

# HURRICANE FICO (1978) - A RECORD SETTER

Donald R. Cochran  
National Environmental  
Satellite Service  
Satellite Field Services Station  
Honolulu, HI 96819

## ABSTRACT

The lifespan of Hurricane FICO (July 1978) in the East and Central Pacific is discussed. Comparisons with other tropical storms suggest that FICO had an exceptionally long lifespan and traveled a distance surpassed by very few other storms.

Hurricane FICO was born as a disturbance in the intertropical convergence zone some 600 nm south of Puerto Vallarta, Mexico (near 105 degrees W) on 9 July 1978. By 0000 GMT on 11 July FICO had achieved hurricane strength, with maximum winds estimated at 75 knots. Rapid development continued over the warm waters of one of the earth's most prolific generating zones for tropical storms. Moving northwest at a speed of over 10 knots, FICO

achieved maximum winds of 115 knots by 0000 GMT 12 July, when it arrived just east of 15 degrees N, 115 degrees W.

At this point in FICO's young life the storm began to pursue a rare course for East Pacific tropical cyclones (see Figure 1). Instead of moving northward toward the cold water death suffered by most storms in this area, FICO embarked on a consistent westward traverse. For nearly a week FICO (Figure 2) moved along 15 degrees north at a near constant speed of 13 knots while maintaining maximum winds near 100 knots.

Climatological tropical storm tracks in Hawaiian waters (1) show that most westward-moving storms take a northwestward bend somewhere around 150 degrees W. Even though the climatological sample is small, this information helped to fuel local forecasters' expectations that FICO would begin tracking more toward the

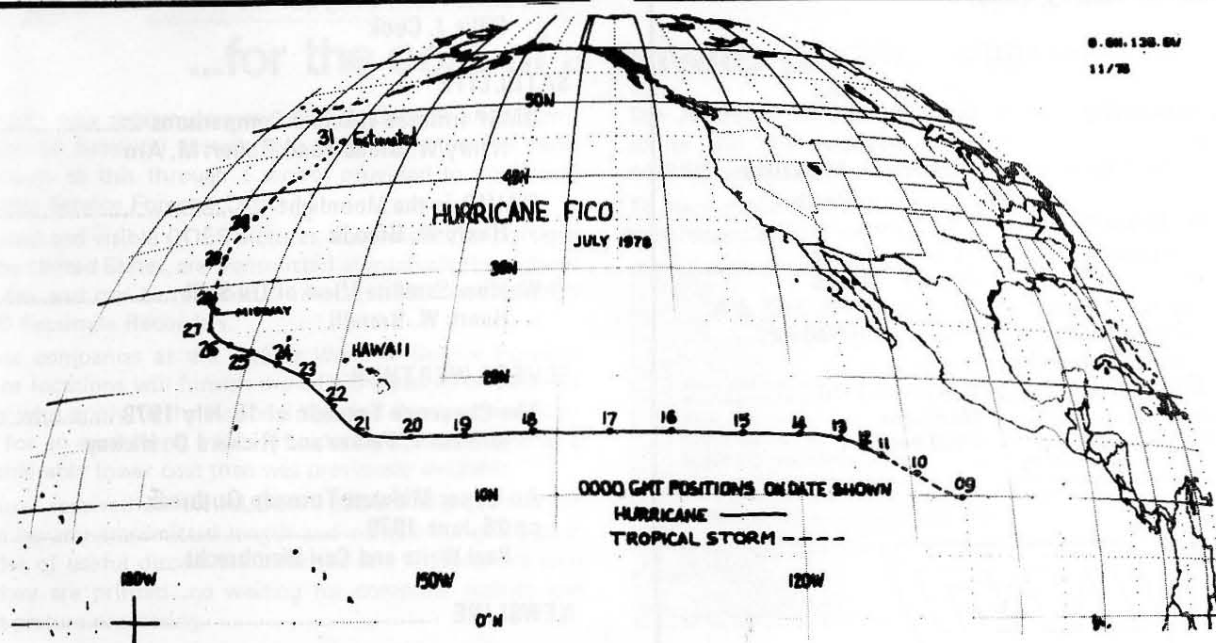


Figure 1 Track of Hurricane FICO

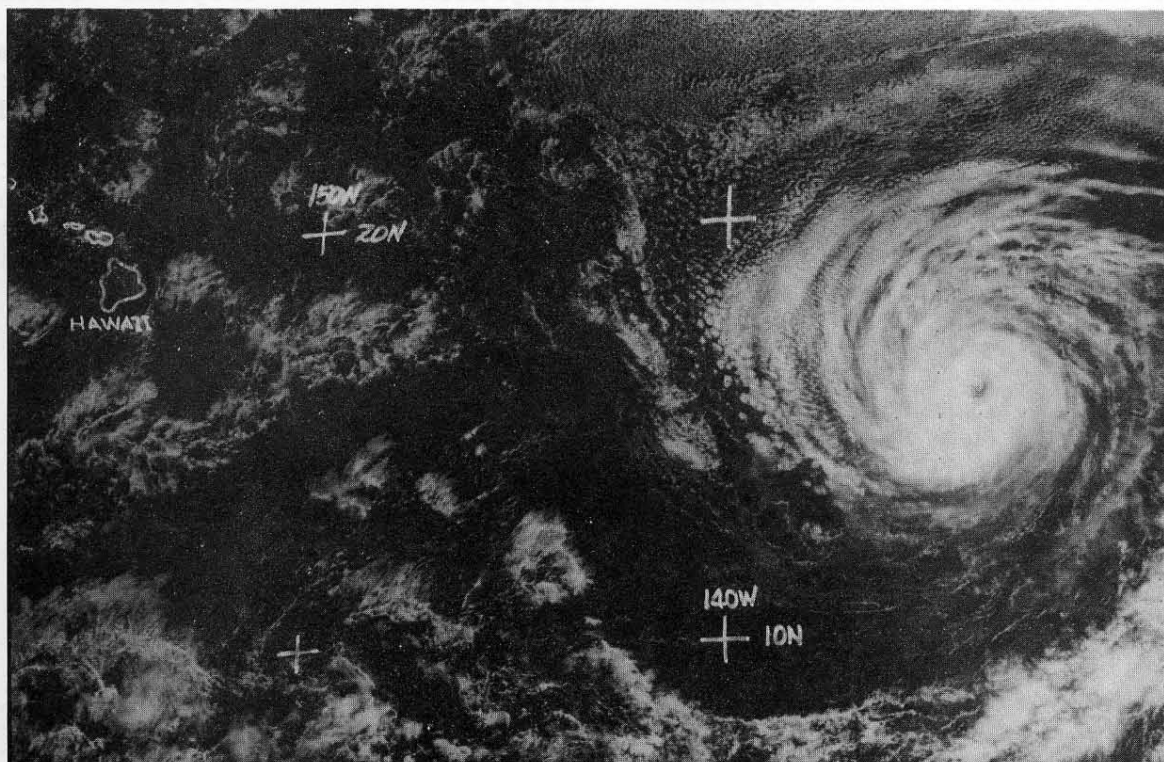


Figure 2 1848GMT 16 JULY 78  
2km Resolution Visual; "Young FICO"

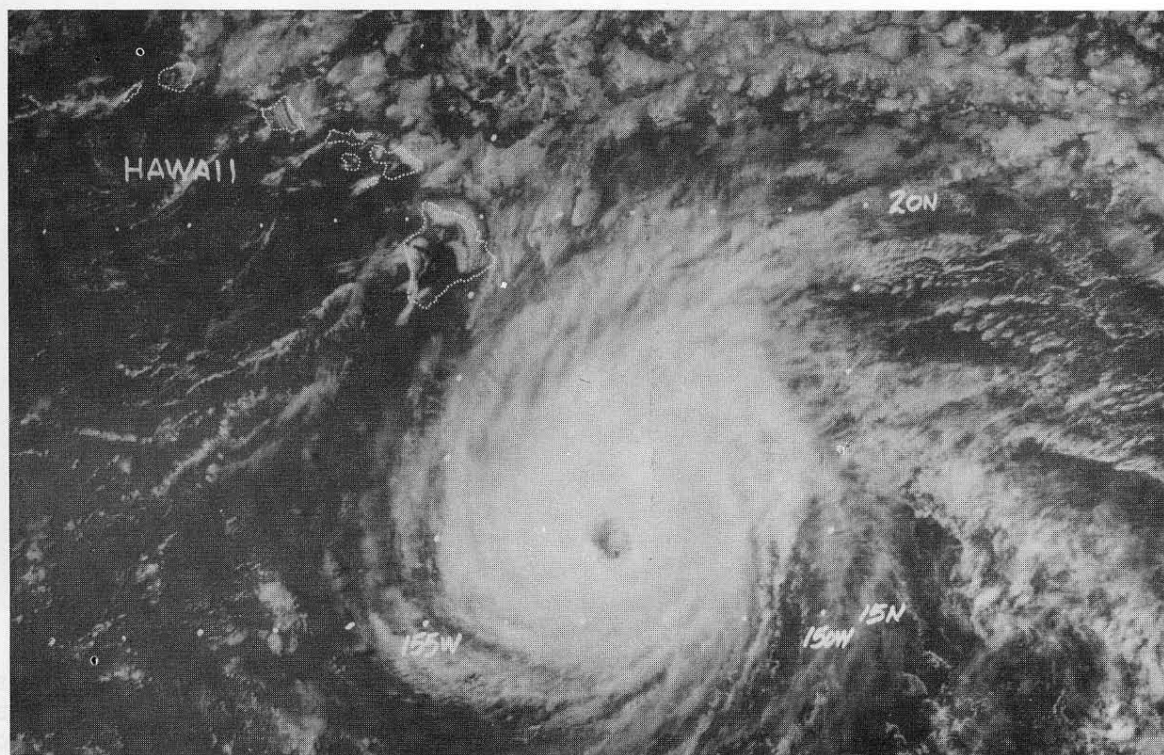


Figure 3 0115GMT 20 July 78  
1km Resolution Visual; "FICO Near Hawaii"

## NATIONAL WEATHER DIGEST

islands, and that is what happened. Arriving some 200 nm south of the "Big Island" of Hawaii at daybreak on 20 July, FICO began a due northwesterly track which was to continue for another week (see Figure 3).

For two days before FICO changed its course, high surf reported to have reached 20 feet pounded the Kapoho area on the southeastern shore of the Big Island. Roads were closed and damages to private homes exceeded \$100,000. The high surf was thought to be caused by the combined effects of FICO and ocean swell from a storm traveling deep in the Southern Hemisphere.

Although high surf warnings had been hoisted for the exposed south and west shores of all islands on Wednesday, 19 July, the surf at high tide on July 19th and 20th reached only 10 to 15 feet at Makaha Beach, Oahu. Surf remained under 10 feet as FICO moved northwestward, passing less than 250 nm southwest of Oahu at 0000 GMT, 22 July 1978.

Maximum wind gusts in exposed coastal areas of Hawaii Island averaged 45 knots but caused little damage. Further to the north, a storm-induced surge in the trade winds combined with local effects produced some power outages and minor damage to trees near Honolulu on Oahu Island.

As FICO churned farther up the Hawaiian chain, minor flooding of shoreside roads was reported on Kauai. On 21 July, the tug LIHUE III ran aground near Nawiliwili Harbor, Kauai; and later, after an overnight battering from the stormy seas, she sank when pulled free of the reef by two sister tugs.

FICO passed innocuously to the south and west of anxious Coast Guardsmen at French Frigate Shoals late Sunday, 23 July. Daily fixes by Air Force Weather Reconnaissance crews continued to confirm a storm of hurricane strength as FICO headed on a track that, if continued, would pass comfortably southwest of Midway Island. At sunrise on 27 July, satellite photographs indicated that FICO had weakened sufficiently to be

downgraded to a tropical storm of 55-knot intensity. But FICO was not ready to quit and now assumed a more northerly track, moving toward a trough of low pressure beyond Midway Atoll. Fortunately, Navy forecasters had already warned the islanders. FICO passed just east of Midway a little before 0000 GMT on 28 July. Although rain was heavy, sustained winds averaged only about 20 knots with peak gusts near 40.

An active cold front approaching the International Date Line now attracted FICO (Figure 4). After dark on Friday, 28 July, the storm turned slightly east of due north and accelerated as it neared the end of its long life span as a tropical system.

At 1200 GMT, 30 July, after 14 days, forecasters at NOAA's Central Pacific Hurricane Center (CPHC) in Honolulu officially designated the storm extratropical. However, FICO's tropical punch did not vanish completely. Remnants of the storm, now enmeshed in frontal cloud bands, supplied rain and winds up to 40 knots to ships southwest of Cold Bay, Aleutian Islands, Alaska as late as 31 July (2).

FICO was not the strongest storm ever to transit Hawaiian waters. That crown is still held by Hurricane CELESTE (1972) with a reconnaissance-measured central pressure of 943mb. Some CPHC forecasters contend that SUSAN (October 1978) was stronger than CELESTE, but reconnaissance, which arrived after SUSAN began filling rapidly, found only 954mb. FICO's lowest observed pressure of 955mb just nosed out Hurricane DOT's 959mb in 1959.

However, FICO broke records for longevity and length of travel. The storm maintained hurricane intensity for the remarkable period of 17 days, whereas the longest span of hurricane intensity of any previously documented central North Pacific storm was 12 days. According to Sasaki (3), Hurricane DELLA (1957)



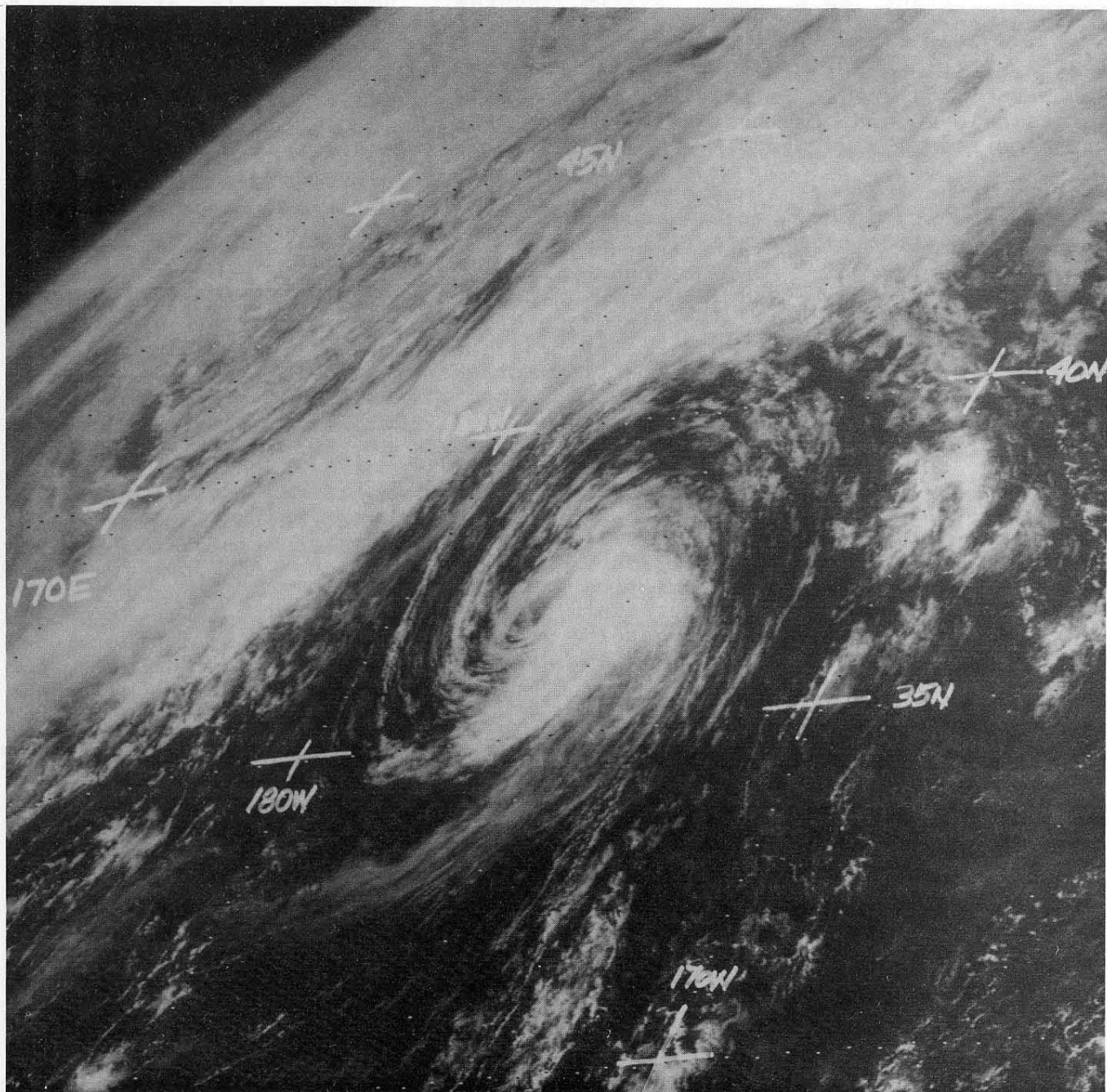


Figure 4 2315GMT 29 July 78  
1km Resolution Visual; "Old FICO"

## NATIONAL WEATHER DIGEST

maintained hurricane strength for 12 days and traveled over 5,000 nautical miles. It is not known whether this travel distance refers to DELLA's lifespan as a named system or to its period of hurricane intensity. FICO easily outlasted DELLA as a hurricane. Moreover, since its official track as a named system covered approximately 5,600 nautical miles, FICO is not only the new lifespan titleholder for the central North Pacific, but it is possibly the longest lived and farthest traveled storm on record anywhere.

The above conclusions may be objected to on the grounds that modern geosynchronous satellite surveillance can observe such long storm tracks, whereas previous storms of equal age were overlooked. While there is a certain logic to this claim, it is useful to note that satellite coverage has been available routinely to the Joint Typhoon Warning Center (JTWC) on Guam since the mid 1960s. According to the annual reports of that Center since 1958, the only typhoon that has had a lifespan exceeding FICO's was RITA (1972) which remained a typhoon for 18 days (4). The JTWC's annual summaries cover the most active generating region on earth. Further, no western North Pacific typhoon from 1958 to the present rivals FICO in terms of distance traveled. The JTWC's 1967 Summary lists Typhoon SARAH (1967) as having traveled 4,499 nautical miles "... the longest in (West Pacific) history". In view of the known short lifespans of east Pacific storms, FICO may be the new Pacific-wide "distance-traveled" titleholder.

A check of the easily accessible literature indicates that FICO's statistics are surpassed only by Atlantic storms. Hurricane GINGER (1971) remained a hurricane for 20 days of its 31-day lifespan (5). GINGER apparently replaced INGA (1969) as the Atlantic's longevity champion. Although INGA outlasted FICO in total time with 25 days, INGA was a hurricane only about 11 of those days (6). Hurricane CARRIE (1957) also bested FICO remaining a hurricane 18 days (5).

With respect to distance, the Atlantic storm, FAITH (1966), is reported to have had "one of the longest, if not longest" track of record (7). Although Sugg gives no distance measurement, a crude estimate from the track map is about 7,200 nautical miles as a named system. However, this storm was of hurricane intensity only 15 of its 26 days.

## ACKNOWLEDGEMENT

The author wishes to thank Doctors R. Pyle and T. Schroeder and, particularly, Professor J. Sadler, for reading the manuscript and making helpful suggestions.

## REFERENCES AND FOOTNOTES

(1) Haraguchi, P., 1975. Forecasting Hurricanes in the Central Pacific. NOAA Technical Memorandum NWSTM PR-13, National Weather Service, Honolulu, HI, 12pp.

(2) Parmenter, F., 1978. A Hurricane in Alaska? Tech Attachment #78-12 to Alaskan Borealis Briefs, NWS Alaska Region, Anchorage, AK, 3pp.

(3) Sasaki, R. I., 1961. A Decade (1950-1959) of Unusual Tropical Storm Activity in the Central North Pacific Near Hawaii. Manuscript available from Central Pacific Hurricane Center Librarian, National Weather Service Forecast Office, Honolulu International Airport, Honolulu, HI 96820, 12pp.

(4) Joint Typhoon Warning Center Staff, 1972. Annual Typhoon Report, 1972, p.28.

(5) Simpson, R. H. and J. R. Hope, 1972. The Atlantic Hurricane Season of 1971. Monthly Weather Review, vol. 100:4, p.265.

(6) Simpson, R. H., A. L. Sugg, et al., 1970. The Atlantic Hurricane Season of 1969. Monthly Weather Review, vol. 98:4, p.304.

(7) Sugg, Arnold L., 1967. The Hurricane Season of 1966. Monthly Weather Review, vol. 95:3, pp.137-8.