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Hurricane Frances, Sept. 30-Oct. 9, 1961...

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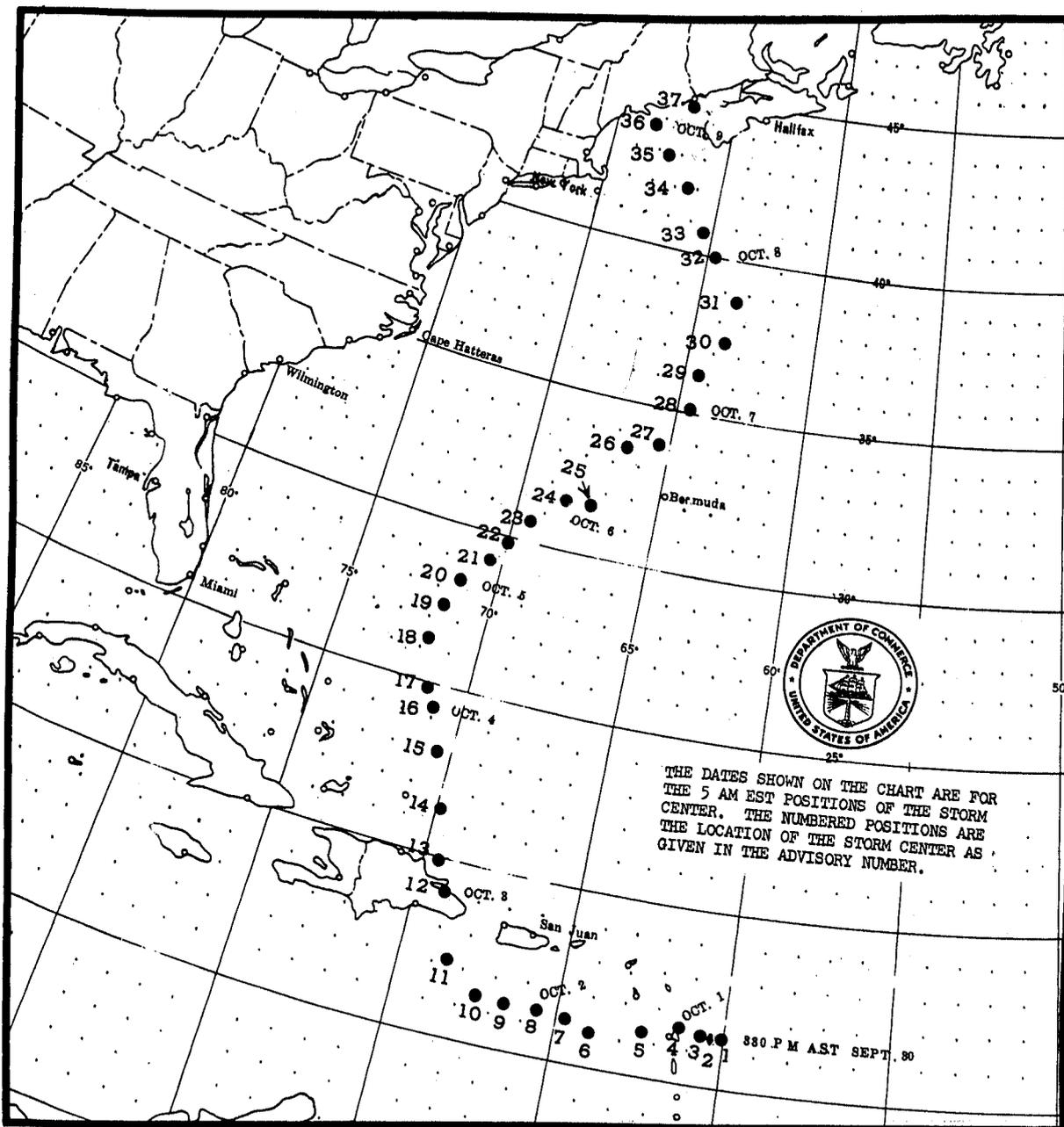
National Hurricane &
Atmospheric Administration
U.S. Dept. of Commerce

HURRICANE FRANCIS



SEPTEMBER 30 OCTOBER 9, 1961

PRELIMINARY REPORT WITH THE ADVISORIES AND BULLETINS ISSUED.



HURRICANE FRANCES - SEPTEMBER 30/OCTOBER 9, 1961

Preliminary Report

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Some indications that a tropical cyclone might be developing east of the Antilles were present in the TIROS III satellite photographs as early as September 28. The evidence was not conclusive, however, and the reports available did not establish the existence of a tropical storm until September 30. Reports from Antilles stations and a Navy reconnaissance aircraft that day were the basis for the first advisory on Tropical Storm "Frances" issued by the Weather Bureau's hurricane warning center at San Juan, Puerto Rico at 3:30 pm AST, September 30.

The tropical storm moved westward through the Lesser Antilles into the northeastern Caribbean, then turned northwestward through Mona Passage and across the eastern portion of the Dominican Republic, attended by flood-producing rains in Puerto Rico.

Early in the morning of October 2 the San Juan radar was picking up the outer rain bands of "Frances" and these appeared to be moving up on the south coastal areas of Puerto Rico as "Frances" passed westward of the meridian of San Juan. Special rainfall reports received from the Puerto Rico Water Resources Authority and the Weather Bureau observers at 7 am on October 2 showed that moderate to heavy rains were falling along the south coast. A flood alert for the south and east coastal sections was issued at 7:40 am and disseminated to the Civil Defense, American Red Cross and local disaster relief people in the various towns and communities in the area. The alert was changed to a flood warning at 8:30 am for the same areas and the warning was extended to the upper tributaries of the Rio Grande de Loiza. Early on October 3 the Yauco, Guayanilla, Tallaboa, Cabas, Portugues and Inabon rivers on the south coastal plain were in flood, and the Rio Grande de Loiza reached flood stage at 2:30 pm on October 2. There was considerable damage to roads and bridges. So far as can be learned, there was no loss of life, due largely to the quick action of the Civil Defense and American Red Cross and Police in evacuating people from the river banks.

No reports of damages or loss of life from tropical storm "Frances" in the Lesser Antilles have been received. Maximum winds reported in Puerto Rico and the Virgin Islands were 35 mph in thunderstorms and heavy rain showers.

After leaving the Greater Antilles, "Frances" moved northward east of the Bahamas and intensified to hurricane force on October 4 when it was centered about 560 miles east of Miami. It continued to intensify and turn gradually toward the northeast. Highest winds were estimated 125 mph when the center passed about 70 miles northwest of Bermuda during the night of October 6-7.

After passing Bermuda the hurricane gradually curved back toward the northwest and approached the coast of Maine on the 9th, then turned abruptly northeast along the coast. In the meantime it had been losing force rapidly over the cool waters east of New England, and its highest winds when it passed southeast of Eastport, Maine, were 35 mph with gusts to 55 in squalls.

National Oceanic and Atmospheric Administration Weather Bureau Hurricane Series

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November 6, 2007

HURRICANE ESTHER ADVISORIES AND SELECTED BULLETINS

San Juan Weather Bureau Tropical Storm Advisory No. 1 FRANCES. 3:30 pm September 30, 1961.

Whole gale warnings are ordered for the Leeward Islands from Les Saintes northward to Sint Maarten and Anguilla. People in the Leeward Islands should begin immediately to take precautions against winds up to 70 miles per hour in the heavier squalls and against rough seas, high tides, and heavy rains. Gale warnings are ordered for Dominica and Martinique for winds up to 50 miles per hour and against rough seas and high tides.

A tropical storm has formed in the Atlantic a short distance east of Guadelope French Antilles and from aircraft reconnaissance and vessel reports it was located at 3:30 pm AST...1930Z...near latitude 16.3 north and longitude 60.1 west or about 100 statute miles east of Guadelope and 425 statute miles east southeast of San Juan Puerto Rico.

It appears to be moving toward the west northwest about 7 miles per hour. Highest winds are estimated to be about 60 miles per hour over a small area near the center and gale winds extend outward 50 statute miles in all directions.

Tropical storm Frances is expected to continue moving toward the west northwest at about the same speed for the next 12 to 24 hours and to increase slightly in size and intensity probably reaching hurricane force during the period.

People in the Leeward Islands should remain on the alert for further information this afternoon and tonight and be ready for quick action for protection of lives and property should tropical storm Frances increase to hurricane intensity.

Vessels in the path of tropical storm Frances should exercise caution and small craft from Puerto Rico, the Virgin Islands and the northern Windward Islands should remain in safe harbor.

The next regular advisory will be issued by the San Juan Weather Bureau at 6:00 pm AST 2200Z.

HIGGS.

San Juan Weather Bureau Tropical Storm Advisory No. 2 FRANCES. 6 pm September 30, 1961.

A hurricane watch is in effect for the Virgin Islands and Leeward Islands. Whole gale warnings are in effect for the Leeward Islands north of Les Saintes Guadeloupe to Saint Maarten and Anguilla and gale warnings south of Les Saintes to Dominica and Martinique. People in the areas of the whole gale warnings and gale warnings should take precautions against winds up to 70 miles per hour in the heavier squalls and rough seas and high tides and should be on the alert tonight and be ready for quick action in case tropical storm Frances should increase to hurricane intensity.

Small tropical storm Frances is in the formative stage but already has winds up to 70 miles per hour in the heavier squalls in the northeast quadrant.

At 6 pm AST...2200Z...it was estimated to be located near latitude 16.3 north and longitude 60.3 west or about 70 statute miles east of Guadeloupe French Antilles and about 400 miles east southeast of San Juan, Puerto Rico.

It is estimated to be moving toward the west northwest at about 7 miles per hour. Highest winds are estimated to be 65 to 70 miles per hour in the heavier squalls in the northeast quadrant and gale winds extend outward from the center 115 miles to the north and 55 miles to the south. Lowest pressure is about 29.65 inches or 1004 millibars.

Tropical storm Frances is expected to continue moving toward the west northwest at about 7 miles per hour for the next 12 to 24 hours and to increase slightly in size and intensity and probably reach hurricane force during the period.

Vessels in the path of tropical storm Frances should exercise caution and small craft from Puerto Rico eastward and southward to and including Martinique should remain in port.

The next regular advisory on tropical storm Frances will be issued by the San Juan Weather Bureau at midnight AST...0400Z... and a bulletin will be issued at 10 p.m.

HIGGS

San Juan Weather Bureau Tropical Storm Advisory No. 3 FRANCES Midnight AST October 1, 1961.

A hurricane watch is in effect for the Virgin Islands and Leeward Islands. Whole gale warnings have been hoisted for the Leeward Islands north of Les Saintes Guadeloupe to Saint Maarten and Anguilla and gale warnings south of Les Saintes to Dominica and Martinique. People in the areas of the whole gale and gale warnings should take precautions against winds up to 70 miles per hour in the heavier squalls. Precautions should also be taken against rough seas, high tides and local floods.

Tropical storm Frances is still very small and in the formative stage but people in the area of gale warnings should be on the alert and ready to take action in case it should increase to hurricane intensity.

At midnight AST...0400Z...it was estimated to be located near latitude 16.3 north and longitude 60.5 west or about 50 statute miles east of Guadeloupe in the French Antilles and about 375 miles east southeast of San Juan, Puerto Rico. It is moving toward the westnorthwest at 4 or 5 miles per hour and is expected to continue on a westnorthwest course at about the same speed for the next 6 hours with some increase in speed thereafter.

Highest winds are estimated to be 70 miles per hour in squalls near the center. Gale winds extend outward from the center 80 statute miles to the north and 45 miles to the south. It is expected to increase slightly in size and intensity during the next 12 to 24 hours.

Vessels in the path of tropical storm Frances should exercise caution and small craft from Puerto Rico eastward and southward to and including Martinique should remain in port.

The next regular advisory on tropical storm Frances will be issued by the San Juan Weather Bureau at 6 am AST...1000Z... and a bulletin will be issued at 3 am.

HURLEY

San Juan Weather Bureau Tropical Storm Advisory Number 4 FRANCES. 6 am AST October 1, 1961.

A hurricane watch is in effect for the Virgin Islands and Leeward Islands. Whole gale warnings are displayed for the Leeward Islands north of Les Saintes Guadeloupe to Saint Maarten and Anguilla and gale warnings south of Les Saintes to Dominica and Martinique. People in the area of the gale and whole gale warnings should take precautions against winds up to 70 miles per hour in the heavier squalls. Precautions should also be taken against rough seas, high tides and local floods.

Tropical storm Frances is still small and poorly organized but thunderstorm activity is increasing and a ship reporting just east of Guadeloupe this morning had winds of 60 kts. Residents of the Islands east of Puerto Rico should be ready to take action in case it should increase to hurricane force.

At 6 am AST...1000Z...tropical storm Frances was estimated to be near latitude 16.4 north longitude 61.4 west or near the northern tip of Bassee Terre Guadeloupe in the French Antilles. This is about 320 miles east southeast of San Juan Puerto Rico. It is moving between west and west northwest at 7 miles per hour and is expected to continue at the same speed and on the same course for the next 12 hours with the speed increasing to 8 to 10 miles per hour thereafter.

Highest winds are estimated to be 70 miles per hour in squalls near the center with gale winds in squalls extending 70 statute miles to the northeast and 35 miles south and southwest. Little change in size or intensity is expected in the next 12 hours. Ships in the path of this storm should exercise caution and small craft from Puerto Rico eastward and southward to and including Martinique should remain in port.

The next regular advisory on tropical storm Frances will be issued by the San Juan Weather Bureau at 1200 Noon AST...1600Z.

HURLEY

San Juan Weather Bureau Tropical Storm Advisory No. 5 FRANCES 12 Noon October 1, 1961.

A hurricane watch is in effect for Puerto Rico, the Virgin Islands and the Northern Leeward Islands. Whole gale warnings remain in effect for the northern Leeward Islands from St Kitts West Indies northward to Saint Maarten and Anguilla for winds up to 50 miles per hour in the heavier squalls and for rough seas and high tides on the beaches. Small craft warnings remain in effect for Puerto Rico eastward and southward to St. Kitts. All warnings are discontinued south of St. Kitts to and including Martinique.

Tropical storm Frances entered the northeastern Caribbean sea near Guadeloupe during the night with the highest winds gusting to 50 to 60 miles per hour at Guadeloupe. Winds of 40 to 45 miles per hour were reported at Dominica West Indies.

In passing through the island chain the storm circulation was weakened and it is slightly diffuse at this time, but is expected to slowly reintensify during the next 24 hours.

At 12 Noon AST...1600Z...tropical storm Frances was located near latitude 16.2 north and longitude 62.4 west or about 300 statute miles southeast of San Juan Puerto Rico. It is moving now towards the west at 9 miles per hour and attended by winds of 45 to 50 miles per hour in the heavier squalls near the center. Gale winds extend 70 miles to north and 30 miles to south of center.

Tropical storm Frances is expected to continue moving towards the west for the next 12 to 24 hours at about the same speed and there are some indications of a very slow intensification during the period.

People in the area of the hurricane watch are urged to keep in touch with the latest advisories and bulletins during the next 24 hours.

Vessels in the path of the storm should exercise caution and small craft from Puerto Rico to St Kitts should remain in safe harbor.

The next regular advisory will be issued by the San Juan Weather Bureau at 6 pm AST...2200Z and a bulletin will be issued at 3 pm AST.

HIGGS.

San Juan Weather Bureau Tropical Storm Advisory Number 6 FRANCES 6 pm October 1, 1961.

Whole gale warnings are discontinued for the northern Leeward Islands. Small craft warnings remain in effect for Puerto Rico and the Virgin Islands. The hurricane watch is continued for Puerto Rico and the Virgin Islands.

Small tropical storm Frances has shown no intensification during the day and it remains a weak diffuse storm up to the present time.

From reconnaissance and vessel reports it was estimated to be centered at 6 pm AST..2200Z..near latitude 16.0 degrees north and longitude 64.0 degrees west or about 235 statute miles southeast of San Juan, Puerto Rico. It is moving westward at about 11 miles per hour. Highest winds are estimated at 35 to 40 miles per hour in the heavier squalls in the northern semicircle. Gale winds extend outward 35 miles in the northern semicircle and 20 miles in the southern.

Tropical storm Frances is forecast to move toward the west at about the same speed for the next 12 hours with no change in size or intensity during the period.

People in Puerto Rico and the Virgin Islands should continue to keep in touch with the latest information on this storm.

Vessels in the path of tropical storm Frances should continue to exercise caution and small craft in the Virgin Islands and Puerto Rico should remain in port.

The next regular advisory will be issued by the San Juan Weather Bureau at Midnight AST...0400Z...and a bulletin will be issued at 9 pm AST.

HIGGS

San Juan Weather Bureau Tropical Storm Advisory Number 7 FRANCES 12 Midnight October 2, 1961.

A hurricane watch is in effect for Puerto Rico and Virgin Islands.

Small tropical storm Frances is beginning to show more reorganization and a slow reintensification tonight.

Reconnaissance aircraft and vessel reports this evening indicate the position at 12 midnight AST...0400Z...near latitude 16.2 degrees north and longitude 64.8 degrees west or about 180 statute miles southeast of San Juan Puerto Rico and 120 statute miles south of St Croix, Virgin Islands. It is moving westward at about 10 miles per hour.

Highest winds are estimated at 50 miles per hour in the heavier squalls over a small area near the center in the north and east quadrants. Gale winds extend outward 60 miles in the northeast semicircle and 35 miles in the southwest.

Tropical storm Frances is forecast to move at about the same speed toward the west with a slight increase in intensification but no marked change in size during the next 12 hours.

People in the hurricane watch area should keep in touch with the latest advisories and bulletins as tropical storm Frances has shown some indications of slight intensification during the past several hours.

Vessels in the path of the storm should exercise caution and small craft in Puerto Rico and Virgin Islands should remain in port.

The next regular advisory will be issued by the San Juan Weather Bureau at 6 am AST...1000Z...with a bulletin at 3 am EST..0700Z.
HUNDEBY.

San Juan Weather Bureau Advisory Number 8 Tropical Storm FRANCES 6 am AST October 2, 1961.

A hurricane watch is in effect for Puerto Rico and the Dominican Republic.

According to aircraft and ship reports at 6 am AST...1000Z...this morning tropical storm Frances is centered near latitude 16.4 north longitude 65.6 west or about 150 miles south of San Juan Puerto Rico. It is moving west at about 9 miles per hour and is expected to continue on a westerly course at 9 or 10 miles per hour for the next 12 hours.

Highest winds are estimated at 50 miles per hour in the heavier squalls near the center and gale winds extend to 60 statute miles in the northeast semicircle and 35 statute miles in the southwest. Tropical storm Frances has shown little change in size or intensity for the past 48 hours. Not much change is expected in the next 12 hours although there is still a good chance that it will reach hurricane force within the next day or two.

People in the hurricane watch area should continue to keep in touch with the latest advisories and bulletins as it is still possible that the storm will increase in force more rapidly than indicated and take a more northerly course.

Ships in the path of tropical storm Frances should proceed with caution and small craft in the Virgin Islands, Puerto Rico, and the Dominican Republic should remain in port.

The next regular advisory will be issued by the San Juan Weather Bureau at 12 Noon AST...1600Z... A bulletin will be available at 10 am AST.

HURLEY.

San Juan Weather Bureau Tropical Storm Advisory No. 9 FRANCES 12 Noon AST October 2, 1961.

A hurricane watch is in effect for Puerto Rico and the Dominican Republic.

Reconnaissance aircraft and vessel reports this morning indicate that small tropical storm Frances is centered at 12 Noon AST 1600Z near latitude 16.3 degrees north and longitude 66.6 degree west or about 160 statute miles south southwest of San Juan Puerto Rico moving westward at about 10 miles per hour.

Highest winds are estimated at 60 miles per hour within 15 miles of the center in the northwest quadrant. Gale winds extend 60 miles from the center in the northern semicircle and 20 miles in the southern semicircle.

Tropical storm Frances is forecasted to continue moving toward the west at about the same speed for the next 12 to 24 hours with a slight increase in intensity but no marked change in size during the period.

People in the area of the hurricane watch should keep in touch with the latest information on this storm. Heavy rains are falling over the south and east coastal areas of Puerto Rico and the people should be ready for quick action in case of floods in those areas.

Vessels in the path of this storm should exercise caution and small craft in the Virgin Islands, Puerto Rico, and the Dominican Republic should remain in port.

The next regular advisory will be issued by the San Juan Weather Bureau at 6 pm AST 2200Z and a bulletin will be issued at 3 pm AST.

HIGGS

San Juan Weather Bureau Tropical Storm Advisory Number 10 FRANCES 6 pm October 2, 1961.

The hurricane watch is discontinued for Puerto Rico and the Virgin Islands, but remains in effect for the Dominican Republic.

From reconnaissance aircraft and vessel reports small tropical storm FRANCES is estimated to be centered at 6 pm AST...2200Z... near latitude 16.4 degrees north and 67.5 degrees west. It is moving towards the west at a slightly accelerated rate of 12 miles per hour.

Highest winds are estimated at 60 miles per hour near the center and gale force winds extend outward from the center 80 miles in the northern semicircle. No increase in intensity has been noted during the past 6 hours and the center remains unorganized which might indicate a weakening tendency.

Tropical storm Frances is forecasted to continue moving towards the west at about 12 miles per hour during the next 12 to 24 hours with no marked change in size or intensity during the period.

People in the Dominican Republic should keep in touch with the latest information on this storm. Some local flooding has taken place in Puerto Rico due to the heavy rains produced by the storm and precautions against floods are continued.

Vessels in the path of this storm should exercise caution and small craft in Puerto Rico and the Dominican Republic should remain in port.

The next regular advisory will be issued by the San Juan Weather Bureau at 12 Midnight AST...0400Z... and a bulletin will be issued at 9 pm AST.

HIGGS.

Miami Weather Bureau Bulletin 11 pm EST October 2, 1961.

At 11 pm EST Tropical storm Frances was near latitude 17.1 north longitude 68.5 west or a little less than 1000 statute miles southeast of Miami and about 70 miles south of the eastern tip of the Dominican Republic.

It was moving westnorthwest about 12 miles per hour.

Highest winds are estimated 55 miles per hour near the center.

The complete advisory from the San Juan Weather Bureau will be sent as soon as received.

MIAMI.

San Juan Weather Bureau Tropical Storm Advisory No. 11 FRANCES 12 Midnight October 3, 1961.

The hurricane watch continues for the Dominican Republic with gale winds along the south and east coasts.

Reconnaissance aircraft vessel reports and land based radar plots indicate small tropical storm Frances is estimated to be centered at 12 midnight AST...0400Z... near latitude 17.1 degrees north and longitude 68.5 degrees west or about 115 statute miles southwest of Mayaguez Puerto Rico. It is moving toward the west northwest at a rate of about 12 miles per hour.

Highest winds are estimated at 55 miles per hour near the center and in heavier squalls. Gale force winds extend outward from the center 70 miles in the northern semicircle and 20 miles to the southwest. There is still no well defined central vortex however there continues to be a weak disorganized circulation with a considerable amount of clouds and rain associated with the storm.

Tropical storm Frances is forecast to move toward the west northwest at about 12 miles per hour during the next 12 hours then turn toward the northwest and weaken as it moves inland over Hispaniola.

People in the Dominican Republic should keep in touch with their national meteorological service for the possibility of heavy rains and the danger of flooding of low areas. Gale wind velocities are also likely along the east and south coasts today. Radar tonight continues to show bands of heavy rain over the southwest portion of Puerto Rico and precautions against floods are continued.

Vessels in the path of this storm should exercise caution and small craft in Puerto Rico and the Dominican Republic should remain in port.

The next regular advisory will be issued by the San Juan Weather Bureau at 6 am...1000Z.

HUNDEBY

San Juan Weather Bureau Advisory Number 12 Tropical Storm FRANCES 1000Z October 3, 1961. For Marine Broadcast.

Tropical storm Frances has apparently taken a sharp turn to the northwest during the night with the center at 1000Z near latitude 19.2 north longitude 69.1 west.

There is no longer a single persistent eye in the storm and the position given is the approximate center of a very wide area of showers thunderstorms and squalls.

Highest winds are estimated at 45 knots in squalls with gale force squalls extending 50 nautical miles to the northeast and 20 miles to the southwest.

Tropical storm Frances is moving to the northwest at about 11 knots and is expected to continue on a northwesterly course at slightly greater rate of speed for the next 12 hours.

Vessels in the path of the storm should proceed with caution.

The next regular advisory will be issued by the Weather Bureau in Miami at 1600Z.

HURLEY.

Miami Weather Bureau Advisory Number 13 Tropical Storm FRANCES 11 am EST 3 October 1961.

Tropical storm Frances remains small and rather disorganized this morning. Ship reports and aircraft indicate that at 11 a.m. EST...1600Z...the center was near latitude 19.9 north longitude 69.6 west. This is about 145 statute miles southeast of Turks Island and 800 miles southeast of Miami. Frances is moving towards the northwest at 12 miles per hour.

Highest winds are near 50 miles per hour in squalls with gales in squalls extending outward about 70 miles to the northeast and 25 miles in the southwest semicircle. The storm is forecast to move towards the northwest at 12 miles per hour during the next 12 hours and then curve to a northnorthwesterly direction with a slight increase in forward speed tonight and early Wednesday. There is some chance of a little intensification and an increase in size.

This forecast track would indicate that Frances offers no threat to Florida with only a remote possibility that it would ever affect any portion of the United States.

Small craft in the southeastern Bahamas should remain in port. Moderate to heavy rains will continue along the north and east coasts of Hispaniola today and occur in the southeastern Bahamas later today and tonight.

Vessels in the path of the storm should proceed with caution.

The next regular advisory will be issued by the Miami Weather Bureau at 5 p.m. EST

SUGG.

Miami Weather Bureau Advisory Number 14 Tropical Storm FRANCES 5 p.m. EST October 3, 1961.

Tropical storm Frances is poorly defined however ship reports and aircraft indicate that at 5 pm EST...2200Z...the center was near latitude 21.3 north longitude 69.9 west or about 80 miles east of Turks Island and 750 miles eastsoutheast of Miami. Frances is moving toward the northnorthwest at 14 miles per hour.

Highest winds are near 50 miles per hour in squalls with gales extending outward about 70 miles to the northeast and 25 miles in the southwest semicircle. The storm is forecast to continue towards the northnorthwest at 14 miles per hour with little change in size or intensity during the next 12 to 18 hours. A slightly more northerly course is indicated Wednesday. Frances offers no threat to southeast United States.

Small craft in the extreme southeastern Bahamas should remain in port. Vessels in the path of the storm should proceed with caution.

The next regular advisory will be issued by the Miami Weather Bureau at 11 p.m. EST.

SUGG.

Miami Weather Bureau Tropical Storm Advisory Number 15 FRANCES. For Marine Broadcast. 0400A October 4, 1961.

Tropical storm Frances continues small and disorganized and at 0400Z was located near latitude 23.0 north and longitude 70.5 west. It was moving toward the north northwest at 15 knots. Highest winds are 35 to 45 knots in squalls extending out 60 miles to the northeast and 20 miles to the southwest.

Little change in size or intensity is expected during the next 24 hours as the storm moves northward around 15 to 20 knots.

The next regular advisory will be issued by the Miami Weather Bureau at 1000Z.

KRAFT.

Miami Weather Bureau Tropical Storm Advisory Number 16 FRANCES 5 a.m. EST October 4, 1961.

Tropical storm Frances remains small and poorly defined and at 5 a.m. EST...1000Z...the center was near latitude 24.2 north longitude 71.0 west or about 590 miles east southeast of Miami. Frances is moving toward the north northwest at 16 miles per hour.

Highest winds are near 50 miles per hour in squalls with gales extending outward about 70 miles to the northeast and 25 miles to the southwest. Frances is forecast to take a more northward course in the next 24 hours and accelerate slightly with little change in size or intensity. Present indications are that tropical storm Frances offers little threat to the mainland.

Vessels in the path of the storm should proceed with caution.

The next regular advisory will be issued by the Miami Weather Bureau at 11 a.m. EST.

FRANK.

Miami Weather Bureau Hurricane Advisory Number 17 FRANCES 11 a.m. EST 4 October 1961.

Frances has intensified during the late morning hours and is now a hurricane. At 11 a.m. EST...1600Z...the center was near latitude 24.9 north longitude 71.4 west or about 560 statute miles east of Miami and 620 miles southwest of Bermuda. Frances is moving towards the northnorthwest at 13 miles per hour.

All information from aircraft and ships indicate that the highest sustained winds are 75 miles per hour over a small area near the center. Higher gusts occurred in a very local squall earlier this morning. Gales extend outward 175 miles in the northeast semicircle and 125 miles to the southwest. Frances is forecast to move towards the northnorthwest at 14 miles per hour with a little increase in size and intensity during the next 12 hours. A more northerly course with a forward speed of near 17 miles per hour is indicated tonight. Hurricane Frances offers no threat to the United States mainland.

Vessels in the path should exercise caution.

The next regular advisory will be issued by the Miami Weather Bureau at 5 p.m. EST.

SUGG.

Miami Weather Bureau Hurricane Advisory Number 18 FRANCES 5 p.m. EST 4 October 1961.

Hurricane Frances has continued to intensify and at 5 p.m. EST...2200Z...the center was near latitude 26.3 north longitude 71.8 west. This position is based on reconnaissance aircraft and is about 500 statute miles east of Boca Raton and 575 miles southwest of Bermuda. Frances is moving toward the northnorthwest at 15 miles per hour.

Highest winds are estimated at 90 miles per hour over a small area near the center with gales extending outward 175 miles in the northeast semicircle and 125 miles to the southwest. The hurricane is forecast to move towards the north at 16 miles per hour with no change in intensity during the next 12 hours. A little increase in size is expected and Frances should move towards the northnortheast at 20 to 25 miles per hour during Thursday. Frances offers no threat to the United States mainland.

Vessels in the path should exercise caution.

The next regular advisory will be issued by the Miami Weather Bureau at 11 p.m. EST

SUGG.

Miami Weather Bureau Hurricane Advisory Number 19 FRANCES 11 p.m. EST October 4, 1961.

Hurricane Frances was located by aircraft and at 11 p.m. EST...0400Z...was near latitude 27.3 north longitude 71.6 west or about 525 miles southwest of Bermuda and about the same distance east of Vero Beach, Florida. The hurricane was moving toward the north at 14 miles per hour.

Highest winds are 90 miles per hour near the center and gales extend out 175 miles to the northeast and 125 miles to the southwest from the center.

Little change in size or intensity is expected during the next 24 hours. It will continue northward tonight and turn more toward the northeast about 18 miles per hour Thursday.

Vessels in the path should exercise caution.

The next regular advisory will be issued by the Miami Weather Bureau at 5 a.m. EST.

KRAFT.

Miami Weather Bureau Hurricane Advisory Number 20 FRANCES 5 a.m. EST...October 5, 1961.

Reconnaissance aircraft located hurricane Frances at 5 a.m. EST...1000Z...near latitude 28.2 north longitude 71.2 west. This position is about 550 miles east of Cape Canaveral Florida and some 460 miles southwest of Bermuda. Frances is moving toward the north at 14 miles per hour.

Highest winds are estimated 90 miles per hour near the center with gales extending outward 175 miles in the northeast semicircle and 125 miles to the southwest of the center.

Little change in size or intensity is expected during the next 24 hours. The hurricane is forecast to move towards the north northeast at about 14 miles per hour for the next 12 hours turning more toward the northeast at a slightly faster rate thereafter.

Shipping in the path should exercise caution.

The next regular advisory will be issued by the Miami Weather Bureau at 11 a.m. EST.

MOORE.

Miami Weather Bureau Hurricane Advisory Number 20 FRANCES...1000Z October 5, 1961. FOR MARINE BROADCAST.

Reconnaissance aircraft located hurricane Frances at 1000Z...near latitude 28.2 north 71.2 west.

Highest winds are estimated 75 knots near the center with gales extending outward 150 miles in the northeast semicircle and 100 miles to the southwest of the center.

Little change in size or intensity is expected during the next 24 hours. The hurricane is forecast to move towards the north northeast at about 12 knots for the next 12 hours turning more toward the northeast at a slightly faster rate thereafter.

Shipping in the path should exercise caution.

The next regular advisory will be issued by the Miami Weather Bureau at 1600Z.

MOORE.

Miami Weather Bureau Hurricane Advisory Number 21 FRANCES 11 a.m. EST 5 October 1961.

Reconnaissance aircraft located hurricane Frances at 11 a.m. EST...1600Z...near latitude 29.0 north longitude 70.4 west. This position is about 410 statute miles southwest of Bermuda and 600 miles east of New Smyrna Beach Florida. Frances is moving toward the Northnortheast at 11 miles per hour.

Highest winds are estimated 90 miles per hour near the center with gales extending outward 175 miles in the northeastern semicircle and 125 miles to the southwest.

Little change in size or intensity is expected during the next 24 hours. Frances is forecast to move towards the northnortheast at 11 miles per hour during the next 12 hours continuing northnortheastward with a forward speed near 14 miles per hour late tonight and early Friday.

This forecast track would take Frances to the west of Bermuda with gale force winds likely on those islands Friday morning. Small craft in the vicinity of Bermuda should remain in port.

Shipping in the path should exercise caution.

The next regular advisory will be issued by the Miami Weather Bureau at 5 p.m. EST.

SUGG.

Miami Weather Bureau Hurricane Advisory Number 22 FRANCES 5 p.m. EST 5 October 1961.

Reconnaissance aircraft has located the center of hurricane Frances at 5 p.m. EST...2200Z...near latitude 29.8 north longitude 70.0 west. This position is about 360 statute miles westsouthwest of Bermuda and 650 miles east of St. Augustine, Florida. Frances is moving towards the northnortheast at 10 miles per hour.

Highest winds are estimated at 100 miles per hour near the center with hurricane force winds extending outward 40 miles in all quadrants. Gales extend outward 175 miles in the northeastern semicircle and 125 miles to the southwest. The lowest sea level pressure this afternoon was 963 millibars or 28.44 inches.

Little change in size or intensity is expected as Frances moves towards the northnortheast at 10 miles per hour during the next 24 hours.

This forecast track would take Frances to the west of Bermuda with gale force winds likely on those Islands Friday morning. Small craft in the vicinity of Bermuda should remain in port.

Shipping in the path should exercise extreme caution.

The next regular advisory will be issued by the Miami Weather Bureau at 11 p.m. EST.

SUGG.

Miami Weather Bureau Hurricane Advisory Number 23 FRANCES 11 p.m. EST 5 October 1961.

At 11 p.m. EST...0400Z...Hurricane Frances was centered near latitude 30.7 north longitude 69.2 west or about 280 statute miles west southwest of Bermuda and 500 miles southeast of Cape Hatteras, North Carolina. Highest winds are estimated 110 miles per hour near the center and gales extend out 200 miles in the northeast semicircle and 140 miles to the southwest. The hurricane was moving between north northeast and northeast about 13 miles per hour.

No appreciable change in size or intensity is expected during the next 24 hours while the hurricane moves northeastward 15 miles per hour. The center is expected to pass 100 miles or little more to the west and northwest of Bermuda with gale winds there most of Friday.

Small craft vicinity of Bermuda should seek shelter and shipping in the path should exercise caution.

The next regular advisory will be issued by the Miami Weather Bureau at 5 a.m. EST.

KRAFT.

Miami Weather Bureau Hurricane Advisory Number 24 FRANCES 5 a.m. EST October 6, 1961.

At 5 a.m. EST...1000Z...Hurricane Frances was centered near latitude 31.5 north longitude 68.4 west or about 215 miles west southwest of Bermuda and 500 miles southeast of Cape Hatteras, North Carolina. The hurricane was moving toward the northeast at 13 miles per hour.

Highest winds are estimated 110 miles per hour near the center. Gales extend outward about 200 miles in the northeast semicircle and 140 miles to the southwest.

The hurricane is expected to move toward the northeast during the next 24 hours with a gradual increase in rate of forward movement to about 16 miles per hour. Little change in size or intensity is indicated.

If the present course is maintained the center will pass about 100 miles to the northwest of Bermuda this afternoon with gale winds beginning in the Islands this morning.

Small craft in the vicinity of Bermuda should remain in safe harbor and shipping in the path should exercise caution.

The next regular advisory will be issued from the Miami Weather Bureau at 11 a.m. EST.

MOORE

Miami Weather Bureau Hurricane Advisory Number 25 FRANCES 11 a.m. EST 6 October 1961.

At 11 a.m. EST...1600Z...Hurricane Frances was centered near latitude 31.6 north longitude 67.6 west moving towards the northeast at 10 miles per hour. This position is based upon reconnaissance aircraft and land based radar and is about 185 statute miles westsouthwest of Bermuda.

Highest winds are estimated 110 miles per hour near the center with hurricane force winds in squalls probably extending outward to 80 miles in the eastern semicircle. Gale winds extend outward 200 miles in the northeast semicircle and 140 miles to the southwest. Lowest pressure this morning was 968 millibars or 28.58 inches.

Hurricane Frances is forecast to move toward the northeast at 10 miles per hour with little change in size or intensity during the next 24 hours. This would indicate that the center would pass about 80 miles to the west and northwest of Bermuda and that gales will begin in those Islands this afternoon and continue during the early part of the night with hurricane force winds in squalls this evening.

Small craft in the vicinity of Bermuda should remain in safe harbor and shipping in the path should exercise caution.

The next regular advisory will be issued by the Miami Weather Bureau at 5 p.m. EST.

SUGG.

Miami Weather Bureau Hurricane Advisory Number 26 FRANCES 5 p.m. EST 6 October 1961.

At 5 p.m. EST...2200Z...Hurricane Frances was centered near latitude 33.0 north longitude 66.6 west moving towards the northeast at 14 miles per hour. This position is based upon reconnaissance aircraft and land based radar and is about 120 miles westnorthwest of Bermuda.

Highest winds are estimated 110 miles per hour near the center with hurricane force winds extending outward to about 80 miles and gale winds extending outward some 200 miles in all quadrants. Lowest pressure this afternoon was 954 MB or 28.17 inches.

Hurricane Frances is forecast to move towards the northeast at 14 miles per hour for the next 12 to 18 hours. A slight increase in size may occur but no change in intensity is expected. It now appears that the center will pass about 100 miles to the northwest of Bermuda and that any hurricane force winds on the Islands would occur as gusts in a squall or two near or just after sunset. Gales will continue in the Islands tonight.

Small craft in the vicinity of Bermuda should remain in safe harbor and shipping in the path should exercise caution.

The next regular advisory will be issued by the Miami Weather Bureau at 11 p.m. EST.

SUGG

Miami Weather Bureau Hurricane Advisory Number 27 FRANCES 11 p.m. EST..October 6, 1961

At 11 p.m. EST...0400Z...Hurricane Frances was centered near latitude 33.3 north longitude 65.4 west or about 75 miles northwest of Bermuda moving towards the east northeast at 13 miles per hour. The hurricane is being tracked by land based radar at Bermuda.

Some intensification occurred during the day and highest winds are now estimated 125 miles per hour. Winds of hurricane force extend outward about 70 miles from the center and gales extend some 200 miles from the center in all quadrants. The lowest pressure measured by reconnaissance aircraft during the afternoon was 948 millibars or 27.99 inches.

Frances is forecast to move towards the east northeast at 14 miles per hour for the next 12 to 24 hours with little change in intensity but a slight increase in size.

Gale winds are occurring at Bermuda and will continue through the forenoon. Some brief gusts of near hurricane force may occur during the next few hours.

Small craft in the vicinity of Bermuda should remain in safe harbor and shipping in the path should exercise caution.

The next regular advisory will be issued from the Miami Weather Bureau at 5 a.m. EST.

MOORE.

Miami Weather Bureau Hurricane Advisory Number 28 FRANCES 5 a.m. EST...October 7, 1961.

At 5 a.m. EST...1000Z...Hurricane Frances was centered near latitude 35.0 north longitude 64.5 west or about 185 miles north of Bermuda moving towards the northeast at 17 miles per hour. Frances continues to be tracked by land based radar at Bermuda.

Highest winds are 125 miles per hour over a small area near the center with winds of hurricane force extending outward 70 miles from the center. Gales extend outward 200 miles from the center in all quadrants.

Hurricane Frances is forecast to continue on a northeast course near 17 miles per hour for the next 12 hours with little change in size or intensity. Thereafter a gradual turn to the east northeast is expected with a slow increase in forward speed.

A turn to a more northerly course during the night prevented Bermuda from receiving hurricane force winds. Maximum gust reported at Kindley Field was 54 miles per hour.

Small craft in the vicinity of Bermuda should remain in safe harbor until seas subside. Shipping in the path of Frances should exercise extreme caution.

The next regular advisory will be issued by the Washington Weather Bureau at 11 a.m. EST.

CLARK.

Washington Weather Bureau Hurricane Advisory Number 29 FRANCES 11 a.m. EST October 7, 1961.

At 11 a.m. EST...1600Z...Hurricane Frances was centered near latitude 36.2 north longitude 64.4 west moving in a northerly direction at a speed of about 14 miles per hour. This position is based on reconnaissance aircraft and is about 265 statute miles north of Bermuda. Highest winds are 115 miles per hour over a small area near the center with winds of hurricane force extending outward about 60 miles from the center. Gales extend outward 200 miles from the center in all quadrants.

Hurricane Frances is forecast to move on a course between north and northeast at a speed of about 14 miles per hour during the next 12 hours with little change in size or intensity. During the following 12 hours Frances is expected to head on a north-easterly course with a slight increase in forward speed.

Shipping in the path of Frances should exercise caution.

The next regular advisory will be issued by the Washington Weather Bureau at 5 p.m. EST.

SCHMIDT

Washington Weather Bureau Hurricane Advisory Number 30 FRANCES 5 p.m. EST October 7, 1961.

At 5 p.m. EST...2200Z...Hurricane Frances was centered near latitude 37.3 north longitude 63.7 west moving towards the north northeast at a speed of 14 miles per hour. This position is based on reconnaissance aircraft and is about 350 statute miles north of Bermuda.

Highest winds are still about 115 miles per hour over a small area near the center with winds of hurricane force extending outward about 60 miles from the center. Gales extend outward about 200 miles from the center in all quadrants.

Hurricane Frances is forecast to continue moving on a course towards the north northeast about 14 miles per hour during the next 12 to 24 hours. Little change in size or intensity is indicated for the next 12 hours.

Shipping in the path of the hurricane should exercise extreme caution.

The next regular advisory will be issued by Weather Bureau Washington at 11 p.m. EST.

SCHMIDT.

Washington Weather Bureau Hurricane Advisory Number 31 FRANCES 11 p.m. EST October 7, 1961.

At 11 p.m. EST...0400Z...Hurricane Frances was centered near latitude 38.9 north longitude 64.4 west or about 350 statute miles southeast of Cape Cod, Massachusetts and is moving towards the north northwest at a speed of 15 miles per hour. The hurricane is being tracked by ship based radar.

Highest winds are estimated to be near 100 miles per hour over a small area near the center. Hurricane force winds extend outward 50 miles from the center and gale force extend outward 200 miles from the center in all quadrants.

Hurricane Frances is forecast to continue moving toward the north northwest at about 13 miles per hour for the next 12 hours continuing on the same course but with some decrease in forward speed after 12 hours. Some decrease in intensity of Hurricane Frances is forecast to occur during the next 12 to 18 hours as the hurricane moves over the colder water of the North Atlantic.

Shipping in the path of the hurricane should exercise extreme caution.

The next regular advisory on Hurricane Frances will be issued by the Washington Weather Bureau at 5 a.m. EST.

MOOK.

Washington Weather Bureau Hurricane Advisory Number 32 FRANCES 5 a.m. EST October 8, 1961.

Reports from ship based radars show that Hurricane Frances is continuing to move toward the north northwest around 15 miles per hour and at 5 a.m. EST...1000Z...the hurricane was centered near latitude 40.0 north longitude 64.8 west or about 210 statute miles south of Cape Sable, Nova Scotia.

Highest winds are estimated to be near 100 miles per hour over a small area near the center. Hurricane force winds extend outward 50 miles from the center and gale force winds extend outward about 140 miles in all quadrants.

Hurricane Frances is forecast to continue moving toward the north northwest for the next 12 hours then turning toward the north northeast during the next 12 to 24 hours with the forward speed continuing at 15 miles per hour. Some decrease in size and intensity of Hurricane Frances is expected as the hurricane moves over North Atlantic waters which are becoming gradually cooler and are considerable cooler in the area around Nova Scotia. If the present course continues gale warnings may be posted east of Portland, Maine later today.

Shipping in the path of the hurricane should exercise caution.

The next regular advisory on Hurricane Frances will be issued by the Washington Weather Bureau at 11 a.m. EST.

MOOK.

Washington Weather Bureau Hurricane Advisory Number 33 FRANCES 11 a.m. EST October 8, 1961.

At 11 a.m. EST...1600Z...Hurricane Frances was centered near latitude 40.7 north longitude 65.3 west moving towards the north northwest about 12 miles per hour. This position is based on reconnaissance aircraft and is about 250 statute miles east southeast of Cape Cod, Mass. Highest winds are estimated to be about 90 miles per hour over a small area near the center. Hurricane force winds extend outward about 50 miles from the center and gale force winds extend outward about 140 miles in all quadrants.

Hurricane Frances is forecast to move on a northerly course about 12 miles per hour for the next 12 hours and then gradually turn more towards the north northeast. Some decrease in intensity is expected as the hurricane moves over colder water but area of gales will expand. The forecast movement will bring the storm close to southwestern Nova Scotia shortly after midnight tonight and gales are likely on the Nova Scotia coast by late this afternoon. Marine warnings may be displayed on the Maine Coast later today.

Shipping in the path of the hurricane should exercise caution.

The next regular advisory on Hurricane Frances will be issued by the Boston Weather Bureau at 5 p.m. EST.

SCHMIDT.

Boston Weather Bureau Hurricane Advisory Number 34 FRANCES 5 p.m. EST October 8, 1961.

Gale warnings are displayed from Eastport to Bar Harbor, Maine. Small craft along the Maine coast should remain in port until the threat of Hurricane Frances has passed.

At 5 p.m. EST...2200Z...Hurricane Frances was centered near latitude 42.0 north longitude 66.4 west or about 240 miles east of Boston. The position is based on reconnaissance aircraft and merchant ship reports. The storm is moving towards the north northwest at about 12 miles per hour. Highest winds are now estimated to be about 80 miles per hour over a small area near the center. Gale force winds extend outwards about 115 statute miles in all quadrants.

Hurricane Frances is forecast to move on a northerly course about 12 miles per hour for the next 12 hours and then gradually turn more towards the north northeast. A further decrease in the storm intensity is expected as the hurricane moves over colder water. The forecast movement will bring the storm close to southwestern Nova Scotia about midnight tonight.

Shipping in the path of the hurricane should continue to exercise caution.

The next regular advisory on Hurricane Frances will be issued by the Boston Weather Bureau at 11 p.m. EST.

TENENBAUM.

Weather Bureau Portland, Maine. October 8, 1961 Sunday 8 p.m. LOCAL STATEMENT ON HURRICANE FRANCES.

The hurricane has slowly worked its way northward and at the moment threatens the eastern coastal parts of the State of Maine to some extent. It is unlikely at this time that any of the land areas affected will experience any unusually severe winds unless the storm takes an unexpected path. However gale warnings are flying along the east coastal region from Eastport, Maine to Bar Harbor, Maine and winds up to 40 or 45 knots may be expected over waters along this route. The storm itself has shown signs of weakening over the past several hours and as it advances over the colder waters of the Eastern Gulf of Maine further weakening can be expected. Also a tendency to swing to a more northeasterly course is expected which would bring the heavier winds away from our coastal areas. However small craft should remain in port along the Maine coast until the threat of Hurricane Frances has passed. We repeat land areas and coastal waters west of Bar Harbor will feel little if any effects from the storm while land areas east of Bar Harbor should experience no damaging winds. Interests should keep abreast of later bulletins and advisories issued on this storm. The next regularly scheduled advisory will be issued at 11 p.m.

CHICKAN.

Boston Weather Bureau Hurricane Advisory Number 35 FRANCES 11 p.m. EST October 8, 1961.

Gale warnings are displayed from Eastport to Bar Harbor, Maine. Small craft along the Maine coast should remain in port until the threat of Hurricane Frances has passed.

At 11 p.m. EST...0400Z...Hurricane Frances was centered near latitude 43.0 north and longitude 67.5 west or about 170 miles east of Portsmouth, New Hampshire. The storm has been moving in a northerly direction at about 16 miles per hour. Highest winds are estimated to be about 80 miles per hour over a small area near the center. Gale force winds extend outward about 100 statute miles in all quadrants.

Hurricane Frances is forecast to take a northerly course for the next few hours and then turn towards the northeast with an increase in forward speed. The forecast movement will bring the storm through the Bay of Fundy during tonight. The storm is expected to lose intensity as it moves over progressively colder water during the rest of tonight.

Shipping in the path of the hurricane should continue to exercise caution. Seas in the path of the storm will be very rough.

The next regular advisory on Hurricane Frances will be issued by the Boston Weather Bureau at 5.00 a.m. EST.. 1000Z.

TENENBAUM.

Boston Weather Bureau Tropical Storm Advisory Number 36 FRANCES 5 a.m. EST October 9, 1961.

Gale warnings are displayed from Eastport to Portland, Maine and small craft should remain in port Eastport to Nantucket Island until winds and seas have subsided.

Tides 1 to 3 feet above normal along with rough seas will cause some minor flooding along the Maine Coast east of Bar Harbor this morning.

During the past six hours Hurricane Frances has diminished in intensity and has now become a Tropical Storm.

At 5 a.m. EST...1000Z...Tropical Storm Frances was centered near latitude 43.8 north and longitude 68.1 west or about 40 statute miles south of Bar Harbor, Me. It is moving north northwestward at 14 miles per hour. Highest winds are about 70 miles per hour near the center with gale force winds extending outward about 100 statute miles in all quadrants.

The center of Tropical Storm Frances is expected to move inland slightly to the west of Bar Harbor early this morning. It will then move northward at no increase in forward speed for the next 12 hours turning more toward the northeast at the same speed thereafter.

There has been a steady decrease in intensity near the center of Tropical Storm Frances in its progress northward over the colder waters. There will be a more rapid decrease in intensity as it moves inland this morning.

Shipping in the vicinity of the tropical storm should exercise caution. Seas will continue very rough off the Maine coast during the morning gradually subsiding thereafter.

The next advisory on Tropical Storm Frances will be issued by the Boston Weather Bureau at 11 a.m. EST.

PIERCE.

Boston Weather Bureau Storm Advisory Number 37 FRANCES 11 a.m. EST October 9, 1961.

Small craft warnings are displayed from Eastport, Me. to Nantucket, Mass. Small craft should remain in port from Eastport to Nantucket until the winds and seas have subsided.

At 11 a.m. EST...1600Z...storm Frances was centered near latitude 44.5 north and 67.0 west or about 35 statute miles south of Eastport, Me. There has been a steady decrease in intensity near the center of the storm as it moved northward over colder ocean waters. The storm has been losing its tropical characteristics and strongest winds near the center are now estimated at 35 miles per hour with gusts of about 55 miles per hour in squalls. The storm has been moving toward the north northeast at about 14 miles per hour. It will move toward the northeast through the Bay of Fundy with increasing forward speed during the next 12 to 24 hours. Rough seas along the Maine coast will gradually subside this afternoon. Shipping in the vicinity of the storm should exercise caution until this evening.

Because the storm is now weakening rapidly this will be the last formal advisory on this storm issued by the U.S. Weather Bureau. Further advices on weather expected with the dying storm will be found in the routine forecasts for the areas affected.

TENENBAUM.