

## **Jackson County, Mississippi – Hurricane Katrina timetable**

Population ~135,000  
4 incorporated cities – Pascagoula, Moss Point, Ocean Springs, Gauiter  
6 PSAPs – cities + Sheriff’s Office Main & West

800MHz radio system used by all public safety agencies  
10 Channels, trunking, 3 transmission sites, approximately 750 subscribers  
\* Pascagoula & Ocean Springs Police Departments maintained separate system  
System performed without problems until approximately 4:30am on 29 Aug  
Microwave signal between sites began to degrade, with intermittent drop-outs  
System was forced into “fail soft” mode, single site transmission, non-trunking  
System became similar to old-style “CB radio” with 10 channels  
System strength limited due to single site, in-building coverage suffered  
Users not familiar with “fail-soft” mode, first time used, many busy signals  
Pascagoula-site transmission equipment destroyed by water, tower not damaged  
Vendor and local maintenance personnel restored remaining 2 sites to trunking operation  
Tuesday, 30 Aug, by restoring microwave paths  
microwave antennae mounts on northern tower “failed” and were replaced  
Vendor-supplied replacement site delivered to Pascagoula, operational on Wednesday,  
31 Aug, returning system to pre-storm 3-site trunking operation  
Pascagoula PSAP lost power when water reached emergency generator, Police Department  
Dispatch continued by using mobile subscriber unit mounted on motorcycle brought  
into the Police Department lobby.  
Vendor provided through sales and rentals approximately 225 additional subscriber units  
During week after storm  
Limited number provided to Sheriff’s Office to replace destroyed units  
Provided to Pascagoula & Ocean Springs for interoperable communications  
Provided to outside assistance groups  
At least 50 at all times assigned to National Guard units  
US Navy, Coast Guard, & SeaBees all assigned units  
Law enforcement agencies provided numerous units for coordination  
Shelters and distribution sites provided units

### **Katrina impact on communications**

“operational” 800MHz operated as designed with reduced capability  
Users unfamiliar with fail-soft were frustrated by busy signals, non-department traffic,  
And reduced range/coverage  
Users not familiar with radio communications protocol  
Ad hoc rather than pre-planned use of available radio call groups limited effectiveness  
and caused some confusion  
Military and to some degree public safety and other radio procedures unnecessarily obtuse  
No need to deny information to opposing forces, clear language is required  
“administrative” communications greatly disrupted, workaround using “Southern Linc” & cellular  
For outside communications, Satellite phones only partially useful, amateur “ham” service available  
Internet access lost, no backup until satellite links arrived 2 weeks into event  
911 system “failed gracefully” with automatic transfer to designated alternate sites  
Storm damage to wire system limited service to local telephone Central Offices (CO’s)  
Post-storm “restoration” cut fibre-optic cable, further limiting local service and  
eliminating all local cellular service

## **The Recovery effort**

800MHz system

- Dependence on vendor for rapid restoration, “spring-loaded” to respond
- Additional subscriber rental units obtained through vendor quickly and in quantity
- Attempts to use this “operational” system for “administrative” use was not effective
- Outside assistance units often arrived with no notice, requesting (demanding) communications
- Interoperability with units bringing their own communications was not as effective as possible
- Unfamiliarity with cross-connection equipment (ACU-1000)
- Lack of necessary connectors to use ACU-1000s
- Telephone company worked at full speed to restore system, but limited access to restoration schedule, efforts, needs, priorities, etc. was frustrating in communications planning

## **Lessons Learned and Recommendations**

Plans were in general sufficient, but not adequately trained or exercised

Specifically:

- Training on system characteristics, such as “fail soft” and all capabilities of subscriber units, such as interoperability
- ACU-1000
  - Additional trained operators, preplanned interconnects with known responders, pre-positioned set of connectors for popular/probable connections
- On hand spare subscriber units for replacements and distribution in addition to pre-planned rental arrangements
- Pre-planned subscriber unit distribution and training to essential individuals and agencies: industry, relief services, utilities, health-care, mass media
- Training non-traditional users in correct and efficient radio communications
- Pre-planned call-group allocations
- Pre-planning for administrative communications in addition to operational comm.
  - Pre-positioned stock of Southern Linc – Cellular phones
  - Centralized administrative “directory” and ability to distribute same
- Additional transmission paths needed for operational system redundancy
- Independent internet communications capability required

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