

This document is made available through the declassification efforts  
and research of John Greenwald, Jr., creator of:

# The Black Vault

---



The Black Vault is the largest online Freedom of Information Act (FOIA) document clearinghouse in the world. The research efforts here are responsible for the declassification of hundreds of thousands of pages released by the U.S. Government & Military.

**Discover the Truth** at: <http://www.theblackvault.com>



**FEMA**

5/14/2015

**SENT VIA EMAIL TO: JOHN@GREENEWALD.COM**

John Greenewald  
[REDACTED]

Re: **FEMA 2013-FEFO-00650 Final Response**

Dear Mr. Greenewald:

This is the final to your Freedom of Information Act (FOIA) request to the Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA), dated April 17, 2013 and received by this office on April 17, 2013. You requested a copy of the After Action Report on the Columbia Space Shuttle Incident, along with the executive summary of the report.

We conducted a comprehensive search of FEMA's Office of Response and Recovery for documents responsive to your request. The search produced a total of 51 pages. After carefully reviewing the responsive documents pursuant to the FOIA, Title 5 U.S.C. § 552, as amended, and DHS' implementing regulations, 6 C.F.R. Chapter I and Part 5, we have determined the documents are appropriate for release. They are enclosed in their entirety; no deletions or exemptions have been claimed.

Provisions of the FOIA allow us to recover part of the cost of complying with your request. In this instance, because the cost is below the \$14 minimum, there is no charge. 6 C.F.R. §5.11(d)(4).

If you have any questions or would like to discuss this matter, you may contact Roman Jankowski, FOIA Team Lead, at (202) 646-4541 or electronically at [roman.jankowski@fema.dhs.gov](mailto:roman.jankowski@fema.dhs.gov). Please reference the subsequent case identifier: **FEMA 2013-FEFO-00650**.

Sincerely,

Roman Jankowski  
Team Lead, Disclosure Branch  
Records Management Division  
Mission Support

Enclosure: Responsive Documents Sent via E-mail (51 pages)

# **COLUMBIA RECOVERY OPERATION**

## **INFORMAL AFTER-ACTION REPORT**

### **EXECUTIVE SUMMARY**

This was a one-of-a-kind operation in many ways. First, it was a mission no one had expected or prepared for so the response team literally had to “make it up as we went”. It also brought together hundreds of agencies, including thousands of volunteers, most of whom had never worked together. Finally, it was also very large in scope from at least 3 perspectives: (1) it was a long response operation lasting over 90 days; (2) it was manpower intensive with a peak strength of 6,000 personnel and over 25,000 personnel rotating through from the various agencies; (3) and it covered a large area with search operations of various magnitudes taking place in several states from the California coastline to the Gulf of Mississippi. Additionally, this operation took place as our nation was ramping up for war with Iraq and continued through the end of the war. This posed many challenges with regards to resources being diverted to support the war effort.

This was also the first response operation under the Department of Homeland Security. Since this was both a long and large “no-notice” response operation and occurred in a resource-constrained environment, this may serve as a good case study for the development of the National Response Plan and the organizational structures associated with it.

There are 6 major issues that came out of this operation:

- **RESPONSE OPERATIONS BEGIN AND END AT THE LOCAL LEVEL**
- **MULTIPLE GPS STANDARDS USED**
- **USE OF VOLUNTEERS**
- **A VIABLE DATABASE MUST BE READILY AVAILABLE**
- **BASE 8 OR STRAIGHT TIME REIMBURSEMENT POSED PROBLEMS**
- **EXCELLENT INTERAGENCY COOPERATION AT ALL LEVELS**

#### **RESPONSE OPERATIONS BEGIN AND END AT THE LOCAL LEVEL.**

The response at the local level in the immediate aftermath of the Columbia tragedy set the foundation for a successful operation. There were dozens of communities affected and the local law enforcement and emergency managers were well organized and able to effectively use the thousands of volunteers that showed up to help. State emergency management personnel from both Texas and Louisiana came on the scene and quickly integrated state assets into integrated state response structures.

Less obvious, but just as important, are all the state and federal agencies that were imbedded in the communities in the affected area. For, example, the US Forestry Service (USFS) provided the first helicopters in the area. The Texas Forest Service, USFS and the FBI had local offices and were on the scene immediately.

Integration of state/local response organizations with their federal counterparts was greatly facilitated by having already established professional relationships as a consequence of being geographically collocated. The USFS, FBI, along with FEMA and EPA regional offices in the area had developed habitual relations with state and local officials which went a long way toward a smooth transition from state/local response to federal response operations.

**MULTIPLE GPS STANDARDS USED. (See issue#6)**

More than one GPS standard was used for this incident, resulting in a significant amount of confusion on the specific locations of debris.

**USE OF VOLUNTEERS. (See issues 18 & 25)**

FEMA did not have a good system to manage the thousands of volunteers that came to assist. State and local entities assumed management for most of the volunteers. We need a system that can quickly evaluate and screen those volunteers that can be of assistance. We also need to have the capability to provide food and incidentals to volunteers. And we need to have contracts that convey the government's responsibilities and the volunteers' authority to act on behalf of the government.

**A VIABLE DATABASE MUST BE READILY AVAILABLE PRIOR TO A RESPONSE OPERATION. (See issue #4)**

We tried to build a new database for this operation and while it eventually worked out, it created many problems and unnecessary duplication of work throughout the entire operation. At the onset of the incident several agencies logged (county judges, sheriffs, EPA, Texas Forest Service, NASA, etc) in calls and set up databases on shuttle debris. Within the first few days we tried to merge the various databases into a single, unified database that would support all the state and federal agencies in the Disaster Field Office. We learned that you can't develop a database while concurrently operating it.

Recommend a national database and 800 phone number be established and "on the shelf" to BE immediately available at the onset of an incident. It should be sufficiently generic in nature to collect data that would apply to any situation. It would, in effect, be a dirty database that collects the initial input from the field at the onset. This would allow time to establish a specific database for the incident while concurrently capturing information from the field.

**STRAIGHT TIME REIMBURSEMENT POSED PROBLEMS. (See issue#22)**

Full-time employees of FEMA's federal partner agencies were not reimbursed for their straight time when deployed to this incident. This is problematic in two ways. First, their home organizations are more than reluctant to release their employees as they have to continue to pay them out of their budgets, while at the same time, have someone else do their work back at home station. Clearly, it would have been easier to get full-time personnel if straight time pay was provided.

A second issue of concern is a perceived inequity among agencies. Specifically, the Urban Search and Rescue personnel deployed to this incident had their straight pay.

reimbursed as well as payment for their replacement back at home stations. Additionally, some of the Urban Search and Rescue teams get portal to portal pay. These folks were working side by side with the Forest Service community under different pay rules, resulting in more than a little resentment.

### **EXCELLENT INTERAGENCY COOPERATION AT ALL LEVELS.**

**(See issues: 1, 2, 8, 10, 15, 17, 21, 23)**

A common refrain--from the people that worked in the Disaster Field Office as well as the many visitors--was that this was an excellent example of interagency cooperation. Local, state, and federal agencies worked as a very tight-knit team and this environment made up for the shortcomings resulting from an organizational structure that was put together "on the fly" and resulted in an hybrid of the Federal Response Plan and the Forest Service ICS architectures.

We recognize a better organizational structure is needed for future response operations where there is a large interagency effort and organizations are working together for the first time. For example, our Logistics and Administration functions were not interagency-staffed and should have been. The Information/Planning function was partially integrated but needed more interagency participation. We did have a fully integrated, multi-agency Operations function that worked extremely well--particularly considering that these agencies never worked together before and were literally "making it up as they went" since this was an unprecedented and unprepared-for incident....

The organizational structure we had worked well, but it was more because of personalities involved than anything else. We basically used a Unified Command Structure but had more than a few holes in it. That being said, the structure used for this operation would be a decent starting point for developing an architecture that could be used for all-hazards incidents.

### **OTHER ISSUES.**

While the 6 issues noted above are the most significant, there are several other noteworthy issues that came out of our review. Following are 28 issues that fall into one of two categories: "**Issue Statement**" for issues that need some type of corrective action; and "**Best Practice Statement**" for practices we consider were instrumental in achieving our objectives. Of these, Issue #5 probably had the most negative impact.

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#01

### **Best Practice Statement:**

Decentralization of Management empowered people to do the job at hand.

### **Discussion:**

On-scene leaders had enough flexibility that rules did not stifle good decision-making. Rules were not abandoned (in fact, it is acknowledged that they are important to accountability). People approached this incident with a “can do” attitude, which allowed rapid progress within the rules.

While it is positive that those working in the field were not overly constrained, their headquarters needed to remain informed about the field activities. There was a perceived disconnection between the field and headquarters that was almost universal. This was magnified when interactions between headquarters level agencies were inconsistent with interactions between these same agencies at the field site.

Visits by upper management from headquarters, regional offices, and the central command (DFO) helped by giving upper management a better understanding of the task and the efforts done in the field. Workers were happy to have their management show an interest in what was going on. Most fortunately, these visits did not result in directives and micromanaging of the field activities from upper management.

### **Recommendation:**

Give individuals the authority to make on-site decisions wherever practical making sure that the people managing at that level are trained to do so prior to an actual event. When authority is given at this level it makes upper management a resource that is tapped when needed rather than an impediment to timely response.

### **Agency Reporting the Best Practice:**

NASA

### **Interagency:**

All Responding Agencies

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#02

### **Best Practice:**

Leaders were well suited for their roles.

### **Discussion:**

Leaders in this incident were compatible with the roles that they were asked to fill. They were also open and honest about agency activities and objectives, which allowed relationships and trust to be developed rapidly among all responding agencies.

### **Recommendation:**

Leaders functioned openly keeping the public or other agencies informed. Agencies leads came to the table with something to offer rather than to claim jurisdiction. Leadership included the right people with enough experience in the right areas to make informed decisions. These decisions were routinely shared through briefings, situation reports, planning sessions, and other mechanisms. Because of this a cohesive team was created from top to bottom.

It is important to the overall operation to give all involved adequate rest and time off therefore, for key positions, rotation of leadership is essential. By sharing leadership among a few people who rotate the leads rather than replacing people with someone new, it ensures continuity and stability for the operation. Also critical is to make sure that a new rotation in leadership does not mean that there is a change in approach for the operation or in operational objectives.

### **Agency Reporting the Best Practice:**

NASA

### **Interagency:**

All responding agencies

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#03

### **Best Practice Statement:**

The deployment of the Space Flight Awareness Program was a crucial morale booster.

### **Discussion:**

During the first few weeks of the response, the importance of providing motivational programs and incentive items for both workers and the public was recognized. (Examples include the issuance of a pin to a searcher for finding a significant piece of debris or the issuance of a pin/patch to a homeowner when a piece of debris was retrieved from their property.) The Space Flight Awareness activities at the base camps and in the community were extremely successful and played a significant part in keeping the morale and providing community support up for the length of the operation. This effort could have been activated much sooner than it was, had clear requirements been articulated up front. The only problem was with getting adequate resources on site and distributed to all who needed them.

### **Recommendation:**

A plan to support morale (in this case, the Space Flight Awareness operation) needs to cover all levels of the organizations involved in the effort and to treat them as equal partners in the operation. This should be started early and be a continuing practice to ensure that each level and wave of the disaster response benefits from this team building support.

### **Agency Reporting the Best Practice:**

NASA

### **Interagency:**

All responding agencies

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#04

### **Issue Statement:**

Interagency collaboration took disparate and separate data exchange formats from FEMA, EPA, and the Texas Forest Service (TFS) and transitioned into a single NASA database. This took a significant degree of collaboration and support by all agencies involved. Collaboration among all elements was exemplary.

On the negative side, the impact of having to build a data management solution in the field, without knowing clear requirements, was substantial. It resulted in delays in meeting recovery requirements, as well as slowing the investigation process by not having access to vital information when it was needed most. The lack of an overall data-management approach and leadership structure in that area impacted decision-making and made coordination among NASA elements difficult.

### **Discussion:**

The database and data exchange processes were initially established separately by FEMA, EPA and TFS, then transitioned to NASA with ongoing collaboration and support by all agencies involved. This progression was primarily related to who arrived on-scene and when, as well as to the emerging requirements of the Shuttle reconstruction activity at KSC. This was done without conflict and with a willingness to contribute to meet emerging requirements and solve problems however required. All organizations involved willingly contributed manpower and technology resources in a spirit of co-operation that avoided bureaucratic roadblocks. There were no territorial/firewall issues put into play by any of the agencies. This kind of collaboration with every agency involved contributing and focusing on the common goal should be repeated in all multi-agency disasters in the future.

The impact of not having clear requirements and building a data management solution in the field substantially delayed moving recovery requirements forward, as well as slowing down gaining an understanding of the how the investigation stood progress. The usage scenarios were understood and developed as the needs of the recovery team surfaced, leaving very little time to properly plan and develop the application and database. FEMA, EPA and TFS assumptions underlying the initial data models were based on a typical disaster management scenario, and were not oriented toward the type of requirements levied by the recovery and accident investigation. It would have been more practical to have all agencies meet to express their database needs before beginning data entries in to their own formats. That way one "generic" database with the fields required by each of the agencies could have been established quickly, while a final application and database was built in parallel to it. When the fully customized version was ready then all of the generic data would be

integrated into it much more readily. This would also require far less scrubbing since everyone would be in one system from the onset.

The lack of an overall data management approach and leadership structure to carry it out impacted decision-making and made coordination among NASA elements difficult. This resulted in a myopic perspective by support personnel in different geographic locations, conflicting assumptions upon which decisions were based, and slower and less effective data management support. Roles and responsibilities were at times difficult to discern. This is an area where clear leadership is a must to make timely and appropriate decisions to keep things focused and moving in the right direction.

**Recommendation:**

Continue to focus on common goals and develop solutions that work for the recovery effort rather than individual agencies.

Have an advanced understanding of needs and an off-the-shelf capability for data management with a generic database. A determined effort to develop a ready-to-deploy capability for use in the management of future debris recovery and accident investigation activities should be undertaken following the completion of the Columbia recovery and investigation. This should be based upon an analysis and understanding of the usage scenarios observed during the Columbia recovery effort, with the incorporation and refinement of the technologies already developed and employed. The battle for data integrity is won or lost in the first week following an accident. The information deluge begins within hours following the accident, so a carefully thought-out process for acquiring, filtering, and organizing the information should exist prior to the accident, and necessary technology assets should be identified and available for immediate deployment. The integrity of the data used during the actual recovery process is vital and should not need to be regarded as suspect, thus losing valuable time. Support personnel should be identified in advance and made available for reviewing, categorizing and structuring information received based on the specifics of the accident.

An overall project management and leadership model needs to be developed through regular inter-agency contact such as through quarterly Regional Inter-Agency Steering Committee (RISC) conferences. Clear project management authority is mandatory for coordinating the activities of groups that are geographically dispersed. Data management responsibilities should be determined in advance as part of preparing for a mishap, and revalidated and tested periodically to ensure the viability of the data management plan. A data management work breakdown structure should identify each required element and the associated pool of resources that would be made available upon activation of the mishap data management team. These elements would include:

- Overall Project Management.
- Database Administration.

- Application Development.
- Data Validation and Data Mining.
- Systems Integration and Configuration Management.
- GIS Product Support.
- Networking and Firewall Coordination.
- Platform and Hosting Support.
- Administration and Logistics Support.

**Agency Reporting the Issue:**

NASA

**Interagency:**

NASA

FEMA

EPA

Texas Forest Service

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#05

### **Issue Statement:**

Firewalls between agencies working on the same response.

### **Discussion:**

Inability of all responding agencies to communicate with each other via data networks. Each agency operated within its own network. Some without the ability to get on the Internet unless going through a cable company. This necessitated ordering additional service to provide either DSL lines or cable company lines for Internet service. Every agency that responded to this event had a requirement to communicate with all components of the operation via a data circuit. This requirement existed for several reasons.

1. To exchange daily Situation Report information among agencies.
2. To transfer data files and graphics among agencies.
3. To communicate emergency information and/or immediate briefing information to multiple agency personnel.
4. To communicate with regional offices and headquarters within their own agency.

### **Recommendation:**

The outer firewall on the FEMA network needs to be opened up to ALL responding agencies so they can obtain access to the Internet to send/receive email and communicate with other agencies. This is necessary in order to reach regional offices for file transfer, to conduct research on the Internet for contracting offices of other agencies, or just conduct general business from their regional offices. This would increase productive communication and reduce the need for additional services (and expenses) to conduct business with regional offices, field locations, headquarters, and other agencies.

### **Agency/Section Reporting the Issue:**

FEMA/Logistics

### **Interagency:**

All Responding Agencies to any federally declared disaster/emergency.

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#06

### **Issue Statement:**

A standard GPS coordinate system was not utilized uniformly across agencies and organizations in the early stages of the response. Therefore, training of personnel to set up and use GPS units was not standardized. This meant that Metadata for GPS positional data, specifically the ellipsoid and coordinate convention (e.g., "WGS 84; decimal degree) was not collected for each record in the field.

### **Discussion:**

Numerous agencies and organizations collected positional data of shuttle debris using GPS units. Many types of GPS units, of varying quality and accuracy, were used in data collection. Different recording methods were also implemented. Initially, there was no standardized reporting format for positional data and reporting the metadata for each positional record, specifically regarding the coordinate system (decimal degree; degree decimal minute, etc.) was not utilized or recorded. Therefore, these discrepancies resulted in significant post-collection QA/QC effort was required to confirm, correct, or convert positional data that was questionable; or for which the coordinate system convention was unknown.

Because the standard coordinate system was not utilized, and because data collection training of field personnel did not include metadata and did not sufficiently emphasize the importance of the coordinate system and convention utilized, significant post-collection QA/QC effort was necessary to process raw positional data for mapping and evaluation purposes.

### **Recommendation:**

Very early in the response, a standardized coordinate system needs to be selected, implemented and utilized across all involved agencies and organizations. In many cases, aircraft operations will be a component of the response. Aircraft navigational equipment utilizes a degree-decimal minute coordinate convention. Because of the critical nature of aircraft navigation, it is recommended that a degree-decimal minute coordinate system be implemented across the response in order to facilitate aircraft operational safety. In the event that this is not a possibility, or in the event that some other convention is utilized, it is critical that data reporting for positional information include the coordinate system and ellipsoid information in order to facilitate post-collection data processing and mapping. Without this information, significant effort is required to accurately convert the positional data collected in the field into a format that is compatible with the mapping projection.

It is recommended that GPS units and GPS equipment be distributed from a limited number of contact points, and that that equipment be prepared consistently for data collection (coordinate system, ellipsoid, etc.).

Training of field data collection personnel should place a great deal of emphasis on the coordinate system and reporting conventions in order to reduce the need for post-collection QA/QC. In addition, specific training and operating procedures for photo documentation requirements, logbook documentation requirements, and other data recording requirements should be developed and utilized early in the response.

Metadata, including coordinate system convention and ellipsoid information, should be collected for every positional record in order to facilitate post-collection processing, mapping, and evaluation across a wide range of agencies and organizations that may utilize various types of mapping software.

To the extent practicable, integrated equipment or compatible equipment should be utilized to collect positional and other field informational data. As an example, GPS units were utilized to collect positional data, personal data assistants (PDAs) were utilized to collect debris description information, and digital cameras were utilized to collect photographs in the field for the shuttle response. It would be beneficial to utilize integrated equipment that includes a PDA function, a GPS function, and a digital imaging function in order to eliminate transcription errors and to facilitate the capture of date, time, GPS location, metadata, and other pertinent information for post-collection processing.

**Agency Reporting Issue:**

U.S. Environmental Protection Agency

**Interagency:**

EPA  
NASA  
USFS  
State  
Local

## **Space Shuttle Columbia Response Team Interagency Lessons Learned**

#07

### **Issue Statement:**

Need for standard conventions and terminology across all responding agencies to a multi-agency event.

### **Discussion:**

In a multi-agency event every agency needs to use the same terminology in the same way. In this particular disaster there were a large number of federal, state and local agencies who had not worked together before. Frequently agencies used different terms to mean the thing, the same term to mean different things or terms that were ambiguous to others. This can cause confusion for the operation by creating unnecessary misunderstandings.

An example of this is the EPA reported Hazardous Materials "incidents" which was generally understood to mean that these required appropriate HazMat cleanup techniques by EPA to resolve. In fact it referred to EPA being asked to evaluate something that had the potential for Hazardous Materials (frequently tanks and tubing from the shuttle fell into this category) before it was handled by anyone. It would have been clear to other responding agencies had EPA called these "Hazardous Material evaluation responses". It would have also been very useful to include whether or not these were in fact "incidents" that did require cleanup or that they had tested the items and found no hazards present.

### **Recommendation:**

Co-location of personnel with report/information/planning functions in future disasters would greatly cut down on this issue. Every agency has personnel assigned to perform this function and by grouping them together misunderstandings in terminology could be dealt with before information goes out to the entire response team as well as to regional offices and headquarters.

### **Agency Reporting the Issue:**

Texas Forest Service (TFS)

**Interagency:**

TFS  
FEMA  
USFS  
FBI  
EPA  
NASA

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#08 (covers #24)

### **Best Practice Statement:**

Successful resolution to all-risk incidents is heightened through the utilization of Multi-Agency Coordination groups to establish incident goals and to set incident priorities. Success is further heightened by the utilization of Unified Command structures to establish and implement objectives to meet these goals and priorities.

### **Discussion:**

A Multi-Agency Coordination Group is made up of individuals representing the various agencies with a stake in the outcome of the incident and who have the authority to commit the agency to action. This group collectively develops and prioritizes incident goals. These goals are achieved through agency personnel who are organized into Incident Management Teams (IMTs). The IMTs set objectives, develop alternatives, select and implement a course of action to accomplish the objectives, and subsequently the goals. Both the IMTs and the MAC monitor the implementation to insure that the goals are being achieved in a timely manner. Greater effectiveness can be achieved by combining the operations, planning, and logistical sections of each involved agency into a unified command. Unified command is achieved when Incident Commanders (IC) (often middle managers) from different agencies are physically collocated working under a common delegation of authority to achieve a set of objectives. Staffs for these ICs may or may not be collocated depending on the specific needs of the incident

### **Recommendation:**

Utilize Multi Agency Coordination Groups and Unified Commands on complex incidents involving numerous incidents.

### **Agency Reporting the Best Practice:**

Texas Forest Service (TFS)

**Interagency:**

TFS  
FEMA  
USFS  
FBI  
EPA  
NASA

Attachment # 1 – Multi-Agency Coordination Group

Attachment # 2 - Unified Command

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#09

### **Issue Statement:**

Needed quicker, better support for Hemphill area of operations.

Developing incidents can become complex rapidly and utilize the area resources through a variety of agencies and volunteers to accomplish incident goals. The influx of people quickly overwhelms the local ability to provide subsistence for these responders. Emergency response procedures are often too slow and cumbersome in recognizing this need.

### **Discussion:**

TFS:

Complex incidents often start with a relatively simple response to a specific event. Dealing with this event creates additional needs involving a greater number of agencies and an increasing number of personnel. Local resources can provide subsistence to these people for a limited time, which then become overwhelmed, and a need exists for feeding, bedding, showers, and other facilities/services for supporting the needs of the incident. This happened at Hemphill on February 3 and 4. Requests to provide catering services for meals and showers as well as the assignment of an Incident Management Team were delayed by upper management. The request was not passed on to FEMA Logistics initially therefore arrangements were not made when needed.

FEMA/Logistics:

Many felt that the overall operation was slow to respond to the individuals working the East Texas remote areas of Hemphill, Texas. This perception and in some cases, reality, was caused by several reasons.

1. The real urgency of the situation was not delivered to the personnel who required the information.
2. A plan of action was not developed for and by the unified command structure to specifically address the Hemphill area scope of operations, which included many volunteers.
3. FEMA Logistics was not brought into the overall scope of operations, but rather was left aside to handle "The DFO" area of operations. This resulted in a lack of knowledge about what was actually required in Hemphill, by whom, and by when.

### **Recommendation:**

TFS:

Involved agencies should convene a Multi-Agency Coordination Group when an incident shows signs of continuing for multiple days or increasing in complexity. This group would review the need for an Incident Management Team, additional incident support people and services, incident specific financial authorities, subsistence support services (catering, showers, bedding). This group would also review existing incident goals and priorities for sufficiency or revise them to meet the changing conditions.

**FEMA/Logistics:**

FEMA Logistics staff must be a major part of the overall operations of any disaster. The FEMA Logistics staff including communications, networking, purchasing, and property requirements all play a major part in any disaster/emergency situation. The FEMA Logistics Chief must be a part of the direct staff line, be included in the functional planning, and the operations of any disaster. This process will enable full and fast operations to occur along with top management pointing the way.

**Agencies/Sections Reporting the Issue:**

Texas Forest Service (TFS)  
FEMA/Logistics

**Interagency:**

TFS  
FEMA  
USFS  
FBI  
EPA  
NASA

Attachment 1 - Multi-Agency Coordination Group

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#10

### **Issue Statement:**

Determine who will do what (from a Logistics standpoint) up front.  
Identify Logistics person from each agency for coordination with overall Logistics head.

### **Discussion:**

Initially each agency had its own Logistics staff within the agency, having all agencies co-locate Logistics staff as a central Logistics function with the lead agency providing oversight helped. This process proved eventful and beneficial to the overall mission. This process took some time to work out but afterward, all individuals worked together as a team and each agency supplied Logistics staff as liaison to communications, network, Logistics (supply ordering) and to Accountable Property Management.

Each agency had a part of the overall mission and each agency had input into the days events/operations. This included communications, network, Accountable Property, supply, purchasing, and transportation. This process materialized early into the event, faded and then was recaptured by FEMA Logistics. Most of the above items materialized with the exception of the purchasing. This element will be incorporated into any future events to eliminate duplicate purchases or excessive buying of materials/goods/services.

### **Recommendation:**

1. Initiate and continue this practice.
2. Assure that ALL agencies participate with personnel from:
  - a. Communications
  - b. Network
  - c. Supply
  - d. Purchasing
  - e. Accountable Property

### **Agency/Section Reporting the Issue:**

FEMA/Logistics

**Interagency:**

FEMA

EPA

USFS

TFS

NASA

All Responding Agencies

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#11

### **Issue Statement:**

Establish a grid plan early to enable complete and methodical search of debris field for air operations, ground crews, and mapping coordinates for GIS.

### **Discussion:**

The massive debris field from the break up of the Columbia required that all agencies involved in the search for the crew and shuttle materials be well planned out to ensure a thorough search effort was done and to create manageable units to search. An interagency group needed to work out the grid plan as early as possible in the response to establish: how primary and secondary search areas would be defined, whether nautical miles (preferred by air operations and the dive teams) or acres (preferred by ground search) would be used, where to establish base camps, etc.

When this was established for the shuttle debris field it also made it possible for GIS to map the grids and add symbols showing the air search and ground search areas. As the search continued maps were updated to show completed grids by color-coding them to show the progress being made.

### **Recommendation:**

Whenever an event includes a large search area; particularly one that is being approached from land, air, and sea an interagency meeting to establish common measurements and to divide up the search area into manageable grids at the earliest possible point is imperative to the operations success.

### **Agency Reporting the Issue:**

NASA

### **Interagency:**

NASA  
TFS  
USFS  
DoD  
FEMA  
EPA

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#12

### **Issue Statement:**

There were multiple centers of command and control that were not well coordinated early in the response effort.

### **Discussion:**

Early in the operation there were four major centers of operational control (Barksdale AFB, NAS Ft. Worth, Lufkin, and Johnson Space Center), several local command posts, as well as agency specific regional and national headquarters. Across these many command centers there were functions being pursued redundantly. Leaders at each center did not understand the functions or activities of the other centers. There were numerous examples of duplicated effort (at best) and conflicting guidance and activities (at worst). It was not clear who had the "lead" decision-making authority for any given function. This lack of clarity contributed to the complexity and cumbersome nature of the call-taking system and the database. It resulted in confusion among local governments and citizens seeking guidance and information.

### **Recommendation:**

FEMA Logistics staff must be a major part of the overall operations of any disaster. The FEMA Logistics staff including communications, networking, purchasing, and property requirements all play a major part in any disaster/emergency situation. The FEMA Logistics Chief must be a part of the direct staff line, be included in the functional planning, and the operations of any disaster. This process will enable full and fast operations to occur along with top management pointing the way. This did not happen early in the Columbia response. There was great improvement as the operation began consolidating to the Lufkin DFO.

### **Agency Reporting the Issue:**

NASA

### **Interagency:**

All responding agencies.

**Space Shuttle Columbia Response Team  
Interagency Lessons Learned**

#13

**Issue Statement:**

What you learn must be quickly translated into what you do in an unfolding disaster.

**Discussion:**

Situational awareness is vital, but there is also “analysis paralysis” when it takes too long to put the information into actions. The key is to strike this balance so that what you learn can be translated into what you do rapidly. Especially in a dynamic operational environment, it is important that the operation be able to learn and move forward. New data generated as the operation proceeds must constantly be used to inform, creating an ongoing revision to the strategy and tactics. This needs to be done real time at the tactical level.

**Recommendation:**

Build a continuous feedback loop that includes operations, planning, and analysis. There was feedback between operations and analysis.

**Agency Reporting the Issue:**

NASA

**Interagency:**

All responding agencies.

## **Space Shuttle Columbia Response Team Interagency Lessons Learned**

**#14 (covers #20)**

### **Best Practice Statement:**

FEMA leadership awareness of the cost/benefit of the GIS/Mapping capability allowed sufficient resources to be provided to establish a full service GIS/Mapping response cell. Interoperability of GIS Software and an Interagency GIS/Mapping plan established early in the recovery effort were key contributors to the overall success of the recovery effort. Providing GIS/Mapping services directly to decision-makers (i.e. decentralizing the mapping operation) allowed for the evolution of products that focused search efforts and allowed all levels of responders clear situational awareness.

### **Discussion:**

The advanced use of Geospatial Information Systems and mapping was truly a significant contributor to decision-making at virtually all levels of the Columbia Recovery effort. The experiences learned from past hurricanes and the 9-11 response served as a foundation to assure quick planning of the GIS support cell. Experienced personnel, who worked together through past efforts, were a contributing factor to the success of the total interagency support effort. By day 2, an interagency team lead by FEMA & NASA was activated and planned the GIS effort that ultimately provided over 27,000 maps. ESRI, Inc. providing free licenses of their latest software served to create instant interoperability between agency cells and the deployed mapping teams. A secure FTP server provided the needed means for electronic transfer of the large maps and remote sensing imagery files to the needed points. NASA provided deployed cells of GIS that serviced directly the decision-makers of the MIT early in the event. When the Barksdale GIS team merged with the Lufkin GIS team they were able to merge data sets seamlessly.

### **Recommendation:**

For future efforts, recognize that interagency planning and interoperability are key to providing products to decision-makers on a timely basis. The situational awareness provided by these products help responders at all levels know what was going on and where it was going on. Also, the convention of a common grid system is a helpful device for a range of planning purposes and should be established early. Accompanying this, the GPS convention and reporting format should be established up front and disseminated universally.

**Agencies Reporting the Best Practice:**

NASA in consultation with involved agencies

**Interagency:**

NASA  
FEMA  
EPA  
TFS

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#15

### **Issue Statement:**

Create a Joint Interagency Information and Planning function.

### **Discussion:**

On multi-agency response efforts like this one, collocating the information and planning functions of the key agencies would greatly facilitate coordination and consistency in planning, reporting and control. Potential benefits include:

- Reduction in duplication of effort inherent in having multiple agencies file their own Situation Reports independent of one another.
- Reduction in conflicting information flowing upward to agency headquarters.
- Increased accuracy and consistency in published information (increasing the degree to which we "speak with one voice").
- Better interagency coordination and integration of both tactical (action) planning and strategic planning.
- Better communication by use of same terminology being by all agencies.

The model for this could be the Joint Information Center (JIC) used on most disaster responses or the Integrated (Logistical) Support Team (IST) proposed for improving logistical support on multi-agency, multi-site responses.

Aspects of this concept have proven successful on previous responses in which I&P staff were embedded as "liaisons" to the Operations Section, Individual Assistance, and Public Assistance (DR-1391-NY World Trade Center and DR-1435-LA & DR-1437-LA) and to the Operations Section and NASA (EM-3171-TX).

### **Recommendation:**

This concept could be tested on a few disasters by collocating the FEMA I&P section with the State I&P function and by embedding I&P staff from other sections in with the FEMA I&P section (and vice versa).

If, as anticipated, it proves useful, this concept could then be considered as a normal alternative on future responses.

### **Agency/Section Reporting the Issue:**

FEMA/Information & Planning Section

**Interagency:**

FEMA  
USFS  
TFS  
NASA  
EPA

**Space Shuttle Columbia Response Team  
Interagency Lessons Learned**

#16

**Best Practice Statement:**

The strength the use of retirees and reservists bring to the operation is beyond measure.

**Discussion:**

Retired agency personnel and reservists who respond to emergencies and major declarations is an asset that the emergency management community and the Federal Response Plan cannot function without. This is especially true in larger prolonged responses. These people are trained to do the necessary tasks in the field that some of the regular fulltime staff have not been. The regular staff cannot devote the amount of time to a field operation this size and are dependent on the skills that the reservists and retirees bring to the operation. These people make sacrifices in their person lives in order to be able to respond at a moments notice when a crisis occurs. They are not always given the recognition their hard work and dedication deserve.

**Recommendation:**

Continue to train retirees and reservists and use their services in disasters. Have an ongoing recognition and appreciation program similar to the award system available for regular fulltime staff to ensure that dedicated hard working retirees and reservists are retained by the agencies that benefit from their services.

**Agency Reporting the Best Practice:**

USFS

**Interagency:**

All agencies that use retirees and reservists to meet needs during a disaster.

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#17

### **Best Practice Statement:**

Interpersonal skills were important and interactions were positive. The Interagency process worked well but was dependent on the good faith and good will of the participants in the response effort.

### **Discussion:**

This recovery process benefited from high quality people with the right skills and the right attitude. Their interpersonal skills helped to develop the required relationships between agencies for working together in the execution of mission objectives. Working in one big, open room at the Lufkin Civic Center for the first week enhanced this. By eliminating the physical barriers in the workspace interagency relationships formed quickly. It allowed agencies to easily locate each other, become familiar with each other, and work together easily. Had an operation this size begun in an office building this would not have happened so quickly, or fully.

The FEMA leadership should have located itself in this room with the other agencies rather than out in the parking lot in a separate trailer. The agencies unfamiliar with them and FEMA itself lost the opportunity to understand each other better at the earliest point in the response. This way, FEMA leadership could have been more visibly integrated into the early operational activities.

The agencies in this operation came together collaboratively to solve the problems at hand rather than get bogged down by turf battles. This may partially be because NASA was the focus of attention and no single agency had particular expertise with how to mitigate this unique disaster. It was also because the people and personalities involved chose to work as a team. This created a "badge-less society" of people with different skills and a common goal. The effort would not have been nearly as effective had there been a strong agency territorial attitude by any of the players.

Individual personalities had a profound effect on the success of the operation. In this case, the effect was positive, but it could have been negative if the individuals involved had negative attitudes, or chose to debate jurisdiction and responsibilities. For future operations, it is worth developing an interagency process that is more insulated from the effects of individual personalities – a system that will function effectively regardless of who is involved. While this ideal is unreachable (the skills and attitude that people bring will always bear on the operation), there are examples of systems that are more resilient, such as the wildland fire service's approach to incident command.

**Recommendation:**

Agencies should carefully consider who to deploy and make choices that will enhance rather than stifle the field operation. Agencies should send only people who have the requisite skills or attitude to the field. Unprepared people impose a management burden on a lean and overtaxed response team.

The interagency process should be explicitly designed to be personality-independent. Future operations would benefit from a more standard approach to deployment based on skills.

**Agency Reporting the Best Practice:**

NASA

**Interagency:**

All responding agencies

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#18

### **Issue Statement:**

The inability of FEMA to, in a coordinated way, catalog each volunteer agencies' capabilities resulted, in some cases, in an inefficient or ineffective use of the volunteer resources.

### **Discussion:**

Almost all of the work carried out in the field during the first days following the Columbia incident was performed by volunteers who were supported by federal, state and local law enforcement. The work handled by the thousands of volunteers included every aspect of the recovery effort, including meal preparation, mapping, GPS and GIS, communications, and searching. The volunteers brought a variety of skills with them, which were almost always employed effectively by the career professionals who managed the overall search efforts in each county's forward command posts. However, a coordinated effort to catalog each volunteer agency's capabilities might have allowed for more effective and efficient use of the volunteer resources.

### **Recommendation:**

Develop and implement a standardized protocol that would enable vetting of any volunteer's specialties, i.e. cadaver dog or underwater search and rescue, thereby eliminating much of the risk inherent in utilizing these assets.

### **Agency Reporting the Issue:**

Federal Bureau of Investigation

### **Interagency:**

FEMA and all other agencies identified in the Federal Response Plan.

**Space Shuttle Columbia Response Team  
Interagency Lessons Learned**

**#19**

**Issue Statement:**

Contracting Officer slow to reach field.

**Discussion:**

On this operation, contracting officers did not arrive until day three of the operation. This timing was in part, based on little knowledge of the urgency of the requirement, the overall requirements for contracting for the field, and the extent of the operations. The Hemphill area had crews, volunteers, TX Department of Public Safety, and many others operating from remote locations for the first 48 hours without benefit of food, water and other necessary commodities.

**Recommendation:**

During the initial briefings before sending individuals to the field, stress again the importance of having the Logistics Chief, the APO, the Resource Management Chief, and a Contracting Officer together in the field on day one. The Contracting Officer and the Resource Management Chief together must have funds available to immediately purchasing those items required in the field.

**Agency Reporting the Issue:**

FEMA/Logistics

**Interagency:**

FEMA  
Effected all responding agencies

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#21

### **Issue Statement:**

Need for interagency coordination of security and safety procedures at the onset of the incident response.

### **Discussion:**

In the beginning of any incident, responders and volunteers come from various agencies to assist in the response and recovery of an event. Both responders and volunteers may come without being solicited or requested. It is essential that resources check-in and be tracked and accounted for. At the beginning of the Columbia Space Shuttle Response, an attempt was made to do check-in, however security checks were not done.

In regards to safety procedures, different agencies have different safety protocols and procedures. In this incident, an Interagency Safety Committee was established, however it was weeks into the incident. It is essential that this be done at the beginning of an all-risk incident, especially when there are agencies that are not normally emergency responders.

### **Recommendation:**

Develop protocols for security and safety procedures during initial unified command meeting. Prior to development of protocols, establish personnel check-in procedures with temporary identification badge for in-coming personnel. Security should then validate those personnel and their clearance and issue permanent badges. Safety procedures and protocols as agreed upon during the command meeting can be put in place.

### **Agency Reporting the Issue:**

Texas Forest Service (TFS)

**Interagency:**

TFS  
FEMA  
USFS  
FBI  
EPA  
NASA

Attachment 2

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#22

### **Issue Statement:**

The inability of FEMA to reimburse federal and state wildland fire management agencies for base-8 salaries (straight or regular time) significantly impacted FEMA's ability to obtain critically needed personnel in a timely manner.

### **Discussion:**

Federal and state wildland fire management personnel possess many skills and abilities useful to FEMA for all-risk emergency and disaster incidents. The Columbia Shuttle Disaster is one example. In general, such personnel are permanently assigned to relatively small fieldwork units scattered throughout the US. They have full-time jobs critical to fulfilling the missions and goals of their home units. Typically these field units have individual stand-alone budgets targeted to meet specific goals. Unit managers are held accountable through performance measures for meeting goals within budget.

When employees are deployed to FEMA disasters under past and current policies, the home unit loses the service of the employee and their associated base-8 salary. This prevents or seriously restricts the home unit's ability to meet their commitments to mandatory missions and goals. This situation results in reluctance on the part of unit managers to release their employees for FEMA assignments, thus limiting the availability of critical personnel needed to assist FEMA. If base-8 salaries were reimbursed, unit managers would have the flexibility to meet local production goals while making their employees available for FEMA assignments.

This has been a serious issue since Hurricane Andrews in 1992 and continues to the present Columbia Shuttle Disaster. This issue needs to be resolved to enhance the deployment of highly qualified responders to FEMA emergencies and disasters.

### **Recommendation:**

DHS/FEMA should immediately undertake measures needed to permit the reimbursement of federal and state wildland fire management agency personnel for base-8 salaries on future FEMA emergencies and disasters.

### **Agency Reporting the Issue:**

USFS, ESF-4

**Interagency:**

FEMA  
USFS

## Space Shuttle Columbia Response Team Interagency Lessons Learned

#23

### **Best Practice:**

Organizational and agency flexibility and adaptability significantly contributed to the effective completion of the mission.

### **Discussion:**

The unprecedented nature of this disaster, a Federal incident creating a disaster for a Federal agency (NASA) and two states, resulted in a situation for FEMA and other cooperating agencies that required maximum organizational and agency flexibility and adaptability. FEMA and cooperating agencies quickly seized this need as an opportunity to embrace a creative teamwork environment conducive to designing organizations, policies, and procedures that facilitated a highly effective response and recovery operation. Without this flexible/adaptive approach, interagency cooperation and effectiveness would have been seriously compromised. FEMA initiated and cultivated this creative management style throughout the incident while maintaining appropriate multi-agency organizational structure and control directed toward the achievement of specific goals.

### **Recommendation:**

DHS and FEMA should institutionalize this "lesson learned" as FEMA transitions into DHS. The Federal Response Plan and the National Response Plan should be designed to permit and encourage appropriate levels of flexibility and adaptability to effectively manage a wide variety of disasters.

### **Agency Reporting the Best Practice:**

USFS, ESF-4

### **Interagency:**

DHS  
FEMA  
All cooperating agencies

**Space Shuttle Columbia Response Team  
Interagency Lessons Learned**

**#25**

**Issue Statement:**

There is a need for contracts that delineate the government's responsibilities to volunteers who participate in disaster activities and/or spell out the limits on the volunteer's authority to act on behalf of the government.

**Discussion:**

The USFS has a standardized contract that delineates government responsibilities to the volunteers and limits the authority for volunteers to act on behalf of the government. Legal counsel for federal or state agencies need to be prepared to modify a standardized contract to meet the specific needs of a particular emergency. Setting forth the obligations of the government to the volunteer in case of injury or death while performing as a volunteer would provide the volunteer with some protection and limit the overall government liability. This contract might also standardize safety protocol.

**Recommendation:**

Develop and implement a process by which legal counsels could modify, or recommend modifications to standard contracts to meet the needs of any particular emergency that requires volunteers or volunteer resources.

**Agency Reporting the Issue:**

Federal Bureau of Investigation

**Interagency/Agency:**

FEMA

**Space Shuttle Columbia Response Team  
Interagency Lessons Learned**

**#26**

**Issue Statement:**

Lack of Accountable Property Officers.

**Discussion:**

Some agencies did not start off with property officers assigned to their agency. This resulted in FEMA and other agencies doubling up to track all property assigned. Additionally, the continuous changeover of personnel in the forestry service made tracking of property a tedious task.

**Recommendation:**

FEMA will provide an accountable property officer for each area where FEMA property is checked out in the future. I.E. Base camps. In those agencies where property is assigned or reassigned, those agencies are to furnish a property officer to track all property from individual to individual until its final return to FEMA.

**Agency/Section Reporting the Issue:**

FEMA/Logistics

**Interagency:**

All Responding Agencies

**Space Shuttle Columbia Response Team  
Interagency Lessons Learned**

**#27**

**Issue Statement:**

Shortfalls in purchases and purchasing authority.

**Discussion:**

Most agencies responding provided their own buying team, some purchased without proper authority (i.e.: No money approved prior to purchase).

**Recommendation:**

That FEMA be the procuring agency for all major items to include: communications, IT equipment, GIS equipment and that responding agencies have in their possession, at the time of response, those items necessary to carry out their mission assignment, with the exception of those items furnished by FEMA. I recommend that the mission statements be written in such a manner as to make this happen beforehand.

**Agency/Section Reporting the Issue:**

FEMA/Logistics

**Interagency:**

FEMA  
EPA  
NASA  
US&R  
TFS  
USFS  
DoD/NAVY

**Space Shuttle Columbia Response Team  
Interagency Lessons Learned**

**#28**

**Best Practice/Issue Statement:**

Utilize FEMA's Community Relations and Crisis Counseling components to coordinate and staff field outreach efforts.

**Discussion:**

Individuals within the impacted communities were key contributors of information regarding the debris search. Initial and ongoing reports regarding materials and debris locations were received from residents directly and indirectly impacted by this event.

Additionally, as responders interacted in the community during daily routines, residents spoke freely about the personal, social and economic repercussions. These were quiet, self-contained communities, abruptly impacted by a catastrophic national event. Many residents emotionally displayed a fervid need to discuss what so tragically occurred in their lives on February 1<sup>st</sup>. Furthermore, with fear of legal reprisals some residents openly stated they'd never communicated reportable incidents to the appropriate authorities or hotline number.

As a component of FEMA External Affairs, Community Relations staff is selectively trained to collect, analyze and convey information that supports the attainment of programmatic and operational objectives. Community Relations could have skillfully served as an impartial presence in the field for a mobilized outreach effort to include hotline notification, and as field observers to gauge the flow and receipt of information for DFO operational priorities.

**Recommendation:**

Utilize FEMA's extensive Community Relations capabilities to augment the coordination of external field communication and outreach. Supplement outreach activities with Crisis Counseling, as assessed and applicable.

**Agency/Section Reporting the Best Practice/Issue:**

FEMA/Information and Planning (I&P)

**Interagency/Agency:**

FEMA  
NASA  
EPA  
USFS  
TFS

## **Attachment 1 MULTI-AGENCY COORDINATION GROUP**

Definition of a Multi-Agency Coordination Group (MAC) – A combination of facilities, personnel, equipment, procedures, and communications integrated into a common system with responsibility for cooperation of resources from assisting agencies and support to multi-agency operations within an area or incident.

Agency Coordinator – An individual who serves as the focal point for one or more agencies to use in passing information and resource requests. Also serves as the focal point for intelligence gathering for the Agency, coordinating unit situation reporting, preparing consolidated Agency reports to Agency Administrator(s), recommending on resource allocations and pre-positioning, and recommending to Agency Administrators and/or Incident Commanders overall incident actions.

MAC functions:

- Overall situation status information
- Incident priority determination
- Resource acquisition or allocation
- State and Federal disaster coordination
- Political interfaces
- Coordination of information provided to the media and agencies involved

MAC is made up of personnel from those agencies that have agencies that have jurisdictional responsibility and those who are heavily supporting the effort or may be significantly impacted by lack of local Agency representatives should be fully authorized to represent their agency (commit resources and authorize expenditure of funds).

**Roles and Responsibilities of the MAC Group.** The MAC Group should perform the following:

1. Prioritizes incidents.
2. Ensures the collective resource situation status is provided and current, by agency.
3. Determines specific resource requirements, by agency.
4. Determines resource availability by agency (available for out-of-jurisdiction assignments).
5. Determines need for and designate mobilization and demobilization centers.
6. Allocates scarce/limited resources to incidents based on priorities.
7. Anticipates future resource needs.
8. Reviews policies/agreements for resource allocations.
9. Reviews need for other agencies involvement.
10. Provides necessary liaison with out-of-area facilities and agencies as appropriate.
11. Critiques operation and recommend improvements.

## **Attachment 2 UNIFIED COMMAND**

### **I. Description of Unified Command**

Unified Command is a team effort process, allowing all agencies with responsibility for an incident, either geographical or functional, to establish a common set of incident objectives and strategies that all can subscribe to. This is accomplished without losing or abdicating agency authority, responsibility, or accountability.

There are essentially four elements to consider in applying Unified Command:

#### **A. Policies, Objectives, Strategies**

In ICS, this responsibility belongs to the various jurisdictional and agency administrators who set policy and are accountable to their agencies. This activity is done in advance of tactical operations, and may be coordinated from some other location than where the direct action takes place.

#### **B. Organization**

In ICS, the organization consists of the various jurisdictional or agency on-scene senior representatives (agency incident commanders) operating within a Unified Command structure.

#### **C. Resources**

In ICS Unified Command, resources are the personnel and equipment supplied by the jurisdictions and agencies that have functional or jurisdictional responsibility.

#### **D. Operations**

In ICS Unified Command resources stay under the administrative and policy control of their agencies. However, operational resources are deployed by a single Operations Section Chief, based on the requirements of the action plan. Unified Command represents an important element in increasing the effectiveness of multi-jurisdictional or multi-agency incidents. As incidents become more complex and involve more agencies, the need for Unified Command is increased.

### **II. Advantages of Using Unified Command**

Below are the principal advantages of using Unified Command.

- One set of objectives is developed for the entire incident.
- A collective approach is made to developing strategies to achieve incident goals.
- Information flow and coordination is improved between all jurisdictions

- and agencies involved in the incident.
- All agencies with responsibility for the incident have an understanding of one another's priorities and restrictions.
  - No agency's authority or legal requirements will be compromised or neglected.
  - Each agency is fully aware of the plans, actions and constraints of **all** others.
  - The combined efforts of all agencies are optimized as they perform their respective assignments under a single Incident Action Plan.
  - Duplicative efforts are reduced or eliminated, thus reducing cost and chances for frustration and conflict.

### III. Applications

Several examples below show the use of an ICS Unified Command application.

#### A. Incidents that impact more than one political jurisdiction.

The classic example is a wildland fire starting in one jurisdiction and burning into other jurisdictions. Responding agencies from each jurisdiction all have the same basic mission (fire control), and it is the political and/or geographical boundaries that mandate multi-agency cooperation and involvement.

#### B. Incidents involving multiple agencies (or departments) within the same political jurisdiction.

Hazardous materials incidents provide an example for this kind of a situation. The fire department has responsibility for fire control and rescue, the police department has responsibility for evacuation and area security, and public health agencies and others have responsibility for site clean up.

Major commercial airplane crashes are another example. Here, the management challenge increases. In one geographical location, fire, law enforcement, health services, the FAA, and others all have legal responsibilities to perform their different missions at the site of the same incident. All may be active at the same time and in the same place. It is the functional role and the legal obligation - not the geography - that brings about the multiple involvement.

#### C. Incidents that impact on (or involve) several political and functional agencies.

These kinds of incidents occur with storms, earthquakes, and other major natural disasters, and they present the greatest incident management challenges. In these incidents, large numbers of local, state, and federal agencies become immediately involved. These emergencies cross-political boundaries and involve multiple functional authorities. Roles, missions, and responsibilities are all intermixed.

ICS' Unified Command approach to incidents like those just mentioned is a practical and cost effective solution. By using Unified Command, participating agencies can improve overall incident management and achieve goals in a timely and cost-effective manner.

#### **IV. Primary Features of a Unified Command Organization**

- A single integrated incident organization
- Collocated (shared) facilities
- A single planning process and Incident Action Plan
- Shared planning/intelligence, logistical, and finance/administration operations
- A coordinated process for resource ordering

##### **A. A Single Integrated Incident Organization**

Under Unified Command, the various jurisdictions and/or agencies are blended together into an integrated unified team. The resulting organization may be a mix of personnel from several jurisdictions or agencies, each performing functions as appropriate and working toward a common set of objectives.

The proper mix of participants in a Unified Command organization will depend on:

- The location of the incident, which often determines the jurisdictions that must be involved.
- The kind of incident, which dictates the functional agencies of the involved jurisdiction(s), as well as other agencies that may be involved.

In a multi-jurisdictional situation, a Unified Command structure could consist of one responsible official from each jurisdiction. In other cases, Unified Command may consist of several functional department managers or assigned representatives from within a single political jurisdiction. Because of common ICS organization and terminology, personnel from other jurisdictions or agencies can be easily integrated into a single organization.

##### **B. Collocated (shared) Facilities**

Bringing the responsible officials, Command Staffs, and planning elements together in a single Incident Command Post a coordinated effort can be maintained for as long as the Unified Command structure is required. One base can serve the needs of multiple agencies. Similarly, resources from several agencies can be brought together in Staging Areas.

##### **C. A Single Planning Process and Incident Action Plan**

The planning process for Unified Command is similar to that used on a single jurisdiction or agency incident. One important distinction is the need for every jurisdictional or functional agency's Incident Commander to get together before the first operational period planning meeting in a command meeting.

The Command Meeting occurs at the beginning of the Incident for the primary purpose of establishing overarching objectives and initiating the Unified Incident Command System. Additional command meetings may occur if the situation changes or a substantial change in personnel occurs. This meeting provides the opportunity to discuss and concur on important issues prior to joint incident action planning.

**The agenda for the command meeting should include the following:**

- State jurisdictional/agency priorities and objectives.
- Present jurisdictional limitations, concerns, restrictions.
- Develop a single set of overall incident objectives.
- Establish and agree on acceptable priorities.
- Adopt an overall strategy or strategies to accomplish objectives.
- Agree on the basic organization structure.
- Designate the best qualified and acceptable Operations Section Chief.
- Agree on General Staff personnel designations and planning/intelligence, logistical, and finance agreements and procedures.
- Agree on the resource ordering process to be followed.
- Agree on cost-sharing procedures.
- Agree on informational matters.
- Designate one agency official to act as the Unified Command spokesperson.

**Command Meeting Requirements**

- The Command Meeting should include only agency Incident Commanders.
- The meeting should be brief, and important points should be documented.
- Prior to the meeting, the respective responsible officials should have reviewed the purposes and agenda items described above, and are prepared to discuss them.

Incident Action Planning meetings will use the results of the Command Meeting to decide on:

- Tactical operations for the next operational period, (operational period objectives).
- Establishing resource requirements and determining resource availability and sources.
- Making resource assignments.
- Establishing the unified Operations Section organization.
- Establishing combined planning/intelligence, logistics, and finance/administration operations as needed.

The end result of the planning process will be an Incident Action Plan that addresses multi-jurisdiction or multi-agency priorities, and provides tactical operations and resource assignments for the unified effort.

**D. Shared Planning/Intelligence, Logistical, and Finance Sections**  
The Unified Command incident organization can also benefit by integrating multi-jurisdictional and/or multi-agency personnel into various other functional areas.

For example, in Operations and Planning/Intelligence, Deputy Section Chiefs can be designated from an adjacent jurisdiction, which may in future operational periods have the primary responsibility for these functions. By placing other agency's personnel in the Planning/Intelligence Section's Situation, Resources, and Demobilization Units, there can be significant savings in personnel, and increased communication and information sharing.

In Logistics, a Deputy Logistics Section Chief from another agency or jurisdiction can help to coordinate incident support as well as facilitate resource ordering activities. Placing other agencies personnel into the Communications Unit helps in developing a single incident-wide Communications Plan.

Although the Finance/Administration Section often has detailed agency specific procedures to follow, cost savings may be realized through agreements on cost sharing for essential services. For example, one agency might provide food services, another fuel, another security, etc.

**E. Unified Command Resource Ordering**  
An important advantage of Unified Command is advance establishment of resource ordering procedures. These decisions are made during the Command Meeting.

The Planning Meeting will determine resource requirements for all levels of the organization. However, the nature and location of the incident will, to some extent, dictate the most effective off-incident resource ordering process. The resource requirements established at the planning meeting are given to the Logistics Section, which then creates a resource order which is transmitted to the designated ordering point for processing. Some situations may require resource orders to be made to different agencies from the incident. Multiple resource orders are generally less desirable than the use of a single resource order, and should be avoided when possible. If the incident is operating under Unified Command, specific kinds and types of resources to be supplied by certain jurisdictions or agencies may be pre-designated as a part of the resource order. This will depend upon the prior commitments of the responsible agency officials in the Unified Command meeting.

If this information is not known in advance, then it will be up to the individual agency dispatch center receiving the resource order to fill the order based on closest available resources.

## V. Guidelines for the Use of Unified Command

### A. Understand ICS Unified Command

It is essential to understand how ICS Unified Command functions. Knowledge of ICS principles and structure will enable managers to accept and easily adapt to a Unified Command mode of operation when it is required. Lack of knowledge about ICS can limit the willingness of some jurisdictions or agencies to participate in a Unified Command incident organization. **It is impossible to implement Unified Command unless agencies have agreed to participate in the process.**

### B. Collocate Essential Functions

Establish a single Incident Command Post and, as needed, other facilities where all agencies can operate together. Avoid the confusion created by separate command, planning, and logistical setups.

### C. Implement Unified Command at an Early Stage of a Multi-jurisdictional or Multi-agency Incident

It is essential to begin joint planning as early as possible. Initiate Unified Command as soon as two or more agencies having jurisdictional or functional responsibilities come together on an incident. It is especially important on those incidents where there may be conflicting priorities based on agency responsibilities.

### D. Concur on an Operations Section Chief and other General Staff members

The Operations Section Chief will normally be from the jurisdiction or agency that has the greatest involvement in the incident, although that is not essential. The Operations Section Chief should be the most qualified and experienced person available. The selection of the Operations Section Chief must be agreed upon by the Unified Command, as the Operations Section Chief will have full authority to implement the operations portion of the Incident Action Plan. It is also necessary to agree on other General Staff personnel who will be implementing their portions of the Incident Action Plan.

### E. If Necessary, Designate One of the Incident Commanders to be a Spokesperson (Operational Period Duty Officer)

The Incident Commanders may see the need to identify one of them to act as an Operational Period Duty Officer and/or spokesperson for the Unified Command. This can provide a designated channel of communications from General and Command

Staff members into the Unified Command. That person does not make Unified Command decisions, but does provide a point of contact as necessary for the General and Command Staffs.

#### F. Train Often as a Team

Finally, it is important to conduct training exercises in using Unified Command with adjacent jurisdictions and functional agencies whenever possible.

### **VI. Functioning in Unified Command**

Individually and collectively, the designated agency Incident Commanders functioning in a Unified Command have the following responsibilities at an incident:

- A. They must be clear on their jurisdictional or agency limitations. Any legal, political, jurisdictional, or safety restrictions must be identified and made known to all.
- B. They must be authorized to perform certain activities and actions on behalf of the jurisdiction or agency they represent. These actions could include:
  - Ordering of additional resources in support of the Incident Action Plan.
  - The possible loaning or sharing of resources to other jurisdictions.
  - Agreeing to financial cost-sharing arrangements with participating agencies.
- C. The Unified Command has the responsibility to manage the incident to the best of its abilities.

This includes:

- Working closely with the other IC's in the Unified Command.
  - Providing sufficient qualified staff and resources.
  - Anticipating and resolving problems.
  - Delegating authority as needed.
  - Inspecting and evaluating performance.
  - Communicating with their own agency on priorities, plans, problems, and progress.
  - Coordinate with their jurisdictions through a DOC or EOC when activated.
- D. The members of the Unified Command must function together as a team. They must ensure that effective coordination takes place. In many ways, this is the most important function they perform in Unified Command.

There are two distinct levels of coordination:

- Coordination with other members of the Unified Command team. It is essential that all participants be kept mutually informed, involved, and consulted.
- Coordination with higher authorities, agency administrators, etc. It is important to keep their respective authorities well informed and confident that the incident is being competently managed.