
naissance and target acquisition elements. It also helps units understand the RTT plan, the reporting procedures, and the expected locations of other reconnaissance and targeting units on the battlefield. During the rehearsal, unit leaders identify any problems with the plan and with resources. Then the RTT staff can work on solving these problems immediately after the rehearsal.

Reconnaissance and targeting are continuing operations; as the overall plan changes, the RTT plan should change as well, to support it. Certain events on the battlefield may also lead to changes in the RTT plan. For example, a pilot executing a CAS mission in the battalion area of operations may fly over a possible enemy cache site as he is leaving battalion airspace. Then the RTT may decide to shift a collection asset to confirm or deny the target. If they confirm it, the team members may nominate it as a high-payoff target,

which is then plugged into the attack guidance and serviced as part of the updated RTT plan.

To support continuous reconnaissance and targeting operations, the RTT should conduct meetings every 12 hours. During the targeting meeting, the team can refine the current RTT plan, initiate plans for future operations, and monitor the status of current reconnaissance and targeting operations. All members of the RTT must attend these meetings, which should follow a planned agenda (Figure 2).

The members of the team should develop a synchronization or execution matrix for tracking the execution of the RTT plan (Figure 3). They should use this tool to track unit activities, monitor their reporting, check their status, and synchronize their efforts. Finally, the staff should integrate RTT operations into all commander's updates and all TOC shift-change briefings.

The RTT concept recognizes the

need for an element that is tasked with the responsibility for planning and coordinating reconnaissance and targeting. The RTT improves the coordination and synchronization of these activities by spreading the staff work load for them.

This concept formalizes the targeting effort at battalion level and helps insure that the commander's high-payoff targets are quickly identified and attacked. Finally, RTT actions complement the overall battalion scheme of maneuver by providing timely information on the enemy and effectively servicing the high-payoff targets.

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Multipurpose Navigational Aid

CAPTAIN JOHN R. SUTHERLAND, III

When my battalion of the 24th Infantry Division deployed to the Persian Gulf in August 1990, we were issued LORAN (long-range electronic navigation) devices and global positioning systems (GPSs). These technological wonders revolutionized our operations in numerous ways—in training, preparation, and execution.

We learned early, however, that certain pitfalls awaited the users. Far too often, the key leaders took immediate control of these devices and used them as their personal command and control aids. This kept LORAN and GPS out of the hands of the soldiers and denied

a lot of potential training to those closest to the enemy.

Some leaders became so dependent on their personal locating devices that they hardly knew their own locations without them. They either forgot how to read a map or lost confidence in their personal accuracy. The old map, compass, and pace count or mileage fell by the wayside for many. But there are always times when the satellites required are not available, and this should not be allowed to hinder operations. In short, these devices should augment basic land navigation, not replace it.

A commander who carries a GPS around with him all the time, constantly referencing it, may be tempted to focus on the device instead of on his unit's actions. Although he may know where he is, he will have lost his feel for the battlefield.

I believe a commander should get these devices out first to the fire support officer (FSO) and the platoon leaders, who will be closer to the action. They should also be able to master the devices, develop training based on them, and use them to orient the unit in movement.

Meanwhile, the commander needs to

be orienting his platoons and watching the fight develop. If he needs a precise grid, he can ask for it on the radio net from the junior leader who is tasked with tracking it, the company navigator. I believe the best man for this job is the FSO. He needs to know his location at all times to call for and adjust fires, and he is not distracted by being responsible

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for maneuvering a platoon or company.

As a company team commander, I assigned these devices to my lieutenants with the instructions that they learn them and then help me exploit them. The LORAN readout is in latitude and longitude. We could input about 100 way points, 10-digit grid locations. LORAN could navigate us through the way points, one by one, reporting our direction and distance to each in sequence. We could convert check points on the graphics into way points and move with relative confidence over great distances across the featureless desert floor. This was the first, most obvious use.

In August in Saudi Arabia, however, I realized we weren't going anywhere for a while. I thought there must be some use for this high speed device, even in a relatively static location. It soon became obvious that the LORAN was not for operations alone.

I'm not sure whose idea it was, but we decided to use the LORANs to set up a couple of land navigation courses. The executive officer (XO) and the senior platoon leader laid in the whole course, point by point, using the LORANs and a bundle of pickets. They surveyed in two courses, one to be negotiated mounted with legs of three to five kilometers and one to be covered dismounted with legs of 800 meters to one kilometer. Then they mapped out all the variations, and we began training.

All crews and soldiers honed their desert dead reckoning skills, and I was impressed by the ability to train on a combat critical task on totally accurate courses.

In late September, the task force moved into its area of operations for the defense of Saudi Arabia. The hasty defense phase was over and we moved north, closer to the Iraqi border. Each company established a forward operating base (FOB), a 360-degree perimeter defense. From these bases we could deploy into a number of locations to block avenues of approach from the north. Each commander was faced with three or more defensive options and several counterattack scenarios. The problem was that all the positions needed to be reconnoitered and laid in but could not be prepared, lest we tip our hand. To further complicate matters, each battle position (BP) was to be reconnoitered by leaders in wheeled vehicles only. Vehicle movement was to be kept to a minimum to conserve fuel, rations, and repair parts. Therefore, only the leaders would site the positions and the engagement areas as well. The troops would not see the ground before the fight.

Once again, the LORAN and GPS came to the rescue. I reconnoitered my company BP and assigned platoon positions. The platoon leaders then selected individual vehicle and squad positions. I verified each position, but I also had to know that they could support each other's fires in the engagement area. How could I be sure the artillery targets I planned were the best ones, and how could I lay in good target reference points (TRPs), trigger lines, and solid obstacle plans?

The first BP was 2.6 kilometers long in an L-shape. The engagement area easily extended beyond my maximum range of 3,789 meters.

To verify the engagement area, we used the LORAN. We shaped the engagement area like a range fan and plugged in way points for the corners of the box. We plugged in a series of points to cover our maximum engagement lines—1,000 meters for the coaxial machinegun and small arms, 2,200 meters for the tank

and Bradley main guns, and 3,300 meters for the TOWs. We also plugged in the TRPs and the obstacle start and end points. Each platoon leader then knelt in the center of his battle position. The XO took my HMMWV (high-mobility multipurpose wheeled vehicle) out to each point, outlining the engagement area. He stopped at each point and called to tell us where he was; we checked our maps and verified our ability to see that location. As he drove from point to point, the platoon leaders tracked him and called in when he dropped out of sight. When two out of three reported a loss of visual contact, the grid was taken, and the amount of dead space was measured. The artillery targets were shifted to cover these dead spots, and obstacles were adjusted to push the enemy out of them. We found a huge, company-size dead spot that previously would have gone unnoticed. At the conclusion of this drill, we had a wired and rehearsed engagement area.

I found this technique invaluable. All positions were gridded-in exactly, as were all the targets, TRPs, obstacles, and trigger lines. Since every position in the BP was registered with the FSO,

To verify the engagement area, we used the LORAN. We shaped the engagement area like a range fan and plugged in way points for the corners of the box.

calling for artillery would be easy and accurate. Dead space was covered, and no one would be surprised when the enemy dropped out of sight for a moment.

We could also rehearse the fight with the GPS. I regularly used fragmentary orders to move the company out of the FOB and into a hasty defense, based upon intelligence to support enemy reconnaissance inbound at night. My XO and I used our BFVs to replicate enemy reconnaissance vehicles trying to penetrate the defense. The FSO drove my HMMWV out in the engagement area with the GPS. When the platoons

spotted movement in their area, they were to adjust fire off the TRPs that were in place. The FSO used the GPS to move to the area where the artillery was to fall and flash the headlights to give a signature. The platoons could then shift.

These drills were invaluable in forging a proficient combat team. We developed reporting procedures, used fire control based on the TRPs, and practiced calling for and adjusting indirect fire. The GPS gave us immediate and accurate feedback that prevented this from becoming a guessing game.

During the long movements north through Iraq, we covered 80 to 90 kilometers a day, mostly in bad weather and mostly at night, and the solid GPS backup helped increase everyone's comfort level with the situation. The lead platoon leader used celestial navigation. He was checked by the following platoon leaders using LORANs and by the FSO using a GPS, while I used map and compass and terrain association.

The other platoon leaders cross-talked to orient the leader, and every 15 minutes the FSO shot out a grid over the company secure net. We found that

I was much more involved with the platoons when I was watching them and the map instead of the GPS.

this redundancy of systems reduced the need to discuss our location, and that forcing the leader and one platoon leader to go without navigational aids gave us an honest broker when satellites were not available. Since the XO and I had no special devices, we could effectively oversee the unit instead of focusing our attention on the employment of the GPS or LORAN. I think I was much more involved with the platoons when I was watching them and the map instead of the GPS.

The GPS also helped us through some terrible weather in Iraq and helped clear up some misleading in-

telligence on key terrain.

When we crossed the border, visibility was 200 meters or less because of a thick sandstorm. By cross referencing GPS locations and orienting on preprogrammed way points, the entire battalion managed to move as a single unit. The GPS allowed us to stay in continuous motion and maintain our tempo. There were no breaks in contact to worry about, even in the bad weather.

Link-ups with fuel and other logistics were easy. These link-ups are normally a nightmare and could easily have been complicated by the long distances between logistics and maneuver units and the fact that we were going to push until forced to stop and fight. No one knew, on any given day, how much pressure we would receive or how far we would push. The two things that kept logistics moving were communications and the pinpoint accuracy of the GPS.

On the second day of the ground war, my unit closed in on our first key objective, a main supply route (MSR) linking the forces at Al Safwan to those at Al Busayah. The 6th French Armored Division and the 82d Airborne Division were to hit Al Safwan and the 1st Infantry Division was to hit Al Busayah. Our own 24th Infantry Division was to occupy a blocking position between them and destroy escaping or reinforcing units from either direction.

To do this we first had to seize an important stretch of road. Aerial photos had given the impression that the road was sunk into a deep gorge 200 to 400 meters wide that could easily be defended by light infantry. We had to assume that by the time we got there, the enemy would know we were on our way and would be lying in wait with a stiff defense, including obstacles and possibly chemicals.

My company was tasked to go into the gorge (only one company team would fit). We were to breach all obstacles so we could use the road as our MSR and then destroy any defenders along the road. As we approached early in the morning and deployed for the fight to come, we were very anxious since opposition had been

light up to this point. When we found a major road but no gorge, I was dumbfounded; I had seen the photos and was convinced that the canyon existed. Since we were alone at this point, I began to wonder if we had strayed off our axis. Since I could see the signature of the battalion over the horizon, I knew we were in low ground, and a

The GPS proved to be of enormous value in all phases of company operations and training.

quick check of the GPS verified our location. The photos had been highly misleading. The canyon we had seen was actually a change in the color of the sand as it sank into a gradual decline of a narrow but gentle valley. The area was not defensible and was not occupied. The GPS helped me stay on course when my senses told me we were way off.

Later that night, the GPS came in handy again. We received a report that our sister battalion had spotted a communications site and was not sure of its destruction. The brigade commander tasked my battalion to launch a platoon-sized raid to go back and hit the site. The battalion had not even travelled near the target—nine kilometers to our rear—and it was pitch dark with a light rain falling. My company got the mission and at 0200 hours I launched a rifle platoon with the XO to carry out the raid while I stayed with the defense. We used the GPS grid given to us for the target and created way points to get us there. The platoon successfully covered the ground to the objective, neutralized the target, and was back before the 1st Infantry Division hit Al Busayah. The use of the GPS boosted my confidence and that of the raiding platoon. No matter what happened, the platoon would be able to return our position, using the GPS.

The GPS proved to be of enormous value in all phases of company operations and training. We used it to hone

individual and collective warfighting skills and to improve movement and mission execution. Our confidence in ourselves and the equipment went up all the time.

We did not, however, allow these devices to supplant traditional land

navigation skills or to replace visual command and control. If they are used habitually at the combat training centers and in home station training, numerous other uses for them will be found, and they will be fully realized as combat multipliers.

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Troop-Leading Procedures

A JRTC Observer-Controller Editorial

MAJOR KEVIN J. MCKINLEY

What must a company commander do to plan a mission, write an order for it, and prepare his unit to accomplish it? Troop-leading procedures (TLPs) may seem ambiguous when trying to complete this process, but understanding them is essential to success.

During more than two years as an observer-controller at the Joint Readiness Training Center (JRTC), I saw all kinds of commanders, good and bad. I also made mistakes as a company commander, but I hope my observations at the JRTC and the lessons I learned from them will provide some insight into the proper use of TLPs.

Field Manual (FM) 7-8, *The Infantry Rifle Platoon and Squad*, and FM 7-10, *The Infantry Rifle Company*, make up the doctrinal bible at the JRTC. Read them, understand them, and apply them, and you will succeed. Although you may find the reading and understanding parts simple while you're sitting in your office, they may not seem that simple in the field:

For example, you've been operating in the maneuver box for six days. You haven't slept. Your unit just fought a successful defense, but you lost 30 of your soldiers, including your executive officer and first sergeant. Your company is low on chow, and your battalion

is having trouble resupplying you with rations and water. The battalion S-3 just called to give you a warning order for a deliberate night attack: *Because you have the most combat potential in the task force, the battalion commander has designated your company the main effort. The battalion order occurs in two hours. Be prepared to attack in 24 to 36 hours.*

Tough situation. Yet this is exactly the situation company commanders often

First, get out a warning order that is as fast and as detailed as possible. Then start a number of actions in parallel.

find themselves in at the JRTC. Where do you go from here?

Go back to the basics. Take that "smart book" from your rucksack and look at the eight steps for TLPs:

- Receive the mission.
- Issue a warning order.
- Make a tentative plan.
- Initiate Movement.
- Conduct Reconnaissance.
- Complete the plan.
- Issue the order.
- Supervise.

Then ask yourself, *Am I doing everything I can do? Are the platoon leaders, platoon sergeants, and squad leaders doing everything they can do? Are we working plans and preparing for missions, or just making our lives harder than they have to be? Are we using common sense? What condition is my company in right now?*

Unfortunately, I can't give exact answers to these questions. There is no secret formula or magic solution that will cause your TLPs to have a positive effect on the execution of a mission, but the eight steps do offer some proven guidelines. The steps can be conducted at the same time; although some naturally come before others, they don't necessarily have to be done in a specific order.

Here are some observations I've jotted down from watching light, airborne, and Ranger companies plan, prepare, and execute their missions:

Use parallel planning and preparation. First, get out a warning order that is as fast and as detailed as possible. Then start a number of actions in parallel. The key here is to get your NCOs involved. Initiative is essential. For example, if you know you're the main effort in the deliberate attack, you can save time by task organizing and