



# The FSNCO Fire Support for an EA

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**A**t the National Training Center (NTC), fire support NCOs (FSNCOs) at both the battalion task force (TF) and company/team levels tend to be reactive in developing an engagement area (EA). As a result, fire support teams (FISTs) have difficulty getting into position at the right time and place to acquire the enemy and trigger and execute timely and accurate indirect fires at the decisive point.

EAs are built from the inside out. The commander chooses the decisive point, the point on the ground where he wants to kill the enemy, and the EA is constructed from there. The goal is to integrate, synchronize and mass the com-

bined arms effects of fire support, maneuver and countermobility against the enemy to meet the commander's intent.

Once the essential fire support task (EFST) to develop an EA has been determined, the company/team and TF fire support officers (FSOs) and their FSNCOs coordinate to develop the EA. They must develop the observation plan, emplace targets (based on planned obstacles), refine the targets (based on the actual siting of the obstacle), emplace the tactical and execution triggers, proof the EA and rehearse with the FISTs. They also establish timelines and priorities of work.

The TF FSNCO is the expert and coordinates and supervises the overall effort.

However, the company/team FSNCO, the senior NCO working directly with the FISTs, should be proactive—take the reins and make EA development happen.

**Company/Team FSNCO.** The FIST is the maneuver commander's precision target acquisition asset. The FSNCO is (or should be) the most experienced fire supporter at the company/team level and on-board the M981 fire support team vehicle (FISTV). He plays an important role in EA development. *FM 6-20-40 Tactics, Techniques and Procedures (TTP) for Fire Support for Brigade Operations (Heavy)*, Page 1-4, states, "...the FSNCO assists the FSO...and



supervises and trains the members of his team....He must be able to perform all the duties of his FSO.”

After being notified of a defensive mission, the company/team FSO and commander begin the planning process. This gives the FSNCO time to complete some implied tasks inherent to the defense. EA development is the one mission the FSNCO can accomplish without the FSO present. The FSNCO’s coordination with the TF FSNCO is vital to accomplishing the implied tasks.

The company/team FSNCO achieves success with initiative—top-down planning, bottom-up refinement and decen-

tralized execution. His proactive involvement in the process can greatly improve the effectiveness of the operation. Figure 1 on Page 36 lists tasks the company/team FSNCO can accomplish in preparation for a defensive mission.

- *Refine the targets.* This is the first step in bottom-up refinement. Target refinement starts as soon as the FIST receives the initial target list worksheet from the TF fire support element (FSE). Refinement is based on the actual site of the obstacles, the direct fire plan and the refined situational template of the supported company/team’s sector. Target refinement is a continuous process through execution.

- *Select observation posts.* The selection of OPs is critical. They must allow the observers to acquire and engage the enemy in the EA. The company/team FSNCO nominates and recommends OPs to his FSO and commander. Although the commander and FSO are responsible for positioning the FISTs, with a little initiative, the FSNCO can make this happen.

There are two approaches to selecting OPs. In the first, the TF directs OP areas, like position areas, during the TF planning process. These OPs are planned to support the targets and EFSTs. They are analyzed using a terra-based computer program to maximize the ranging capabilities of the FISTV and observation of the battlefield. The FISTs then refine the location of the OPs once a detailed reconnaissance of the area is completed. This approach is more centralized and uses more in-depth planning and assets not found at the company/team level.

In the second approach, each FIST is allowed to select its own primary and alternate OPs based on the company/team sector, the enemy’s avenues of approach into the sector and the targets. This approach is decentralized and relies heavily on the initiative of the FSNCO/FIST.

The first step in the FSNCO’s selecting OPs is a thorough map and terrain analysis. Primary and alternate OPs should be in the company/team sector and allow the FIST to accomplish its EFST’s task and purpose—observe the supported sector, adjust and evaluate the effects of fires and support the obstacles in the EA. These OPs need to take advantage of the range of the ground/vehicular laser locator designator (G/VLLD), helping to provide for FISTV survivability. The FSNCO coordinates the OPs with other FIST and maneuver OPs to prevent gaps in observation coverage.

A reconnaissance of the routes to and from these OPs is conducted and rehearsed in daylight, limited visibility and in mission-oriented protective posture level four (MOPP-4). The FSNCO should consider using dismounted OPs with platoon forward observers (FOs), if available, in order to hide the FISTV and (or) cover dead space. A dismounted OP can make maximum use of concealment, given its smaller signature.

The FSNCO also considers terrain when selecting OPs. He never uses a prominent terrain feature for an OP; it’s

- Refine each target.
- Select the observation posts (OPs).
- Establish communications with the, task force (TF) fire support element (FSE) and other fire support teams (FISTs).
- Conduct pre-combat checks (PCCs) and (with the company/team FSO) pre-combat inspections (PCIs).
- Draw a terrain sketch for each OP and conduct target area survey.
- Report the exact location of engagement area (EA) obstacles to the TF FSE.
- Report the exact location of all the vehicles in the company/team to the TF FSE.

Figure 1: Company/Team Fire Support NCO (FSNCO) Tasks for a Defensive Mission

too identifiable by the enemy and easily targeted.

Table 2-2 on Page 2-4 of *FM 6-30 TTP for Observed Fire* outlines the advantages and disadvantages of positioning the FISTV on both forward and reverse slopes. In a reverse slope defense, OP selection is more critical. The observer may be able to identify his target, but he probably won't have enough terrain to properly trigger indirect fires. Therefore a second observer, possibly a scout or dismounted FO, must be in an OP positioned forward. This will provide the eyes required to acquire and trigger timely and accurate indirect fires. As necessary, the FSNCO coordinates with the company/team commander for engineer support.

The bottom line is the observer must be in position to see the commander's decisive point and execute his EFST. Therefore, the company/team commander must commit the assets necessary to get the observer into position.

- *Establish communications.* Initiative, cross-talk and coordination among FISTs are imperative during the preparation and execution of an EA. Without proper coordination, gaps in observation coverage could allow the enemy free passage through the EA.

Cross-talk is most critical between the primary and alternate shooters of a target. These two teams must understand each other's responsibilities, their OPs and their tasks and purposes.

Communications and coordination with the TFFSE also are essential. Communications is the FIST's link to the weapons systems; without it, effective fire support won't happen.

- *Conduct pre-combat checks and inspections.* The company/team FSNCO conducts in-depth pre-combat checks (PCCs) and, with the FSO, pre-combat inspections (PCIs) of all personnel and FISTV equipment. Pre-combat checklists vary from unit to unit; but at a

minimum, the FSNCO goes through the appropriate -10 technical manual list of required checks.

- *Draw a terrain sketch for each OP.* The terrain sketch helps the FIST analyze its area of responsibility. The sketch provides a quick reference for accurate target location. In addition to terrain features, the sketch includes the location of all obstacles, company/team target reference points (TRPs), friendly forces within the observed sector, primary and alternate targets, and tactical, execution and limited visibility triggers.

Terrain sketches are refined on a regular basis. They are drawn in as much detail as possible and refined at midday and again before sunset. The difference in lighting shows the subtle differences in the terrain. A properly drawn terrain sketch that's completed early is a valuable tool.

- *Determine the exact location of emplaced obstacles.* With the AN/PSN-11 precision lightweight global positioning system receiver (PLGR), the FIST precisely locates the obstacles in the EA. From a map, the TF plans obstacles that don't necessarily get emplaced exactly where planned. The company/team FSNCO reports the obstacle's location to the TF FSE when the engineer pla-

toon leader begins to layout or site-in the obstacle.

Determining the exact location of obstacles is an essential part of the target refinement process and may identify holes in coverage. All obstacles must be under observation and covered by direct and (or) indirect fires.

- *Determine the exact location of friendly units.* With the PLGR, the FISTs precisely locate all vehicles in their supported company/team. This gives the FSE a basis upon which to plan accurate critical friendly zones (CFZs) to protect friendly units. The FISTs update these locations regularly to ensure effective radar zone coverage.

**Task Force FSNCO.** FM 6-20-40, Page 1-7, states, "...the Bn/TF FSNCO assists the FSO...and supervises and trains the maneuver FISTs...He must be able to perform all the duties of his FSO."

The TF FSNCO orchestrates fire support during EA development. He establishes the priorities of work and develops a timeline not only for the FSE, but also for the FISTs. His involvement in the process is essential to the effectiveness of the operation. Figure 2 lists the tasks the TF FSNCO accomplishes.

- *Establishes priorities of work and the timeline.* The TF FSNCO establishes and maintains priorities of work on the tracking chart shown in Figure 3. He and the FSE are responsible for coordinating all the tasks listed on the chart and ensuring they are executed. On the chart, he lists the tasks in the priority in which they need to be accomplished and by when.

- *Disseminate the target list.* Early dissemination of the target list is a vital component of EA development. The target list is transmitted to each FIST at the earliest possible time—most likely during the TF planning process. This

- Establish priorities of work and a timeline.
- Disseminate the target list (early).
- Consolidate and update target refinements.
- Coordinate for engineer support.
- Provide each FIST a line-of-sight diagram for its OP (terra-based software).
- Coordinate for mortar registration.
- Update the FISTs on the friendly and enemy situations.
- Establish and coordinate radar zones.
- Emplace triggers.
- Proof the EA.
- Rehearse.

Figure 2: Task Force FSNCO Tasks for a Defensive Mission

Responsibility	Task	Time Task Complete
FSE	Disseminate target list.	
FSO/TF FSNCO/FIST	Complete target refinement. Select OPs.	
TF FSNCO/FIST	Dig-in FISTVs.	
TF FSNCO/FIST	Establish FSCM.	
FSE	Determine line-of-sight for each OP.	
FIST	Complete PCC and PCI.	
FSE/FIST	Conduct voice and digital radio checks.	
FSE	Provide meteorological data to mortars.	
Survey Chief	Survey mortar positions.	
TF FSNCO/FIST	Register mortars.	
FIST	Verify obstacles.	
TF FSNCO/TO	Plan CFZs. Emplace triggers. Illuminate triggers.	
FSE	Send SITREPs.	
FSO/TF FSNCO	Conduct rehearsal.	

Legend:	
CFZs = Critical Friendly Zones	FSO = Fire Support Officer
FIST = Fire Support Team	OP = Observation Post
FISTVs = FIST Vehicles	PCC = Pre-Combat Checks
FSCM = Fire Support Coordinating Measures	PCI = Pre-Combat Inspections
FSE = Fire Support Element	SITREPs = Situation Reports
TF FSNCO = Task Force Fire Support NCO	TO = Targeting Officer

Figure 3: Example Priorities of Work Tracking Chart

helps the FIST begin EA development and OP selection.

- *Complete target refinement.* As EA development proceeds, the TF FSNCO consolidates all the FIST changes to refine the targets and transmits the updated list to the brigade FSE.

- *Coordinate for engineer support.* The TF FSNCO coordinates the use of engineer assets for digging in FISTVs. Because of the proximity of the FSE to the engineer in the TF tactical operations center (TOC), the TF FSNCO can establish a good working relationship with the engineer and easily coordinate for his FISTs' digging assets.

*FM 5-103 Survivability* outlines the time it takes to dig-in a FISTV—one hour for a turret defilade in soft soil and one hour and 45 minutes in hard or rocky soil (see Figure 4). For survivability purposes, it's advisable FISTVs be dug in at least to turret depth.

- *Provide each FIST a line-of-sight diagram.* An observer plan is constructed in concert with the S2 and S3's using a terra-based computer program to assist in OP position selection. The TF FSNCO provides line-of-sight dia-

grams for each OP based on the terra-based program, which shows the actual terrain upon which the FISTs will operate. The FSE in the TOC has access to these types of tools.

- *Coordinate for mortar registration.* Registering TF mortars in the defense is essential to the success of fire support for an EA. To facilitate mortar registration, the TF FSNCO coordinates with the direct support (DS) Field Artillery battalion survey team for survey for the mortar platoon positions. The TF FSNCO ensures a computer meteorolo-

Type of Position	Soft Soil (Hours)	Hard/Rocky Soil (Hours)
Hull	0.6	0.81
Turret	1.0	1.45
3 Tier	1.6	2.5

Figure 4: FISTV Survivability. This charts give the times required to dig-in a FISTV based on an armored combat earthmover (ACE)-bulldozer mix (see *FM 5-103 Survivability*, Page C-63). The FISTV should be dug-in at least to the turret.

logical report is sent to the mortar platoon every four hours.

Because mortars are the TF's most responsive indirect fire asset, the FSNCO places their registration high on the priorities of work list. Also, battlespace in the EA is deconflicted with the mortars with the event listed on the TF defensive preparation timeline.

- *Update FISTs on friendly and enemy situations.* A set time interval for the TF FSNCO to provide the FISTs updates is invaluable for EA development.

- *Establish and coordinate radar zone planning.* The TF FSNCO insists the FISTs frequently send accurate location reports for their supported company/teams. Battle positions (BPs) are updated on the situation map—the same map upon which the CFZs graphics are drawn.

- *Emplace triggers and proof the EA.* All triggers must be deconflicted with maneuver TRPs. There are two types of triggers: tactical and execution. The FSNCO calculates the distances these triggers are from the target based on limited and non-limited visibility. Fire support personnel mark triggers using physical trigger kits when time permits and with laser triggers for hasty purposes. The emphasis is on precision time-distance factors in accordance with the procedures for engaging moving targets published in Section IV, Page 5-23 of FM 6-30.

The tactical trigger allows the guns time to shift on to the intended planned target. The formula used to calculate the distance of the tactical trigger from the target is (shift time of the guns in minutes) x (enemy rate-of-march in meters per minute) = distance from the target to call for at-my-command and do-not-load. For example, if it took the guns 8 minutes to shift and the enemy was moving at a rate of 20 kilometers per hour (333 meters per minute), the formula would read: 8 min x 333 meters per min = 2664 meters from the target.

The execution trigger tells the observer to fire the target. The formula used to calculate the distance this trigger is from the target is (time-of-flight of the round expressed in minutes + transmission time expressed in minutes) x (enemy rate-of-march in meters per minute) = distance from the target to call for execution. For example, if the time-of-flight of the round is 32 seconds and the transmission time is 10 seconds (32 + 10 = 42 seconds, which is .7 minutes) and the enemy is moving at 20 kilometers per hour (333 meters per

minute) then the formula would read:  $.7 \text{ min} \times 333 \text{ meters per min} = 233 \text{ meters}$  from the target.

There are three means to emplace triggers. In the first, the TF FSNCO uses either the FSO's M998 or air liaison officer's (ALO's) M113 to emplace triggers. While driving around the EA, he maintains communications with the FISTs in their OPs with their targeting heads up and operational to perform target area survey. This ensures the FISTs see him and can identify any dead space not previously noticed. The TF FSNCO then goes to each target and announces it to the responsible FIST. Then he establishes the tactical, execution and limited visibility triggers for that target. This process must be completed for each target, time permitting.

In the second option, the TF FSNCO instructs the FIST with the least important task and purpose to emplace the triggers. The emplacing team leaves a dismounted element on its OP with the G/VLLD and a radio to perform target area survey for that OP. The emplacement procedure is the same as in the first option.

Finally, each FIST emplaces its own triggers. The company/team FSNCO uses another vehicle (such as the commander's M998) and establishes the triggers while the remainder of the team performs the target area survey. This is the least preferred option because it doesn't facilitate redundant eyes on each target by other FISTs.

In a reverse slope defense, trigger emplacement becomes more difficult. The observer may not be able to identify the tactical triggers associated with his target. Therefore a second observer, possibly a scout or dismounted FO, must be positioned in an OP forward to provide the eyes to trigger timely, accurate indirect fires.

There are three techniques for marking triggers: day, limited visibility and laser. These are based on the different rates-of-march the enemy uses during these periods. If time permits, all three trigger types should be emplaced for each target.

Day triggers are physical triggers that are placed on the ground that can be observed during daylight—such as VS-17 panels or 4x4 painted plywood panels. These triggers may be difficult to see during the fight because of battlefield obscurants.

A limited visibility trigger is a trigger that emits a thermal signature and can

be observed through a thermal or infrared sight—a five-gallon can with a mixture of fuel and dirt, a bag of charcoal or reverse polarity paper or tape. It is a thermal or reverse polarity trigger used during limited visibility and at night and is only good for as long as it produces a thermal signature. A thermal trigger is best to use even in daylight because it can be seen through battlefield obscurants. The distances for emplacing limited visibility triggers differs slightly from day triggers because the enemy moves slower in periods of limited visibility in the day and at night.

The laser trigger is a lased point on the ground where a physically emplaced trigger would be. These also are known as "hasty triggers." They consist of an azimuth, distance, vertical angle and grid. This information is recorded in the targeting station when day and limited visibility triggers are used. If a laser trigger is used as the primary means of triggering fires, it must be sited at tactical and execution distances for both day and limited visibility rates-of-march.

Lighting thermal triggers before sunset is critical and should occur before the obstacles are closed. This event is placed on the TF timeline and disseminated to all company/teams. The TF FSNCO coordinates for security, such as a combat vehicle escort or the use of a combat vehicle to perform this task, as necessary.

There are three basic means of lighting triggers. In the first, the TF FSNCO goes forward in an M998 or ALO M113 and lights the triggers while maintaining communications with the FISTs to verify they can observe the thermal trigger. This is the preferred option because the teams are in position and it precludes any FISTV maintenance problems. The next option is the FIST performing the screen mission (if a screen mission was planned) lights the triggers on the way back to the OP. The third is to coordinate with maneuver elements lighting TRPs to light the fire support triggers at the same time. Regardless of the means employed, the trigger must be lit. An unlit trigger isn't a trigger.

While the TF FSNCO emplaces triggers, he proofs the EA. He confirms that the primary and alternate shooters can observe their targets and triggers. If not, he changes responsibility for that target and triggers to an observer who can accomplish the task and purpose. Target responsibilities are established in initial planning and refined during EA proofing.

Proofing the EA is essential in the target refinement process. During proofing, the locations of all obstacles are verified with a PLGR and target refinement is completed based on the obstacles' locations.

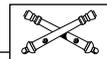
- *Rehearse.* If time permits, the best rehearsal is a mounted rehearsal with all FISTs in their OPs. The next best choice is an FM voice rehearsal.

The key fire supporter in a company/team defensive rehearsal is the FSO. He must understand his task and purpose and exactly how the fire support system will integrate with the scheme of maneuver in the EA. The fire support rehearsal includes the scheme of fires, priorities-of-fire (POF), fire support coordinating measures (FSCM), clearance of fires procedures, the task and purpose for each primary and alternate observer and his target, the role of mortars plus jump plans.

The scheme of fires provides a logical sequence to follow. It orients observers on each trigger and target. The rehearsal validates the targets and ensures they are integrated with the obstacles. The rehearsal also confirms FIST "ownership" of each target.

**Conclusion.** Fire support EA development tasks aren't taught in our NCO education system. These skills mirror our maneuver brethren's and must be acquired.

Initiative, communications and early coordination are the keys to success in fire support for an EA. As FSNCOs, we must be proficient in EA development tasks—be proactive in improving the lethality of indirect fires in the defense.



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