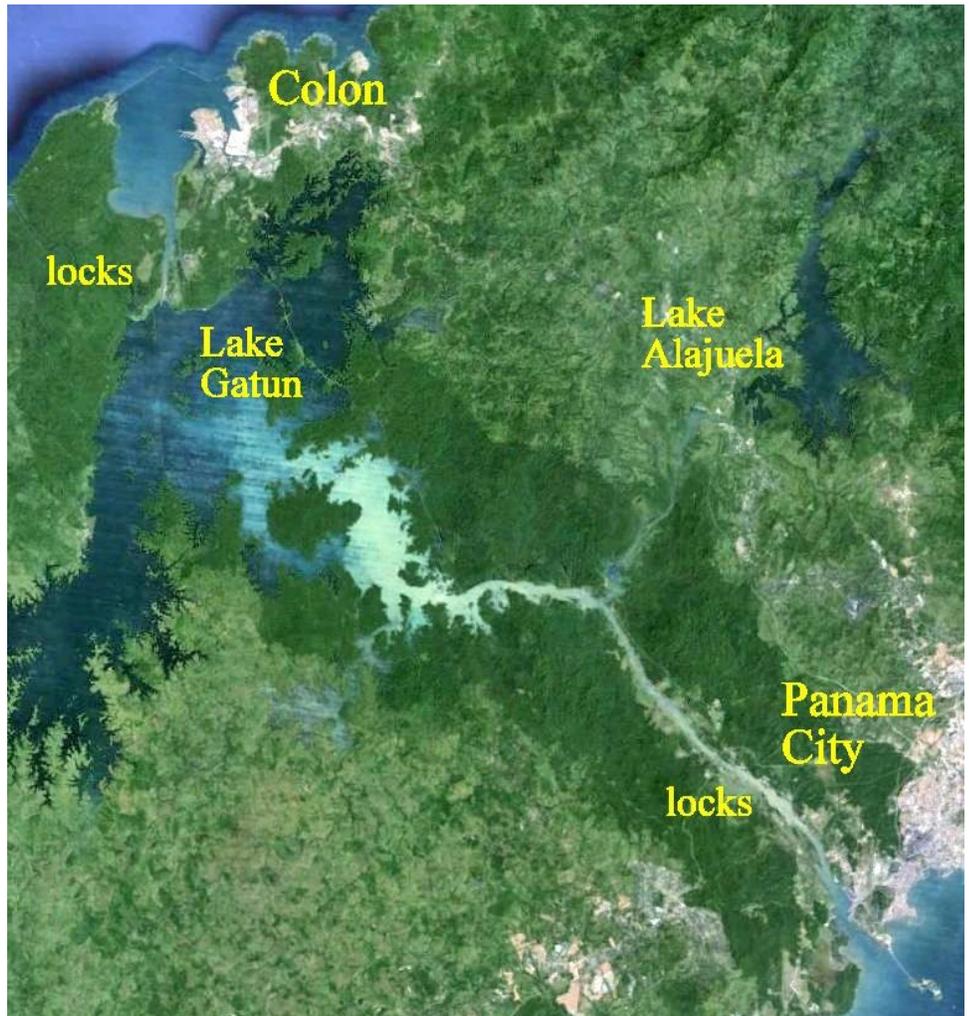


## Panama Canal

We arrived at the north entrance to the Panama Canal in the morning of 24 December. We left the last lock on the south side as it was getting very dark that evening. During the previous days a former ship pilot explained the history of the canal. He gave a description of the various activities over the loudspeaker system during our passage. I will give an overview here and then photos from the ship. It was his trip number 1130 through the canal.

The city of Colon is at the north end and Panama City is at the south end. Lake Gatun is in the center at 26 m (85 ft) above sea level. There are 3 pairs of locks at the north end of the canal. At the south end there is a small lake between 1 pair of locks and a set of 2 pairs of locks. The uniform vegetation (dark green) marks the extent of the former Canal Zone under American administration. The canal length is 77 km (48 miles) and the Zone width is 16 km (10 miles). The lake and canal water is fresh water from rainfall only. Additional water is provided by Lake Alajuela.



The French attempted to build the canal in 1881. America succeeded during 1904 to 1914. Future locks of a wider size are now under construction at both ends. The northern locks are shown at the right and the southern at the left. The canal has been operated by an agency of the Panama government since 1999.



Notice that we moved eastward while traveling through the canal from north to south.

These 3 views are from Google Earth with my own lettering.





We passed the breakwater of the northern harbor. A boat with the canal pilot (and other workers) came along side and the people climbed on our ship; the boat then left. A tug boat was available if needed.



The remains of the French canal are at the left. Lock doors for the new canal are being built, with new canal construction in the background. At the right are the first locks with other boats ahead of us.



Electric powered tractors on both sides of the ship use tight cables to keep the ship centered in the locks and away from its walls. The tractors do not pull the ship, which moves under its own power. The lock doors in the center photo are closed shut while the water on its left side drains. The right photo shows turbulent water that has drained from that lock. All water eventually goes into the ocean.



The left photo shows a tractor climbing up an incline using the ladder-like track under the tractor. The center photo shows us about to enter the middle lock. The upper right photo shows us in the last lock before being raised to the level of the lake beyond. The lower right photo shows the tight clearance for the container ship, which has the maximum width allowed by the canal. It illustrates the need for the wider locks that are being constructed nearby.





Several of the locks have a double set of doors. That is to protect the lake water in case one set of doors is damaged by a ship. The middle photo shows a canal

official (the pilot?) leaving our ship by climbing down a ladder. The right photo shows the top of the dam that holds up Lake Gatun. Electric power is no longer generated there because the water is needed for lock operations. We then spent a few hours crossing the lake to the other side.



The canal is being dredged to make room for larger ships. Some equipment loads debris onto barges, as at the left. Other equipment continuously digs sediments and pumps them to the shore using large pipes, such as those rafted in the background of the middle photo. Several times we saw trains on the east side of the canal carrying containers between the port cities. The white tower behind has ship navigation aids.



Some alligators were seen in the canal. Our commentator joked that they were Homeland Security aids.

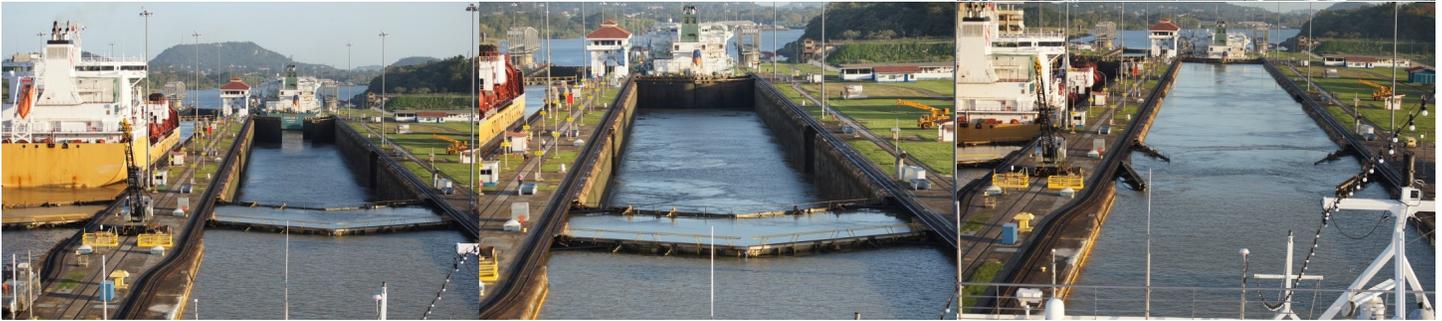
Other towers along the canal held lights or patterned panels. The goal was to keep them in vertical alignment to assure the pilot that the ship was in the correct part of the canal channel.



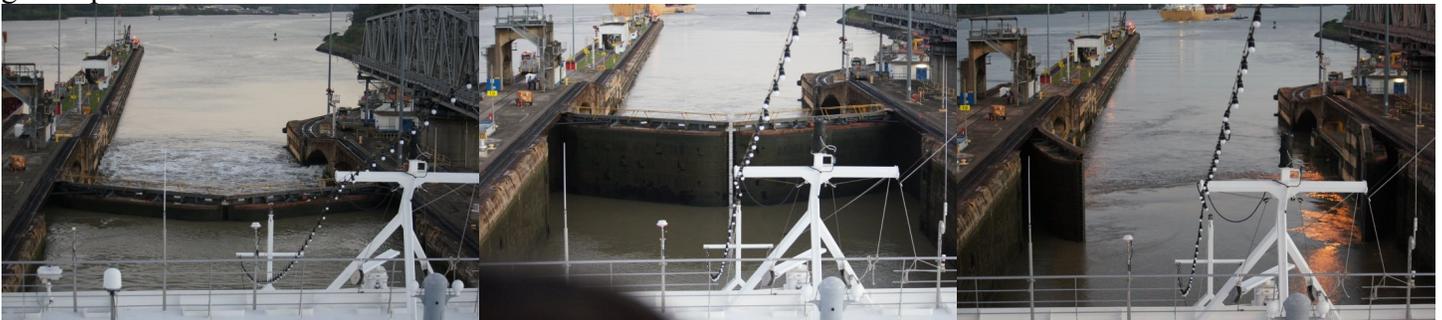
We entered the narrow part of the canal. Eventually we passed the prison where former dictator Noriega is being held. Finally we came to the mountain ridge that had to be penetrated to get to the Pacific side.



Beyond the mountain cut is a new highway bridge. The boat with a new pilot and two tug boats came out to us. In the distant right is the new channel and lock construction, shown in the upper right photo. We entered the single lock on the right side this time and proceeded to the small lake. Soon we came to the set of two locks that lowered us to the level of the Pacific Ocean.



The gates were closing at the end of the first of the final two locks after the blue and white ship was in the final lock. Once the gates closed the water rose in our next lock. When the water levels were equal the two pairs of gates opened to let us enter that lock.



We entered the last lock. The water level was lowered. The gates opened. And finally we were at the Pacific Ocean level. It was quickly getting dark as we left the last dock. The Canal authorities charged our ship \$123,000 for this trip through the Panama Canal. Our next destination was Costa Rica.

Ed Holroyd, January 2014

