

### Miami Real-Estate Boom of the 1920s

- Image as a tropical paradise after Railway arrived at "Ft Dallas" in 1896.
- Incorporated as "Miami" that year
- City began to grow during post-WW I prosperity
- Heavily promoted during the 1920s
- Inflating a speculative realestate bubble

*Footnote: Prohibition lasted 1920-1933*

### By the Middle 1920s...

- Adverse press & nervous bankers has slowed the speculative frenzy
- Over-extended speculators were not finding eager buyers
- Shortage of building materials
- Prinz Valdemar capsized blocking the Port of Maimi turning basin

### Great Miami Hurricane of 1926

- Cape Verde storm
- Noticed on 11 September
- Passed by the Leeward Is. Puerto Rico & Hispaniola
- Entered the Bahamas on Sep 17th
- Few reports reached Miami ahead of the storm
- Squalls reached Florida 11:30 PM
- Eye went directly over downtown
- Maximum wind 138 kt
- Minimum pressure 935 mb
- Hurricane conditions lasted 12 h
- Surge ~15 feet
- Citizens went outside during the eye passage
- Damage extended to Moore Haven on the S. Side of Lake Okechobee BIG STORM
- Also hit Pensacola

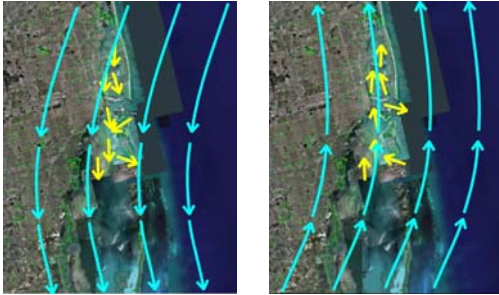
### The Florida Hurricane & Disaster

1 9 2 6

L.F. Beardon

Introduction by Arva Moore Parks

## Surge in Biscayne Bay



Killed 373 (or so), damage \$100M (1926 \$\$)

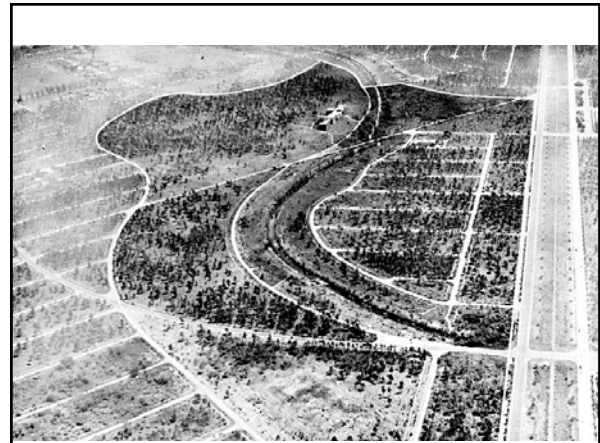
## Aftermath...

- Curtain wall failures in the Meyer Kaiser Bank
- Burst the Real Estate Bubble
- Wiped out millions in bank reserves
- Brought the depression to Miami 3 years early
- Set the stage for the great depression (J. K. Galbraith).
- Official deaths (NOAA) 243 or 373 (Red Cross)
- More than 800 missing...
- Damage \$159 M
- Similar storm today would cost > \$100B



## George E. Merrick (1886-1942)

- Son of a Congregationalist Minister
- Moved as a boy from Pennsylvania to Miami in 1898
- Appointed governor of Florida in 1915 (age 29)
- Promoted extensive road building
- Starting in 1922, began developing Coral Gables on 6000 acres of land inherited from his father
- Former Presidential Candidate William Jennings Bryan was a booster
- Founded UofM in 1926 with gift of \$5M and 600 acres
- 1926 Hurricane brought it all down
- Opened Caribbee Club on Matecumbe Key
- Wiped out again by 1935 Hurricane
- Became Postmaster in Miami
- Died in 1942, age 55



## Lake Okeechobee Hurricane of 1928 (San Felipe Segundo)

- Cape Verde storm
- Ship report SS *Commack* 17N 48W
- Landfall in Guadalupe on 12 SEP, 500 dead
- Another 100 died in St Kitts & Mountserrat
- Landfall in Puerto Rico on the 14<sup>th</sup>
  - Maximum wind 160 mph
  - 1500 dead
  - **First official CAT 5 Hurricane**
- Passed through the Bahamas and intensified over the Gulf Stream
- Landfall near Palm Beach on the 16<sup>th</sup>
  - Max winds 140 mph
  - MSLP 929
  - 11 ft (3.3 m) surge
  - Storm mislocated: Forecast track to the north



## Lake Okeechobee



- Project to "reclaim" Everglades,
  - Began in 1910
  - Drainage canals
  - Dikes 5-8 ft
  - Migrant workers and sharecroppers S. of the Lake
  - No major storms, except 1926
- Eye passed over the Lake in 28
- Dikes overtopped in 120 mph winds
- Another BIG storm
- Flooding and wind damage
- Loss of life
  - Red Cross 1836
  - Modern count from mass graves ~2500
  - Probably low
- News of the disaster got out slowly





## Labor-Day Hurricane of 1935

- First appeared E of the Bahamas
- 31 AUG Weather Service reported a "tropical disturbance" in the islands
- Raised storm warnings from Ft. Pierce to Miami, ordered precautions in the Keys
- Then decided it would go through the Straits
- Storm intensified rapidly
  - Landfall at Long Key & Lower Matecumbe Key
- Passed up the FL west coast to a second landfall in the Panhandle

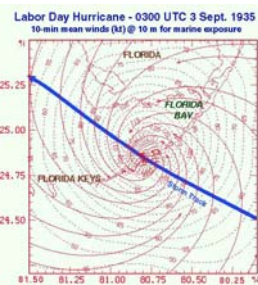


## The Disaster



- "Overseas Highway"
  - Parallel with the RR
  - Work started in 1934
  - WW I Veterans
  - Camp on lower Matecumbe
- Labor Day 1935
  - Many went to Miami for the long weekend
  - Many remained
- Rescue train
  - Supposed to be on standby
  - Left Miami 4:25 PM, two hours after the CCC called
  - Delayed enroute
  - Reached Islamorada at 8:20 PM

## Hurricane Reached Long Key at 0300Z or 10:00 PM



- Most intense hurricane to make US landfall
  - MSLP 892 mb
  - Winds 190-200 mph
  - 15-20 ft surge
- Record W-Hemisphere SLP stood until Gilbert in 1988
- Very small hurricane
- Devastation over (only) a 40 mi stretch of Keys

## Aftermath

- Killed more than 423
  - 259 veterans
  - 164 civilians
- Isolated lower keys
- Hemingway's diatribe
- Ended the FECR Key-West Extension
  - Roadbed sold to the state for the highway
- Hurricane forecast office established in JAX in 1935 (before the storm)
  - Beginning of NHC
  - Grady Norton in charge, assisted by Gordon Dunn



## Memorial in Islamorada



## 1938 New England Hurricane

- First observed as an easterly wave (Bilma Oasis, Niger)
- Reported as a hurricane by SS *Alegrete* N. of Puerto Rico, 16 SEP
- JAX WX office warned Florida
- Reported again by Cunard liner *Corinthia* off Hatteras on the 21<sup>st</sup>
- Forecast responsibility passed to DC
- Trough swept east from Great Lakes
- Had been raining ahead of the trough for days
- Weakness in the ridge pulled the "Long Island Express" north



## Long Island Express

- Forecaster Charles Pierce recognized the situation, but was ignored
- Struck Long Is. (West Hampton Beach) With no warning
  - Moving 60 mph
  - Winds 80-100 mph widespread
  - MSLP 945 mb
  - 50 mi eye
  - Extensive flooding
- At Blue Hill Observatory, 120 mph sustained, 186 mph gust
- Storm rain on top of previous rainfall produced widespread flooding.
- Impact:
  - 682 (or more) dead
  - \$300M in damage (1938)
  - Inflation adjusted to \$4B



## SUMMARY

- **Grady Norton** and the beginnings of the National Hurricane Center
- FECR Key West Extension
  - Built 1905-1912, Flagler, Merideth & Krome
  - Menaced by 5 hurricanes during construction
  - Engineering Marvel
- Operated at a loss for 23 years
- Wiped out by **1933 Labor-Day Storm**
  - First recorded US CAT 5, 892 mb pressure record stood until 1988
  - Killed > 423, many Veterans working on the Overseas Highway
- **1938 New England Hurricane**
  - Recurved, fast moving (60 kt) Cape Verde storm
  - Struck Long Island with little warning
  - CAT 2-3 winds widespread
  - Heavy rains after a wet summer caused widespread flooding
  - Claimed nearly 700 lives; did \$300M in damage = \$4B today
  - Prototypical New England Hurricane: Long Island Express

For NEXT TIME: Exam 1 Review  
Exam 1 Monday 16 OCT  
For the 18<sup>th</sup>: Read 147-152, Waves in Emanuel