TEAM RUBICON
BRIDGE THE GAP

After Action Report

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Operation: Starting Gun

Moore, OK

05/20/2013 to 07/03/2013

Publication Date: 08/30/2013

Executive Summary

Brief Operation Summary

From May 20th to July 3rd 2013, Team Rubicon participated in disaster response and recovery operations in the town of Moore, Oklahoma which had been bisected by a massive tornado. During these operations Team Rubicon fielded over 450 volunteers from across the country to conduct damage assessment, prompt home repair, and debris management. This operation was the first time Team Rubicon implemented the Incident Command System for management of a large-scale national response. It was the organization's largest operation to-date and was the first time that Team Rubicon conducted full demolition of damaged structures using heavy equipment. Successful as a whole, the mission presented Team Rubicon with further incentive for its professionalization efforts, tested outstanding developments, and provided further direction for internal development projects.

Collaborating Organizations and Community Partners

- AmeriCares
- Home Depot
- JCB
- Veterans United
- ITDRC
- Motorola
- Total Radio
- ViaSAT
- Goal Zero
- Palantir
- AmeriCorps
- American Red Cross
- Southern Baptist Disaster Relief

Key Strengths/Accomplishments

- Achieved nationwide activation of assets within days to support response to affected areas.
- Mobilized more than 450 veterans and civilians in a joint response from across the country.
- Implemented full scope of Incident Command System to support 44 days of continuous field operation.
- Completed more than 450 work orders, saving the community of Moore nearly $3.7 million in disaster recovery costs.
- Conducted more than 3,000 damage assessments and shared them with local and national emergency management agencies.
- Developed methodology for rapid and effective demolition and debris clearance for communities in need of debris clearance from multiple properties.

Key Lessons Learned

- Clear communication of expectations is necessary at all levels of incident and organizational management to ensure efficient operations.
- Developing trust between organizational leadership, incident management, and field operators must be a key focus of training and internal programming to ensure effective collaboration.
- Skilled personnel must be available in order to support the delegation of authority necessary to support Team Rubicon's large scale operations at all levels.
- All missions and organization functions require clearly defined goals and objectives for contributors to work effectively towards mission success.
- Appropriate systems and adequate numbers of trained personnel to execute them are necessary to ensure accountability in all parts of Team Rubicon operations

Operation Overview

Operation Name: Operation Starting Gun
Duration: 44 Days
Dates: 5/20/13 – 7/3/13
Location: Moore, Oklahoma
Field Activities: Damage Assessment, Expedient Home Repair, Debris Management, Home Demolition
Participating Regions/States: All Regions (10) and 38 States
Mission Objectives:

1. Establish a strong incident management infrastructure to facilitate sustained, safe, and well documented storm recovery operations throughout the month of June.
2. Create a system to alert, activate, and deploy volunteers from all ten national regions. Engage regional leaders throughout this process to ensure a range of volunteer experience and capabilities are distributed across the regional deployment tie blocks.
3. Ensure Continual and complete accountability of all resources, personnel, and funds connected with operations throughout all phases of the disaster response.
4. Establish interagency relations and operational transparency with external disaster response/recovery organizations, including the Oklahoma VOAD and governmental authorities, to allow for ease of access into the area of operations and set the foundation for rapid integration during future events.
5. Ensure that tactical operations on the ground are targeted towards the largest groups of vulnerable populations, engage the greatest range of volunteers, and provide the greatest depth in delivered aid per resource engaged.

Cash Raised:
  Less Credit Card Fees:
Net:
Expenses:
  Transportation:
  Equipment:
  Food:
  Lodging:
  Authorized Cash Disbursements:
Total Expenses:

Net Operation Gain/ (Loss):

Total Volunteers: +450 (combined civilian and veteran, with all 5 Armed Services represented)
Total Man Hours: 37,600 Hours
Number of Incidents: 8 non-serious injuries and 2 minor vehicle accidents
Damage Assessments: +3,000
Work Orders Completed: +450

Summary of Events

Situation Overview:

During the final weeks of May 2013, a massive storm system developed over the state of Oklahoma. The storm system spanned from the state's southeast to northwest corners and was combined with weather conditions perfect for tornado formation. On May 19th and 20th, after much anticipation, atmospheric conditions caused the storm to generate an intensive burst of 8 separate tornadoes in and around Oklahoma City. One of these, approximately 2 miles wide and gusting at 200 mph, touched down southwest of Oklahoma City at 14:56 CST. It proceeded to transverse the south and southeast segments of the city, cutting directly through the town of Moore. Initial assessments indicated the damage or destruction of nearly 8,000 structures (including the town hospital and multiple occupied schools), over 23 casualties (a significant number being children), and an active need for extensive emergency provisions of response and recovery services. With this in mind, Team Rubicon decided to initiate Operation Starting Gun and activate its national membership to respond.

Incident Summary:

Activation (May 20, 2013 – May 22, 2013)

This initial phase began nearly immediately after the disaster's occurrence. Thanks to a previous incident in Cleburne, TX (Operation Horned Frog), Team Rubicon Headquarters was already on an operational footing and was quick to react to the new incident. The Operations Planning Section conducted its initial intelligence gathering and briefed TR Leadership within 24 hours of the incident. With multiple areas damaged by the series of tornados, it was rapidly decided to focus on conducting operations in the area of highest damage concentration. Social media immediately began reporting the beginning of engagement efforts. Notifications were sent via email and phone to Regional Leaders to prepare for large scale activation. By May 21st, Team Rubicon was working to establish connections with the Oklahoma VOAD and Emergency Management agencies in the affected area. In addition, elements of the demobilizing Op. Horned Frog were directed to prepare for imminent redeployment once their task in Cleburne was complete.

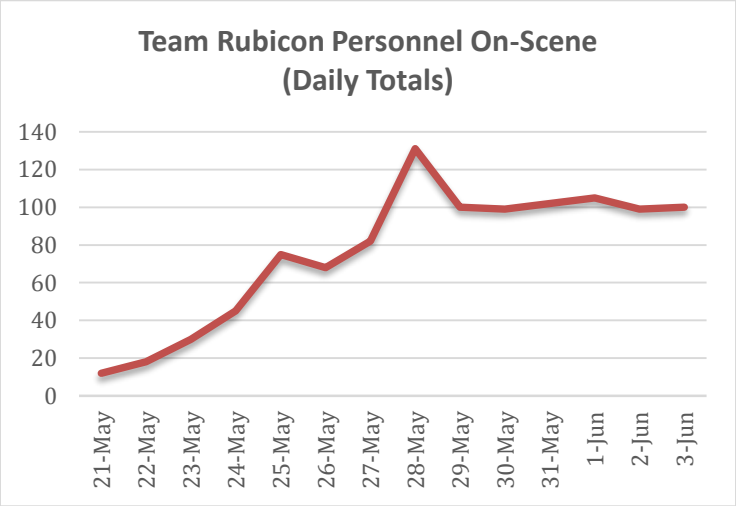
Initial Response (May 22, 2013 – May 24, 2013)

TR's initial response was remarkably rapid thanks to the status of Region VI's augmented response team in Cleburne, TX and quick integration of lessons learned from the initial deployment of Operation Horned Frog. Incident management and field personnel were on-scene in Moore by May 22nd despite logistical issues and weather hazards. However, significant difficulty was encountered securing housing for personnel, identifying a viable forward operating base, and gaining access to damaged areas in advance of their arrival. This was due to a combination of inefficiencies in response coordination, miscommunication with local authorities, infrastructure damage, and access restrictions. Thankfully, donations by the local community, partnership development, and significant communication efforts alleviated these issues. By May 24th, the Forward Operating Base had been established at the Moore Home

Depot, personnel were being housed in the Minco High School gymnasium, and assessment teams were moving into the affected areas.

Expanding Operations (May 22, 2013 – May 27, 2013)

Key among the mission priorities was the need to effect a nation-wide mobilization of the TR-Volunteer base. This was evident by the sheer scope of damage and the need to support a rapidly disappearing Region VI volunteer base. To support this expansion, the TR-HQ Operations Section activated an impromptu Emergency Operations Center. This EOC was staffed by Region IX volunteers and supported by Region VI planners, all of whom provided critical assistance throughout the initial and expanding operations phases. From May 22nd to 23rd, response was expanded to integrate Regions VI and VII, and specialized support from Regions III, VIII, IX, Palantir, and TR-HQ. At the same time, a National Mobilization Plan was finalized and implemented. On May 25th, the first non-adjacent region deployment team arrived by plane in Oklahoma City. By May 27th, a relatively standard weekly rotation of personnel from non-adjacent regions was under way. Additionally, field operations expanded scope from damage assessment, work order accumulation, and expedient repair to include debris management and full demolition of destroyed housing.



Regular Operations (May 27, 2013 – June 25, 2013)

Evolution into the 'regular operations' phase proved tumultuous and fraught with operational, logistical, and managerial challenges. Changing operational conditions caused field intelligence to expire rapidly – notably in terms of active work orders. This caused an inefficient shuffling of field elements between work sites, which were often already completed by outside organizations or contractors. Additionally, having not conducted a field operation of this scale before, the learning curve for mastering resource allocation was tremendous. Frequent personnel turnover exacerbated these challenges. Logistics found itself under staggering and chaotic operational requirements, thus leading to its own unique set of problems. The most notable were a simple lack of sufficient dedicated logistics personnel, constant maintenance and

upkeep requirements, and difficulties with equipment needs identification, acquisition, and tracking. Managerial difficulties centered on the size of the operation and that this was the first time Team Rubicon had implemented the Incident Command System for a large-scale national response. Inadequate numbers of trained management personnel to teach and direct left a massive learning curve for newly initiated personnel. The resulting confusion regarding roles, responsibilities, and practices led to miscommunications, information gaps, and interpersonal friction. The operation was fraught with challenges and opportunities to fail.

It is through the fortitude, resiliency, and adaptability of Team Rubicon's responders that these issues were identified, challenged, and either overcome or mitigated. Entry into 'regular operations' allowed for a somewhat stable period in which personnel could be trained, mentored, and coached in their respective roles. This was augmented by the increasingly rapid identification and promotion of skilled leaders into field leadership and command positions. Tremendous improvements in efficiency and collaboration ensued. Lessons were learned, integrated, and implemented with increasing levels of effectiveness. Though logistics continued to prove problematic throughout the mission, the monumental efforts of those who stepped up and into those roles made the difference between mission success and failure. Management personnel began building upon best practices and innovating increasingly effective solutions to the chaotic operational environment. Field leaders eventually mastered the processes necessary to efficiently conduct the numerous tasks assigned to them.

By the end of regular operations, field operations were running concurrent assessment, light and medium debris removal, and heavy demolition of structures in an efficient sequence. Logistics was able to prepare for demobilization while still providing necessary support to continuing operations. And incident management improved at collaboration, conducting external outreach, integrating incoming intelligence, and directing field operations.

Demobilization (June 25, 2013 – July 3, 2013)

At the beginning of Operation Starting Gun, it was determined that Team Rubicon would seek to maintain a response for approximately one month. Operations were scheduled to be shut down, outstanding work orders handed over, and all resources returned home by the end of June. With this in mind, field operations were purposely wound down during the last week of the month. Donated and purchased equipment were inventoried and packaged, rental vehicles returned, outstanding work orders compiled and turned over to remaining recovery organizations, personnel were steadily demobilized, public advertisements were issued to inform and direct the community, and incident management conducted final meetings with local authorities. All these activities were conducted quickly and efficiently with substantial numbers of local TR personnel showing up specifically to help with the demobilization process. At the same time, Region VI and VII trailers were restocked, repaired, and received capital improvements for better organization and utilization. TR purchased and utilized two ISO conex containers to ship remaining equipment back to Los Angeles, to facilitate transport of remaining equipment, and begin preparations for the next disaster. Demobilization was finished on July 3rd with shipment of the conex containers and transport of the last personnel out of Moore.

Analysis & Discussion

Overview:

The following sections will provide an in-depth discussion of Team Rubicon's execution of Operation Starting Gun. It must be noted that large operations of this kind have a particular tendency to shed light on areas in need of improvement, as well as providing opportunities for discovering potential solutions. They are chaotic, yet critical, learning opportunities. The goals of the segments below are to capture the successes, failures, innovative solutions, and opportunities for growth at every level of the operation.

Strategic Goals & Objectives:

From the mission's outset, a series of mission priorities (or goals) were outlined by Team Rubicon's executive leadership. Due to the lack of an adequate pre-existing support infrastructure (including plans, procedures, systems, and personnel to facilitate the mobilization process), these goals were never fully published or developed into an Incident Strategic Plan. The resulting lack of strategic clarity regarding mission intent, scope, and parameters has been noted by regional leadership and incident management as a key cause of confusion. A vital lesson from this mission is the importance of ensuring that time and effort is dedicated to the creation and publication of an Incident Strategic Plan.

However, it is still possible to examine operational success in terms of achievement of the mission priorities that were created:

1. ***Establish a strong incident management infrastructure to facilitate sustained, safe, and well documented storm recovery operations throughout the month of June.***

Achievement of the first mission goal was primarily due to existing conditions rather than actions during the operation. The early establishment of a substantial incident management system that grew with the incident was rapidly and effectively achieved. However, critical deficiencies of qualified and skilled management personnel at all levels and in all functions on-scene limited its effectiveness (more discussion on this later). Safety at the incident was a constant battle. Fortunately there were no major injuries during the course of the operation, but there were numerous close-calls. Examination of circumstances indicated a need for more robust safety oversight but, even more importantly, the need for extensive pre-deployment and on-the-job training for leaders and workers alike. Documentation of the mission was also problematic – though not due to a lack of paperwork. Instead, it was unfamiliarity with roles, forms, and reporting/information requirements that hobbled the documentation effort. This also is ultimately a training and information management issue. With all that said, the operation was successfully sustained from start to finish without any unplanned halts in field operations. Thus, this goal was reasonably achieved given the situation, scale of operations, and relative readiness of Team Rubicon personnel.

2. ***Create a system to alert, activate, and deploy volunteers from all ten national regions. Engage regional leaders throughout this process to ensure a range of volunteer experience and capabilities are distributed across the regional deployment time blocks.***

The second mission goal was also partially achieved. The alert, activation, and deployment system was constructed and deployed with reasonable success. TR managed to deploy more personnel than ever before, with an impromptu system, ultimately managing to ensure that everyone got where they needed to be. TR also succeeded in integrating a highly diverse mixture of volunteers with different skills, backgrounds, and experience levels. However, it suffered from significant technical problems, over complexity, and outside issues (such as transportation availability) that hampered personnel interface and directly or indirectly caused countless difficulties throughout the operation. Regional leadership was not fully integrated into the process causing communication breakdowns, process inefficiencies, and a crippling workload for personnel at TR-HQ.

3. ***Ensure continual and complete accountability of all resources, personnel, and funds connected with operations throughout all phases of the disaster response.***

Mission goal three proved the most problematic of all. Accountability was achieved sporadically as personnel changeover led to losses of lessons learned, in part due to replacements being mostly untrained. Thankfully, the efforts of several highly proficient and forward-thinking individuals ensured the general continuity of accountability in all areas. Personnel accountability proved the greatest challenge of all. Difficulty interfacing with systems created to facilitate personnel tracking, as well as tremendous difficulty finding people willing to take on the role, made on-scene tracking incredibly difficult. Lack of integration with regional leadership made accountability between 'home' and the incident incomplete and sporadic. In post-mission discussions and reports, it has been noted that many of the above issues could be resolved via implementation of training, volunteer expectation and culture management, improving coordination among leadership, and the full development of systems and processes meant to support the facilitation of total accountability.

4. ***Establish interagency relations and operational transparency with external disaster response/recovery organizations, including the Oklahoma VOAD and governmental authorities, to allow for ease of access into the area of operations and set the foundation for rapid integration during future events.***

Attainment of goal number four had a rocky start due to a series of unfortunate miscommunications. Despite this, it is the most soundly accomplished goal of the mission. Fervent effort was bi-directionally aimed toward the development of relations with local authorities, community members, and fellow responders to great effect. By the end, local law enforcement and rescue services actively stated that they would remember TR for future incidents, honest and positive discussion with local emergency management and elected officials were conducted, on-site partnerships were developed with multiple responding organizations, and the OK VOAD acknowledged TR's place in the state's VOAD community. This speaks highly to both the political acumen and the skill of TR leadership, as well as the outstanding image and work delivered by volunteers in the field.

5. ***Ensure that tactical operations on the ground are targeted towards the largest groups of vulnerable populations, engage the greatest range of volunteers, and provide the greatest depth in delivered aid per resource engaged.***

Achievement of goal number five is harder to gauge. Throughout the course of operations, distinct effort was put toward ensuring the maximum number of volunteers possible was leveraged to make the greatest impact. Provision of assistance was generally prioritized toward those without home insurance, those with insurance companies requiring substantial contracting work before conducting assessments/providing funds, and those with disabilities. However, later identification of unassisted vulnerable populations on the periphery of Moore indicated that some of TR's operations may have been better directed towards assisting them. While identification of volunteer skills and capabilities for best application could have been executed better, talent identification and task assignment became more rapid and efficient as the operation continued. The same improvements were seen in field unit organization, as well as equipment and machinery application. With these things in mind, and without further metrics for evaluation, Team Rubicon came as close as possible to achieving this goal given its outstanding handicaps and circumstances.

Preparedness & Pre-Planning:

Introduction

The conduct of preparedness activities is considered a critical component of the emergency management process. Evaluation of the effectiveness and usefulness of the deliverables from these processes, at least in terms of their strengths, weaknesses, and opportunities for improvement, is an essential part of determining the adequacy of one's preparations.

Core Operations Plan

At present, Team Rubicon does not have a core operations plan. To date, it has effectively worked off of the professional knowledge and experience of its members. When combined with institutional knowledge gained from previous operations, this less formal model was workable for a limited size of field operations. However, with the drive to integrate industry standards, to increase the size and scope of its operational capabilities, and to effectively and safely work as a national first responder, the creation of a core operations plan is critical for success.

Hazard-Specific Plans

At present, Team Rubicon does not have any hazard-specific pre-planning in place. It does have institutional knowledge regarding response to several common natural disaster types. Formalized capture of this knowledge, alongside more complete planning data, has been identified as a critical development objective.

Support & Function Specific Plans

At present, Team Rubicon's operational support systems are informal. They are based upon a mix of previous experience, industry knowledge, and momentary innovation. While this has been feasible for previous incidents, feedback from this operation regarding communication of roles, process efficiency, and system capacity indicate that more formalized plans and systems are necessary in order to support the expanded size, scope, and duration of operations that Team Rubicon is moving toward. Creation and dissemination of National and Regional Incident Support Plans have been identified as a critical development objective.

A function-specific plan for national mobilization was developed and implemented during this operation. Feedback regarding the efficacy of the mobilization process indicates that, while the concept of the document was sound, its exclusion of regional leaders from the deployment process led to mass inefficiencies in personnel vetting and deployment coordination. Future iterations of this plan will need to fully integrate regional leaders in the process. Additionally, it will be necessary to develop and test more robust and comprehensive systems to support the implementation of the National Mobilization Plan. It has been demonstrated that the existing Google Docs based systems are inadequate for the stresses of large scale, nationwide mobilizations. Systems such as Everbridge, Cornerstone, alert and dispatch protocols, and formalized EOC processes will be critical in this effort.

<u>Incident Management:</u>

Introduction

The following sections will examine the incident management and support activities as executed by each level of TR operations leadership.

Incident Command System Implementation

Overarching Trends:

At present, Team Rubicon has not established a trained or certified incident management cadre. This is due to its youth, the relatively recent date of NIMS/ICS adoption (Spring 2013) the relatively small scale of most of its missions, and its existing personnel management technology acting as a significant barrier to talent/skill identification. The result is that the organization depends on a small group of identified personnel, regional leaders, and field promotion of volunteers who show promise in the field. The tenuousness of this approach was clearly demonstrated during this mission. Unfamiliarity with NIMS/ICS and advanced leadership concepts among the general staff caused significant miscommunications, false expectations, and interpersonal conflict. Difficulty in coordinating turnover and deployment schedules hindered continuity of command. The choice to deploy TR-Headquarters personnel to the incident provided massive morale and functional improvements among leaders and field personnel alike. The significance of improving this situation through knowledge/skill identification, provision of common training, regular exercises to develop trust, formal organization, and communication facilitation cannot be overstated as TR pursues larger missions and an expanded scope of operational activities.

Command Staff:

The personnel activated to serve as members of the Command Staff were experienced incident managers who succeeded in holding the mission together through a mix of personality, political acumen, adaptability, and technical knowledge. A great deal of credit goes to their efforts and sacrifices for ensuring mission success.

In contrast, a number of difficulties were noted. The Incident Commanders stated they felt micro-managed by TR-HQ, minimally empowered, and stifled by overly frequent reporting requirements and frequent second-guessing. It is worth noting they also describe strong relations and significant successes at improving and advancing the operation while working with TR-HQ representatives on-site. The efforts of external affairs proved to be just as taxing, with constant meetings and discussion often preventing them from focusing more energy on internal direction. This manifested in difficulties communicating incident goals and objectives to general staff, providing regular briefings, facilitating planning meetings, and providing strategic direction.

Beyond the formal selection, training, and organization of an incident management cadre, the following actions will significantly improve Command Staff function during future missions:

- Ensure clear identification of roles, responsibilities, and requirements for all incident management positions through formally published and communicated operations plans.
- Creation and briefing/publication of incident response strategy/ goals to guide incident objective creation.
- Formal education and practice in deliberate implementation of the 'Planning P' (re: National Incident Management System) as part of the incident management process.
- Publication and posting of critical segments of the incident action plan every day to include incident objectives, safety message, and organization chart for general knowledge on-scene.
- Provide a morning general briefing to all personnel to communicate the incident action plan and pertinent operational details to field personnel.
- Identify and appoint liaison personnel and assistants to join general staff and decrease external affairs/communications/reporting workload carried by the Incident Commander.
- Standardize TR-Headquarters representation on-scene at large incidents as part of the Command Staff to ease vertical communications, facilitate mentoring of incident management, and organize training for field personnel.
- Schedule and implement regular rotations of incident command personnel with adequate overlap to ensure continuity of leadership.

Operations Section:

Team Rubicon's operation in Moore, OK was its longest and most organized to date. It was even recognized by local authorities and partners as the largest and most organized volunteer operation present. The scope of activity coordinated by the operations section demonstrated the flexibility and adaptability of Team Rubicon and its personnel. It also added heavy

construction equipment (such as backhoes and bulldozers) and full home demolition to its growing repertoire of tools. Some specific accomplishments include:

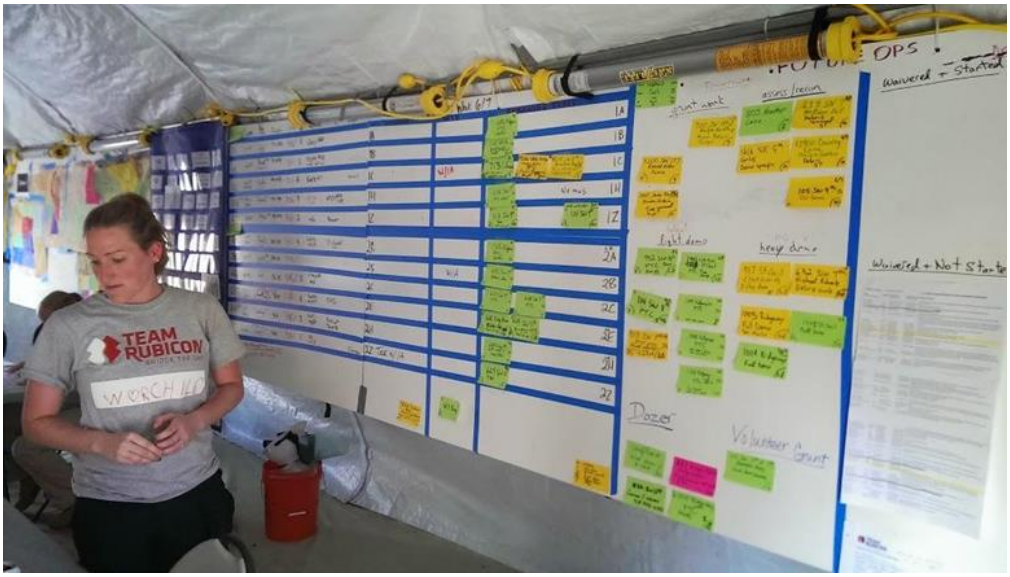
- Successfully coordinated over 100 volunteers per day utilizing ICS systems and processes, to which many leaders had limited exposure/experience.
- Maintenance of a highly adaptive and innovative state, revising tactics and techniques quickly to absorb best practices and lessons learned. Resulted in the successful development and testing of new demolition/debris management tactics and workflow management methodologies.
- Maintenance of a reliable daily operations schedule and tempo.
- Facilitated field promotion of leaders who distinguished themselves into field leadership and incident management positions. This was the key aspect that paved the way for innovative developments.
- Recurring and effective daily briefing and tasking of strike team leaders and division supervisors.
- Well-planned and executed concept to spread regional volunteers across strike teams during deployment to prevent clustering, foster inter-regional connection, and develop leadership.

These successes came with a number of critical problems and failures that will need to be addressed. These include:

- Disorganized operations center design.
- Communications confusion due to lack of personnel assigned to acting as single point of contact for field elements and monitoring base phone.
- Inadequate debrief of field leaders. This improved over time but never involved substantive or organized data collection for documentation and analysis.
- Undefined roles beneath the Operations Section Chief and Deputy OSC within the operations center.
- Chronic understaffing.
- Inadequate work-order tracking and an insufficiently dynamic management system for work order/field task assignment.
- Incomplete development process for tactics and insufficient communications/ coordination of developed tactics to supporting elements (logistics).
- Ineffective Palantir integration into work order development section and intelligence access.
- Not enough emphasis on safety during briefings – notably about specialized equipment.
- Slow deployment of personnel in the mornings.
- Expansion of mission's scope in the field without adequate assessment of capabilities, costs, or hazards. Provision of training initially did not keep up with expanding scope.
- Failure to communicate operational needs to other General Staff.

Critical improvements for future operations should integrate the following in processes, planning, and training:

- Creation and communication of an incident integrated communications plan that maps communication systems and personnel, oriented around a designated and consistently monitored point of contact based in the Operations Section.
- Development of team leader debriefing process and tools that facilitate documentation and data collection – to include modification of ICS 204 and use of electronic systems.
- Refine and formally integrate use of modified 'Kan-Ban system', battle-boards, and T-Cards developed during operation for work order, field task, and asset management.
- Deliberately map and staff functions necessary to maintain span of control given size and scope of operations in line with NIMS principles. Do not expand mission size or scope beyond support capacity.
- Formally develop field tactics as part of 'Planning P' and communicate it to other sections as described therein.
- Integrate Palantir trained personnel to augment the Operations Section and facilitate better integration with the Planning Section.
- Ensure adequate training is available on-scene when planning to conduct activities that expand beyond normal scope of operations and existing personnel training.



Kan-Ban Style Resource/Work-Order Tracking Board in use at the Forward Operating Base (courtesy of Sean Horgan)

Planning Section:

The Planning Section experienced a significant ebb and flow of effectiveness throughout the course of the mission. Initially strong due to the training of the personnel fulfilling the function, it declined upon their departure. The steep learning curve incurred upon replacements resonated with issues in the Operations Section. The result was a conflict over the role of 'Planning' as defined by NIMS/ICS versus military doctrine. Symptoms were exacerbated by the immense workload distributed among the Planning Section's few members.

Successes came from the significant change in structure and function achieved when mentored by trained incident command personnel. The group evolved from a disjointed unit into a full contributor to incident management through the creation of daily IAPs, provision of information for operational planning, increased collaboration with command elements, and maintenance of the Palantir database.

Key problems centered around:

- Undefined roles, responsibilities, and deliverables.
- Inconsistent resource/personnel tracking.
- Lack of documentation or demobilization functions.
- Insufficient number of personnel trained to manage Palantir implementation.
- The consistent confusion and distraction of Palantir personnel with IT/technology support problems.

Solutions for these issues are based around training and preparation. Incident management training based on NIMS/ICS principles and TR Doctrine will clarify roles and expectations. This can be reinforced through the creation of job aids and field guides. Development of new personnel tracking systems will improve resource tracking. Awareness training on the use and integration of Palantir into operations will demystify the system and facilitate more efficient application. The creation of a trained and deployable cadre of Palantir-proficient technicians to augment Palantir advisors will reduce workload. Finally, the assignment of personnel to specific positions in advance of deployments will prevent the creation of false expectations and ensure that often overlooked functions (documentation, demobilization, and resource tracking) are filled.

Logistics Section:

Logistics is often the unsung powerhouse of Team Rubicon operations. The personnel who filled this function during Operation Starting Gun managed to feed, house, and equip a company-sized formation for 44 days continuously. The function scaled from a small, one-person, trailer-based activity to a 10-person, multi-unit organization integrating activities ranging from chainsaw maintenance to catering. Beyond providing regular food and housing to hardworking field operators, they ensured daily preparedness of mission critical equipment and conducted frequent, on-demand resupply drops in the field. These activities supported the completion of damage assessments, expedient home repairs, building demolitions, housing muck-outs, heavy vehicle operations, and debris management activities – all of which demanded unique combinations of supplies and services. This was accomplished utilizing a mixture of military experience, minimal ICS knowledge, and the emergent skills of numerous people who stepped up to fill the need.

While accomplishments were significant, critical problems caused substantial inefficiencies, interpersonal conflict, and operational failures that must be remedied. Each function's difficulties and potential improvements will be discussed separately for clarity due to the expansive nature of the Logistics Section.

The largest problems afflicting the Logistics Section were due directly to personnel issues. From the onset, an inadequate number of knowledgeable personnel with applicable skills were assigned to the section. Skill identification on-site was minimal and primarily occurred due to self-identification to leadership personnel. At the same time, volunteers who were unable to operate in the field or had been having trouble working with field leadership were often sent to the Forward Operating Base to assist in Logistics. The result was a toxic mix of disgruntled, unfamiliar, and potentially unreliable personnel attached to strong and dedicated personnel at all levels of the section. The symptoms varied in intensity throughout the operation as personnel rotated in and out - with more than one interpersonal conflict evolving. The survival of the section is directly attributable to a string of highly skilled and motivated leaders and workers who carried the section forward despite all the challenges.

To prevent these issues in the future:

- Function-specific training for logistics-oriented personnel and volunteers must be provided. In-house skills training should be developed to help workers learn to fill service and support roles.
- Clear position expectations and activity job aids should be created for frequently-used/critical logistics activities.
- In-processing must identify skills useful to Logistics as well as field ops.
- Critical logistics positions must be assigned to trained and experienced personnel. Requests for additional skilled personnel by these leaders must be heeded.
- Systems for rotating support personnel into strike teams for field experience and morale purposes need to be created.

The ‘Facilities’ function is generally responsible for the creation and management of all establishments supporting the mission – in this case, the housing at Minco High School Gymnasium and the Forward Operating Base at the Moore Home Depot. While the overall organization and setup of all facilities received high reviews, maintenance and upkeep proved a problem. The need for dedicated managers with adequate official authority to guide daily activities, ensure appropriate decontamination of personnel, organize cleaning/maintenance, and provide security became very clear. Frustration and rapid turnover among personnel assigned to the position, steady degradation of facility conditions (offset by sporadic bursts of cleaning activity), and a series of minor incidents at the housing facility emphasized this issue. Since Team Rubicon relies heavily on the generosity of local organizations/businesses to provide facilities, it is imperative that this function’s fulfilment take a high priority with the mindset of ‘leave-no-trace’. Primary solutions involve the assignment and empowerment of facility managers. This can be partially achieved through a transfer of authority over personnel from the Operations Section to the Facilities Unit Leader at the end of every Operational Period, or whenever they are not tasked to field operations. The maintenance of unit cohesion would ensure continuity of command, reduce confusion, and assist in effective management. At the same time, Section Chiefs and Incident Managers must give the Facilities Unit the same level of respect, importance, and authority afforded to field leadership.

The ‘Supply’ function focuses on the acquisition, storage, and distribution of mission critical supplies to support, field operations, and command elements. This function was not officially established during Operation Starting Gun and no processes exist within Team Rubicon to

facilitate its execution. This resulted in non-centralized acquisition, redundant purchases, cost and material tracking gaps, uncertainty regarding inventory, and frustration among field operators making equipment requests. Any successes depended heavily on the diligence of leadership for tracking and control. Future large-scale operations will require this function to be established, staffed, and facilitated with appropriate protocols and systems. Additionally, the need to create a formal interface between the supply unit (Logistics) and procurement unit (Finance Section) is critical.

'Ground Support' is the general term for activities that directly facilitate ground-based field operations. These include transportation, equipment, maintenance, and field resupply. This function was shared throughout the entire Logistics Section, with special units being created for coordinating transportation and chainsaw maintenance. Major issues included accountability for issued equipment, timely allocation of activity-specific equipment to field teams, vehicle tracking, preventative maintenance of construction/demolition vehicles, and communication of field needs to the Logistics Section. Solutions can be achieved by the creation of protocols and procedures for equipment/vehicle management; implementation of tracking systems through which strike team leaders can be held accountable for equipment issued to their teams; the development of standardized activity-specific strike team load-out inventories; advanced notice of Operational needs to Logistics via planning cycle implementation to ensure adequate time for adjustment of supply systems/items to match changing tactics; the use of resource cards for tracking; and the establishment of internal command communications systems for transmission of field needs from Communications to Ground Support Units.

'Services' functions conduct activities that support the sustainment and well-being of field personnel and command elements beyond delivery of material goods. Critical functions active in this area during Operation Starting Gun were Communications, Medical, and Food/Catering (only Food was an officially designated unit). Communications suffered from initially scattered organization, with no single point of contact between the field and the Forward Operating Base. The result was significant confusion and disjointed situational awareness. Future missions must have adequately designed inter-operable communications plans that include a single point of contact between the Forward Operating Base and field elements. Additionally, separate communications networks should exist for field operations and command elements. The medical function was reasonably well executed, however the number of close calls and minor injuries throughout the mission underlined the need for a staffed first aid station at the Forward Operating Base and fully stocked trauma kits to be issued to field supervisors for quick response. Lastly, Food/Catering was well provided for and all personnel received three square meals per day throughout the course of their deployments. However, quality reliability, timeliness of supply, delivery regularity, acquisition cost, and personnel expectation dogged execution. Improvement through pre-planning of sourcing methods, vendors, operational timetables, expectations management, and budget analysis will allow for significant advances.

Finance/Administration Section:

Very little data exists for how effectively the Finance/Admin Section was executed. This is due to the simple fact that its staffing was sporadic, organizational guidelines for incident-level finance activities are limited, and that the final data regarding mission costs is still being compiled.

Critical issues were found in the assignment of personnel to fulfill the Finance/Admin Section: a lack of dedicated function execution, inconsistent control over expenditures, and significant difficulty maintaining complete accountability through receipts.

A cluster of improvements are clearly necessary from functional and structural perspectives to ensure a functional Finance Section during future operations:

- Train and directly assign personnel to fulfill the Finance/Admin function at all missions. These personnel must be completely dedicated to the task.
- Create protocols and procedures to formalize interactions with other sections and fulfillment of mission-essential tasks. These can be identified through an analysis of Team Rubicon policies, accounting/finance best practices, and NIMS/ICS requirements.
- Establish methods for controlling purchasing and ordering in a coordinated manner that provides for complete tracking, reporting, and rapid needs fulfillment.

Field Operations:

Introduction

The field personnel of Operation Starting Gun achieved a stunning level of success. Approximately 450 volunteers, augmented by Palantir technicians, completed approximately 3,000 damage assessments and over 450 work orders ranging from roof repair to building demolition. The cumulative result of these activities was a net savings of approximately $3.7 million to the community of Moore. Additionally, field leadership did a spectacular job of maintaining command and initiative despite the problems encountered by incident management at various points throughout the mission. The cost was approximately 8 non-life threatening injuries, work related damages to nearly all heavy construction equipment used, and 2 transportation vehicle accidents resulting in minor dents and scratches.

The majority of issues encountered were personnel related and centered on interpersonal relations, volunteer expectations, training, leadership methodology, or safety. All of these issues can be alleviated through a combination of training, communication, and culture development.

Safety

On the whole, Team Rubicon personnel did a fantastic job at maintaining safety. This is evidenced by the small number of minor injuries that occurred during the 44 days of continuous operations. Division and Team Leaders showed great teamwork in identifying and resolving safety concerns ranging from hydration to protective equipment use to heavy vehicle operation. However, significant safety concerns were noted in the operation of construction vehicles, appropriate use of protective equipment, and the identification of skilled operators for more dangerous and technical activities (such as tree-trimming, trailering, and building demolition). In these cases, personnel and/or leaders were often unaware of the risks being taken and changed their behavior once advised.

Improvements to safety for future operations include:

- Incorporating a safety component in the daily safety briefing and during personnel in-processing.
- Ensure inclusion of a safety component during task assignment briefings to field leaders. Focus should be on specific safety issues that will be encountered while conducting task-critical activities.
- For high-risk activities that require technical knowledge for safe completion, ensure that only personnel provided with, or able to demonstrate, adequate training are allowed to conduct them.
- Create, codify, and communicate common safety guidelines and work practices to all personnel before and during all missions. Ensure awareness of workplace risks.
- Ensure adequate staffing of the Safety Officer function on Command Staff during all phases of Operation.
- Safety issues should be included in daily debriefing activities so that the Safety Officer and Incident Commander can determine if safety practices or operational activities need to be modified for the next operational period.

Field Leadership

With the exception of a few individuals, field leadership was excellent throughout the mission. The performance and decisions of these personnel served as the fundamental adhesive that held the operation together. The lack of casualties beyond minor injuries, the lack of work order errors beyond a few isolated cases, and the effective completion of the 450+ work orders underlines the capability of Team Rubicon's leaders.

Issues noted include:

- Perception of promotion by relationship rather than ability.
- Inconsistent levels of operational knowledge regarding field tasks & safety practices.
- Inconsistent leadership expectations and methods, mentorship skills, personnel management, and problem solving.
- Lack of established processes for addressing issues.
- Frequent circumvention of the chain of command for sorting out problems.
- Possessiveness over shared equipment (such as chainsaws and heavy vehicles)

Solutions include:

- Creation of a field leadership training and certification program that would establish a consistent knowledge/skill/behavior expectation for strike team leaders and facilitate its conveyance.
- Creation of established methods for identifying, appointing, and field promoting leaders.
- Creation of uniform methodology for reporting and handling problems communicated by field personnel to their chain of command.
- Clear communication of command chain and reporting responsibilities to field personnel during training and missions.
- Provision of safety briefings and activity-based training during personnel in-processing to ensure adequate awareness and familiarity with field tasks to be assigned.

Damage Assessment

Damage assessment remains a problematic activity for Team Rubicon. While the Palantir system provides for the rapid collection and display of geospatial information, its current form does not necessarily collect the information needed to adequately prepare task assignments for field personnel. In addition, the system does not allow for the direct translation of damage assessments into task assignments. This issue is compounded by system and tool unfamiliarity among Team Rubicon volunteers, who often have no training themselves in damage assessment. The result was confusion caused by inconsistent data inputs and incomplete display.

Outside the system or its users, Team Rubicon personnel rapidly discovered the perishability of damage assessments and work-orders in a disaster environment where participants are not coordinated by a central body. Significant time and effort was expended on repeatedly refreshing operational area data, double or triple checking internal work orders, and confirming the validity of third-party work orders. Work order requests or damage data would often become invalid/outdated within twelve to forty-eight hours.

Given the magnitude of this system and process to the execution of Team Rubicon's disaster response operations, the issues outlined above mandate a revisiting of the system and how it integrates into operational processes. The result of this process will likely lead to changes in data collected, system interfaces, and internal data management processes. Additionally, it is imperative that training programs be developed to build Palantir system familiarity and teach appropriate damage assessment practices to TR personnel.

Expedient Home Repair

After immediate life-saving/property protection operations and damage assessment, expedient structure repair is one of the most important activities for stabilizing areas affected by natural disaster. Team Rubicon personnel conducted a significant number of these repairs to homes within Moore throughout the course of Operation Starting Gun. Issues were found in the identification and prioritization of these work orders, the availability of adequately trained personnel to oversee repair tasks, and the operational transition to demolition and debris removal before confirmed completion of all repair tasks. Identification of field personnel proficient in building repair/construction, provision of awareness and operational level skills training to volunteers, and creation of training materials for individual familiarization will significantly improve Team Rubicon's ability to execute these tasks. In addition, task priority integration, improved damage assessment practices, and increased assessment data analysis integration into planning processes will substantially improve incident management's ability to apply personnel to these tasks in a timely and effective manner.

Debris Management

Debris Management activities constituted the bulk of Team Rubicon's work orders during the operation. Tasks ranged from the clearance of debris from resident's yards to searching for and retrieval of missing valuables alongside owners. Team Rubicon focused heavily on such activities due to its involvement beyond the initial 30 days after the disaster (a period in which expedient repair is the more critical concern). Due to the magnitude of destruction, the majority of tasks involved clearing the remains of housing units from their foundations and pushing them to the curb for pickup by city contracted garbage disposal. Continuously adapting debris clearance tactics to changing local regulations was critical due to the threat of fines or pickup refusal by authorities.

After a number of rapidly changing tactic iterations, the Operations Section determined a method of unit composition and employment that allowed for effective and rapid sequential execution of these tasks. Resources were broken into Heavy, Medium, and Light units. Heavy units consisted of large construction equipment such as bulldozers and backhoes. Medium units utilized skid-steers. Light units were composed entirely of field personnel with hand tools and wheelbarrows. These units would be applied sequentially from Heavy to Light onto a property. Heavy units demolished any remaining structures and pushed major debris to the curb. Medium and Light units continued the cleanup effort as the outstanding debris decreased in scale until there was none. Units finished with their task would move to the next closest property with the appropriate work order. Smaller specialized tools, such as chainsaws, were moved between teams and properties via small units of skilled operators as directed by need. During the final days of Operation Starting Gun, up to 24 work orders were being completed per day utilizing this methodology.

Critical issues were found in heavy equipment selection for this task. Initially the skid-steers and similar equipment rented for debris clearance were equipped with wheels. It was quickly discovered that these non-tracked variants got mired down in the moist soil of the local properties. They were rapidly switched for the tracked variety. Future mission leaders must ensure that knowledgeable decisions by subject matter experts guide the acquisition of specialized equipment.

Building Demolition

As of Operation Starting Gun, residential structure demolition has become a new capability in Team Rubicon's repertoire. Along with it came a slew of associated learning pains involving equipment selection & maintenance, safety, demolition technique, cost/benefit considerations, and new documentation requirements.

Initially, Team Rubicon personnel were only equipped with skid-steers. A number of personnel were caught attempting to use these vehicles for building demolition. This is a task for which they are completely unsuited. To make matters worse, some of these personnel were not using adequate protective equipment and were oblivious to the danger. In response, safety briefings and training activities were implemented to increase awareness and ensure that only personnel with adequate supervision and training were allowed to utilize equipment. New safety

standards were implemented, including the use of spotters and minimum distances field personnel had to keep from construction vehicles demolishing structures. Finally, larger and more appropriate equipment (backhoes and bulldozers) were acquired. Eventually demolition operations were folded into debris management activities, as described in the previous section.

The increased wear on construction vehicles became apparent as demolition tasks became more common. Frequent requests for field repair due to issues such as ruptured hydraulic lines frequently added cost and delayed task completion. Causation was usually either a lack of preventative action (such as the technique of covering hydraulic lines with pool noodles) or lack of awareness of the equipment's tolerances. Heavy vehicle training and awareness with consideration for its operation and preventative maintenance will be critical for reducing such issues during future operations.

The documentation necessary for conducting complete housing demolitions significantly increased the amount of preparation necessary to task a work-order. Home owners were approached to sign the same release multiple times and were contacted several times to confirm approval of the demolition. Increasing the efficiency of this process, as well as improving the accessibility and storage of necessary paperwork through electronic means, would significantly reduce workload and speed work completion.

All things considered, the final key learning point from conducting demolition activities was the cost-benefit differential that emerged from renting large construction equipment. Daily costs were staggering without a corporate sponsor to donate equipment. The damage incurred by operations increased this cost further. Unless a method of significantly reducing expense is secured, it will not be practical to conduct full demolitions during future operations. Additionally, training and certification requirements would be necessary to ensure appropriate operation of heavy vehicles and use of safety practices. The fact that Team Rubicon's specialty is initial response and recovery operations, as opposed to long term recovery, is a further disincentive to exploring this as a routine response function.

Image compilation depicting the demolition and debris removal process developed during Operation Starting Gun that significantly increased the efficiency of TR field operations (courtesy of Kirk Jackson)

Conclusion

Team Rubicon's experiences during its response to Hurricane Sandy demonstrated the need for significant reform to its domestic disaster response system. The recognition of a severe need for professionalization led to reorganization of the Field Operations department, adoption of the National Incident Management System, a reassessment of leadership roles and responsibilities, as well as substantial cultural shifts. These reforms were an ongoing process when tested by the high operations tempo of 2013's spring and summer seasons. Of these disaster responses, none so thoroughly tested the organization's dynamicism, resilience, knowledge, and responsiveness like Operation Starting Gun.

The events in Moore, Oklahoma revealed that Team Rubicon exists as an organization with remarkable resilience to stress in the midst of tremendous growth and change. The organization was able to activate the full strength of its employees and volunteer base at a moment's notice to develop critical processes, execute off-site mission support, and provide immediate disaster response. They did this from across the nation, both remotely and in person, despite confusion born of incomplete systems and unfamiliarity with developing internal processes. Additionally, Team Rubicon mobilized its donor base within days to provide funding for the expansive operations needed to serve the effected community. Field operations were successfully organized and executed using the incident command system thanks to leadership and mentoring by subject matter experts, the willingness of all to learn and adapt, and a communal desire to contribute to the mission and succeed by any means possible. Finally, personnel demonstrated a thoroughness and attentiveness to safety and success through incredibly low numbers of injuries and work-order mistakes. Despite all errors, these successes demonstrate a substantial well of internal strength that will only help the organization evolve and grow over time.

Due to the lack of time and manpower to affect complete change, many of the weaknesses that Team Rubicon identified in the aftermath of Hurricane Sandy remained during Starting Gun, though in altered form. Among these are a series of key organizational weaknesses that demand attention if the organization is to proceed in its development. First and foremost is the need to develop trust among organization leaders and field operators alike. This lack of trust came from a multitude of origins, though it consistently manifested itself as negative behavior patterns between regional and national leadership, incident management personnel, and between veteran and civilian membership. The trust issue was magnified by incomplete or inadequate communication between all parties. Communication of expectations, reporting needs, description of new processes and systems, situation developments, and the like were problematic due to variable participation of either the transmitting or receiving parties. Delegation of powers was a problem both in and out of the field, being a partial symptom of the trust issue. Inadequate delegation in headquarters and among certain parts of incident management led to severe over-burdening of personnel and organizational components. This often resulted in failures and inefficiencies that could have otherwise been prevented.

Another issue is the ongoing redefinition of cultural and internal expectations. The movement of Team Rubicon's culture toward that of a highly professionalized disaster response organization, as compared to its more free-form origins, is causing substantial confusion that has had operational ramifications. It is extremely difficult to integrate efforts with larger professional movements without clear definitions of organization goals, objectives, expectations, and functional roles. As a result, entities seeking to positively contribute toward the success of an organization may be mistakenly exorcised when their efforts are misinterpreted. This undermines the development process. The issue is exacerbated by the

trust and communication issues mentioned above. Finally, the present inability to provide for complete accountability due to inadequate systems and personnel to execute them is a critical issue in terms of safety, transparency, and effective decision making ability. These weaknesses will need to be addressed if Team Rubicon is to fully maximize its strengths and opportunities for growth.

Though the weaknesses discussed are daunting, there is an even more substantial portfolio of opportunities by which Team Rubicon can grow. The development and communication of plans and protocols by the newly established Planning Section will allow for a common understanding of purpose, systems, and responsibilities. The creation of training programs by the newly created Training Section will provide the opportunity for clear communication of technical knowledge, expectations, responsibilities, and culture points throughout the Team Rubicon membership. This will allow for the development of trust and positive expectations among personnel through the experience of stress in controlled training environments. This will be further enhanced through the education and development events provided via the Clay Hunt Fellows Program.

Appointment and development of regional and state leadership positions provides the opportunity for more efficient communication and direction throughout Team Rubicon, as well as improved distribution of effort. Expanded hiring of staff positions will provide better capability for conducting otherwise impeded internal development and executing critical functions. Increasing industry recognition can allow for partnership in preparedness and response efforts, improved knowledge sharing, smoothing of relationship building, and improved access to technical assets. Lastly, the increasing incorporation of Team Rubicon into state and local disaster operations plans and contact lists is increasing the opportunities for Team Rubicon to test and improve the processes and methods it creates. These provide a broad base of knowledge, manpower, and profitable instances by which operational solutions may be developed, implemented, and tested in the coming months.

Operation Starting Gun demonstrated that Team Rubicon is well on its way toward building itself into a major contributor in the disaster response and recovery industry. It has, and always will have, a great deal of growing to accomplish. The developments to come in the aftermath of operations in Moore will be targeted, specific, and reshape a significant portion of Team Rubicon's operations. Those who struggled and worked in Oklahoma can be confident that their efforts and experiences will effectively inform the growth to come. At the same time, they can be confident that this growth will embody the same spirit of determination, ruggedness, and mission-first orientation that characterized their efforts and defines Team Rubicon operations as a whole.