

WINTER 2000

REMINDER... FEBRUARY 6 TRIP TO LIGHTHOUSE

ANNUAL MEETING AT THE LIGHTHOUSE AUGUST 8, 1999

On August 8, about 130 members of the Society visited Hillsboro Lighthouse. It was a beautiful day, with a nice breeze. Lunch and beverages were available at the Hillsboro Club, and slide shows and exhibits were set up for the members.

The ANNUAL MEETING started at 1 PM in the Sea Room of the Hillsboro Club. The Society Officers and about 30 members were present. President Harry Cushing lead the meeting. Treasurer Julie Cushing reported the bank balance at close to \$ 12,000. Hibbard Casselberry, Membership Chairman, reported about 300 membership are on the active membership list. It was decided that MEMBERSHIPS will be on a CALENDAR YEAR basis with new memberships due in JANUARY 2000.

Dave Butler, Vice President HLPS was appointed by the Coast Guard to work with Arthur Makenian USCG Auxiliary to provide the Engineering for installation of a new bearing in the Lighthouse. Complex work involved in removing the vertical shaft used for rotation has been completed. A model of the required five foot diameter 300 pound new ball bearing has been built and tested for installation.

FEBRUARY 6, 2000 MEETING

We will meet at the SANDS HOTEL on Sunday February 6, starting at 10 AM. **DIRECTIONS:** Drive east on Atlantic Boulevard. Cross the Intracoastal bridge, and go north on A-1-A about 2 blocks and park in the City lot. Walk to the SANDS HOTEL on the Intracoastal. We will travel to the Lighthouse on a sixty foot long open yacht, landing right at the Coast Guard dock. There will be Coast Guard Auxiliary personnel to guide the tours of the Lighthouse. Attendance is limited to SOCIETY MEMBERS, but you can renew membership at the Sands.



There will be a TENT set up on the beautiful grounds, with chairs for those who do not wish to climb. There will also be refreshments available. The HILLSBORO LIGHT-HOUSE is truly a beautiful locations.

HILLSBORO LIGHTHOUSE



PRESERVATION SOCIETY

F.L.A. MEETINGS AT SANIBEL ISLAND

The Florida Lighthouse Association winter meetings were held on Sanibel Island on January 15, 2000. Our H.L.P.S. Officers are quite active at the State Level. Hib Casselberry is VP for Membership and spoke at the meeting. Dave Butler is a Director, and he spoke on the purchase of the new bearing for Hillsboro and the plans for re-activation of the 1,000 watt lighting at Hillsboro. After the meetings there was an opportunity to climb the tower. The view was spectacular, but the stairs and tower are smaller than Hillsboro. Sanibel was built in 1885



THE PRESIDENT'S LETTER

The replacement bearing that will enable the great Fresnel lens at Hillsboro lighthouse to shine again has been ordered. The purchase order was issued by the Coast Guard around the first week of December. The delivery should occur sometime around March or April 2000. Once the mechanism is in place and thoroughly tested, HLPS will make an announcement as to when the beacon will be officially "relit". We are not planning an elaborate ceremony as we did last year. We do plan to gather at the Yardarm Park to commemorate and witness the event. Watch your mailbox for an announcement.

We hope you all will be able to attend our first lighthouse tour on Sunday Feb. 6. Starting at 10 AM a chartered boat will take members from the Sands Harbor Hotel for a round trip visit. There is no charge for members. We only ask that your dues be up to date. If you haven't renewed since Sept 1999 then we ask you to do so prior to boarding. HLPS members will be dockside to assist. The first boat leaves at 10 AM and on the hour thereafter. The last boat leaves at 3PM and will return by 4PM.

The year 2000 marks the 93rd Anniversary of Hillsboro lighthouse. It is one of the oldest structures in Broward County, just a few years younger than the Stranahan House in Fort Lauderdale.

Harry Cushing

HILLSBORO LIGHTHOUSE

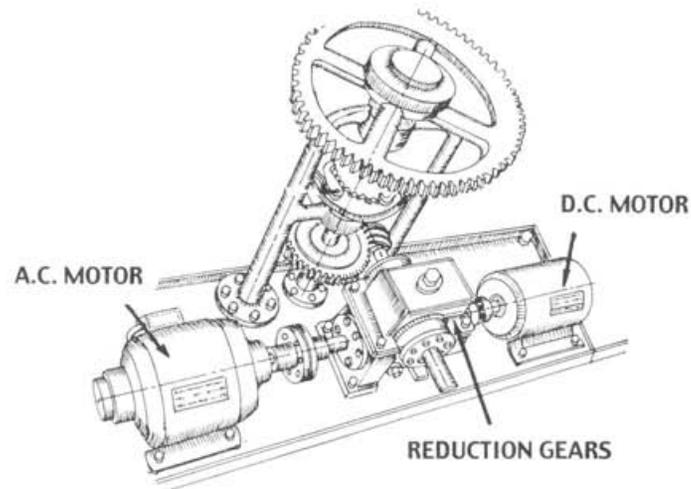
Hillsboro, built in 1905-1906 was the last



Paul Bradley, Lighthouse artist and HLPS member, had a display of drawings at the Sanibel meetings. Paul did the drawing of Sanibel shown above

TURNING THE LENS ELECTRICALLY

In 1932 Hillsboro was electrified. A small gasoline generator was installed, and a sturdy reduction gear was built which provided 1,100 to 1 reduction ratio. The design is shown in the drawing below. The motor on the left was driven by the GENERATOR, and the motor on the right was driven by a BATTERY BANK. Either could turn the lens, although by the 1960's the Lighthouse Keeper sometimes hired a young boy to run up to the top of the tower and push on the huge lens to help get the rotation started. In 1992 the turning mechanism failed.



ELECTRIC LENS TURNING MECHANISM

coastal lighthouse in Florida. The second-order "clamshell" Fresnel lens is nine feet in diameter, and weighs about 4,000 pounds. The present value of the lens is about \$ 2,000,000.

In 1890 a French engineer, Bourdelles, developed a plan to float the lens assembly in a bath of liquid mercury. It was a great idea for a large, slow turning lens, and it worked well at Hillsboro for 86 years. Before electric power was available in 1932 the rotation was powered by a falling weight, and this had to be cranked up every 2 hours all night long. After 1932 a 6 kilowatt gasoline generator provided the power for rotation. The rotation mechanism was clever. Two motors drove the reduction gears. One was powered by the GENERATOR, and the other was powered by a BATTERY BANK. Either could turn the lens at 1.5 RPM. This gave a 20 second flash. Originally lit with vaporized kerosene, the range was about 14 miles.

In 1966 when a 1,000 watt light was installed the beam became so powerful the extreme range was listed as 28 nautical miles.

In 1992 the turning mechanism failed, and Hillsboro has been running on 36 watt electric lights ever since. The EPA will not allow MERCURY to be used in the future, so a new BALL BEARING is needed. It is a very difficult task to re-engineer a 100 year old design to 1998 technology, and the first ball bearing assembly, installed in December 1998, failed.

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