MAJ Robert Bettencourt, ATO Team Chief, Roving Sands 99 (Photo by SSG Regina Height, 1st Combat Camera)

ATO Teams
Connectivity for the Deep Fight

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Working in a joint and combined environment is the norm for Army units. Peace-enforcing or peacekeeping operations in Bosnia, Kosovo and world disaster assistance in Turkey are proof of our need to work closely with our sister services and allies.

During the 1999 Roving Sands exercise at Fort Bliss, Texas, the 40th Infantry Division (Mechanized), California Army National Guard (ARNG), replicated an Army force (ARFOR) headquarters in support of a joint task force (JTF). Roving Sands 99 was the first time the ARFOR was configured as a robust cell that fully "played" the ground force. It also was the first time a National Guard division served as the ARFOR headquarters. If you think your unit will never have to do this—think *again.*

After an initial "What is an ARFOR?" briefing by Operations Group D of the Battle Training Command Program (BCTP), Fort Leavenworth, Kansas, we realized the usual deep operations coordination cell (DOCC) configuration and operations would not suffice. We needed a better way to plan deep operations, provide continuity from air tasking order (ATO) to ATO and use all assets from other services and, possibly, other nations. We needed to ensure connectivity to all involved. Whether your unit serves as an ARFOR or a joint force land component command (JFLCC), it must be able to move beyond the normal DOCC configuration.

Two developments emerged from our wargaming. First, we revised the DOCC organization and changed its name to the operational fires element (OFE). This ensured everyone understood it was not exactly like the DOCC, although it performed the DOCC functions and more.

Our second development was the ATO team, part of the OFE. The full complement of intelligence and deep-strike assets available to the commander of the ARFOR (COMARFOR) required rotating ATO teams, each dedicated to planning one ATO at a time, starting 120 hours out. Our ATO teams allowed the ARFOR staff to logically portray a very dynamic battlespace to its commander.

The ATO teams took the commander's vision and intent for deep operations and created a plan to execute his intent. The teams accessed the entire suite of intelligence and fire support systems that "see" the commander's battlespace, translated his essential fire support tasks (EFSTs) into recommended target sets and tracked them on their ATOs. Each team tracked the fight and its ATO until its ATO was executed and then began the process again with a new ATO.

During Roving Sands, these teams became a focal point for shaping the

fight. Senior leaders and other battlefield operating system (BOS) staff officers began to use the ATO team cycles to integrate the ARFOR commander's fight. For example, tasking remotely piloted vehicles (RPVs) was briefed and approved at the daily ATO decision briefings to the commander—just one of many systems briefed to the ARFOR commander. The staffs worked together to determine how best to integrate the assets of the entire force in the overall scheme; they worked 96 to 120 hours out to provide senior leaders more details and synchronization options.

This article outlines the organizational changes we made to implement our OFE to accommodate the ATO teams and discusses ATO team operations. Our OFE and the ATO teams came with organizational and equipment costs, but the benefits gained in Roving Sands were exponential. III Corps is studying them for possible implementation.

Organization and Equipment. The organization of the ARFOR headquarters was one of the first concerns addressed by our command staff, our coaches from BCTP and Roving Sands participants, the 1st Battlefield Coordination Detachment (1 BCD) out of Fort Bragg, North Carolina, and III Corps out of Fort Hood, Texas.

Funding and real-world issues dictated the final structure for our personnel, equipment and communications requirements. However, we did not consider funding constraints in our initial mission analysis. We used the 101st Airborne Division's draft ARFOR manning model; the III Corps tactical standing operating procedures (TACSOP); our own BCTP Warfighter 98 experience with I Corps; organizational aids; and mission, enemy, terrain, troops and time available (METT-T) to determine our ARFOR headquarters manning for Roving Sands.

We decided that neither a rear nor a forward ARFOR headquarters section was required. G1 and G4 were not involved in Roving Sands 99 but would normally impact the OFE and the ATO team process. In fact, 24-hour operations were not being dictated; the exercise modeled a single daily 12-hour shift. We concluded that with only a 12-hour shift to manage, there were enough personnel in the division main tactical operations center (TOC) and division command post (TAC) to man the OFE.

Our coaches validated our OFE model as we progressed through institutional training and SOP rehearsals. For maximum development of soldier skills, we chose to cross-train personnel once the exercise started.

Equipment. The 40th Division fielded its own tactical local area network (TAC LAN), including laptop computers for the four ATO work stations. However, the division's intelligence and fire support sections could not communicate tactically with our higher headquarters due to equipment challenges.

For example, the 40th Division Artillery uses the initial fire support automated system (IFSAS) as its fire support digital interface. A limitation of IFSAS is its reduced efficiency in managing digitally within a large operational environment. However, III Corps Artillery provided us advanced FA tactical data systems (AFATDS) with operators and supervisory personnel: one AFATDS for the OFE, one for the FA intelligence officer (FAIO), one for the aviation brigade/Army airspace command and control (A^2C^2) cell and one for the fire support element (FSE). This augmentation, along with additional digital systems for the intelligence sections, not only facilitated future and current operations, but also provided our soldiers and supervisors a great training opportunity. External digital communications with the BCD and player cells were enhanced by the AFATDS augmentation.

Personnel. On the personnel side, we enhanced the division's DOCC with four ATO teams and called the DOCC an OFE. Figure 1 shows the fire support personnel in the division's modified table of organization and equipment

Fire Support Element	Rank	OFE Personnel	Auth	MOS
FSCOORD	COL	FSCOORD	1	13A
DFSCOORD	LTC	DFSCOORD	1	13A
AFSCOORD	MAJ	ATO Team Chief	4	13A
FA Intelligence Officer	MAJ	FA Intelligence Officer	1	13A
Target Analyst	CPT	Target Analyst	1	13A
Targeting Officer	CW4	Targeting Officer	1	131A
FA Intelligence Officer	CW3	FA Intelligence Officer	1	131A
Fire Support Sergeant	SFC	Current Fires NCO	1	13F40
Fire Support Sergeant	SSG	ATO Team Assistant	2	13F30
Fire Support Sergeant	SGT	ATO Team Assistant	1	13F20
Senior Radio Operator-Maintainer	SGT	Communications NCO	1	31C20
Fire Support Specialist	SPC	ATO Assistant	1	13F10
Radio Operator-Maintainer	SPC	Communications Specialist	1	31C10
Fire Support Specialist	SPC	Current Fires	2	13F10
Admin Specialist	SPC	Current Fires	1	71L10
Radio Operator-Maintainer	PFC	Communications Specialist	1	31C10
Intelligence Sergeant	MSG	OFE NCO	1	13Z50
		Total	**22**	
		Additional Personnel		
	EM	Intelligence Analyst	2	96B
	CPT	BCD LNO	1	13A
	LTC	JFACC LNO	1	13A
	LTC	JTF Fires	1	13A
	NCO/EM	AFATDS Augmentation	6	13C
		Total	**11**	

Legend:

AFATDS = Advanced FA Tactical Data System
AFSCOORD = Assistant Fire Support Coordinator
ATO = Air Tasking Order
BCD = Battlefield Coordination Detachment
DFSCOORD = Deputy Fire Support Coordinator
FSCOORD = Fire Support Coordinator
EM = Enlisted
JFACC = Joint Force Air Component Command
JTF = Joint Task Force
LNO = Liaison Officer
MOS = Military Occupational Specialty
OFE = Operational Fires Element

Figure 1: Army Force (ARFOR) Fire Support Manning for Roving Sands 99

(MTOE) used for the FSE and OFE, including the additional personnel needed.

Each team covered a different ATO period. The team had one assistant fire support coordinator (AFSCOORD), an FA major, and one Military Occupational Specialty (MOS) 13F20 Fire Support Specialist. The four teams shared two MOS 96B Intelligence Analysts and had an overall NCO-in-charge (NCOIC) who managed the enlisted issues for the teams. (The ARFOR OFE would need additional personnel for 24-hour operations.)

The deputy fire support coordinator (DFSCOORD) was responsible for the productivity of the four teams. The senior AFSCOORD served as the officer-in-charge (OIC) for the teams. Each AFSCOORD assembled his team's information and products into "Power Point" slides used for the targeting meeting and decision briefing. These slides covered each functional area of the four ATOs in progress at a time.

Although the size of the briefing was large, a laptop computer with a Zip drive per ATO team allowed the team to display the commander's focus on its screen. Between briefings, the screen saver showed the high-payoff target list (HPTL) and automatically rotated through the commander's update from the TAC LAN. This ensured everyone in the OFE knew the commander's focus and the current situation.

The DFSCOORD also played a major role in prioritizing the ATO target submissions. He arbitrated which targets received priority. Once an ATO was published, the DFSCOORD reviewed the list to ensure any key targets not on the ATO were "rolled" onto another ATO or deleted in favor of attack by a different system. He also recommended re-strikes for some critical targets where no battle damage assessment (BDA) was available to ensure we achieved the commander's intent regarding effects. Sometimes a target was not attacked because a higher priority target presented itself in the same area; as necessary, he renegotiated the inclusion of the target on another ATO.

The DFSCOORD played a key role. In 24-hour operations, the multiple-launch rocket system (MLRS) battalion commander is the most likely person to work this all-important split shift with the DFSCOORD. Deep operations are continuous in this environment even though Army deep operations normally are executed at night.

Many special staff members participated in deep operations planning and execution, but one component we had never used previously was a staffer from the Space Command. An Army lieutenant evaluated concerns about communications degradation and the accuracy of global positioning systems (GPS) as they might be affected by solar activity. The Space Command representative also provided terrain-based imagery and much more.

ATO Team Operations. The myriad of intelligence platforms and deep-strike assets available to an ARFOR required a dedicated team focused on planning only one ATO at a time. The ATO teams worked to look at all options at the disposal of the ARFOR commander. They followed a daily cycle that displayed their major ATO responsibilities for that period.

Because each ATO covers attack flights in a 24-hour period and ATOs are planned at the ARFOR level as far as 120 hours out (i.e., four days beyond the current day), we used four ATO teams in rotating fashion. Each team followed an ATO for four days; on the fifth day, the FSE picked up responsibility for the ATO during its execution and battle damage assessment while the team began a new ATO cycle. Each of the four ATO teams planned ATOs out for the next one, two, three and four days, respectively. Figure 2 shows the ATO team tracking and development cycles. (Individual ATOs in Roving Sands were identified by letters A through N.)

Candidate Target List (CTL). The ATO teams produced a list of targets to be nominated for the joint force air component command (JFACC) to engage, normally by fixed-wing JTF aircraft commonly referred to as "Blue Air." Each day, we forwarded a new CTL (see the example CTL in Figure 3) to the BCD, the ARFOR's liaison to the USAF-dominated JFACC. We tasked an FA captain to be our liaison officer (LNO) to the BCD, thus ensuring the JFACC clearly understood the rationale behind the CTL targets.

Each CTL was the culmination of detailed analysis and planning by representatives from the G2 and G3 plans

								ATO-J
							ATO I	Plan
						ATO H	Plan	BCD
					ATO G	Plan	BCD	JIPTL Pub
				ATO F	Plan	BCD	JIPTL Pub	ATO Pub
			ATO E	Plan	BCD	JIPTL Pub	ATO Pub	Fly E
		ATO D	Plan	BCD	JIPTL Pub	ATO Pub	Fly D	Assess
	ATO C	Plan	BCD	JIPTL Pub	ATO Pub	Fly C	Assess	
ATO B	Plan	BCD	JIPTL Pub	ATO Pub	Fly B	Assess		
ATO A	Plan	BCD	JIPTL Pub	ATO Pub	Fly A	Assess		
11 Jun	12 Jun	13 Jun	14 Jun	15 Jun	16 Jun	17 Jun	18 Jun	19 Jun
Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat

Figure 2: During Roving Sands 99, four ATO teams each worked an ATO for a four-day cycle with the fire support element (FSE) picking the ATO up for its execution and assessment. This figure shows 10 of the 14 ATOs tracked and developed by the teams during the exercise.

Requested AI Missions for ATO K

ARFOR Pri	BE#UIC	Name	Latitude	Longitude	Req#	Desired TOT	Desired Effects	JFACC Pri	Remarks
1		HQ IV Corps SA-6 Bde	325000N	1040700W	3E2501N	251200Z	Attrit 50%		AY0010
2		HQ IV Corps SA-8 Bde	325600N	1042100W	3E2502N	251215Z	Attrit 50%		AY0011
3		HQ 42 MR Div SA-6 Bde	322500N	1054500W	3E2503N	251300Z	Attrit 50%		AY0023
4		HQ 44 IN Div SA-6 Bde	321700N	1053300W	3E2504N	251245Z	Attrit 50%		AY0037
5		HQ 41 AR Div SA-6 Bde	325500N	1045000W	3E2505N	251300Z	Attrit 50%		AY0017
6		HQ 43 IN Div SA-6 Bde	331100N	1050300W	3E2506N	251315Z	Attrit 50%		AY0030
7		HQ 64 IN Div SA-6 Bde	333600N	1050500W	3E2507N	251330Z	Attrit 50%		AY0044
8		IV Corps SS-21 Bde	324800N	1040500W	3E2508N	251400Z	Attrit 30%		AY0006
9		IV Corps Helicopter Bde	325000N	1041900W	3E2509N	251500Z	Attrit 30%		AY0007
10		Rail Yard	325010N	1034501W	3E2510N		Neutralize for 72 Hours		AY0085
11		Rail Junction	325012N	1035119W	3E2511N		Neutralize for 72 Hours		AY0086
12		Rail Bridge	324904N	1021603W	3E2512N		Neutralize for 72 Hours		AY0087
Requested Special Missions									
		(None for this ATO.)							
Pre-Planned ATACMS Missions									
1		SA-6 Battery	330100N	1035900W		250300Z	Neutralize for 24 Hours		AY0088
2		HQ 64 IN Div	333100N	1050000W		250300Z	Attrit 30%		AY0039
3		HQ 43 IN Div	331100N	1045400W		250400Z	Attrit 30%		AY0025
4		IV Corps CSS Bde	325800N	1040900W		250400Z	Attrit 30%		AY0009
Pre-Planned Army Aviation Missions									
1		41 AR Div SS-21 Bn	325000N	1045000W			Attrit 50%		AY0018
2		34 Tank Bde 42 MR Div	321700N	1043500W			Attrit 30%		AY0022

Legend:

AR = Armor
ARFOR = Army Forces
Bde = Brigade
BE = Battlefield Encyclopedia
Bn = Battalion
CSS = Combat Service Support
Div = Division
HQ = Headquarters
IN = Infantry
JFACC = Joint Force Air Component Command
MR = Motorized Rifle
SA = Soviet-Made Antiaircraft Missile
SS = Surface-to-Surface Missile
TOT = Time on Target
UIC = Unit Identification Code

Figure 3: ATO Team K Candidate Target List (CTL)

cells working as part of the team for the period four days out (current plus four, or C+4). The following day (i.e., C+3), that CTL would be finalized and sent to the JFACC via the BCD.

Each day we briefed the COMARFOR on the four upcoming ATO periods, soliciting his approval for the CTL to be submitted that day (for C+3) and obtaining his intent for operational fires to be staffed and then published as our CTL the following day. The goal was to complete the COMARFOR's daily decision briefing within an hour, which allowed an average of 15 minutes per upcoming ATO. Each iteration required an appearance by several key personnel to discuss each period's CTL, including the G2, G3 and ATO team chief.

The joint air operations center (JAOC) occasionally denied CTL targets after the list was submitted on C+3. Daily briefs for C+2 and C+1 explained to the COMARFOR which of the nominated targets were denied and the reason for denial. The JAOC published its formal refinement for C+2 in a daily joint integrated prioritized target list (JIPTL). Following an analysis by the appropriate ATO team chief and the DFSCOORD, the JIPTL allowed the COMARFOR to direct other assets against targets "below the cut line" or to re-nominate them on the pending CTL.

The discussion for C+4 was especially crucial because it gave the COMARFOR the opportunity to focus planning for the next day's CTL. If, for example, a number of Scud launches were detected via satellite imagery, the COMARFOR might direct additional intelligence platforms be sent to the area and deep-strike assets be planned for engagement if launchers or missile caches were identified.

The teams worked together throughout the day to keep situational awareness. They conducted backward planning, especially the planning related to fire support coordinating measures (FSCMs), so critical information was disseminated in a timely manner. For example, changes to coordinates of the fire support coordination line (FSCL) had to be sent to the JFACC at least 12 hours in advance. This meant the team for an ATO immediately preceding the expected movement of an FSCL had to give a warning order in its CTL; the order to move the FSCL would come in the next team's CTL.

Operational Fires Focus Graphics. One of initiatives was the operational fires focus graphic. Using Power Point on a laptop computer, the map graphic showed where the enemy was expected to be as of any given ATO and where operational fires were planned, based on the COMARFOR's intent for the day. The map depicted the COMARFOR's

1. Operational Fires Focus

2. Target Lists: Supported/Unsupported Joint Integrated Prioritized Target List (JIPTL) or Candidate Target List (CTL)

3. Pre-Planned Army Aviation Mission Fragmentary Order (FRAGO)

4. High-Payoff Target List (HTPL)/Target Selection Standards (TSS)/Attack Guidance Matrix (AGM)

5. Weather Information

Figure 4: ATO Binder Index—Air Tasking Order (ATO) Cycle Information

priorities. Notes at the bottom of the map explained the proposed task, purpose, method and effects (TPME) for each priority.

The graphic was not only a great way to quickly disseminate lots of information in the decision briefing, but also a great tool for the BCD to use when lobbying for limited JFACC assets. Similarly, it was *the* tool used by the COMARFOR's representative to the joint targeting coordination board (JTCB). That representative (we made this a lieutenant colonel slot) explained why ARFOR nominations needed to be satisfied fully as opposed to the competing requests from, for example, the Marine force (MARFOR), Navy force (NAVFOR) and even the JFACC itself.

ATO Binder. During Roving Sands, we designed the ATO binder. (The binder's index is shown in Figure 4.) We put the two basic documents for each upcoming ATO period (the CTL/JIPTL and the operational fires focus) into that binder. The format for the COMARFOR's daily decision briefing and the day's timeline were posted up front (see the example in Figure 5). The timeline helped orient the COMARFOR to each day's discussion as we moved rapidly through the briefing; the overview of all pertinent ATO periods posted as a graphic above the briefing map (overview shown in Figure 2) also helped orient the COMARFOR.

The documents for each day were divided in the ATO binder by tabs, allowing the COMARFOR to move to the next day's documents as easily as flipping a page. For example, ATO K was briefed until the commander decided on the plan for that day, then the tab was turned and the briefing for the next day's ATO (ATO L) began.

The products were color-coded to be discerned at a glance. For example, the products for ATO K were highlighted with yellow, one of the four colors we rotated through with each team. The colors (red, green, yellow and blue) remained with the same ATO team throughout the exercise.

Each ATO team kept a copy of the two basic documents (the CTL/JIPTL and the operational fires focus) in a folder called the "football." Once the day for execution of the ATO arrived, this "football" was "handed off" to the FSE for management while the ATO team started a new folder for C+4.

A key to this ATO team concept is its flexibility to fit any theater or operation. Whether you use two, three or four teams, the concept remains intact.

The 40th Division had the opportunity to build on an early success in Warfighter 98 and share the deep operations expertise of two corps. To ensure our COMARFOR could synchronize his intelligence and attack assets for the best effects on target to meet his intent, we revised the DOCC structure to be an OFE with ATO teams. Necessity, being the Mother of Invention, prompted 40th Division innovations, which were successful during Roving Sands 99.

ATO-O	G2 Focus	96-120 Hours	(29 Jun 99)
ATO-N	CTL to BCD	72-96 Hours	(28 Jun 99)
ATO-M	JIPTL Published	48-72 Hours	(27 Jun 99)
ATO-L	ATO Published	24-48 Hours	(26 Jun 99)
ATO-K	Fly K	Current	(25 Jun 99)
ATO-J	Assess (BDA)		

Legend:

BCD = Battlefield Coordination Detachment
BDA = Battle Damage Assessment
CTL = Candidate Target List
JIPTL = Joint Integrated Prioritized Target List

Figure 5: ATO Decision Briefing

Colonel Mark A. Graham took command of the 40th Infantry Division (Mechanized) Artillery, California Army National Guard (ARNG), in September of 1998 as the first Active Component (AC) officer to command an ARNG brigade-level unit in peacetime. In his previous assignment, he was the Chief of the Field Artillery Branch in the US Army Personnel Command, Alexandria, Virginia. He also commanded the 1st Battalion, 17th Field Artillery, part of the 75th Field Artillery Brigade, III Corps Artillery at Fort Sill, Oklahoma. Among other assignments, he served as S3 of the 1st Armored Division Artillery and S3 of the 2d Battalion, 29th Field Artillery in the 1st Armored Division, both in Germany; and as the G1 for VII Corps Artillery, deployed to Saudi Arabia during Operations Desert Shield and Storm. He commanded two batteries: one in the Field Artillery School Brigade and one in III Corps Artillery.

Lieutenant Colonel Chris A. Hood is the 40th Infantry Division Artillery Deputy Fire Support Coordinator (DFSCOORD), California ARNG. In previous assignments, he commanded the 2d Battalion, 144th Field Artillery and three batteries in both the California and Ohio National Guards. While on active duty, he was a Battalion Fire Support Officer and Special Weapons Officer for the 1st Battalion, 20th Field Artillery, 4th Infantry Division (Mechanized) at Fort Carson, Colorado. He also served in various positions with the 1st Battalion, 333d Field Artillery (Lance) in the 42d Field Artillery Group in Germany. He holds a Master of Arts with a concentration in Human Resource Management from the University of Utah. When Lieutenant Colonel Hood is not serving as DFSCOORD, he is Telecommunications Sales Representative in Phoenix, Arizona.

Major M. Robert Bettencourt III is the Assistant S3 for the 40th Infantry Division Artillery, California ARNG. He previously served as the Deep Fires Coordinator in the 40th Division's Operational Fires Element during exercise Roving Sands 99 at Fort Hood, Texas. He was the 3d Brigade Fire Support Officer and Battery Commander of B Battery, 1st Battalion, 143d Field Artillery, all with the California ARNG. Major Bettencourt's civilian occupation is as an attorney in Visalia, California. He holds a Juris Doctor from McGeorge School of Law in Sacramento, California.