STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : The Miami Hurricane Center, Miami, Fla.

DATE: Oct. 10, 1958

FROM : WBAS, Wilmington, N. C.

SUBJECT: Report on Hurricane Helene.

Mr. Dunn, here is a rather informal report on the hurricane as we saw it here. We were considerably surprised at the terrific winds. It did not seem possible for the anemometers to stand such a blow. All the CHRN Stations reported their anemometers stayed at the top of the dials for some time. It would be much better if these anemometers were equipped with half-speed switches as is the one here in our office. We thought for a while that even with our half-speed switch we wouldnt get the extreme gusts. The winds were much higher all along the coast than in Hazel but the damage is nothing to compare with that of Hazel. We were certainly fortunate that the storm passed south of us. We greatly appreciated all the help we received from Stanley Rehder and the Red Cross crew. The cooperation with all the people up & down the coast was excellent. They all have expressed great appreciation for our Warning Service.

Copies of the report will be mailed to the RO, CO and Raleigh. (carbon copies) Inclosed are a few pictures I took of the damage along the coast.

H. L. Frost, MIC.

HURRICANE HELENE
Wilmington, N. C.
September 27, 1958

Hurricane Helene developed north of the Virgin Islands on Sept. 23rd and for the following three days kept a fairly steady course northwest towards a strong high pressure area which covered the eastern half of the U. S. It was difficult to understand how the storm could possibly come near enough to seriously threaten the Carolina coast. However the northwest course continued. Conditions began to look serious on the 24th so the Wilmington Weather Bureau Office remained open all night. (Ordinarily the office is closed from 10 p.m. to 6 a.m.) On the 25th the hurricane still continued moving northwest in spite of the high pressure over the mainland. It was felt the situation was serious enough to prepare for full emergency duty. The telephone company was ordered to install three unlisted telephones and a command post was prepared. The Red Cross disaster committee was advised of the critical condition. Information was also sent to the police stations of the beach communities. At that time it appeared the storm would strike south of Charleston but the Cape Fear area would be near enough to experience high winds, perhaps of hurricane force. Trips were made to Wrightsville Beach around sunrise and again near sunset to observe the surf and sea conditions. The Central Office sent a RADAR specialist, Mr. Tarblee, to the AirForce Radar station at Fort Fisher (25 miles south of Wilmington) to send out hourly reports of the storm. He arrived at 3:40 p.m. and left at once for Fort Fisher. The Weather Bureau Office was kept open all night

The beach was again visited about 7 a.m. on the 26th. The sea was very rough and so confused that no swell count could be made.

The beach communities were all advised to prepare for the severe storm with 75 mph winds which would strike the coast warly the next day. Then came the 11 o'clock Advisory (NO. 13). Upon receipt of this Advisory the station want on full emergency duty. The Chairman of the Red Cross Hurricane Warning Committee, Mr. Stanley Rehder, was contacted. He came to the Weather Bureau Office and remained on duty until 4 p.m. of the 27th (28 hours of continuous duty). He brought a crew of ladies and gentlemen who worked in shifts. They handled most of our long distance telephone calls and performed a vital service in disseminating the warnings to all communities in the nine counties of the Wilmington Storm Warning District. Mr. Rehder and his crew deserve the highest praise for their valuable assistance. It would have been impossible for the Weather Bureau personnel to handle this work alone. These people volunteered their services and are to be commended for their wonderful cooperation.

The public was informed the hurricane would probably follow about the same course as Hurricane Hazel in '54 and would mostly likely be just as great a disaster. Upon receipt of this information the beach communities prepared for evacuation. Machinery and equipment which might be damaged by water was moved out. Shelters were prepared and by evening, 8 hours later, the beach communities appeared fully prepared for the storm. A trip was made to Carolina Beach with Mr. Tommy Thompson of Radio Station WGNI. The sea was very rough and waves were washing up the beach under the board walk. At the City Hall the police and city officials were busy winding up the evacuation. The city had the appearance of a ghost town. Short broadcasts were

made, via telephone, over both the local radio stations (WGNI & WMFD) Carolina Beach appeared ready for the hurricane. The drive back to the airport was made through heavy rain squalls, typical pre-hurricane weather. All night the Weather Bureau Office was a busy place. The Red Cross crew were kept busy telephoning out the advisories and bulletins. They assisted in collecting reports from the CHRN stations along the coast and the special RADAR reports that Mr. Tarblee phoned in from Ft. Fisher. At 5 a.m. on the 27th a trip was made with Mr. Thompson (radio station WGNI) to Wrightsville Beach. The weather conditions were puzzling. No rain had fallen for hours and the pavement appeared dry. There were no pre-hurricane squalls. The wind was about 25 mph. The full moon was shining through a thin blanket of cirro-stratus clouds. About the only indications of a storm was the tremendous surf and rough sea. A careful swell count showed only 2½ to 3 per minute, which is the lowest observed here in any storm. The only people to be seen were the police and city officials at the police station. Some time was spent there discussing the storm. A broadcast was made, via telephone, over station WGNI. Everything possible was done to let the people know the storm would, most likely be just as bad as Hurricane Hazel. This was the strongest statement it was possible to make. The people remembered what occurred four years ago and were prepared for the worst. It was reported later that all beach communities along the Carolina coast were completely evacuated. Some of the police at Wrightsville Beach remained until they saw their anemometer dial read 100 mph, the highest it could register.

Back at the office the reports from the CHRN stations and the RADAR reports from Ft. Fisher were received and relayed to Miami. Mr. Sandifer, Piedmont Airline employee, assisted in the telephone work. Mr. Rehder and his crew continued sending the advisories and bulletins to all points along the coast. A wonderful spirit of cooperation prevailed. As the hurricane moved nearer the squalls set in again. It began to rain. It rained hard, then harder. Then for hours it RAINED. When the storm ended the rainfall totaled 8.29 inches. The wind had been from the northeast all morning, the velocity steadily increasing. At 10 a.m. it was blowing hard; 11 a.m. it blew harder; 12 noon harder, then for three hours it B-L-E-W. The highest wind ever known here in the past 87 years was the 98 mph gust recorded when Hurricane Hazel struck in 1954. We were a bit surprised when a gust of wind sent the anemometer dial up to 92 mph. But there was much more to come. A steady watch was maintained on the anemometer dial. There was considerable comment and discussion when dial reached 101 mph a new record. The gusts kept getting harder and new records were set every 5 or 10 minutes as we watched the indicator go to 104, 111, 115, 125 and then came a terrific gust of 135 mph. It did not seem possible that the anemometers could stand such a wind. They were expected to blow away at the next gust but fortunately they remained and an excellent record was maintained throughout the storm. After the sheet on the triple register was worked up it showed the maximum velocity for five minutes was 69 mph. and the fastest mile was 88 mph. This greatly exceeds all previous records which extend back to Jan. 1,1871

The people in the office were told that none of them would ever live long enough to see higher winds than they were now experiencing.

The barometer which had been falling steadily all morning began a rapid fall about 8 a.m. The barograph pen had to be raised one inch. High speed gears were used on the barograph. The lowest pressure, 28.795 sl. occurred at 11:19 AM followed by a rapid rise. It had been assumed the hurricane would move inland on the Brunswick Coun ty coast, near or a short distance west of Cape Fear. Its path would then be northeast towards Norfolk. Had it followed such a course, the results would have been more disastrous than when Hurricane Hazel struck in '54. It was a great relief to see the wind direction gradually shift from northeast to north and on to northwest. It is believed the center passed only 20 or 30 miles south of Wilmington.

During the storm the rain was blown with such force it sounded like sleet striking the windows. A lake soon formed west of the building and on it were "white-caps" resembling the ocean. An object was seen blowing by which proved to be the top of the tipping bucket rain gage. The recording pen which had been clicking off two "ticks" per minute was now making a straight line. There was some discussion over the loss of the rainfall record and presently Mr. Renn Huneycutt (Observer-briefer) was seen out in the storm. There were gusts well over 100 mph and torrential rain but he recovered and replaced the raingage top.

A half hour later Mr. Honeycutt went out to recover the top again. This time he took along some wire and fastened the top on securely. Mr. Honeycutt was not ordered to do this work as it was not considered safe to be out in such a storm. His action may seem of minor importance but he should be commended for work "over and above the call of duty". Visibility at times was only a few yards. The torrential rain and 100 mph winds made wild scenes. From the office window occassional glimpses could be had of the large hangar a few hundred yards to the north. Part of the corrugated metal roof was stripped off. The building housing the Pennington Flying Service office lost its entire roof, ceiling and part of the cement block walls. A small type airplane which was thought to have been securely tied down was blown over. When the wind began reaching gusts of 80 mph and was still increasing, the CAA tower was abandoned. Later one of the windows was broken.

About 9 a.m. there was power failure. The CAA emergency power was turned on but it failed. The CAA maintenance man was called and fortunately was able to remedy the trouble. Emergency power was used for two days.

It was realized early in the morning that all communications might be lost. The National Guard was anxious to render every assistance possible. A telephone line was strung from the Weather Bureau Office to the National Guard radio station, 200 yards west. As the fury of the storm increased, first one line then another went out, including the National Guard telephone. By 1 p.m. all communications were lost. Perhaps the most serious loss was the

contact with the RADAR station at Ft. Fisher. The station had been tracking the hurricane continuously and the reports were of utmost importance. It was not possible to use any of the six telephones in the office. After a while it was a surprise to hear one of the telephones ring. Over it Central could call us but we could'nt call out. This was a fortunate break. The Operator was asked to connect us with the Weather Bureau in Raleigh and for the next two hours a running report of the storm was given to the Raleigh station. By this means we were enabled to receive the 1 and 3 o'clock bulletins on the storm. One of the Red Cross ladies hurridly typed these and a copy was given to an Aid to Governor Hodges. The Governor was in the city during the storm. Rep. Lennon was also in town and spent some time at the Weather Bureau Office.

By 4 p.m. the worst of the storm was over. Mr. Stanley Rehder had been at the Weather Bureau for 28 hours and he now left for some much needed sleep. The Weather Bureau should honor him and his loyal crew for the vital assistance they so willingly gave us. It would not have been possible to carry on the work without their wonderful cooperation. People began leaving the office and soon only the Weather Bureau crew remained. The office was a mess. Rain had blown in around the doors and windows. The Red Cross had sent out a large box of sandwiches and doughnuts and a hugh mug of coffee. Now partly eaten sandwiches, paper coffee cups, empty coke bottles, cigarette butts, teletype paper, wet clothing and miscellaneous messy things littered the place. The aftermath of the hurricane. All communications were out so to the one man left on duty fell the tedious job of cleaning up the place. Hurricane

Helene was gone but certainly not forgotten.

From the airport a drive was made down through the business section of the city. A great many stores had lost their plate glass windows. Broken glass littered the sidewalks and debris littered the streets. Many streets were blocked by uprooted trees. Many of the century old live-oak trees and hundreds of large pine trees were blown over or broken off by the wind. Many trees had fallen on the houses. Most all TV antennaes were down. Tangled masses of spanish moss, tree branches, pine cones, leaves and trash covered the streets and yards. Moss blown from the trees was draped over telephone and power lines. Traffic was heavy on the streets as people drove about to see the amazing results of the storm. Six thousand telephones in the city were "knocked out", Electricity was off and the TV and radio stations were off the air. An attempt was made to drive to the beach but police were stopping all traffic there. Most all the drive-in theaters lost their screens and other equipment. Mayor J.E.L.Wade has estimated the damage in the city will total one million dollars.

The next day (Sunday) a trip was made to Wrightsville Beach and down the highway to Carolina Beach. It was surprising to see how little damage had been done at the beach communities. There was little or no water damage at Wrightsville Beach but practically every house showed shingle or roof damage. Many porch roofs were blown away. Water was reported to have been 9 ft. above normal but that was at the time of low tide. The highest water was about 3½ ft. above the normal high tide. Some water came over the lower streets at the north end of the island, but there was no serious

flooding. The island had been completely evacuated before the storm. The police remained until 11 a.m. When they saw their wind velocity indicator go to the top of the dial, 100 mph, they too abandoned the island.

About 15 miles south of Wilmington, near Carolina Beach, there was a surprising sight. A 625 ft. radio tower which was not damaged by any of the hurricanes of 1954-55. Someone said it was built to withstand winds of 250 mph. It was broken off at about the 300 ft. level by Hurricane Helene. It seemed that practically every building in Carolina Beach was damaged by the storm. There was evidence of water damage to the board walk and along the waterfront but it was negligible when compared to the wind damage. One rather amusing sight was a filling station operated by the Shell Oil Co. The wind had blown away the letter "S" on a prominent "SHELL" sign. At 8:45 a.m. the CHRN anemometer at the police station was seen to reach 90 mph. At that time the barometer was reading 29.30. The city was completely evacuated after that and no further observations were made. This is also a Storm Warning Bisplay Station. After the storm, the 3 in. signal mast in front of the City Hall was found to be badly bent and will have to be replaced. One cup was blown off the small CHRN anemometer.

At Kure Beach, south of Carolina Beach, the effects of the terrific wind was perhaps even more evident. Several cement block houses were total wrecks and many, many others had lost their roofs. One puzzling situation was the loss of 300 ft. of the fishing pier. There was little other evidence of water damage. There seemed to have been very little erosion on the beaches. More indications of erosion was evident at Fort Fisher, a few miles farther south. One small store building was missing there. Probably destroyed by a combination of wind and water.

On Sept. 30th , three days after the storm, a trip was made down along the Brunswick County coast. Most all the bill boards along the highway were badly damaged or demolished. No damage was visible to the 200 or 300 ships of the "mothball fleet" tied up in the Brunswick River. They had a million dollar loss in Hurricane Hazel in '54. A great many trees had been blown down on the highway. They had been cleared away but the cut up stumps and prostrated trees were to be seen everywhere. Many farm buildings showed severe roof damage.

Pleasant Oaks Plantation, 12 miles below Wilmington, suffered tremendous losses. The plantation was established in 1725 and was one of the show places of the Cape Fear area, especially during the annual Azelia Festival. The hurricane

uprooted trees that were 5 and 6 ft. in diameter. Over 400 trees were lost including approximately 100 of the hugh live-oaks, many of which were over 300 years old. Pleasant Oaks lost a large number of trees in Hurricane Hazel but "nothing in comparison with the devastation which we now have". It is so badly damaged it will be closed for 4 or 5 years, at least.

At Southport the damage did not seem to be as great as had been expected. A newspaper story said Southport was damaged more than any other city. Many of the hugh old oak trees were damaged and broken branches lay about the yards. The little city park was a mass of broken branches, litter and debris, but none of the giant live-oak trees were blown over. Many of the houses showed severe roof damage. The Storm Warning Displayman, Mrs. Jessie S. Taylor said this hurricane had the highest winds she had ever seen, but Hurricane Hazel was the most destructive due to the high water. The mast on the Storm Warning Tower was bent by the wind in Hurricane Hazel. A new mast was installed and it was bent more by Hurrinane Helene and will have to be replaced again. 100 yards from the tower a piece of the red hurricane flag was seen lodged in a tree. Mrs. Taylor has been the Co-operative Observer since 1900 (she served about ten years before she was married. Her maiden name was Stevens.) She has been Displayman since 1921. She was commended and received a silver medal for Meritorious Service for her work in the Hurricane Hazel disaster in 1954. She is recommended for additional award for her excellent service in disseminating the warnings before Hurricane Helene struck.

Long Beach, 10 or 12 miles west of Southport, lost every one of its 300 houses in Hurricane Haezl, 4 years ago. Probably 150 homes were rebuilt after that storm. Nearly all of them showed severe roof damage and several were demolished. The terrific winds were offshore this time. It was interesting to note the damage to different type houses. The common type of construction is cinder block or cement block and it seems the style to build low one-story houses with flat roofs. The roofs overhang the walls about 2½ or 3 feet on all sides. Many of these roofs were ripped off in one piece and went sailing through the air like kites. One was carried some distance and several of the cement blocks were still attached. Only a part of one wall of the house remained. Indications are that houses made of cement blocks were the first to be destroyed. The Government should issue a bulletin with advise on the best building material for houses constructed in areas subject to wind storms.

Also the custom of building overhanging roofs in such areas should be discouraged. Hurricane Hazel in '54 cut a new channel across the western end of the island. About a year ago the U. S. Engineers closed this channel but the fill is quite low. Water covered the highway in Hurricane Helene but there was little erosion.

At the Oak Island Coast Guard station the anemometer "went out" at 92 mph at 10:45 a.m. The wind increased for the next two hours and was estimated at 125+. The wind direction shifted from NE to N and NW. The tide was estimated to have been three feet above normal. The lowest barometer recorded was 27.58 at 1 p.m. This barometer should be checked for accuracy before this figure is accepted as the reading appears much too low. Interesting information was obtained from the Frying Pan Shoals light ship located 35 miles offshore. The hurricane center passed north of the ship. The wind shifted from east to southeast, south and southwest. The lowest barometer was 28.18. The anemometer was carried away when registering 110 knots, from the SSE at 1:30 p.m. The wind was later estimated at 120 knots. Storm swells were 25 ft. high. The anchor chain broke about 2:30 p.m. setting the ship adrift.

Ft. Caswell, on a point at the mouth of the Cape Fear River, dates from colonial times. Some of the buildings and trees are very old and have seen many hurricanes. Damage there was worse in this storm, Helene, than in Hazel 4 years ago. Many of the trees were uprooted and the houses damaged by the wind. There was no water damage.

The CHRN Observer at Holden Beach, Mr. J. A. Hewett, evacuated the island before the storm. All CHRN observers had been instructed to take along their Weather Bureau aneroid barometers when they evacuate. Mr. Hewett did this and reports the lowest pressure he noticed during the storm was 28.85. The tide rose about 4 feet above normal. There was very little water damage on the island but all the houses showed roof damage from the wind. One demolished house looked as if it had exploded. Mr. Hewett said the wind was much higher in this storm than in Hurricane Hazel and it was estimated at 150 mph in that hurricane. Mr. Hewett was very cooperative in giving us reports whenever he was called regardless of the hour, and he took special pains to disseminate all advisories and bulletins given him.

Ocean Isle, like Holden Beach and Long Beach, had all its houses destroyed in the '54 hurricane. The place has never been rebuilt like the other resorts. Only a few houses are located there now. During Hurricane Helene erosion was

was apparently greater than anywhere else on the North Carolina coast. (except possibly on Core Island northeast of Cape Lookout) However the erosion was slight when compared to that of the hurricane 4 years ago. All of the casualties (20) in Hurricane Hazel occurred at Ocean Isle, Holden Beach and Long Beach. Everyone was evacuated from the islands this time and there was no loss of life. Much wind damage to the houses was observed.

Many houses in the Shallotte area and along the highway (No. 17) were damaged by the wind. There was a pathetic story in the newspaper about a dairy farmer near Bolivia, about 20 miles east of Shallotte. A large barn collapsed in the storm killing fifty dairy cows.

The area visited was the Brunswick County coast where the Hurricane Hazel disaster occurred four years ago and 20 lives were lost. All persons interviewed praised the Weather Bureau Storm Warning Service and seemed very grateful for the warnings given them.

On October 1st a trip was made along the coast from Wilmington to Cedar Island. Most all farm houses and settlements along Highway 17 showed the effects of the hurricane. The first stop was at New Topsail Beach, at the southern end of Topsail Island. Mr. Dewey D. Justice, our CHRN Observer, was in a discouraged mood and insisted on resigning. Some news commentator has misquoted one of his reports and he was in the "dog house" with the local people. The Wilmington Weather Bureau Office called all the CHRN stations for reports on the weather and sea conditions. These reports were assembled and relayed to Miami. They were not intended to be press reports. A news commentator obtained one of the Topsail reports, and trying to be sensational, he changed its meaning and broadcast it over his radio station. Mr. Justice' reported the water "one foot above normal, swells 9 ft. high and four per minute" , a perfectly sensable report. The news commentator reported the water was 9 ft. deep over Topsail Island. Mr. Justice was blamed for this error. He received many telephone calls from people in the interior who owned houses on the island. The local people became very angry over the "wild report" which they thought Mr. Justice had sent out. Mr. Justice remained on the island until 11:30 a.m. and was in the last party to evacuate. At that time his barometer read 29.29 and the wind was east 75 mph. The tide reached 3 ft. above normal. Swells were about 12 ft. High and were coming in at the rate of 4 per minute. At 3 p.m. Mr. Justice estimated the wind was blowing 100 mph in Jacksonville, the evacuation point. He returned to Topsail Island at 5 p.m. At that time the tide was normal the wind was northwest 65 mph with gusts to 75. The island was never flooded and there were no breaks in any of the sand dikes and dunes. Mr. Justice

has always been one of our most consciencious, loyal observers. He did outstanding work in sending in the reports at all hours of the day and night before the hurricane struck. He also did a wonderful service in disseminating all advisories, bulletins and warnings. All our CHRN Observers rendered outstanding service but Mr. Justices' name should head the list of award recommendations. Rainfall at Topsail totaled 5.50 in. Near the south end of the island there is a strip, perhaps 100 yds. wide, where damage to houses was the worst. Two houses in this section were demolished and others lost their roofs. From indications it seemed that tornadic winds swept through the section. The windward side (north side) of all houses looked as if they had been sand blasted. An interview was had with one of the County Commissioners, Mr. Harvey Jones. He praised the work of Mr. Justice and the Weather Bureau Storm Warning Service. The only complaint was the sensational, false report of the news commentator. Both Mr. Jones and Mr. Justice highly praised the work of Sergt. Clark of the State Highway Patrol. Sergt. Clark received the warnings which were telephoned to Mr. Justice and hurridly disseminated them to all residents of the island, particularly those without telephones. He attended to the evacuation and saw that no one was left stranded on the island. Sergt. Clarks' service was highly praised by everyone.

Sneeds Ferry, like all other places along the coast suffered heavy wind damage, especially to roofs and TV antennaes. The CHRN Observer, Mrs. Clara M. Everett, reported the lowest barometer reading she noticed was 28.76. The anemometer indicator remained at 100 mph, the top of the dial, for some time then stopped recording. The wind direction was northerly all the time and there was no flooding. The storm kept Mrs. Everett very busy looking after her house and small children yet she always had her weather reports ready at the scheduled times regardless of the hour, day or night. Personal convenience was sacrificed and she could always be depended upon to give us valuable information when it was needed.

At Swansboro the CHRN station is in the police station. The anemometer indicator remained at 100 mph (top of the dial) for a long time. The highest wind was given as 115 + mph, a conservative estimate. The tide was estimated to have been 4 to 5 ft. above normal. The lowest barometer reading noticed was 28.52. There was very little flooding and little water damage. Many of the houses show roof damage. Two boats were left stranded. One, a palatial yacht, was heavily damaged and may be beyond repairing. The people at the police station were very enthusiastic about the Storm Warning Service and expressed

great appreciation for the warnings sent them. They were thanked sincerely for the reports given to us. It was hard to tell who appreciated the service of the other the most.

At Morehead City the Storm Warning Displayman, Mr. John S. Parker, performed a great service in disseminating the warnings. He has no anemometer but stated the wind was stronger than in any of the hurricanes of '54 and '55. There was much damage to houses, trees, etc but very little water damage. At nearby Ft. Macon (Coast Guard Station) about 2 miles south across the channel, the tide rose 2 ft. above normal. The lowest barometer observed was 28.68 and the highest wind was estimated at 110 knots. (127 mph) The eye of the storm was nearest the station at 6 p.m. A report from the Coast Guard states the lowest pressure observed at Cape Lookout was 27.98; the highest wind southeast 125 knots. The eye past nearest to Cape Lookout at 6:30 p.m. The tide was estimated to have been 4 ft. above normal. This would seem to indicate the storm was just as bad as the "Terrible Storm" of August 19, 1879.

A special research wind station is located at radio station WMBL on Radio Island, between Morehead City and Beaufort. The special anemometer at this station blew away when the wind velocity reached 90 mph, about 7 p.m. The storm was at its peak from 5:30 to 7:30 p.m. There was no flooding. The lowest barometer noted was 28.40. (recording barometers should be equipped located at some stations along the coast. Surely the Special Research Wind station and the Coast Guard stations should be equipped with barographs, at least during the hurricane season).

Farm buildings and villages along Highway 70 from Beaufort northeast to Atlantic were battered by the hurricane. Mr. Harry Fulcher, CHRN Observer remained at his post until he saw his anemometer reach 100 mph (as high as it will register) about 5:30 p.m. then went to the shelter in the school building. The lowest barometer noticed was 28.90. The wind was from the east until 7 p.m. when there was a lull lasting 15 minutes. The wind then shifted to the north. The water height in Core Sound was about normal until the wind shift. At midnight it was 5 to 6 ft. above normal. Mr. Fulcher said the water was the highest he had ever seen, even higher than in the hurricane of 1933. Others said it was the highest since the 1933 hurricane. Mr. Fulchers brother and his wife, Mr. & Mrs. Clayton Fulcher, started to drive to his fathers house after the wind shifted. They reported seeing a wave of water about 18 in. high coming towards them on the highway. The car was quickly turned around and before reaching higher ground they were driving in water 2 ft. deep. Evidently the north wind brought in a small Bore, storm surge or "Tidal Wave". The section of the coast from Cape Lookout to Drum Inlet has always been protected from the ocean by the long narrow Core Island. Erosion was severe during the hurricanes of 1954-55 and has continued. On previous visits to Atlantic the people expressed great concern over the Core Island erosion. Wide channels across the island would expose the mainland to the open sea, with disastrous results in severe storms. Mr. Fulcher stated he examined the island after Hurricane Helene and found 50 channels cut across Core Island. He said the island is now hardly more than a chain of small islands. This is a very serious matter. It is

requested that on the next flight of the Weather Bureau plane along the Carolina coast a careful examination be made of Core Island. Should there be any important channels across the island it will seriously complicate the forecasting of high water stages on the coast of Carteret and Pamlico counties.

It is believed that a study of Hurricane Helene will show the 15 minute lull noticed at Atlantic was not the "eye" of the hurricane, at least not the dominant center. There are a number of things about the hurricane that seem hard to explain. But this seems to be one characteristic of most all hurricanes.

Mr. Fulcher states Hurricane Helene gave them the least rainfall (2 inches) and the highest tide of any previous storm, including the hurricane of 1933. In this storm the water level was normal until the wind shifted to the north. The north wind blew the water down from the shallow Pamlico Sound.

The highway from Atlantic to Cedar Island crosses a low level salt marsh. The five mile drive across the marsh reminds one of the flat prairies of western Kansas. The marsh is so low that a good "Northeaster" can put water over the highway. During the hurricane dead marsh grass floated across the highway and for a time the road was blocked by the grass which was, in some places, 4 ft. deep on the pavement. At Cedar Island the tide was about normal until the wind shifted to the north then it rose 4 ft. in only a few minutes. One reliable witness stated the water continued rising and reached a height of 8 to 10 ft.(Others estimated the height to be 7 to 8 ft.) Thirteen homes and two stores were damaged by salt water. There was considerable erosion and the

fishing pier was destroyed. There is no information regarding the highest wind velocity or the lowest barometer reading at Cedar Island.

Over the Wilmington Storm Warning District serious erosion was noted on Ocean Isle and Cedar Island, at opposite ends of the district. It appears that Ocean Isle was just about in line with the northwest course of the hurricane before the sharp curve to the northeast. No doubt erosion occurred along the northern section of the South Carolina coast. Erosion on Cedar Island was caused by the water in Pamlico Sound being blown down by the 100 mph. plus, north winds. Wind damage appeared to be greatest from the Brunswick county coast to Topsail Island.

So many different estimates have been made on the total storm losses, that it is difficult to tell just what the total will be. The President designated the regions of North Carolina hit by Hurricane Helene as a major disaster area.

The merchants have replaced their shattered show-windows; the people have been busy cleaning up the uprooted trees and debris; roofs have been rapidly repaired. Within a few weeks time all evidences of the destructive hurricane will be erased. A few places, the Pleasant Oaks Plantations and others, will not recover from the storm for a great many years.

Hurricane Helene swept along the entire coastline of the Wilmington Storm Warning District. Each of the CHRN stations recorded winds of 100 mph or over. Past history shows that whenever a major hurricane occurs anywhere along the coast of the U. S. from Maine to Texas, many lives are lost. There were no casualties when Hurricane Helene struck the Carolina coast.