



HURRICANES

AND

HOLIDAYS-

Supplication Day - July 25
Local Thanksgiving- Oct. 25



A young worshipper joins in the Prayer of the Church.

The ESEA Title III staff takes this opportunity to present you with materials on two local holidays that have been observed since early Danish times. These holidays are inextricably involved with the hurricane, and since we have not suffered a hurricane's attack for several years, it is perhaps time that we review the significance of these two days.

Supplication Day is that day we humbly beg to be spared the horrors of a hurricane during the season that follows. Local Thanksgiving Day is the time for giving thanks that we have been spared, and it marks the end of the season.

For often proud man that is capable of orbiting satellites around the Earth and the Moon, the realization that a single hurricane releases the energy of several million Hiroshima-Nagasaki bombs should be a humbling one. The Virgin Islands two hurricane "holidays" hopefully reveal our continuing recognition of man's frailness before the awesome forces of nature.

The materials included in this publication only begin to scratch the surface. We hope that they will give you some fresh ideas and stimulate you to investigate further. To this end you will find a list of suggested activities, sources of information and materials, and a brief bibliography included.

HURRICANES IN THE VIRGIN ISLANDS

The hurricane is one of the calamities that strike deep terror into the people of the Virgin Islands, as well as the rest of the West Indies, because they have been visited by extremely devastating ones.

In order to afford some idea of these severe hurricanes, we are including firsthand accounts of some of them.

HURRICANE 1772

On August 31, 1772, St. Croix was struck by a hurricane which was described in the local newspaper as the "most dreadful hurricane known in the memory of man". This catastrophe was described in a letter written by Alexander Hamilton to his father. The letter * reads as follows:

Honored Sir. I take up my pen just to give you an imperfect account of the most dreadful hurricane that memory or any records whatever can trace, which happened here in the 31st ultimo at night.

It began about dusk, at North, and raged very violently till ten o'clock. Then ensued a sudden and unexpected interval, which lasted about an hour. Meanwhile, the wind was shifting around to the South West point, from whence it returned with doubled fury and continued so till near three o'clock in the morning. Good God! what horror and destruction—it's impossible for me to describe — or you to form any idea of it. It seemed as if a total dissolution of nature was taking place. The roaring of the sea and wind—fiery meteors flying about in the air — the prodigious glare of almost perpetual lightning — crash of the falling houses — and the earpiercing shrieks of the distressed, were sufficient to strike astonishment into Angels.

A great part of the buildings throughout the Island are leveled to the ground — almost all the rest was very shattered — several persons killed and numbers utterly ruined — whole families running about the streets unknowing where to find a place of shelter — the sick exposed to the keenness of water and air — without a bed to lie upon — or a dry covering to their bodies — our harbour is entirely bare. In a word, misery in all its most hideous shapes spread over the whole face of the country — a strong smell of gunpowder added somewhat to the terrors of the — and it was observed that the rain was surprisingly salt. Indeed, the water is so brackish and full of sulphur that there is hardly any drinking it.

*Lewisohn, Florence. Divers information on the Romantic History of St. Croix. St. Croix Landmarks Society Inc., 1964, p. 47.

My reflections and feelings on this frightful and melancholy occasion are set forth in following self-discourse.

Where now OH! Vile worm, is all thy boasted fortitude and sufficiency? — why dost thou tremble and stand aghast? how humble — how helpless — how contemptible you now appear. And for why? the jarring of the elements — the discord of clouds? Oh, impotent presumptuous fool! how darest thou offend that omnipotence, whose nod alone were sufficient to quell the destruction that hovers over thee, or crush thee into atoms? See thy wretched helpless state and learn to know thyself . . .

Hark! ruin and confusion on every side.
— 'Tis thy turn next: but one short moment — even now — Oh Lord help — Jesus be merciful!

Thus did I reflect, and thus at every gust of wind did I conclude. — till it pleased the Almighty to allay it.

I am afraid, sir, you will think this description more the effort of imagination than a true picture of realities. But I can affirm with the greatest truth, that there is not a single circumstance touched upon which I have not absolutely been an eyewitness to.

HURRICANE 1837

There was another dreadful hurricane and fire on August 2, 1837 which caused considerable loss from the destruction of houses, ships, and other casualties. The most distressing part of the whole was the loss of life not only in town but in the harbour. To that effect the Government House made the following proclamation;

P R O C L A M A T I O N

When on the 2nd instant this Colony was ravaged by an awful Hurricane and Earthquake, Lightning and Conflagration augmented its terrible effects, it was a great consolation to find that no kind of disorder was committed, and that all did their best to put a stop to the Fire: I beg that every one in particular who in the time of danger exerted himself will accept of many warmest thanks.

Inhabitants of St. Thomas! To you distress needs no interpreter. Let us hand in hand alleviate the general calamity. I need not warn against profiting by the misfortune of others; no one will by raising the prices of necessities and shelter stamp himself with public contempt.

As soon as the severest distress is relieved, we will assemble in the House of the Lord, and on this mournful occasion join in Prayers to the Almighty.

Government House, St. Thomas, the 5th August 1837.

Hurricane 1867

In october 29, 1867, one of the most terrifying hurricanes passed over the Virgin Islands and Puerto Rico. According to an article published in the St. Thomae Tidende for November 13, 1867, it was a storm which if not in magnitude, certainly in destructiveness, was declared to surpass any hitherto known. It was considered stronger or more severe than any other that has ever been previously felt in these islands.

On St. Thomas the barometer fell as low as 27.95 inches just prior to the calm(eye) which occurred shortly after noon. More than 600 persons were drowned on this island and many more were killed on short by falling houses. In Puerto Rico this storm was known as "San Narciso", named after the calendar saint on whose day it occurred.

Below is a picture of the harbor of St. Thomas during this hurricane.



The hurricane of 1916, just before the United States took possession of the islands was, perhaps, one of the worst ever experienced in the islands. Great damage was done in St. Thomas and St. Croix though St. Thomas suffered very much more.

In Zabriskie's (*The Virgin Islands of the United States of America*) there is an account of the hurricane describing this catastrophe in the three islands. It reads as follows:

HURRICANE OF 1916

Hurricane of October 9-10, 1916-Most destructive since fearful catastrophe of 1867-Estimated damages amounted to nearly \$2,000,000-St. Thomas suffered most-Few fatalities, but many injured - Major part of population sustained serious losses - Wind velocity approximated 140 miles per hour-Official barometrical readings Harrowing details as minutely depicted in local newspapers.

On the evening of Monday, October 9, 1916, the islands of St. Thomas, St. Croix, and St. John were visited by one of the fiercest and most destructive hurricanes that had been witnessed in that section since the memorable one of 1867. The first estimated damage to property was placed at about two million dollars but this figure was pared down considerably after a more careful survey of the situation had been taken. St. Thomas probably suffered greater injury than her two sister islands, owing principally to her costly harbour works. The fatalities in the three places were comparatively few, there being but four deaths, from drowning, reported in St. Thomas and five deaths, due to injuries from falling walls or trees, recorded, respectively, in St. Croix and St. John. Many more, however, were wounded, and most all of the inhabitants suffered seriously as a result of the havoc that was wrought.

There was but little warning of the approaching catastrophe, although the morning of the ninth opened with a drizzling, disagreeable rain, with slight winds that rose and fell throughout the day. The usual hurricane signal was sounded at about two o'clock in the afternoon, but almost before the storm shutters could be adjusted the precursor of the gale appeared in the form of heavy gusts of wind and vertiable downpours of rain, the force of wind increasing in intensity until it attained a velocity reckoned at approximately 125 to 140 miles per hour. The severity of the storm may be estimated by the extremely low barometer, the readings of which, as given to the Washington Weather Bureau, were as follows:

9th Oct.	7:30 A.M.	29.724
	1:00 P.M.	29.665
	2:15 " "	29.576
	3:00 " "	29.549
	5:00 " "	29.439
	6:00 " "	28.800
	7:00 " "	28.263
	9:00 " "	28.264
	midnight	29.261
10th Oct.	6:00 A.M.	29.637
	8:00 " "	29.700

A general consideration of the 1916 hurricane seems inadequate to fully portray to those who have never passed through such a calamity and real significance of the disaster. Therefore in order to more fully reproduce the sentiments of the sufferers regarding their unfortunate experience, there are quoted below extracts on the subject from the leading local newspapers which appeared during the days immediately following.

From the October 11 issue of *Lightbourn's Mail Notes*, St. Thomas:

Devastation! Devastation! That's what meets the eye right and left, in front of us, all about us. Yesterday this island was visited by one of the most violent and destructive hurricanes perhaps in its history. It came rather unexpectedly, as we had been visited by southerly wind up to early yesterday morning, and it was near noon before it took a northerly bend, and even then there were few or no signs of a coming storm. At about 12:30 Commodore Konow on H.M.S. *Valkyrien*, at sea, on his way to St. Croix, observed signs of danger and returned to port giving his observations. In the meantime the barometer began to fall rapidly and the alarm guns were fired shortly before 2 o'clock. This was the signal for most of us to prepare, and those who accepted the warning did so none too soon, for sleuth-like the monster gathered its strength for the spring and soon we were in the furious grasp of a cyclone the like of which the island has never felt before. The great storm of 1867 was not its equal, neither that of 1876, although in the first named there was greater damage in the harbour owing to the number of ships present and in the latter a greater loss of life. Fortunately, on shore, we have to report no loss of life; only a few wounded which are being treated at the hospital.

The first part of the cyclone was fiercest from about 6 to 7:55 when the storm centre was experienced, and this lasted until 9:40, an unusually long period. It is thought that the wind's force between 7 and 8 o'clock was considerably over one hundred miles an hour in some of those furious gusts which not only shook the stoutest building to its foundations but seemed to shake the very foundations of the island.

At 9:40 the storm returned in all its fury from the southeast, bending, breaking, smashing in its track; much that escaped in its first furious onslaught gave way in the second, as one could hear how things were being demolished. The only consolation we had was to know that each blast would be weaker and weaker, as we saw the barometer rapidly rise from its lowest recorded point, 28.10.

The entire island has suffered; some localities more than others perhaps. In the town we can hardly select a spot that has suffered more than another, although appearance would seem to point to the Savanne and Frenchman's Hill, in the latter place damage being done to a number of large dwellings almost to the point of demolition.

In the harbour everything that floated, save the distress vessel *Blandford*, has been moved from its moorings. The German steamers *Wasgenwald* and *Calabria* are ashore; the Danish barkentine *Thor* a wreck on the lower point; the *Aholt* sunk; the dock dragged a little from its moorings but is quite safe; and the schooner *Irma II*, sloops *Spider* and *La Gracia*, and other small craft sunk or beached. The huge dredge *St. Hilda* has been driven alongside the King's Warf, where she now remains.

H. M. S. *Valkyrien* did splendid service with her searchlight all last night. A boat's crew this morning took off the survivors of the Danish barkentine *Thor*; others from that ship were rescued during the hurricane.

We hope to be able to give more of a detailed statement of the damage done to property tomorrow.

We understand that Captain Maynard of the sloop *Fate*, last seen on board the *Irma II*, is missing. The Captain was well known here as a frequent trader.

James Abbot, an old man, passenger from Tortola on the sloop *Spider*, tells us that he managed to save himself when that sloop capsized during the beginning of the hurricane by clinging to her stern and then striking out for the *La Gracia*, aboard of which he was pulled by one Wheatley. Two men, Frazer and Bruly, of the *Spider*, are supposed to be lost.

Mr. W. C. Creque, also of the *Spider*, was picked up about 4 o'clock this morning and conveyed to hospital by Gendarmes.

The scene along the road to the west is one of devastation. So many houses are down that it is not easy to calculate the number that are flat. The largest trees have been uprooted and broken, and the passage along the road is as difficult as through barbed wire entanglements. The church and parsonage at Nisky are not very much damaged, but stable and outhouses are gone, the beautiful trees about the place have been broken or overthrown. A number of people were housed in the parsonage during the night, and many had narrow escapes from injury or death. There is much need for help in clothing, food, and shelter.

The mother of Miss Tilly Davies lost her house on "Bunker's Hill" last night and suffered injuries which compelled her to go to the hospital. As we go to press we learn that the body of Bruly has just been washed ashore in the upper bay. It was clad only in a pair of drawers and the face badly bruised.

From the October 11th issue of the *West End News*, Frederiksted, St. Croix:

THE GALE

Monday afternoon and night the 9th and Tuesday morning the 10th October, 1916, will long be remembered by the people who at that time lived in Santa Cruz. The gale, which came half-way unexpected on us, not having received any information about its route or about what time it might be expected here, was announced about 2 o'clock by the firing of the customary two times two guns as warning for an approaching hurricane and hurricane flags hoisted on the fort flagstaff. The inhabitants of the town feverishly barred up and soon after the forerunner, the gale arrived—rather heavy squalls of rain and strong winds, and soon the gale

raged in its full force. The barometers in the town are reported to have been very low, lower than any time before, and even lower than registered in the last gale which raged Santa Cruz in 1899. Accompanied by torrential rains the storm continued till about 5 o'clock when the lull came. People crept out of their houses and cautiously walked around looking for relatives or friends or proclaiming their whole partial losses. From a house near the hospital in Strand Street several small children and old folks were removed during the rain to the hospital. When the lull came most, or at least a good many, people believed that all danger was over and opened up their houses, but before 6 o'clock they had to retreat and bar up quickly again. Soon the gale raged with even greater force from the west (the sea), contrary to the first part of the gale which was blowing from the east. The sea which had been rising since the day before, Sunday, now put on a most boisterous face and dashed forcibly against the rocks, making its way across the streets, reaching the houses on the eastern side of Strand Street. Even in some of the upstairs residences in the same street the salt water was discovered. But the most pitiable and largest damage done to any individual, so far as we have heard, was the total destruction of Mr. R. E. Higgins' Hardware and Wholesale Provision Store in Strand Street, No. 5—it was levelled, simply—bricks, rafts and beams, provisions and nails, water and paper, all in a pellmell condition.

Besides Mr. Higgins' store, the gallery of Mr. Merwin's store, the roof of the gallery outside Ramsay's Café, the Club, the Post Office, and not least the Doctor's residence have suffered great damage.

Almost the entire roof of the Doctor's house is blown off, part of it being hurled down in the yard, where it destroyed the stable and a couple of rooms.

Ninety per cent, we believe of all the fences in the town are down, and most of the trees too. In the market place, the streets, the graveyards, in yards, along the beach, in fact all over, the eye sees nothing else but uprooted or broken trees; the park is a "saga blot," nearly all the fine, high mahogany trees in front of the fort are uprooted, pieces of boards, sheets of galvanized iron, and telegraph wires are everywhere the spectacle. There is scarcely a house that has not suffered, if not otherwise, then by the water, which has spoiled much wall paper, furniture, clothes, etc. The strength of the gale can be judged when it is known that "Mountain's" barometer registered as low as 27.80.

Today the town stinks of the brine sent in from the sea, and at times you fancy you smell fire. That must be from the debris and the water. North of the town there is a mighty sea or rather dirty pool of water, and the "Panbush" quarter is in a most pitiable condition, this being a part of the town that always floods every time a heavy rain falls.

It has been reported to us that even under these trying and serious conditions, some people cannot remember the Seventh Commandment. Galvanized iron, boards, and the like disappear like nothing.

The Hospital: Part of the operating room's roof was blown off, and so was also the western topmost gallery (Sister Julia's Gallery); part of the roof of "long-cot," the women's ward; the kitchen and the fan-mill are entirely down, although it was reported that the stove from the kitchen was used to cook on yesterday. Some of the patients have left the hospital for want of accommodation, they say, but they will be received again as soon as the Hospital Commission had taken a full view of the situation.

The galleries on the eastern and the western sides of the Fort are blown down or away.

Castleburgh manager house is partly ruined and some of the labourers' homes damaged. The horse and mule stables are also blown down.

Through someone's carlessness, or perhaps thoughtlessness, a lamp kindled a fire in Bethlehem village with the result that some forty-four to forty-eight rooms burned down.

Annaly schoolhouse was blown about one hundred yards away and put down in a vally.

At Diamond, part of the works and chimney was blown down.

The manager's and Mr. Du Bois' houses at Lower Love are partly damaged, and part of the village is destroyed.

At Annaly, on Captain Blackwood's estate, only four houses are left of a village of about twenty-three to twenty-five houses.

At Spring Garden the top of the storeroom fell in and the roof and parlour have been blown down.

At estate La Reine, the residence of old Mrs. Fleming, the roof and side of the dining-room have gone, while the roof of the bedroom and of the manager's house have completely gone.

All the roads are of course blocked for traffic of car and phaeton, by the fallen trees, and telephone posts and wires, which system we understand is totally deranged and will take months to bring to order.

From the October 12th issue of *Lightbourn's Mail Notes*, St. Thomas:

ST. JAN NEWS

CRUZ BAY—Police Assistant house gallery destroyed; some other little damages. Not much to other houses.

K.C. BAY (Abraham Smith's place)—Every house level to the ground except one room. All cocoanut trees destroyed.

DENIS BAY (Lindqvist's place)—Gallery gone, and some other parts damaged. The village houses all destroyed. The entire banana field, lime trees, cocoanut trees, and bay leaf destroyed.

AMERICA HILL (Plantation Coy)—Dwelling house much damaged, also Bay Rum Factory, etc. Lime cultivation seriously damaged.

MILAND—No damage.

MANHOE BAY—Marsh's house destroyed.

ANNABERG—Francis' Castle Building, just built, much damaged.

MARY'S POINT (Stakemann's property)—Labourer's village destroyed, also cocoanut grove.

PARCEL ANNABERG (owned by squatters)—Houses damaged.

LEINSTER BAY—The private boarding house of Mrs. Glen, owned by Lawyer Jorgensen, entirely destroyed.

HERMITAGE (Lockhart's)—Some damage to buildings, etc.

EAST END—Many small properties suffered very much damage. Some persons crushed to death in their houses.

PALESTINA—Nearly all the houses destroyed. Many homeless.

CORAL BAY, EMMAUS—Moravian Church and Mission house and outer buildings all gone. Parson Rev. Penn had to take refuge at Carolina, Mr. E.W. Marsh's estate. Not much damage to Carolina. Other parts of Coral Bay very much damaged. Many homeless.

SOUTH SIDE—Many places much damaged and poor people much in need.

MOLLENDahl—Scarcely a house not seriously damaged.

CESSMAN HILL—Scarcely a house not ruined. Many homeless and nothing to eat.

These are among the worse; still there are other parts that we have not been able to get news from.

The Moravian Minister Revd. Penn lost everything, especially his valuable books.

The inhabitants are in a deplorable condition.

Of all the beautiful palms there are scarcely a dozen trees left in the whole Island. The beautiful cocoanut grove of Estate Trunk Bay is entirely destroyed.

From the October 14th issue of the *St. Thomae Tidende*, St. Thomas:

STORM NOTES

In our account Wednesday of the great hurricane of Monday night we tried to depict at some length the aspect of the town as it appeared after the terrific ordeal through which it passed during those few fatal hours. The account was somewhat extensive and descriptive enough as we thought, but the more we see of the widespread havoc and the general wreckage, and the more heard, the more we find that our sketch, full as it seemed, was lacking. There are certain experiences which cannot be related effectively, certain scenes which cannot be fully delineated, they must be felt and seen to be understood. Such is the hurricane and its calamitous effects.

We said in our sketch that the better way to convey an idea of the general damage and loss would be rather, for the hundreds of houses within the town limits, to name those which have not been damaged; if this were done it would be seen how few houses have escaped. Any attempt to name or specify losses would unavoidably be very incomplete.

The fall of the coal cranes affords the best idea of the force of wind. The huge machines were made to withstand a wind velocity of one hundred miles an hour, but their collapse during the second part of the storm proves the speed of the wind to have been greater. The Farina reports it at between one hundred thirty and one hundred forty miles an hour. The way in which the strong iron members have bent is surprising.

RELIEF COMING

We are glad to learn that, Government having represented to the Ministry of Finances that assistance from the State Treasury towards relieving the distress caused by the hurricane would be necessary, the Ministry has cabled Government that means would be forthcoming for the said purpose. Government has under consideration the appointing of a committee with Judge Wellejus as chairman to investigate matters and to make proposals to Government for assistance outside of such as is already under the care of the Poor Commission.

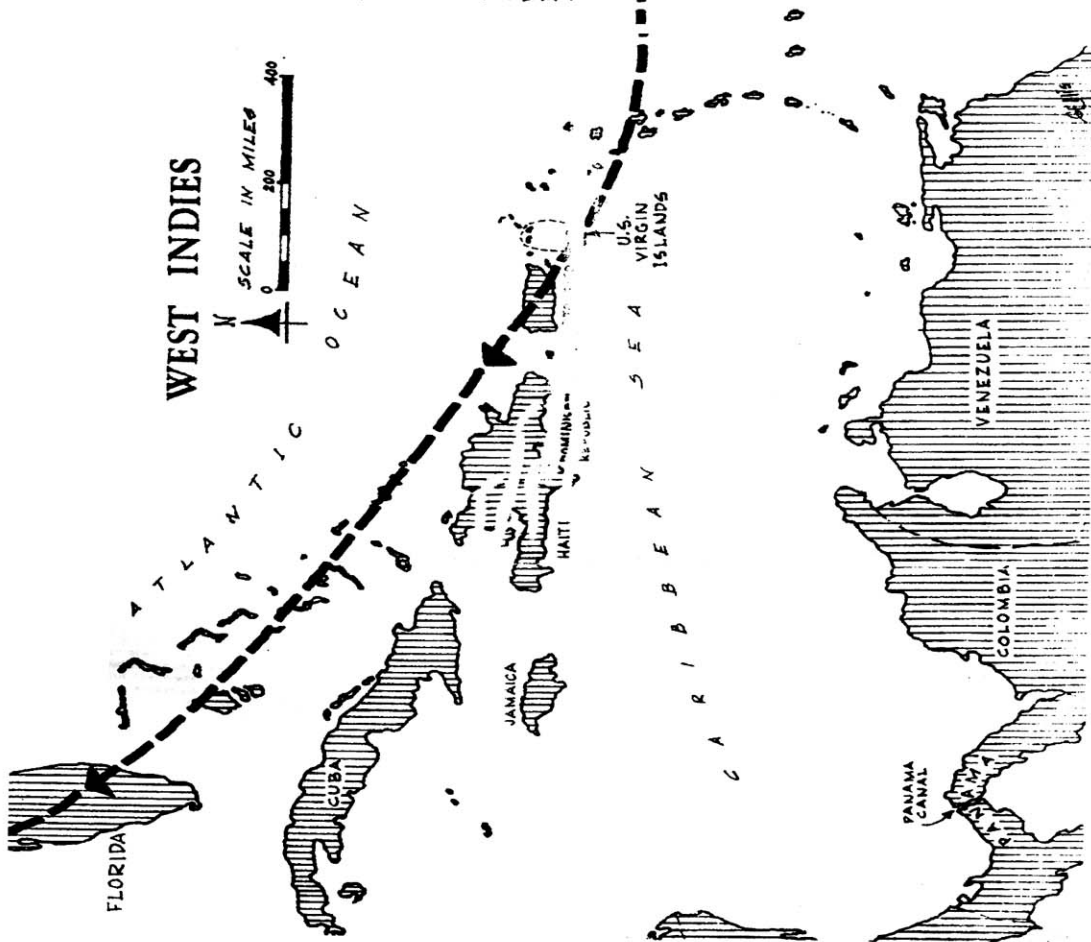
It will be comforting to the numerous sufferers by the hurricane to learn the foregoing so they will know that help is coming from Denmark.

Also from America relief may be expected, appeal for aid having been cabled. It has been suggested that arrangements be made here for procuring by cable food and building materials to get which a group of merchants may see after.

The aid now has to include St. Jan, which has also been swept by the storm. Some hurried notes sent us from there give a partial but awful sketch of conditions, while an eyewitness who experienced the hurricane there gives a deplorable account of its ravages. The state of things is appalling, he says, no homes, no food, no fruit trees, no provision grounds left, almost everything flat, boats, fishpots, all gone. Desolation reigns. From St. Croix likewise come harrowing tales of distress, so that each of the group has shared the common affliction.

Hurricane 1928

This hurricane was originated near Cape Verde Islands. The center of the hurricane fully developed passed over Guadaloupe about noon of the 12th. With a pressure of 27.76 inches. There was great destruction in Guadaloupe, St. Kitts and Montserrat. About 11 A.M. of the 13th, the S.S. Matura was near the center when southwest of St. Croix the barometer was 27.50 inches. The wind reached 90 miles an hour on the island of St. Thomas which received the heaviest blow of the three islands. This hurricane, known as "San Felipe" in Puerto Rico was then a storm of tremendous force. On the 13th, it crossed Puerto Rico. The wind there was highest, rainfall the heaviest and destruction the greatest of wind in recent years.



THE BULLETIN

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WEDNESDAY, SEPTEMBER 19, 1928.

Virginia Lost.

A cable from the Governor of St. Martins says: "Virginia" parted chains in St. John and went adrift. Crew, passengers, and mail saved. St. John and Saba badly damaged, no deaths.

The Virginia was a weekly visitor to St. Thomas, and we are glad to know that her popular skipper, Captain Mardenborough and crew have been saved.

Ed. Bulletin.

Hurricane of 1928.

On the night of September 12 and the morning of the 13th this island was visited by one of the most violent and destructive hurricanes since the memorable one of 1916. Some of the older people seem to think that it surpassed the hurricanes of 1867, 1899 and 1916. In the afternoon of the 12th, the usual hurricane signal flag was hoisted at the Fort and in the evening the firing of the hurricane guns was the signal for us to prepare, that the storm was approaching. At about 11:30 the force of the wind began to increase, and between the hours of 12 and 1 o'clock everybody was fully aware that a dreaded West Indian hurricane was upon us. The storm raged for hours, with an intensity which may be better judged by the low barometer, which fell to 28 on in Christiansted, and much lower in Frederiksted as reported. As far as we have been able together, up to the present, the entire island has suffered, in some places more than others. About 5 o'clock a.m. on the 13th, everybody thought that a lull would come, the storm was fiercest at that time, and continued far into the day, tearing and smashing every thing in its path. Some of the buildings that escaped its fury in the early hours of the morning are away between the hours of 6 to 10 o'clock in the day. In the harbour, vessels have been sunk or blown in shallow water. The schooner Vigilant is right up under the Fort battery and further up the schooner Resolution is sunk, only part of her masts is visible, other small vessels are under water.

During the hurricane of 1916 there was a lull at about 5 o'clock the after-

noon which made some persons believe that the storm was over, until it returned with greater force from the west, but in this hurricane there was nothing of the kind as it raged continuously for hours, which will long be remembered by the people of St. Croix.

Some people homes have been so badly damaged or destroyed that they were compelled to abandon them and shelter with relatives or friends. The Government Offices and other public buildings were thrown open to people who sought shelter in these places. The first floor of the Lutheran parsonage also received some of the people who were to seek refuge in their homes during the storm. The local chapter of the American Red Cross has rendered valuable assistance in giving out food to the very poor and deserving ones who are in a deplorable condition, left so on account of the ravages of the hurricane. Many people have said that considerably and some persons have expressed that they are in no position and have no hope of rebuilding their homes unless help is given—and sufficient help. There were times we are told, when hurricanes occurred in rich time, when the islands were flourishing, but the same cannot be said now, hence the difference.

The Wharf is in a wild state, some of the benches are broken up, a lot of rubbish from the sea is thrown up on land, caused as some people believe from a tidal wave, as it is reported that earthquake shocks were felt during the cyclone. Communication was interrupted, telegraph, telephone and electric wires were on the ground, but repairs are being made. The radio poles are also down, temporary repairs were effected.

The Police were ordered out and went around warning the inhabitants that the storm was approaching, and they must prepare. These Officers of the peace were also prepared to give any assistance needed during the storm. As men were on duty while the hurricane was raging—some work indeed for these brave men.

The hurricane was accompanied by heavy rains, which continued up to when the cyclone had passed. The streets are broken up from the powerful rush of water from the hills, and traffic is stopped in part. Prince's street until repairs are made. Some people who have not lost their homes got their furniture and other belongings damaged by the rain which fell in torrents, as some of the best houses in town were reported leaking through the driving force of the wind with the rain, and some of the houses the galvanized roofing is entirely off.

The more we see and hear of the wreckage in town and country the more we are tempted to write, but will resist the temptation for today on this disastrous hurricane of 1928.

—ST. CROIX ATIS.

Monday, Sept. 17, 1928.

SEVERE HURRICANE (Continued)

what will be done for the island by the Red Cross. Miss Cameron, the local representative declares it is a big proposition, and nothing definite can be said until a report is received from National headquarters. It is hoped that the Red Cross will be above just criticism on this occasion, and thereby assure its continued support by the people.

It is also hoped that the Government will not be slow in giving aid to the people from the Hurricane Fund it is suffering. In St. Thomas, the damage to property is said to be great. In San Juan city a lone property damage is estimated to be \$1,000,000 dollars, and Haiti has had another tidal wave.

Mrs. Josephine Danvers, Mother of Mrs. Eugene Bennerson, and a resident of Concordia (Florida) left her home for town about 8 o'clock yesterday afternoon. Patrolman Bennerson who went in to see if she was at home, was told that she had left and perhaps reached town.

Severe Hurricane
Sweeps Frederiksted

Frederiksted has been severely hit by the hurricane which struck the island on Thursday morning. From one end of the town to another, one sees nothing but destroyed houses. The streets are choked with debris. Electric poles and telephone poles have been thrown down, trees uprooted, the big wharf, lighters and boats, have been destroyed, the country districts are in a state of devastation, and when all the damage is added, the loss may reach several hundred thousand dollars.

While the damage to property has been great, it is not yet known how many lives have been lost. Mrs. Josephine Danvers, the mother of Mrs. Eugene Bennerson, was drowned in Concordia gutter yesterday. She was on her way to town and in crossing the gutter the water was so rough she was obliged to hold on to the bridge. Police Bennerson, who was also on his way to town, was hastened to her rescue, but was unable to save her. See more about this in another column.

It is said that this gale was more destructive than that of 1899, and by far the worst in the history of the island. The speed of the 99 gale was far greater, doing its damage in a shorter time, that of Thursday morning travelled slower and lasted much longer.

As it were few people expected that the hurricane would have been so severe. For the past years warnings were sent out, and the people were told to get out, but on those occasions the wind was kind and the island was spared. On Wednesday afternoon after the first hurricane had been hoisted, many people looked forward to the same experience, but later when the guns were fired it was evident that trouble was near. The Maturra in port loading sugar was obliged to leave work and to get up to the men from this port on board stowing the sugar. This morning she returned but was unable to land the men, and had to get to sea again. They were landed at Christiansted. She has been badly battered. She went south to escape the storm, but was apparently over taken.

The wind which started to rage from Wednesday night did not become furious until Thursday morning when it did its greatest damage. There is hardly a house in town that has not felt the heavy hand of the wind, or drenched by the soaking showers which fell all day yesterday. Many people declared there was a hail storm, and several shocks of earthquake were felt.

It would take several days to record the details of the destruction wrought to private properties and government buildings, and such details would become more some at that, for everywhere one turns it is a repetition of galvanized sheets torn from roofs, sides of houses and galleries blown away. In Free Gut and other parts of town the roofs have been blown to the ground, leaving their occupants homeless and destitute. Other buildings were so badly damaged they had to be abandoned. In the street it is impassable by vehicles because of the rooms belonging to Mrs. Thomas have

been blown across it. Fortunately they are all in tact. Merwins have lost several lighters. Bethlehem has a quantity of wet sugar, stores and groceries considerable wet goods.

Evidently there will be a shortage of houses. Thus far, however only a few people have sought refuge at the Fort, and there are no other cases of hunger and privation as yet reported.

In Christiansted the property damage is said to be equal to that in Frederiksted, but the number of big houses destroyed is larger. Hundreds of people have sought refuge in the Fort, and other public buildings. Many have lost their all, and are being fed by the government. On some estates in the country many of the Great Houses have been badly damaged, and only a few village houses are left standing.

All eyes are now being turned to see

Mrs. Bennerson left Concordia for town and when he reached the bridge, he saw some one hanging off, but he did not know who it was until he got about three yards to the person. He then called:

"Miss Joel!" To this she answered, "Hello!" Mrs. Bennerson then stepped on the bridge and found my self beating against the rocks, in the terrible stream of water, and was taken about 400 feet down the gully where I had struck a rock and my building had saved my life. But I never saw Mrs. Danvers again until she was found by a searching party that I met just after reaching town. The party consisted of Mrs. Bennerson, Mathilda Peterson, Ernest Folkes, Arnold Gumb, Bill George, Joe Levine, Arthur Saviner. Mrs. Danvers was laid to rest 3 o'clock this afternoon.

— West End News —

Saturday, Sept. 15, 1928.

The destructive hurricane of 1928 in the Virgin Islands is fully described in the articles reproduced from The Bulletin in the preceding page.

There was so much damage, in these islands, specially in St. Croix which laid in the direct path of the storm, that assistance was urgently needed.

Therefore, an appeal was made to the American Red Cross by the Governor of the Virgin Islands at that time, Waldo Evans, and according to his annual report this organization contributed with lumber and other building materials and donated approximately \$15,000 in cash for relief work. Also, it gave food and distributed clothing to hundreds of families.

In addition, the Governor purchased approximately \$20,000 worth of building material which were sold at cost and transported to the islands through the Navy Department eliminating freight charges.

Harbor and telephone reconstruction were immediately made available by the St. Thomas Harbor Board and by diverting funds previously appropriated for other projected improvements.

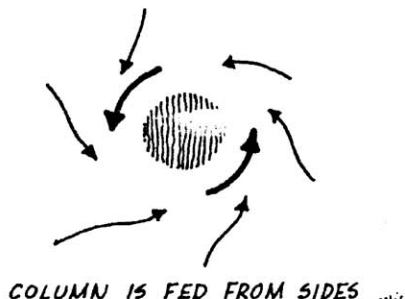
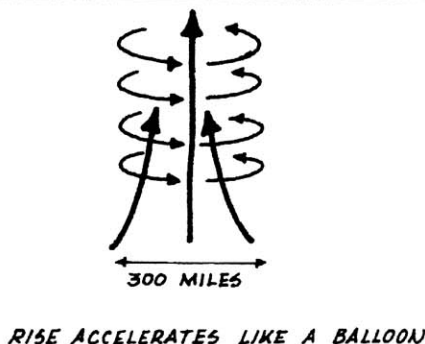
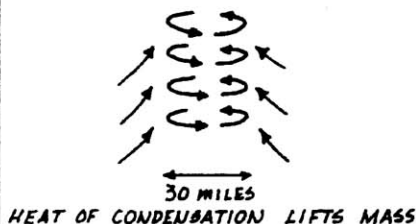
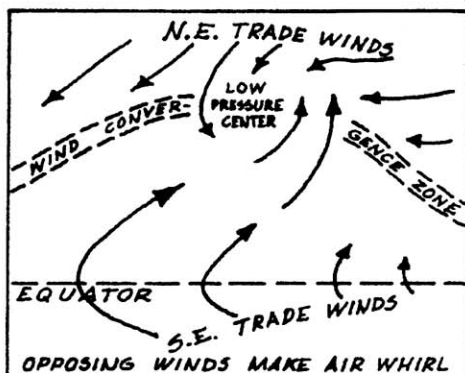
Birth of Hurricanes

A hurricane is born in a hot moist air mass over the ocean. The cyclonic motion is often started as opposing trade winds whirl around each other. This occurs during the summer months when the Northeast and Southeast tradewinds converge north of the equator.

The rotating low pushes air toward its center, forcing the hot moist air there to rise. As the moist air rises, it slowly cools and the moisture condenses. The condensing moisture (rain) gives off heat, further warming the rotating air mass which becomes even lighter and rises more rapidly.

As this whirling air rises, more warm moist air flows in behind to replace it. More condensation occurs, more heat is produced, more warm moist air flows in and the storm increases.

Hurricanes are so violent because of the tremendous amounts of energy(heat) released by the continuous condensation. This is similar to a thunderstorm over land; however, the hurricane has a virtually inexhaustible supply of moist hot air to feed it. The heat given off by condensation causes the air in the hurricane to rise faster and faster. Surrounding air sweeps in rapidly until the hurricane is a giant wheel of violent winds.



STORM TIDE
(6-20 FT. HIGHER)
PRECEDES HURRICANE
UP TO 1,000 MILES

GENERALIZED HURRICANE STRUCTURE

GENERAL DIRECTION OF MOVEMENT
NORTHWESTERLY
BETWEEN 10-30 M.P.H.

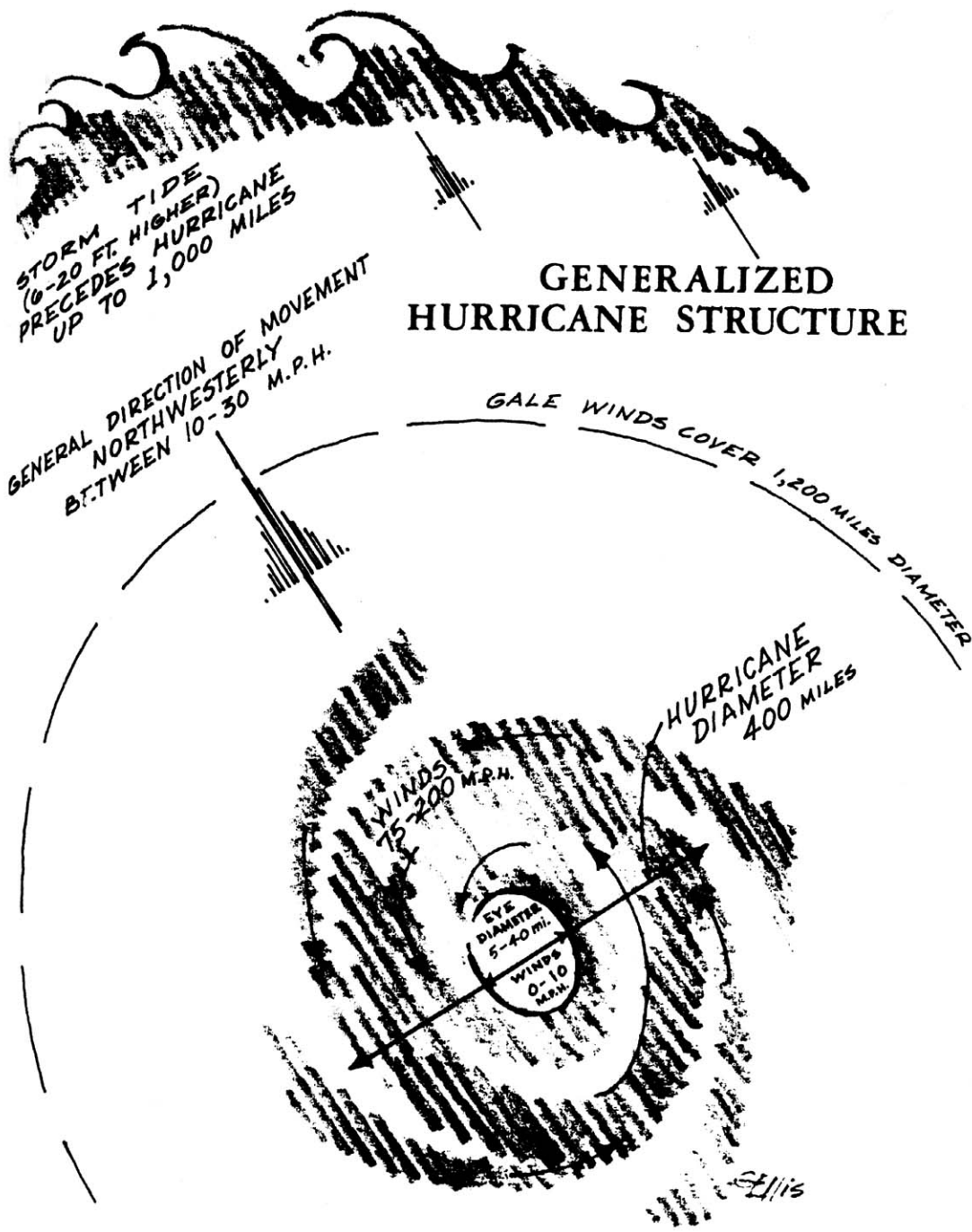
GALE WINDS COVER 1,200 MILES DIAMETER

HURRICANE
DIAMETER
400 MILES

WINDS
75-200 M.P.H.

EYE
DIAMETER
5-40 MI.
WINDS
0-10
M.P.H.

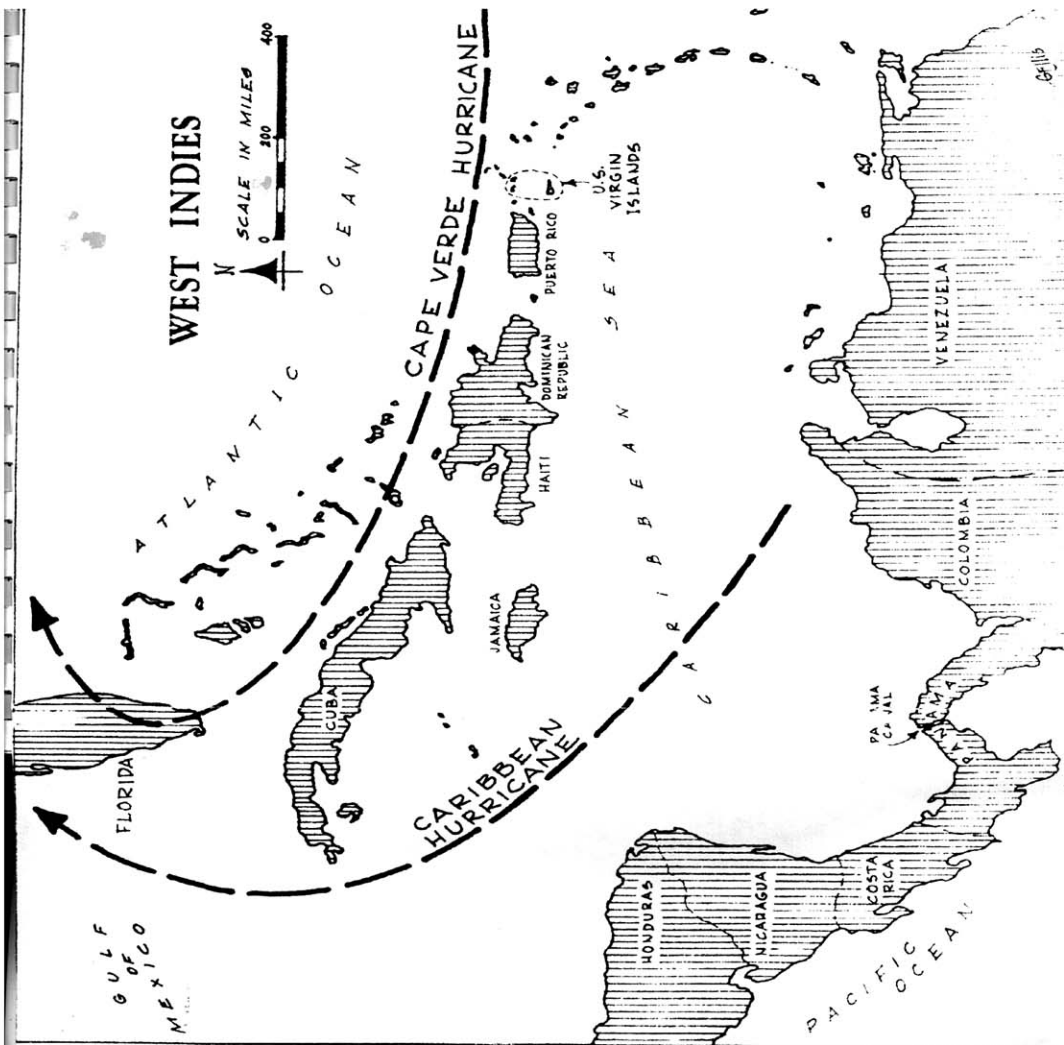
SE/115



There are two cradles for the formation of Atlantic Hurricanes. The Cape Verde hurricanes form in the vicinity of the Cape Verde Islands off the Coast of West Africa. Hurricanes formed there travel westward sweeping over the Greater Antilles toward the eastern coast of Florida. These are the hurricanes that pose the greatest threat to the Virgin Islands.

Caribbean Hurricanes form in the Caribbean Sea off the north coast of South America and travel northward creating the greatest danger to Western Florida and the Gulf Coast States.

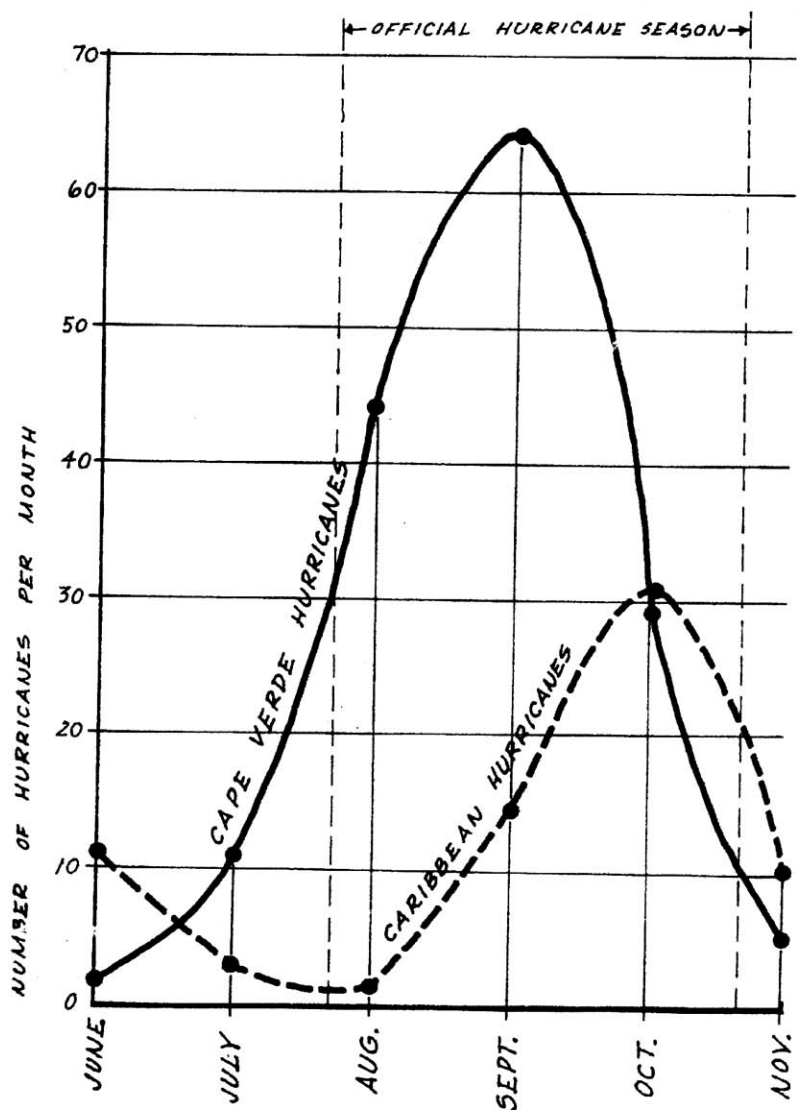
The two families of Atlantic hurricanes form at different times of the summer. The Caribbean hurricanes occur in the months of June and July and again in September, October and November. These are the times when the sun is most directly over head and thus the hottest. The Cape Verde hurricanes happen most frequently in August and September due to warming by ocean currents during this period.



FREQUENCY OF CAPE VERDE AND CARIBBEAN HURRICANES

FOR A 45 YEAR PERIOD - FROM 1887 TO 1932

66119



OBSERVATIONS
during the Hurricane of August 2nd 1837

During the Hurricane described in the article from the St. Thomae Tidende for August 9, 1837 the following meteorological observations were made and printed in that same issue. The format has been modified for easier understanding and some additional notes have been added in *italics*.

"In the morning the wind northerly, light and unsteady with overcast air. The Gale increased by degrees from the afternoon at 2:00 o'clock with heavy gusts of wind from the N.E. to N.W. in this place."

August 2nd

Time	Barometric Pressure	Comments
11:30 A.M.	29.75 inches	middle state of the Barometer with fair weather.
1:30 P.M.	29.68	
2:00 P.M.	29.65	
2:15 P.M.	29.64	
2:45 P.M.	29.60	increasing gale
3:00 P.M.	29.56	
4:00 P.M.	29.50	at 4 o'clock signal made and a gun fired from Mt. Kjar's Observatory as a warning for approaching Hur.
5:00 P.M.	-	From 5 o'clock the Hurricane raged with increasing fury, the
7:00 P.M.	28.40	wind between N.E. and N.W.
7:40 P.M.	28.10	until 7:50 when it suddenly became calm (<i>the Eye, note the extremely low pressure</i>), and which
7:50 P.M.	27.98	continued to 8:40 when the Hurricane suddenly again came on from the South.
8:30 P.M.	27.98	
8:45 P.M.	28.25	
8:55 P.M.	28.37	
9:25 P.M.	28.81	
		Heavy rain with thunder and lightning during the whole time of the Hurricane.
9:40 P.M.	28.96	
10:00 P.M.	29.07	
10:30 P.M.	29.26	Decreasing Gale
11:10 P.M.	29.31	
11:40 P.M.	29.35	A Fire broke out in town

August 3rd

2:00 A.M.	29.46	Heavy rain from 1:00 to 3:00.
5:39 A.M.	29.52	Overcast with some rain
9:00 A.M.	29.63	and wind from S.E.

August 4th

Time	Barometric Pressure	Comments
6:00 A.M.	29.74	Essentially normal barometric pressure.

August 5th

6:00 A.M.	29.75
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From accounts by vessels arrived after the Hurricane from East and West, the direction of the Hurricane has been between W. by N. and W.N.W., and the progress about 14 miles per hour.

DIRECTION OF
HURRICANE PROGRESS
AT 14 M.P.H.

POSITION OF HURRICANE OVER ST. THOMAS

Evening of August 2, 1837

③ 9:00 P.M.

WIND HITTING
FROM SOUTHWEST

② 7:50 P.M.

DURING THE CALM
OF THE "EYE"

WIND HITTING
FROM NORTHEAST

① 6:00 P.M.

6/11/37

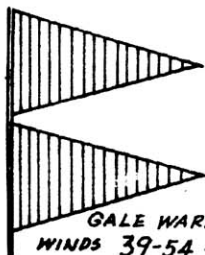
STORM WARNING FLAGS

... FLOWN AT HARBOR
ENTRANCE SIGNAL STATIONS,
AIRPORTS AND OTHER
STRATEGIC PLACES

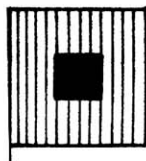
COLORS:



SMALL CRAFT WARNING
WINDS UP TO 38 M.P.H.



GALE WARNING
WINDS 39-54 M.P.H.



WHOLE GALE WARNING
WINDS 55-73 M.P.H.



HURRICANE WARNING
WINDS 74 M.P.H. & UP

Hurricane Warning System

A system for giving advance warnings of hurricanes was established in 1938 by joint action of the U.S. Weather Bureau, Air Force and the Navy. Reconnaissance aircraft equipped with radar and advanced weather instruments fly surveillance missions to suspect areas.

When hurricanes or severe tropical disturbances are spotted, the aircraft fly into the center of the storm every six hours. During this time they take readings on wind intensity, wind direction, location and other meteorological data.

Based on this information, the Bureau issues bulletins every six hours forecasting the probable path of the storm, its intensity and related warning information. As a hurricane intensifies and moves toward land, official bulletins and warnings are issued more and more frequently.

For the Caribbean area, Roosevelt Roads, Puerto Rico serves as headquarters for the Navy Hurricane Hunter squadron. For the East and Gulf coast of the mainland there is a similar station at Jacksonville (Florida) Naval Air Station.

Other important sources of information come from Tiros, Essa and Nimbus satellites and ships at sea. The satellites, transmitting pictures and meteorological data back to earth, provide a means for spotting hurricanes in their very early formative stages. Ships, too, provide important early warning data when their paths cross a tropical disturbance and the information is radioed to the nearest meteorological station.

Through an intricate communications system all information is fed into The Hurricane Forecast Center, Miami University, Coral Gables, Florida. In this Center the data is interpreted and reports are fed to the local Weather Bureau stations. The local stations then make these reports public and issue forecasts and warnings as necessary for their area.

SUGGESTED ACTIVITIES

Interview someone in your community who has experienced any hurricane. Put in writing their account and report it to the class.

Ask a person from the community who has experienced a hurricane to speak to the class about it.

Make the students aware of the importance of following the weather news on radio, television, and the newspaper.

Invite a person from the Public Safety Department, Civil Defense, Fire Department, etc. to give a talk about hurricane precautions.

Prepare a chronological list of hurricanes in the Virgin Islands with dates and other places affected by them.

Investigate how hurricanes get their names and mention some of them.

Explore role of satellites in weather forecasting (Contact NASA).

Field trips to study weather instruments in use. Trips to the airports, Harbor Masters stations (Contact Science Supervisor).

Study weather instruments in the classroom: barometer, thermometers, wet and dry, rain gauges, etc. (Contact Science Supervisor).

Study weather maps and related materials (Contact Puerto Rico Weather Bureau).

Investigate current developments in hurricane detection. (Contact University of Miami, NASA).

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West End News (Frederiksted) October 11, 1916.

OTHER SOURCES OF INFORMATION AND MATERIALS

St. Thomas Public Library
Von Scholten Collection
St. Thomas, Virgin Islands
Tel. 774-0630

Mrs. Agatha Ragster
Science Supervisor
Department of Education
St. Thomas, Virgin Islands
Tel. 774-5370

Puerto Rico Weather Bureau
Forecast Service
Isla Verde Airport
San Juan, Puerto Rico
Tel. 791-0320

Hurricane Forecast Center and
Hurricane Research Center
Weather Bureau Building
University of Miami
Coral Gables, Florida

NASA (National Aeronautics and Space Administration)
Manned Spacecraft Center
2101 Nasa Road 1
Houston, Texas