
The Train Never Got There
50 Years Since the Labor Day Storm
Seeing the Eye of a Hurricane
Mariel Harbor: A Panoramic View

The Historical Association of Southern Florida

UPDATE

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“There is no aspect of this museum that has not felt the impact of our Volunteer Staff. We are indebted to you all.”

— Randy F. Nimnicht
Executive Director

THE HISTORICAL ASSOCIATION OF SOUTHERN FLORIDA

THANKYOU MOLLY BLYTH THANKYOU PAT BONAVIATHANKYOU IRENE
BECKONTHANKYOU OSCAR CROGWELLTHANKYOU CONCHITA CAVANZO
THANKYOU BARBARA DREWTHANKYOU VALERIE DOUBERLEYTHANKYOU
RAQUEL FUNDORATHANKYOU BETTY FIELDTHANKYOU BESS FREEDTHANK
YOU RUTH EL SASSERTHANKYOU DONG GABYTHANKYOU ELOISE GABYTHANK
YOU CHRIS HANSENTHANKYOU PAUL KEEFETHANKYOU CONNIE KEEFE
THANKYOU IRVING LIFSHITZTHANKYOU ANNE SCHIFFTHANKYOU CAROLE
WERNSTROMTHANKYOU PAULETTE WARDTHANKYOU SUZANNE NASCA

AN ASSOCIATION OF PEOPLE SHARING
AN INTEREST IN THE HISTORY OF
SOUTH FLORIDA AND THE CARIBBEAN

The names on this page are of very special people. They are volunteers at the Historical Museum. They work in the Museum Store, help in the Research Center, teach school children or aid in Collections. Without their many hours of volunteer service, the Museum simply would not function as well. Next time you see them in the Museum, join us in saying THANK YOU.

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UPDATE

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On the Cover: Rescue train headed for Matecumbe and Lower Matecumbe keys to pick up veterans in 1935 Labor Day hurricane reached Islamorada before the wind pushed a wall of water over it, derailling it. (MASF, gift of Mrs. Karl Voelker)



Rodolfo Cortino, University of Wisconsin specialist in Hispanic Theater, left, joins HASF vice president Raul Rodriguez, president Marcia Kanner, and executive director Randy Nimnicht on the Cultural Center plaza at the opening of the exhibit *Two Centuries of Hispanic Theater in the United States*. (HASF, WY Ostrenko)

AROUND THE MUSEUM

VIEW FROM THE BRIDGE

Like many others in Dade County, I have for a long time been aware that a parallel culture exists here, the vivid Cuban way of life that adds spice to our cultural broth. New words have been added to our vocabulary: quince, paella, media noche; but words do not a language make, and the language barrier continues to run like a river separating two great groups of Dade Countians. It was with a view to bridging this cultural barrier that HASF staged its recent exhibit, *Two Centuries of Hispanic Theater in the United States*.

Some of you who were lucky enough to see the exhibit may have been as unprepared as I was for the visual impact of this stunning show: the costumes and stage sets, the evocation of strange religious rituals in the santaria play *Santa Camila de la Habana Vieja*, the theatrical bravura that seems quintessentially Hispanic. The colors — black, red, white, royal purple and deep emerald green — project an aura of emotion, exposed

but dignified, that summons up memories of Goya, Velasquez, Cervantes. There is energy, as well as zest and humor. The most surprising thing to me was the revelation of the scope and depth of theatrical enterprise here in Miami over the last twenty years, from Spanish classics to musical comedies. *Macbeth*, *Saint Joan*, *The Cherry Orchard*, everything from *Dracula* to *Same Time Next Year* has played here in Spanish. Too bad this rich cultural experience is almost unknown outside of the Spanish-speaking community.

Recently I talked to two of the men most responsible for bringing *Two Centuries of Hispanic Theater in the United States* to the Historical Museum in April and May, Raul Rodriguez and his cousin, Eduardo Corbe. Many of us know Raul as HASF Trustee and Vice President, and as a rising young architect whose firm has just completed the new campus of St. Thomas University at the north end of the county. He's a quirky blend of off-hand Ivy League charm and Latin intensity.

Over a year ago, he said, he was asked by Randy Nimnicht for his opinion about bringing to the Historical Museum the Hispanic Theater exhibition developed by Nicholas Kanellos of the University

of Houston. He liked the idea well enough to recommend that Linda Williams be sent to Houston to see the exhibition. Linda's report was so enthusiastic that the event was scheduled for April of this year.

As a prime mover in bringing the exhibition here, Raul is especially pleased that the sponsor of the plays which were an important part of our local enhancement project was General Federal Savings Association, the first Cuban savings and loan institution in the United States. From its inception, Raul told me, GFSA has sought out the working class depositor. In its advertising it uses the character of Roberto, the building super in the Cuban film *El Super* (who wanted to leave the Bronx and go live with his family in Hialeah), as its corporate spokesman.

Despite an idyllic childhood in a wealthy Cuban family, Raul Rodriguez identifies closely with those Cuban exiles who, for reasons of poverty, language or color, lack the advantages which have made entrance into American life relatively simple for him. Deeply satisfying as his life is in Miami, he still feels nostalgia for the lost life of Cuba, for the great cosmopolitan city of Havana, for the Hispanic heritage

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"There Was Not a Thing Left"

Edited from an oral account taped in April 1985 by Elizabeth Dutcher Bradford, now Mrs. James Ternent.

My husband Carson Bradford, Jr. and I were living at Lower Matecumbe in 1935. We had a restaurant, a service station, fishing docks for boats to tie up to and service for them. Our place was next to the ferry boat landing. The ferry took you from our key, Lower Matecumbe, down to the next key so that you could join the road again and drive on to Key West. The ferry came in once a day and people drove down in time to take the noon ferry across.

At this time the veterans from WW I were quartered along the keys. They had marched on Washington, demanding a bonus for their part in the war. They had camped on the capital grounds and were finally sent to the keys to build the overseas highway. It was still deep in the depression and this gave them work. We had about 350 veterans at Lower Matecumbe.

We also had about 75 fishermen who kept boats there and used Matecumbe as their base to catch fish, bringing them back where trucks would load the catch and take it back to Miami. It was a busy place, always something going on, and when the veterans came to that tiny little place, 350 of them were a lot of people. We had what was almost a country store except that we had tables in there and we served lunch. We had a chef and a waitress and helped supply the fishing boats with the food they needed and the pleasure boats that came down and docked.

On about the first of September there were warnings of a hurricane in the Caribbean. Sunday, the second of September, my husband's father, Carson Bradford, came down as he often did on weekends. My husband and he talked it over and said, well, they'd better get me and the children — two little ones, Betty Ann, two and Carson, ten months — back up to Miami just in case the storm got bad. So Sunday we three and Edna, the nurse went with Papa in my husband's car, which was larger, to the Bradford's house on Miami Beach. By that time the storm was getting closer.

That night it got very bad, soon the lines were down. The electricity was gone but the telephones were still working so Papa Bradford would call Matecumbe and talk to Carson. Papa would tell Cardy he'd

better get in his car and come on but Cardy would say, "No, I can't leave until the veterans leave. They're sending a train down for them and as soon as the train gets here and they leave I'll get in your car and leave."

Finally, late at night when there was no electricity in Miami — there was no electricity anywhere, I guess — we sat in the car and listened to the car radio and Papa called Cardy again and said, "Son, you'd better come up. Get out of there." Cardy said, "Well, Dad, I don't think I can make it now." While he talked the roof was blowing off the restaurant and he could see the sky. Just then the phones went dead and that was the last we were able to talk to him.

We sat in the car, Papa Bradford and I, all night, listening as long as we could to the radio for whatever they could find out about the storm while Mother Bradford went upstairs and got her Bible and stayed there praying. Most of the people on the Beach had left their homes and gone to Miami for safety, but we stayed in the big house on the bay and tried to keep it as dry as we could. We listened to the radio as long as they were broadcasting.

The next morning we tried to find some contact and couldn't. I wanted

to get a plane to fly down to the keys and find my husband. I called Pan American, I called the other airlines. None would take a plane out of the hangars. Finally I found someone who said he knew only one person who possibly would take a plane up in this kind of weather and that was Charles Collar. I found out that Collar had just gone out to the airport to check on his plane so I got in the car, went out to the airport and caught him before he left. He said no at first, but he did it. He had a hard time getting the plane off the ground and at times the wind was so strong it was standing perfectly still in the air. At other times we almost hit the trees.

By the time we got out of Miami and down a ways it was afternoon. We went as far as we could down the keys looking for Matecumbe and couldn't find it. It was beginning to get dark and the pilot said "I'm going to have to find a place to land before dark." So he flew back and we recognized Snake Creek. There were people down there so we landed and stayed there all night.

Snake Creek had had its bridge washed out, there was no way to get across to the other side. A lot of people were beginning to come down

Continued



Lower Matecumbe: veterans' camp, Bradford's dock, barge which had been their home, ferry slip and ferry. (THE MIAMI NEWS. Rephotographed)

there to see what they could do and to find people. One of the veterans' camps was right on the other side of the bridge. There were many people who had been killed and people were taking rowboats, or whatever boats they could find, across the creek on ropes and then pulling them back with the wounded in them. They didn't bother with the dead, only the wounded. The only lights were lanterns and flashlights and the lights of some cars that had come down, including a car that belonged to one of the Matecumbe deputies. He had gone to Miami the day before and had escaped the storm. I stayed in his car all night Monday.

Early Tuesday morning my brother-in-law Herbert Harper and our close friend Gifford Bunnell drove down from Miami to Snake Creek. They joined Pilot Collar and me on our second try to find Matecumbe. In attempting to take off the plane skidded into mangroves. Herbert and Giff went overboard to free it. The wings and the tail were torn when it came loose. The men climbed aboard and the pilot took off.

We found Matecumbe. Only part of the ferry landing was left. No, there was one other structure — the bottom part of our houseboat, which originally was a barge, was still there. The top part was completely cut off as though somebody had taken a saw to it. You could see only the floor. This houseboat had been Carl Fisher's luxury houseboat and it was our home while we were down there. It was really a lovely houseboat, four bedrooms upstairs and a big living room. It had one small bedroom downstairs and a bathroom and kitchen and small living room. I had fixed it up as best I could for living; it was right next to the ferry landing and just across the road from the restaurant and store.

As we flew down to land at Matecumbe we could see bodies in the tops of the trees. The water was still so high in most places you couldn't see the land, only the tops of the trees.

Bodies were floating in the water as we came lower and there was not a soul stirring until we landed in the water. When those on the ground saw our plane someone found a rowboat and came out to get us.

There were fewer than fifty of the 350 veterans who were there before the hurricane. They were in a daze. Most of them couldn't even talk. After they saw us and knew that somebody else was still alive they began to come to their senses a little bit. Giff offered them a drink that

helped revive them. One told about a man who had had a 2x4 blown through his chest as he ran out the door of the store just before it was blown away completely. He was still alive so the men went over to where he lay. They pulled the 2x4 out of him but he died immediately. Then they started to take the dead and pile them up on the ferry landing.

My husband was anxious to get out of there when he realized that he could. The plane could carry seven people. The pilot, Cardy and me, Giff and Herbert left room for two of the wounded, one very badly hurt.

The plane was heavily loaded when we took off from Matecumbe to come back and we flew pretty low. The wind was still very strong. We could see that the water had gone down some but the trees were still sticking out of the water in places. The farther north we came the more people we could see. We passed Pigeon Key, a little island east of the railroad accessible only by boat. There was a family living on the key at that time and as we flew over it we could see the people down there. There was a man, a woman and I think the woman was holding a baby and then there was another child, maybe two. The woman and the man were waving diapers to try to get us to land but our plane was loaded and we couldn't.

In Miami we told everyone about them. I talked on the radio later and announced that those people needed help, but I think there was so much confusion that they were forgotten. Later I was told they all had died. It was weeks before people were really helped down in the keys. Even the very injured man we brought back on the plane died soon after we got him to Miami.

Back in Papa Bradford's house on Miami Beach Cardy told of many things that had happened after his father had driven us all up in our big car. There were two corrugated tin garages near the store. Papa Bradford's car was in one and a car with seven people in it had parked in the other garage, the one Cardy usually used.

Before the storm a tank car filled with water had been brought down by the train and left on the tracks near the store. When the storm got so bad and the roof blew off the veterans ran to Cardy to see what to do, where to go. Cardy said, "Go hang onto the water tank," and that may be why as many of them lived as did. Their clothes and even their shoes were blown off. Two young boys who worked for us, about 18 years old, ran and got hold of the

water tank wheels and survived. We saw them two years later in Fort Pierce and they still had their skin peppered. The sand had been blown so deep into their skin it wouldn't come out.

When the roof blew off Cardy ran out and got in the car that Papa had left, which was parked on top of a concrete cistern. One of the Veterans got in with him. He had picked up a stray dog. The first winds had blown the garage off the car and over to one side; then when the eye of the storm passed and the wind came back the other way the garage was lifted up and folded over the car so that it acted as a shield that covered the car so they were lucky there. Cardy knew his mother would be praying for him and he never had any doubt that he wouldn't be all right even though the water came up to his lap. The car with the seven people in it was completely buried in sand and water.

A strange thing happened before the hurricane. The vets were paid on Friday night and Saturday. They often ran short before then and Cardy kept an account book of what they got on credit. Sometimes he did not get paid for a long time but on this Friday and Saturday almost all the veterans who owed him money came in and paid him. Afterward he realized that every veteran who paid him back died in the hurricane.

The train never got there. Whether it was blown off the tracks or something blew on the tracks and the train was derailed or the winds got so bad that they couldn't get any further I'm not sure. I think they got as far as Islamorada.

The veterans kept waiting and waiting for the train and kept asking when would the train come. They were all frightened and they would keep coming to Cardy to ask what to do.

When it was over, all of their little houses, all of their sleeping quarters, all of their buildings were completely gone. There was not a thing left. Nothing was left of the store or the restaurant and service station or the docks and the boats. We had a water tank and generator there. They were gone, too. There was nothing left. It was desolated.

We did find two things: the board with Cardy's name on it, Carson Bradford, Jr., that had been up over the door of the restaurant and we found the chef's big butcher knife. I still have it. Herbert and Giff drove back to Snake Creek on Wednesday, September 5, and picked up the car they had left. The storm was over but those who lived through it never forgot it. ■



Lower end of Long Key and Long Key viaduct. High water floated railroad ties which were caught by the wind, overturning the rails. (MASF, gift of Mrs. Karl Voelter)

Labor Day Storm 50 Years Ago

BY MICHAEL KESSELMAN

In 1933, the Florida Legislature, hoping to stimulate a faltering economy, created the Overseas Road and Toll Bridge District to assist in the construction of a newly planned Overseas Highway. The two-fold purpose of the highway was to assist in luring tourism to Key West and to provide a potential link to a proposed Pan American Highway.

In October 1934 the State Road Department and the Florida Emergency Relief Administration (FERA) of the New Deal proposed utilizing unemployed World War I veterans and laborers in the construction of the highway. Shortly thereafter, 700 were dispatched to the Florida Keys by the federal government to begin the monumental task. Arrangements were also made with the Florida East Coast Railway for special trains to be placed on alert for potential emergency rescue missions in case an impending hurricane threatened the workers' safety.

On August 31, 1935, a tropical storm was recorded northeast of Turks Island in the Bahamas with an unusually small center. The storm rapidly intensified to hurricane strength, however, ravaging Andros Island early in the morning of Monday, September 2. Miami citizens, fearing the worst, began boarding up in earnest, but the storm passed to the south, creating for the Magic City winds of only sixty-five miles per hour.

At noon the hurricane, moving on a west-southwesterly course, pointed its rapidly increasing fury at Lower Matecumbe Key. Fearing impending catastrophe, Ray Sheldon, assistant director of the veterans work camp at Matecumbe Key, requested a rescue train. That Monday being Labor Day, the train's departure was delayed until 4:25 p.m. and lengthy stops at the Miami River, Homestead, and Windley Key stations delayed it further. Late that evening, the rescue vehicle inched

southward into Islamorada and the hurricane reached its apex. The ocean rolled over the tracks and the rain pelted down in torrents, making visibility nonexistent. The wind, suddenly increasing, pushed a massive wall of water over the train, derailing it. The only section left standing was the engine.

Sustained winds had reached an incredible 200 mph, with gusts possibly attaining 250 mph. The hurricane was one of the most violent ever recorded and the most intense to strike the United States mainland. Houses were swept off their foundations as the entire Keys were covered with a massive wall of water at 8:30 p.m. on September 2. The barometric pressure fell to 26.35" at several stations between

Continued

Dr. Michael Kesselman adds another hurricane to a series he has written for Update, this a disastrous one.

Tavernier and Key Vaca. This reading is still the lowest ever recorded at any land station in history. The Labor Day storm is one of two category-five storms to ever strike the United States mainland.

As the storm passed over the Keys it produced tides of eleven to twenty feet above sea level for a distance of twenty-one miles to the right of its center. The water level rose to sixteen feet above sea level at Long Key fishing camp to the left of the center. The highest waves offshore reached an incredible thirty-six feet, massive waves that wreaked havoc on shipping. The Danish motorship **Luse Maersk** was carried over Alligator Reef at 9 p.m. by a "wall of water" and grounded four miles away. The American steamship **Dixie** was washed ashore on French Reef. Many Keys inhabitants were blown into mangrove trees along the coast, while others were buried alive in sand and debris. Buildings, docks, roads, trees, and bridges were all washed away and some of the islands disappeared from the face of the earth.

Many individuals were drowned by the flood waters generated by the raging winds. The exact number of deaths attributed to the storm is still unknown. The Red Cross estimated the final death toll at 409, including 165 civilians and 244 of the veterans. Out of 79 members of the Russal family in the Keys, only 11 remained alive.

The Keys were completely isolated from the mainland and fresh water. By the next day the survivors were desperately gathering rain-water to quench their parched throats. That same day, some men in makeshift boats managed to reach Homestead with their tragic news. People in Homestead hastily organized rescue missions and at the same time the Keys people swiftly formed their own relief efforts. First aid tents were erected for the injured and makeshift food and coffee stands fulfilled the survivors' basic needs. Groups of individuals led by Captain E.B. Parker of the FERA began the unenviable task of searching for victims.

As boats began arriving from Homestead, the seriously injured were moved to nearby hospitals. The first doctor to arrive was Dr. G.C. Franklin of Coconut Grove. What he saw was a scene of total devastation and personal tragedy.

E.B. Parker's house had been located 300 feet south of the Matecumbe Hotel. The storm destroyed the entire structure except fortunately for one small corner in which he and his ten children had taken

refuge. The lowest barometric reading in his house was 26.55".

R.L. Russal of Windley Key reported that the water level was three feet deep in the rescue train's coaches before they were derailed at Islamorada. Subsequently the water rose even higher, reaching to Russal's neck.

Bob Coombs, chief deputy sheriff in Tavernier, reported the water rising four feet above the highway just south of the Tavernier post office. Steel doors, which opened outward at the Alligator Reef Lighthouse, were pushed through the doorsteps.

Marvin C. Thompson of Islamorada stated that after his house was destroyed he took refuge in the Florida East Coast Railway (FEC) freight station. When the station began breaking apart, he left with his two brothers and eleven other survivors, taking refuge in a freight car containing forty drums of oil. The rising water turned the freight car with its contents on its side.

The FEC's tracks, originally built by Henry M. Flagler, experienced the brunt of the storm. Miles of railroad embankment, which rose from several feet above the ground to as high as twenty feet at the bridges, were all washed away. Much of the track was bent and twisted by the 200-mile-per-hour winds and the water that attained heights of 20 feet above mean low tide at Lower Matecumbe Key, according to R.L. Boro of the State Roads Department.

After lashing the Keys, the hurricane spent its remaining fury on the Florida Gulf Coast. At Fort Myers, waves reached fifteen feet. Along the beaches from Sarasota to Clearwater Beach, homes were severely damaged. Hurricane winds and flooding was reported from Tampa northward to Cedar Key. The damage reached a total of \$6,000,000 in Florida.

The grisly search for casualties and the missing in the Keys continued for days after the hurricane's passage. Some victims had tied themselves to trees while others were found floating in the ocean. Most of the missing unfortunately were never found.

President Franklin D. Roosevelt ordered the dead to be quickly identified, placed in coffins, and either sent home or to Miami for burial. However, in a few days conditions in the Keys forced the health authorities to forbid further removal of the dead for fear of precipitating an epidemic. Many unfortunate victims, when their bodies were discovered too late for burial, were cremated. Careful effort was made to hold religious services, performed by a

Roman Catholic priest, a Jewish rabbi, and a Protestant minister. Veterans were given full military honors.

Some criticism and controversy about the tragedy and the cremations resulted in investigations conducted by the American Legion and Veterans of Foreign Wars. In retrospect, it was found that "no culpable negligence chargeable to any person or group of persons could be found," according to Congressman J. Hardin Peterson and Governor David Sholtz of Florida.

With the passage of the storm Henry M. Flagler's dream of an overseas railroad to the Keys was a thing of the past. Miles of embankment had been washed away. The track along much of the route was wrecked by the savage hurricane and, in many areas, washed a great distance from its roadbed. Although the railroad was all but destroyed, the trestles and bridges were undamaged and so the State Road Department acquired the property from the FEC with the idea of building an overseas highway to Key West. When accomplished, the building of this highway was an engineering feat comparable to what the construction of the overseas railroad had been. On trestles constructed to carry a railroad, a twenty-foot concrete motor highway was built. In 1938 the overseas highway, which stretched 139 miles over the Florida Keys, was opened for public use and Key West was again connected to the mainland.

What would happen today if a hurricane or equal magnitude struck the lower southeast coast? According to Dr. Neal Frank, chief forecaster of the National Hurricane Center in Coral Gables, "The overall situation could result in awesome destruction of property and loss of human life."

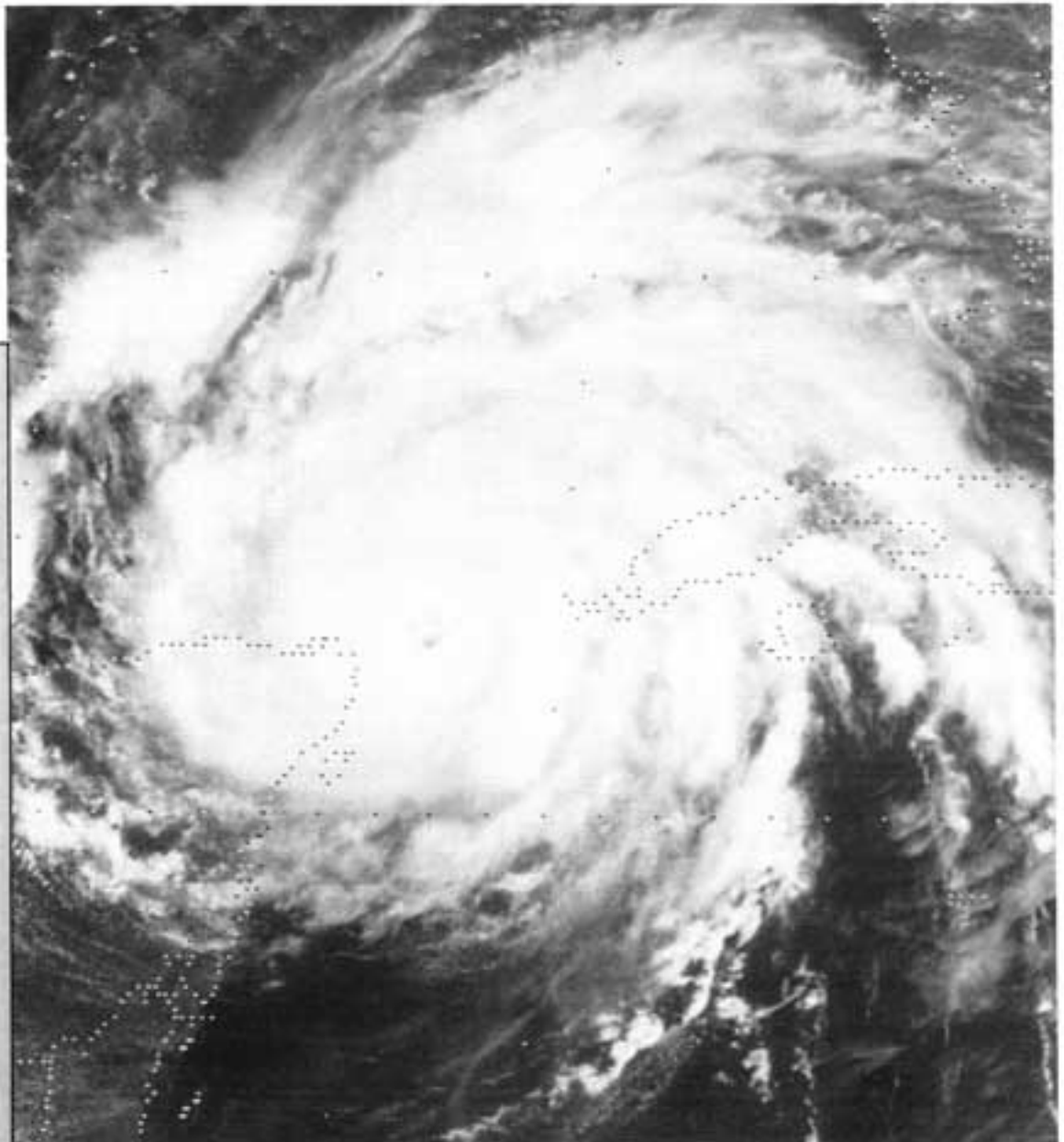
According to Dr. Frank, "The growth along the Keys has been tremendous. It takes at least thirty hours to evacuate the Keys today. The 1935 hurricane grew from a tropical storm to the most intense hurricane in history in a mere thirty hours. Therefore, meteorologists are faced with the necessity to overwarn. Extra precaution is not a severe problem when one looks at the price we could all pay if we did not evacuate."

"If the storm struck Miami, all of Key Biscayne, Miami Beach, and Bayshore Drive would be under six to ten feet of water. If citizens did not swiftly heed evacuation orders, 100,000 or more people could lose their lives. A constant nagging question to local meteorologists is: will there be sufficient time for complete evacuation?" ■



In 1979 the Miami Satellite Field Service Station moved to new quarters with new equipment at Gables One Tower, across from the University of Miami. GOES-Tap images were relayed to customers, including weather service offices in San Juan and Ruskin, the Navy in Jacksonville and Key West, all major Air Force bases in Florida, NASA's Kennedy Space Center, Eastern Airlines and television stations around the state, plus out-of-state taps. One of the pictures they received at 5:30 p.m. 7 August 1980 was a full-disk infrared from GOES-East picturing Hurricane Allen over the Yucatan Channel with the warm eye clearly showing. (NOAA)

Eye of Allen blown up becomes a bottomless pit of still air as would be seen by a satellite passenger were there one. Grids of land masses are computer-implemented to pinpoint what is below the storm clouds. (NOAA)



The Miami Satellite Field Services Station

BY
DONALD
C.
GABY

The space age began on October 4, 1957, with the Russian launch of Sputnik 1, the first man-made satellite to orbit our planet Earth. The United States soon followed with Explorer 1 in January 1958. Even before those historic events the U.S. meteorological satellite program had been conceived and a system of environmental satellites was being planned. Very high altitude photographs, using captured German V-2 rockets in the late 1940s had revealed the great potential of artificial satellites for monitoring Earth's atmosphere. For instance, one of those photographs taken over New Mexico in 1954 showed an entire hurricane in the western Gulf of Mexico!

TIROS-I, their first of a series of "weather" satellites, was launched April 1, 1960. TIROS, an acronym for Television Infrared Observation Satellite, was a system of polar-orbiting satellites that was developed over a period of many years and carried a variety of constantly being-improved sensors. Dr. Neil Frank, the director of TIROS, recalls that as early as 1963 the National Hurricane Center (NHC) at Miami was receiving pictures by mail that were useful for anticipating the arrival of tropical cyclones from the eastern Atlantic Ocean. Late that year TIROS-VIII carried aloft the first Automatic Picture Transmission (APT) system, a means of continuously transmitting satellite pictures that could be acquired by anyone with relatively simple equipment. (A high school student in Hialeah built his own receiver.) Alvin Samet, retired chief of the NHC's Radar and Public Information Section, remembers that the very first APT receiver in the field was installed at the NHC. Tracking those early satellites and registering the pictures were difficult and time-consuming tasks. In early 1965 the NHC moved to new quarters on the University of Miami campus and the former "city" office was combined with the "airport" office. As an aviation weather forecaster who in 1961 had been trained for the TIROS-III readout operation, I* finally had the opportunity to work routinely with satellite imagery. In 1966 I was sent to the National Environmental Satellite Center in Washington, D.C., for two months of additional training. That year the U.S. introduced a system of operational polar-orbiting satellites that provided viewing of the entire world once each day. It had also introduced a series of research and development satellites known as Nimbus. Perhaps the high point in the use of APT imagery at Miami occurred in 1969 when Mr. Samet acquired a Nimbus-2 picture of Hurricane Camille that is still among the best ever of a hurricane.

In December 1966 the U.S. launched the first of a series of geostationary satellites known as Applications Techno-

*The author believes that since "you", "he", and "she" are lower-cased the upper case "I" puts one's self in rank with the Deity, whose nouns and pronouns are normally capitalized.

logy Satellites (ATS). ATS-1 and ATS-3 carried "spin-scan" cameras that provided frequent daytime viewing of almost a hemisphere from their lofty vantage points 22,300 miles above the equator. By 1969 the National Aeronautics and Space Administration (NASA) had completed its studies and made the above spacecraft available for experimental operational use. The National Environmental Satellite Service (NESS) and National Weather Service (NWS) agreed to conduct an ATS experiment. Two field units were established, one at the NHC in Miami. These were "bootstrap" efforts, with funds for them taken from many different pockets, the NESS providing the necessary equipment and training, and the NWS providing space and small staffs. ATS pictures acquired on the ground at Wallops Island, Virginia, were sent down a dedicated, high-quality telephone line to Miami. At the NHC a new unit was created, the Satellite Applications Section (SAS). This SAS was the predecessor of Miami's Satellite Field Services Station (SFSS). Under NHC director Dr. Robert Simpson, I was selected as chief of the SAS and continued later as manager of the SFSS.

For me, February 1970 was spent in training at Washington, and by May the electronic and photographic equipment was installed and tuned. The first ATS-3 picture came down the line to the NHC on June 16, 1970. It was near perfect and showed all of the Atlantic hurricane belt, from Africa into the eastern Pacific Ocean as well as most of North America and all of South America. No tropical cyclones were seen in this first picture, but there was much excitement at the prospect of using such imagery to monitor the upcoming season's storms. The ATS pictures were in the visible spectrum and, therefore, were not available at night. Even so, pictures acquired every 25-30 minutes from dawn to dark represented a gigantic step forward. Showing almost a hemisphere, they were easy to register to land, and with a resolution of about two miles they could be used to locate well developed hurricanes to within several miles. The ten-by-eleven-inch photographic negatives were processed to produce 16mm-film movie "loops", animated imagery wherein a series of pictures was displayed repeatedly for as long as one wished.

Viewing weather systems such as hurricanes in motion added a whole new dimension to the meteorologist's conception of the weather. Animated imagery was also used for tracking cumulus and cirrus cloud elements, thus providing indirect measurements of the low- and high-

Donald C. Gaby, who last year wrote about researching a 100-year-old hurricane, chronicles the development of weather reporting.

List of Acronyms

TIROS = Television Infrared Observation Satellite	GOES-Tap = Communications tap on a GOES data circuit
NHC = National Hurricane Center	DUS = Data Utilization Station
APT = Automatic Picture Transmission	VISSR = Visible Infrared Spin Scan Radiometer
ATS = Applications Technology Satellite	NHEML = National Hurricane and Experimental Meteorology Laboratory
NASA = National Aeronautics and Space Administration	AFOS = Automatic Forecasting and Observing System
NESS = National Environmental Satellite Service	McIDAS = Man-computer Interactive Data Access System
NWS = National Weather Service	NOAA = National Oceanic and Atmospheric Administration
SAS = Satellite Applications Section	
SFSS = Satellite Field Services Station	
GOES = Geostationary Operational Environmental Satellite	



Florida photographed at night by a polar-orbiting satellite with infrared imagery shows surface temperatures. The darker shades indicate warmer surface temperature, the darkest being the Gulf Stream winding between Florida and the Bahamas. (NOAA)

level wind fields over vast data-sparse regions of the oceans. The high point of that first hurricane season with ATS-3 may have been the animated sequence of Hurricane Celia as it moved ashore in Texas. WTVJ Channel 4, which had pioneered television in Miami, was first in the nation to show a satellite movie loop when Don Franklin included the Celia sequence in his weather program.

That first summer was a period of becoming established and learning how best to apply the ATS imagery. With the full support of Dr. Simpson the SAS soon was staffed with two meteorologists and three technicians. The following winter the SAS, using ATS-3, provided close support to the Spaceflight Meteorology Group for launching of Apollo 14 to the moon, and again for recovery of the astronauts in the ocean northeast of New Zealand using ATS-1, which viewed most of the Pacific Ocean. During the spring of 1971 close support was provided to the Experimental Meteorology Laboratory for its cumulus-cloud seeding experiments in Florida. The 1971 hurricane season saw all tropical cyclones in the Atlantic formally classified by the SAS meteorologists; that is, all were located and their maximum, sustained wind speeds were estimated twice each day using satellite imagery only.

0630Z 15 JAN 1979 ZA CURVE 4KM



0600Z IC CURVE 2KM



0700Z IB CURVE 2KM



Miami's Satellite Field Services Station worked closely with the Weather Service Office at Ruskin developing "enhanced" infrared pictures showing ground temperatures on freeze nights. Pictures were taken at 1 a.m., 1:30 and 2 a.m. (NOAA)

After the season, comparisons against the NHC's "best tracks" data showed wind speeds estimated within ten knots on the average, a level of performance that would be maintained in the years to follow. Winds derived from cloud motion vectors became routine data input to the NHC's twice-daily synoptic weather analysis. The use of geostationary satellite imagery had truly revolutionized the operations of the NHC. From the outset, the SAS has operated seven days per week without fail.

When the ATS Experiment began it was expected that an entirely new series of Geostationary Operational Environmental Satellites (GOES) would be introduced in 1972. The plan was to establish large Data Utilization Stations (DUS) at a few selected sites where the large amount of data expected from the GOES would be read out, processed, interpreted, and applied. However, repeated delays in production of the new spacecraft forced a continuance of what was dubbed the Interim ATS Experiment. Since the GOES program was well funded, the NESS moved to establish Satellite Field Services Stations (SFSS) at Kansas City and Miami. A manager, two meteorologists, and photographic technicians were hired for each station. Hope centered upon ATS-3 lasting until the launch of the

Continues



First Applications Satellite Technology pictures were transmitted 16 June 1970, a day of calm weather. On 3 August, however, the ATS-3 displayed Hurricane Celia moving ashore in Texas (the bright pinwheel west of Florida). The approximately half-hour segments gave weathermen a chance to see for the first time storms in motion. Pictures were taken in daylight only. At 4:32 p.m. (EST) this one shows the sun setting in the west and darkness over the eastern Atlantic Ocean. (NOAA)

first GOES. Fortunately it did last until the first GOES launch in May 1974. During the interim the Miami SFSS provided good service with some improvements.

By some bureaucratic reasoning still a mystery to me the original plan called for a DUS at San Juan, Puerto Rico, but not at Miami. That plan was changed to provide the primary readout station at Miami, but in the meantime too little responsibility had been provided for assigning the required large staff to the Miami SFSS. Also, since a high-resolution display device essential to the DUS concept was not delivered on schedule, the planned mode of operation was modified to provide the new GOES data to a number of SFSSs around the country using dedicated telephone lines. A modern Central Data Distribution Facility was built in the new World Weather Building near Washington. The Miami SFSS was initially fed data on three dedicated lines, one from the ground station at Wallops Island, Va., and two from "sectorizers" or minicomputers at Washington that could provide an assortment of sector pictures of various scales and areas. These same data were relayed to a variety of GOES-Tap customers who gained access to the data flow. The new GOES satellites carried a Visible Infrared Spin Scan Radiometer (VISSR) capable of providing visible pictures of one kilometer (one-half mile) and infrared pictures of eight kilometers (four miles) resolution, simultaneously, at intervals of thirty minutes, or more frequently, day and night. The infrared pictures allowed viewing at night and therefore around-the-clock operations. The sectorizers would in time permit a host of improvements in the way the raw image data could be displayed. To best utilize the vast amount of new data from the GOES, a professional staff of nine meteorologists and one oceanographer was provided by the NESS. Technical support was provided by a private contractor.

On June 1, 1974, the SFSS went to a 24-hours-a-day operation. That year notable hurricanes continuously monitored by the GOES were Carmen, which struck Belize and later the U.S. Gulf coast, and Fifi, which caused severe flooding in Honduras. High-resolution, visible-and-continuous infrared pictures from the GOES marked another great advance for the meteorologists. The infrared imagery soon would be applied also to a number of oceanographic problems. The first non-government GOES-Tap user was meteorologist Roy Leep of Tampa's WTVT television. Another early user was LANICA airline, the first in the nation's commercial aviation industry, when Allen Rubenstein established via GOES-Tap a dispatch service to support eight Latin America carriers operating from Miami to many countries in Central and South America.

One of the new products planned for every SFSS was a written message to describe significant features seen in the GOES imagery by satellite meteorologists dedicated to continuous and immediate study of the data. With the satellite data received at each SFSS being rerouted to a large number of government and commercial users by dedicated telephone circuits, these written messages were intended to be used together with the pictures in making up-to-the-minute improvements to weather forecasts and warnings. Unfortunately these written messages were opposed at Miami, which led finally to an interagency agreement to modify the GOES program there. The meteorologist staff was reduced almost by half, and thereafter the Miami SFSS, unlike its counterparts elsewhere, was unable to operate around-the-clock. Nevertheless, in future years 24-hours-a-day support to the NHC during periods when hurricanes were threatening land would be provided by use of overtime, and a number of new products and services would be introduced.

For the hurricane forecasters the SFSS provided classifications four times per day at six-hour intervals geared to NHC advisory times. For storms threatening land, such

classifications were provided routinely at three-hour intervals, or more frequently. At times, additional information such as the diameter of the hurricane's eye or an estimate of the radius of maximum wind was given. The technique developed by V. Dvorak of the NESS Applications Laboratory for the classification of tropical cyclones was steadily improved and made more objective. At Miami a complementary technique for treating subtropical cyclones was developed. SFSS meteorologists Ken Poteat, Jim Lushine, and Max Mayfield made significant contributions toward improving those techniques.

An article published in the **Monthly Weather Review** of May 1980 summarized the efforts of the Miami SFSS in the classification of all Atlantic tropical and subtropical cyclones over the period 1971 through 1978. Storm locations and intensities determined from satellite data compared against the NHC's smoothed, "best tracks" data in post-analysis showed consistently an average difference or accuracy of only about seven knots, standard deviation eight knots, in estimating maximum sustained wind speed; and an average difference or accuracy of about seventeen miles, standard deviation fourteen miles, in location. A later study, which compared satellite estimates of storm intensity prior to the onset of aircraft reconnaissance to the initial aircraft observations, confirmed such estimates to be very close to values determined by actual measurement. Using a computer technique developed by the National Hurricane and Experimental Meteorology Laboratory (NHEML), the Miami SFSS, from satellite data only, came routinely to provide estimates of rainfall rates and total core rainfall in hurricanes approaching land. The GOES satellite data were often described as the backbone of the hurricane warning service.

For Florida agriculture the SFSS worked cooperatively with the Weather Service Office at Ruskin to develop "enhanced" infrared pictures to depict ground temperatures on freeze nights. This new method was first used in January 1976 and the agricultural weather forecasters praised the much improved knowledge of the distribution of ground temperatures and the rates of temperature fall that became available via the satellite data. It soon was routine on freeze nights to send Ruskin pictures designed to depict ground temperatures alternating with pictures designed to show cloud cover and movement. At the Ruskin weather office, observations from a dozen key observing stations around the state together with satellite images representing thousands of data points were used with a computer program developed at the University of Florida to improve minimum temperature forecasting in Florida. A study at the University had shown that an improvement in the forecasting of the onset of freezing temperatures that allowed the growers and farmers to begin protective measures an hour or two later would result in fuel cost savings of as much as a million dollars a freeze night. After a few years the Ruskin office began to receive the raw digital temperature data directly from Washington or Gainesville, but transmission of the pictures from Miami and consultation continued as a useful service.

Prior to the advent of the GOES satellites with frequent infrared imagery 24-hours-a-day, an analysis of the Gulf Stream's current location had been prepared once per week at Washington. Coded messages giving this information prepared by the NWS were broadcast by the Coast Guard. A study conducted by EXXON Corporation and the NWS had shown large fuel savings by ships using such information. At Miami the SFSS oceanographer, Dr. Stephen Baig, soon developed a new analysis technique using animated, enhanced infrared imagery to depict the Gulf Stream location. Animation of the images allowed easy separation of clouds from subtle ocean surface temperature

Maríel Boatlift: A Failed Mission

BY ALLISON DeFOOR II



Atop the mast of the 39-foot Cartwright boat his father had built Steven Boudreau focuses his camera lens straight down into the water of Mariel Harbor.

A while back I presented to the Historical Association in Southern Florida, on behalf of myself and Dr. Cleophas W. Boudreau, a set of photographs taken in May 1980 from the mast of Dr. Boudreau's sailboat the *Melibeia* in Mariel Harbor, Cuba, plus some slides taken from sea level. To my knowledge the elevation views of Mariel Harbor are the only ones available in the United States. When I presented them Director Randy Nimnicht requested that I prepare a short narrative to indicate how they came to be.

Essentially these photographs resulted from a failed rescue mission, adventurous and quixotic in nature, that occurred during the Mariel boatlift of late April and May, 1980. After four years the dates are quite unclear, but the events will live in my memory for as long as I live. The mission originated through the efforts of a priest, Fr. Ron Johnson. At the time, I was working in Key West as an assistant public defender and attending Holy Innocents Episcopal Church. Father Johnson was the rector there.

In the heady days that surrounded the beginning of the Mariel boatlift Key West had become electrified with the idea that Cuban-Americans might be able to bring to freedom, in the fashion that they had done in the mid-sixties, some or all of their families who remained in Cuba. The dark side of the Mariel boatlift, the sending by Castro of criminals and misfits to America, had not yet occurred nor was it even suspected. The town was positively alive with energy. Cuban-Americans were coming down and buying every boat that could be found, for outrageous prices, and heading to Mariel to get their families out. Shrimp boats were being similarly chartered. Occasionally buses full of the arriving refugees were seen going through the streets as they headed toward Miami, their passengers shouting, "Libertad!" One certainly could sympathize with the emotions of the Cuban-Americans who wanted to get their families back together and out of Castro's Cuba.

Father Johnson had gone through seminary school at the University of the South (Sewanee) with Fr. Leo Alard, rector of the Episcopal church in Homestead. With news of the boatlift activities in Key West, Father Alard contacted Father Johnson to see if there was any way to go to

J. Allison DeFoor II presides over Monroe County court cases when he is not sailing boats.



Second harbor into which the *Melibe* and her crew were escorted, far from the port's entrance was ringed with a ridge of hills and a Cuban militiaman with an AK-47 rifle every several hundred yards.

Cuba and retrieve Father Alard's family, consisting of some twelve individuals. Thus Father Johnson contacted me, knowing that I had recently sailed in the 1979 Key West to Veradera sailboat race (which proved to be the last to date). For several months I had been living with my wife in a sailboat docked in the old Truman Annex Naval Station harbor. This boat belonging to some friends who had asked us to take care of it while they returned to New York was not seaworthy enough for a bluewater passage, we felt, and further, it not being ours, we were inclined not to utilize it to go to Cuba. Instead, a close friend and dockmate of mine, Dr. Cleophas W. Boudreau, indicated that he would be prepared to help. Dr. Boudreau was on sabbatical from the faculty of Suffolk University following the death of his wife the year before. He and his son Steven had sailed down from Boston in a 39-foot Cartwright boat that the doctor had built himself. The boat was equipped with over six months worth of provisions (which would prove very valuable later in Cuba). We gladly accepted his offer of his boat, his son, and himself on the expedition. Father Johnson, myself, and Henry Alard, brother of Fr. Leo Alard, made up the rest of the crew.

Prior to going, because of concerns about the legality of sailing without clearing customs and other legal niceties, Dr. Boudreau and I placed a call to United States Customs. We were told that it was permitted to go and indeed that the government had blessed such ventures and that when we returned we should merely call

Customs and it would advise us what to do.

And so we sailed, in midafternoon the latter part of April 1980, and enjoyed a delightful overnight trip in four-to-six-foot seas. Shortly after dawn, when some twenty miles north of the Cuban coast, we found ourselves viewing the skyscrapers of Havana. From there we sailed westward until a line of boats entering a harbor told us we had found our destination. Proceeding into the Mariel port complex, as we passed a large power station on the port side of the entrance, we were immediate-



Melibe was equipped with six months' worth of provisions for which the crew of five were grateful.

ly directed, by a line of Cuban gunboats into the first inner harbor, some four or five hundred acres of lagoon surrounded by high bluffs on all sides. In this harbor were hundreds of boats that had come down on similar missions. Overlooking all of this was a large greystone mansion that we were told had been in pre-Castro days the Cuban Naval Academy. Interestingly, the academy appeared to have few, if any, docking facilities but did boast a large veranda overlooking the harbor complex, presumably suited for cocktail parties and dances.

After several hours we were escorted from this lagoon around a point and into a second harbor that was even further removed from the port's entrance. Harbor number two was ringed with a ridge of hills and, as with the first harbor, it boasted a Cuban militiaman with an AK-47 rifle every several hundred yards. This evidently was to prevent those on the boats from going ashore and those on shore from swimming out to the boats. We spent the next week in this second harbor. The wait consisted largely of nothing to do but row to the other boats and chat, play cards, and smoke cigarettes. I'll never forget the sights and sounds, however. Some individuals had strapped fifty-five gallon drums full of gasoline to the rear of the small power boats to get to Cuba and their families, risking everything through a mode of transportation that can only be described as a moving bomb. Many had traveled down with no preparations, with no food, and no beverages. These had to pay the ex-



The *Melibea's* Key West passengers spent a week in this harbor with a Cuban destroyer anchored sideways across the port entrance, blocking it. Word came that boats would be filled with undesirables.

tortionate prices that opportunistic Cubans were charging in an effort to raise hard currency.

After we had been there some twenty-four hours a Cuban destroyer that was posted at the port entrance turned sideways across it, blocking it. At that moment rumors began to fly through what had now become a community of boat people, to the effect that we were going to be traded by Castro for Guantanamo Bay. Intermittently, helicopters came over to survey the scene, and each one was reported to be bearing Castro himself.

Later that same day we found out why the Cuban destroyer was blocking the port. A line of squalls crossed the Cuban coast. It had already created havoc and devastation in the Florida Keys. In the space of some minute and a half the sky turned from clear to black as ink. Gale force winds hit and immediately began blowing every small boat in the harbor on to the lee shore.

We were anchored behind a line of shrimp trawlers, which afforded us some protection, but the strength of the storm was such that the trawlers began to drag on their anchors and our vessel was thereby threatened. With that, we cut our anchor and sought to circle in the center of the harbor, which was now largely empty. The squall was over almost as quickly as it had begun, in some fifteen minutes, and in that amount of time almost all vessels in the harbor, hundreds of them, were blown onto shore.

The weather that evening continued troubled. We heard a bone-chill-

ing broadcast from a man who claimed to be in the wheelhouse of a boat that contained a hundred or more persons heading to the U.S. He described the boat as sinking, and the terror in his voice is something that none of us who heard it will ever forget. If the report was a true one (there were rumors that it was a hoax planted by the Cubans), many lives were lost that night by boats in transit.

Next we waited for three, perhaps four, days before Cuban officials finally began to circulate, checking passports and ascertaining which boats would take what emigrants. Henry Alard did the negotiating for our vessel. He left the vessel at one point to go into Mariel and was taken to the outskirts of Havana to place phone calls to his family. He found that they were awaiting transportation, having received word by telephone from family members in the United States.

Eventually one of the Cuban officials told us that we could only take two family members and with them we would have to take some seventeen of the "others." By now word had circulated through the boat community about the nature of those "others" and so we were less than enthusiastic. The decision of whether to take the two family members plus undesirables or sail empty was left on the shoulders of Henry Alard. He made the tearful decision that we would sail empty.

At this point the officials announced that they were not allowing any boat to sail empty; they were in fact forcing vessels to take on as

many persons as the Cubans wished to put on board. We made a decision to try to run the port by timing our attempt with a moment when a larger vessel would be attempting to leave. Soon this occurred and we made our move. As we had hoped, the Cubans went after the larger vessel, which could carry more passengers. We sailed out of Mariel and returned to the United States after an overnight journey of no mishap.

The photographs that have been provided to the Historical Association were achieved by running Steven up the mast and having him take shots in several directions. Since we had been one of the few sailboats there in the beginning, and certainly the largest one, we were able to achieve a panoramic series of views, unrivaled by any that other Americans might have taken during the boat lift.

The Alard family had a happy reunion anyway after the vessel *God's Mercy*, a large freighter sent by Episcopal priests of New Orleans, was able to make a landfall in Mariel and get out the entire family although the eldest member, the grandmother, arrived in the United States and died shortly thereafter, on Jose Marti's birthday. Ultimately the New Orleans priests who had arranged the rescue mission and who were convicted in federal court for trading with the enemy, had their convictions overturned by the federal appellate courts. ■

(All pictures given to HASF by Dr. Cleophas W. Boudreau and Judge J. Allison DeFoor.)

Satellites
From page 10

features, since the clouds moved and the Stream was relatively fixed. Movie loops of the Gulf Stream were prepared daily. These showed that the variability of the Gulf Stream was much greater than previously thought. During 1976 responsibility for preparation of these analyses and messages was transferred to the NESS and they were prepared thrice weekly with updates as needed. At Miami the oceanographer used the GOES animated imagery, nighttime polar-orbiter infrared data, and whatever conventional or research data were available. He trained the meteorologists in this work, so the job could be done reliably even in his absence.

By the end of 1976 similar analyses and messages were being prepared of the Loop Current in the Gulf of Mexico. Miami's basic oceanographic product became a Gulf Stream System analysis, covering the Gulf of Mexico, the Straits of Florida, and the Atlantic Ocean to off Cape Hatteras. By 1981 those analyses were being supplied by facsimile and automatic telecopier to a wide variety of users. Both maritime shippers wishing to take advantage of the current and fishermen seeking the edge of the warmer Stream water were benefited. One large towing company reported fuel savings of as much as \$6,000 per day using this information. To aid the smaller boaters and coastal fishermen the same information was broadcast using the NOAA Weather Radios from Florida to North Carolina. Such information was given in reference to 29 coastal points between Dry Tortugas and Cape Hatteras. During the warm summer months it was difficult or impossible to do these analyses south of about the latitude of Daytona Beach because of the weaker temperature gradients and more atmospheric moisture. A useful by-product of this effort was a Provisional Climatology of the Gulf Stream System from infrared imagery giving monthly mean locations, width of the Stream, and variability in position.

The NESS had always planned toward an entirely electronic mode of SFSS operation to replace the expensive photographic processing and to permit more timely analysis of the data and easy distribution of the animated imagery. In 1979 the NHC and Miami SFSS moved to new quarters at the Gables One Tower, across Dixie Highway from the U. of M. campus. Image recorders using a dry process and temporary electronic animation equipment were installed. In late 1981 an Electronic Animation System designed to NESS specifications for all SFSS's was provided. This new equipment made possible a larger number and variety of animated sequences to serve diverse needs, always instantly available. It also made possible new products, such as animation of the NHC radar display or other radar displays remoted to the NHC. After the NWS provided the Automatic Forecasting and Observing System (AFOS), i.e., electronic consoles with television monitors tied to a large computer to replace the traditional facsimile charts and teletype copy, any of the animated satellite or radar imagery could be routed directly to each forecaster's station.

A hint of what the future would bring was experienced when a McIDAS device was leased from the University of

Wisconsin for experimental use at the Miami SFSS/NHC. McIDAS stands for Man-Computer Interactive Data Access System. At the University of Wisconsin all satellite and conventional data reside on a large computer. These data could be acquired at Miami via a high-capacity data circuit. The McIDAS allowed the satellite meteorologist or forecaster to manipulate these data in many useful ways, faster and more easily than ever before. Someday a satellite readout antenna may be installed at the NHC for direct reception of the data, and a second-generation McIDAS-type device provided to permit sophisticated uses of these data.

It may be well to review for the reader the condition of the SFSS at the end of its first decade. An improved GOES satellite added atmospheric sounding capability to the well-proved visible and infrared imaging. Water-vapor images became available, allowing atmospheric circulations to be recognized before clouds formed. Four, dedicated, high-quality data circuits brought four pictures every half hour to Miami with a wide choice of scene and type. These data were used inhouse by SFSS meteorologists and oceanographers and NWS forecasters. These same data were routed to a large number of GOES-Tap customers, which included the NWS offices at San Juan and Ruskin, the Navy at Jacksonville and Key West, all major Air Force bases in Florida, plus others out-of-state, NASA's Kennedy Space Center, Eastern Airlines, and a host of television stations around the state.

With the SFSS, a special communications rack allowed customer selection from among the incoming data lines. The Electronic Animation System together with an IPS Looper provided continuous animation of three different sequences or scenes at any time, with many other special animations available at the touch of a finger. The satellite meteorologists provided close support to the NWS forecasters at Miami, San Juan, and Ruskin year around, and to the hurricane forecasters in season. Close support to space-shuttle launchings and landings had become an important new duty. A variety of meteorological support was provided many others, including the military, researchers, domestic and international search and rescue efforts, and students. The oceanographer, assisted by a NOAA Corps officer, provided almost daily oceanographic support to a host of users from Texas to New England, primarily via the Gulf Stream System analyses prepared thrice weekly and transmitted via facsimile, automatic telecopier, and radio. Direct operational support to research cruises was provided by daily radio contacts as needed. Special support was provided to government agencies and institutions relative to oil spills, the "red tide" phenomenon, search and rescue, and to numerous oceanographic research efforts.

By 1981 the NWS and NESS began to feel a budget squeeze. In 1983 it became necessary to reduce the size of all SFSSs and to make them a part of the local NWS office. At Miami, the SFSS had to sacrifice four positions and I volunteered mine. With the start of the fiscal year on October 1, 1983, the Miami SFSS became a part of the NHC. On Christmas eve I retired. Although the SFSS continues elsewhere, its third chapter story will have to be told by someone else. ■

LETTERS

Jewell Woodard Alderman's account of her family's move to Miami (February 1985 *Update*) set off a flurry of correspondence among family members who wrote the author and almost depleted the press run of the magazine. By March 1 invitations had been issued to a Third Biennial Reunion of the clan on June

15 at the Biscayne Bay Yacht Club. Mrs. Alderman has shared some of her correspondence with *Update*.

How I enjoyed your "Georgia Family Moves to Miami" story. It was almost ten years later that I made my first trip to Miami. In April

our grandmother had died; Mother thought it would keep Aunt Mary from being lonely if Son and I went down to visit. I remember Aunt Ida made a big picnic lunch and took the Flonnies, Son and me to spend the day at the beach. Another day she took us for swimming at a club pool

Continues on page 16



INTO THE TRUNK

Marion Rhodes, one of the page-turners for HASF's recent Audubon bicentennial celebration, gave more than her time. She came to the festivities with a shoebox filled with goodies for the collections — postcards, photographs, and a Seminole doll. The photos are of Musa Isle Indian village, an attraction on the Miami River, and of Deaconess Harriet Bedell and her Glades Cross Mission. The pictures reproduced here show domestic life at Musa Isle, from the traditional infant's cradle, to making patchwork, and the proper attire for fashionable Seminole women of the 1930s.

— REBECCA SMITH
Curator of Research Materials

*Around the Museum
From page 2*

whose continuity was disrupted for him when he came here at the age of eleven.

These feelings are shared by his cousin, Eduardo Corb , director, actor, set and costume designer and writer, a veteran not only of Hispanic theater in Miami but a man of solid accomplishment in the New York theater. One of the great disappointments of both Raul Rodriguez and Eduardo Corb  was the failure of English-speaking people to come out for the April 21 performance of **A Little Something to Ease the Pain**, an English-language production directed by Eduardo. For both cousins this play was an attempt to bridge the gap between the cultures, to make the Cuban experience both in Cuba and the United States accessible to their English-speaking fellows in all its bittersweet pain and laughter.

Cuban culture, Eduardo explained to me as we walked through the exhibition, is the product of three influences: Spanish, African and North American. The first he illustrated with his set and costumes for **Las Ninas Ricas de Camaguey**, his adaptation of Lorca's **The House of Bernardo Alba**, and the second with the santaria symbols in his setting of **Santa Camila de la Habana Vieja**. When I seemed surprised that he should mention North America as a

cultural influence, Eduardo assured me that the impact of the United States in Cuba was profound, and that it remains so to this day, what with radio and television easily picked up across the short stretch of water that separates the two countries.

As we studied the exhibits together, Eduardo was an anthology of theatrical anecdotes and odd bits of history. Do you know, for example, that it was Juana la Loca (Mad Joan), the mother of Charles V, who introduced black as the color of mourning to Spain? Eduardo also confided that, while he considers Vivian Leigh the greatest actress he has ever seen, his heart belongs to a beautiful minor film actress named Deborah Padgett, who married one of Madame Chiang Kai-Shek's nephews. He told a hilarious story of his doomed pursuit of Miss Padgett through the halls of a New York hospital in his attempt to speak to her.

It was Raul Rodriguez who persuaded his cousin Eduardo to take on the arduous task of pulling together the local enhancement component of Hispanic Theater. In less than six weeks, virtually living in the Historical Museum, Eduardo collected hundreds of costumes, props, photographs and graphic designs of stage sets, created the vignettes from a number of plays that lend so much life to the exhibition, and framed and

mounted the graphic display.

By the time you read this, Eduardo will have been to Mexico, where he will have been the first Cuban ever invited by the Mexican government to direct a play. Maybe one of these days we can get him to do another play in English for us. Bridges, after all, are two-way streets.

HAIL AND FAREWELL

Before this UPDATE reaches you, HASF Assistant Director Linda Williams will have left us to take up a new post as Executive Director of Spanish Point at the Oaks, in Sarasota, Florida. Linda, whose languid beauty belies the fact that she is a marathon runner, first came to HASF ten years ago as a CETA worker. During that time her tact and quiet competence won her a unique place at our Museum. According to HASF President Marcia Kanner, "We have been extremely fortunate to have had Linda as a part of our Museum family. Her contributions over the last ten years have been considerable, and I know she will be a great asset to the historical community in Sarasota."

I have had the pleasure of working with Linda on several projects. We shall miss her smile and her gracious amiability. We wish her well in her new role in Sarasota.

— LEE ABERMAN

Letters
From page 14

and afterward we went down town for lunch at Woolworth's and to a movie.

I remember walking from the hospital (Woodard Hall) down town for the Fourth of July parade and my patent leather slippers made blisters on my feet. You took a carful of cousins out to the Indian Village and Son bought a long Indian bow and what a problem that proved to be coming back on the train.

I loved the pictures. Everybody looks so young and grand I want to cry. Remembering, remembering...

Mary E. Broadhurst
Adel GA.

ROMANCE REMEMBERED

You will never know how much I appreciate the *Update* with the story and pictures of "A Georgia Family Moves to Miami." I read and reread your story.

I have been tied down since last June. Dorothy has Alzheimer's disease and is bedridden. I have Bernice Gallagher of Kentucky five days a week to help care for Dorothy.

I noted the Rev. J.C. Sims in your picture. He married Dorothy and me in his back yard December 22, 1936. Rob Marion and little Betsy were at the wedding and Dorothy's brother, Marshall Nembach. Our wedding dinner was at the Biltmore in Coral Gables. We had quail as the main dish. We had a room at the Netherlands Hotel on Thirteenth Street on Miami Beach before returning to Atlanta. We stayed at the

Atlanta Athletic Club the rest of the time in Atlanta. I was on assignment from the home office of the Ford Finance Company, Universal Credit Company.

Some day I would like to visit Adel and see the Cook County Historical Society display. Mary Broadhurst (Everett Rodger's daughter) had me send the flag given to us at Russell's funeral for display.

Have you and Mae Clarke finished the book about your Dad? If the reprise is like your account of the Georgia family in *Update*, it should be a knockout.

James Hall
Winter Park FL

ENGINE LORE

Re: "Head-On Collision" (August 1984).

The FEC engine used in the "wreck" was their #116, built by the same people (American Locomotive) and of the same wheel arrangement (4-6-2) as the venerable and beloved 113 and 153 now at the Gold Coast Railroad.

There is a conflict in the FEC's records as to how the promoters obtained 116. One of my rosters shows that the engine was sold to the Walter-Wallingford Co. for scrap in 1930; the other indicates the engine was sold directly to the promoters. More likely the engine was first sold to the scrap company; the number change (the FEC engine carried the number 3001 for the wreck) bears this out. I don't know the number of the Seaboard engine used.

A photograph I have of the 3001

(116) prior to the wreck states that the engine was reconditioned and returned to service after the wreck. It did not return to the FEC. To whom it was sold and where it went I do not know.

Seth H. Bramson
330 NE 96th St.
Miami Shores FL 33138

Railway buff Bramson has published a book on the subject, *Speedway To Sunshine*, which is available in the museum's Indies Company store in the Downtown Cultural Center. Show your membership card for a ten per cent discount.

MAKING SALT

If, in fact, salt were made as described (*Time Capsule 150 Years Ago*, 1985 February *Update*) the product must have been terrible, to say the least. In solar evaporation of seawater the first chemical to precipitate ahead of salt is gypsum or calcium carbonate in a rather large percentage. To obtain pure salt, seawater must first be put in reservoirs until it reaches about 1.205 specific gravity, then it is flooded into the salt pans and allowed to remain up to about 1.260 s.g. at which point magnesium salts precipitate in the course of fractional crystallization.

Douglas Erickson
Douglas Road
Miami, FL 33133

The story of the Erickson family's production of salt in the Bahamas is high on *Update's* wish list.

THE FINAL WORD

30s BLOWOUT #2

Elizabeth Ternent, whose memories of the Labor Day hurricane fifty years ago opens this issue of *Update*, marked another 50th anniversary in the early part of the year. When her family first moved to Miami her father took a liking to some property up on the Oklawaha River and bought it. The family used it as a vacation home and ultimately her father placed it with a real estate agent for rental. It turned out the agent rented it to Ma Barker and her family and it was there that the feds closed in on them and did them in. Early this year the town celebrated the 50th anniversary of the shooting

and Elizabeth was invited back for the festivities.

MORE TO READ

Don Gaby's story on the Miami Satellite Field Services Station is taken from a history he has completed on the station. A copy of the history has been given to the Historical Museum and is available for weather buffs in HASF's Research Center.

ANY 1925 BABIES?

Back in May, thirteen people met and formed an organization called Natives of Dade County (NOD). If

you are over fifty and were born in Dade County you are eligible to become a member. Spouses are invited to participate in the activities. Leon Gold is president of the new club; he can be reached at 944-5993. Among the officers is Historian Lydia Walker, a Black woman who was one of the first graduating class of Goulds High School. Lydia helped establish the first Black home for the aged in Dade County. Preserving and promoting the heritage and culture of Dade County is the objective of the group.

Maria Anderson



Update
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Miami, FL 33130
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