

## International Date Line

Toward the end of 2011, the nation of Samoa in the South Pacific made headlines when it decided to shift from being the first nation to welcome each new day to becoming the last to bid farewell to the current day. They did this for economic reasons, as the vast majority of their commerce is conducted with New Zealand and Australia, and by being separated by one full day caused havoc with business, in particular having to deal with two weekends per week, which loses two business days right there. Why is the line there in the first place, and how did it come to be there? Here are the answers:

Before we begin, we must define certain terms. The word antipodes is a term applied strictly to any two places on opposite sides of the earth, so situated that a line drawn from one to the other passes through the center of the globe and forms a true diameter. Any two places having this relation – as London and, approximately, Antipodes Island, near New Zealand – must be distant from each other by  $180^\circ$  of longitude, and the one must be as many degrees to the *north* of the equator as the other is to the *south*, in other words, the latitudes are numerically equal, but one is north, and the other is south. Noon at the one place is midnight at the other, the longest day corresponds to the shortest, and mid-winter is contemporaneous with mid-summer. In the calculation of days and nights, midnight on the one side may be regarded as corresponding to the noon either of the *previous* or of the *following* day. If a ship sets sail eastward, and thus sails toward the sunrise, after twelve hours will find herself twelve hours in advance of the sun, while the reckoning of another ship, that had departed from the same port as the other, but sailed westward, toward the sunset, after sailing twelve hours would find that when meeting the first ship that they were twenty-four hours apart. To avoid the confusion of dates which would thus arise, it is necessary to determine a meridian at which dates should be brought into agreement; in other words a line the crossing of which would involve the changing of the name of the day either forwards, when travelling westwards, or backwards, if headed eastward. Thus  $180^\circ$  from Greenwich, England, which is  $0^\circ$ , gives us the  $180^{\text{th}}$  meridian, situated in the Pacific Ocean, as a convenient line for coordinating dates. The so-called International Date Line, which is primarily due to American initiative, is designed to remove certain objections to the meridian of  $180^\circ$  W., the most important of which is that groups of islands lying about this meridian differ in date by a day although only a few miles apart. Several forms have been suggested; these generally agree in retaining the meridian of  $180^\circ$  in the mid Pacific, with a bend in the north in order to make the Aleutian Islands and Alaska of the same time as America, and also in the south so as to bring certain of the South Sea islands into line with Australia and New Zealand.

When I was traipsing about the Pacific Ocean during my navy days, here is what my diary had to say about crossing the Date Line when travelling east, on our return home:

“Tuesday, 25 May 1954. Noon position; latitude  $31^\circ 06'$  N., longitude  $170^\circ 42.5'$  E. At sea, still overcast and a little rough, but slackening.

Wednesday, 26 May. Noon position latitude  $29^\circ 14'$  N., longitude  $177^\circ 33'$  E. At sea. It cleared up a bit today. The sea is back to normal. Tonight we will cross the date line.

Wednesday, 26 May. Midway Islands. We arrived at around 1100 and had liberty while the ships refueled (88,000 gallons). The only thing different on the island is the young Gooney Birds. They are now almost the size of the parents, but covered with dark brown fuzz. They sit on their rear ends and prop themselves up by their “elbows”, with their huge webbed feet sticking up at a 45° angle; craziest thing I ever saw!

Went swimming for about two hours. It is said that the beaches here are among the finest in the world. Underway at 1615. [4:15 PM]

Thursday, 27 May. Noon position; latitude 24° 30.5' N., longitude 170° 34' W. Choppy seas today. We held a full power run. We [U.S.S. Gregory DD 802] won with 34.6 knots, leaving the Halsey-Powell and Marshall a mile and a half behind. The others were over the horizon. We used better than 8,000 gallons of fuel per hour.”

1956 diary: (This time we were heading west into the western Pacific) “Wednesday, March 14. Noon position; latitude 24° 08' 30” N.(read that as twenty-four degrees, eight minutes and thirty seconds north), longitude 170° 24' 30” W. Days high temperature 80°, low 70°. Seas calmed down quite a bit. Quarterly sea makes steering difficult. We did 20 knots all day (about 26 or 27 MPH). We did not conduct a speed run, as it would have brought our total fuel consumption between Pearl and Midway up to 83,000 gallons. They are a little leery of a storm to the southward. We steamed 406.0 nautical miles.

Thursday, March 15. Noon position, Midway Islands; days high temperature 79°, low 70°. We arrived at the Midway Islands at 1017. (There is no “Midway Island” – the group consists of three islands; Sand Island, the largest; Eastern Island and in between them is Gooney Island, named for the Black-footed Albatross, locally referred to as “Gooney Birds.”) Went swimming for two hours, then returned to the ship. It was a cloudy day, so I didn't take my camera over. We were under way at 1415 (2:15PM) for Guam on a base course of 253° true.

Set ships clocks back 1 hour (+12). Ship steamed 287.6 nautical miles.

March 16 – No such date, we crossed the 180<sup>th</sup>.

Saturday, March 17. Noon position; latitude 26° 40' N., longitude, 176° 34' E.

Days high temperature 80°, low 69°. We are making 16 knots towards Guam. We have a 20-23 knot tail wind, which is causing havoc on the bridge due to stack gas. (Rich in sulfuric acid.) We steamed 279 nautical miles today.”

Sunday, March 18. Noon position latitude 24° 45' 30”N., longitude 169° 49' 30” E. Days high, 81°, low 71°. We still have our 22 knot tail wind and the bridge is covered with soot. The sky is very cloudy and threatening rain.

Set ships clocks back 1 hour (-11). We steamed 303 .9 nautical miles.”

You have now been taken across the International Date Line in both directions, and if you aren't completely confused by now, you never will be!