Bridge Collapse

Dave Downey
Miami-Dade Fire Rescue
Initial Dispatch

Overpass fell on road, multiple workers injured and multiple vehicles stuck underneath

- **Assignment**
  - (4) Battalions
  - (5) Suppression
  - (5) Rescues
  - Squad
  - Haz Mat
  - Collapse Unit
  - Additional Special Ops Units
Background

- Pedestrian bridge built over a significant thoroughfare
  - Connecting residential area with FIU
- Accelerated Bridge Construction (ABC) Design
  - Prefabricated, Monolithic
  - Post-tensioned construction
  - Built off site
  - 174 ft continuous span
Background

- Pancake collapse with the south end supported on the column
  - Approximately 70 ft span
- Entrapped 8 vehicles
  - Four (4) were occupied
  - All vehicles were in the eastbound lane
  - Numerous construction workers on top
- 9 persons transported
  - Construction worker succumbed to his injuries
  - Five (5) fatalities; one (1) construction worker and five (5) occupants
Rescue Efforts

- Surface rescue
- Lightly trapped
- Search through hailing, auditory, search cam, canine
- Able to “clear” seven (7) of the eight (8) vehicles
- Transitioned to Recovery as of 2200 hrs.
**Recovery Efforts**

- Miami-Dade Police had the lead
  - OSHA, NTSB, FDOT, Sweetwater PD, FIU Police
- Deconstruction process to bring down the leaning slab (approximately 350 tons)
  - Accomplished partially at 0330 hrs on 3/16/18, completely down at 1420 hrs on 3/16/18
- Focus on the four (4) occupied vehicles
  - Two (2) on the east side, removed at 0600-0700 hrs on 3/17/18
- Last vehicle removed, 2030 hrs on 3/17/18
Challenges

- Large unsupported spans of concrete
- The ABC resulted in one continuous slab, did not provide for joints
  - Unsupported with the failure of the post-tensioned cables
- Required breaching/breaking
  - Excavator-mounted chipping hammer

The only way to move large pieces of concrete is to make it into small pieces of concrete
What Went Well

- Unified Command
- Moving vehicles to the ME’s Office
- Experienced rescuers
Thank You

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