthouse on the West Coast. It is open to the public Thursday through Monday from 1:00-4:00. www.ci.pg.ca.us/lighthouse.

Point San Luis

Our closest neighbor to the south, Point San Luis Lighthouse, provides Docent led Trolley Tours year round on Wednesdays at 12 pm & Saturdays at 12 pm, 1 pm, & 2 pm. You can book tickets by visiting www.sanluislighthouse.org or calling t-855-Keep-the-Light (533-7843). There are also links on the PSLHK website to hike the Pecho Trail on Wednesdays & Saturdays at 9am or to book a Lighthouse Adventure Kayaking Excursion via Avila Beach Paddle Sports.

Point Sur

Tours of our closest lighthouse neighbor to the north, Point Sur Lightstation, are offered year-round. From November through March, tours are Saturdays and Sundays at 10 am and Wednesdays at 1 pm. In the summer, tours are offered from April-October on Saturdays and Wednesdays at 10:00 am and 2:00 pm; Sundays at 10:00 am; and Thursdays in July and August at 10:00 am. For a list of special tours and more information, check their website: www.pointsur.org or call (831) 625-4419.

News from Point Sur by Doug Williams

2014 is a banner year for Point Sur Lightstation. We are celebrating three significant anniversaries: the 150th for CA State Parks, the 125th for the lightstation, and the 25th of the volunteer program. Special events are planned throughout the year climaxing on August, 1st, the lightstation's actual birthday.

Central Coast Light Keepers has been successful in obtaining a substantial matching grant from the State to rehabilitate all five of the historic wooden bridges on the access roads of Point Sur Lightstation.



For information on Piedras Blancas Light Station

www.piedrasblancas.org
or www.piedrasblancas.gov

National Lighthouse Day

On August 7, 1789 the United States government took over responsibility for building and maintaining our nation's lighthouses. Two hundred years later, in recognition of the signing of the Lighthouse Act by President George Washington, the United States Congress designated August 7, 1989, as National Lighthouse Day.

Piedras Blancas Light Station will be celebrating National Lighthouse Day during the public tours on Saturday, August 9th. Enactors in period attire portray life at the light station in the 1890s.

This special tour is offered at the regular fee of \$10 for adults and \$5 for ages 6-17. Meet at the former Piedras Blancas Motel, located 1.5 miles north of the light station, by 9:45.



Above: left: Volunteer Marni Stanfield in period attire. Above right: Cathy Shusta portraying the wife of a keeper.

Piedras Blancas Light Station Tours

Tours are offered year round on Tuesdays, Thursdays, and Saturdays. From June 15 through August 31, tours are offered 6 days a week, Mondays through Saturdays. There are no tours on Federal holidays. Tours last about 2 hours and include the historic Piedras Blancas lighthouse and support buildings and a half mile interpretive trail that provides spectacular ocean views and opportunities to view wildlife. Meet at the former Piedras Blancas Motel located 1.5 miles north of the light station at 9:45 a.m.

Please do not wait at the gate to the light station!

Groups of ten or more please make advance arrangements. \$10 for adults, \$5 ages 6-17, no fee for children 5 and under.

For information on tours email PiedrasBlancasTours@gmail.com or call 805-927-7361.

Dress warmly and wear comfortable walking shoes.
No pets!

Tours may be cancelled on the day of the tour due to inclement weather.



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