
Support-by-Fire Positions

CAPTAIN CHRIS TONER
CAPTAIN JOSH M. WILLIAMS

The *support by fire* task focuses on the specified form of maneuver or the designated main effort with direct or indirect fires. The result is an objective on which the conditions set will enable the maneuver force to accomplish its assigned task.

We offer here some techniques for setting up a light infantry support-by-fire (SBF) position. Although indirect fires are also important, these techniques focus on the direct-fire engagement only. This is by no means the only solution, but it has proved helpful in setting the conditions on the intended objective. These techniques focus on the direct-fire engagement only (with no intent of diminishing the importance of indirect fires). They can be applied to team through battalion level positions (squad level react to contact, platoon ambush, platoon or company SBF, and defense).

The result is an effective SBF element that balances the rate of fire with

the desired effects. All of this leads to a no-lull SBF that fully accommodates any amount of time needed for the desired form of maneuver.

Assumptions. Planning a deliberate SBF begins with a detailed reconnaissance of the objective area and the selection of a tentative position. Imagery, photographs, and human intelligence will provide many of the answers that help develop a plan for the execution of the SBF. Further reconnaissance will then refine the plan and confirm the SBF location, sectors of fire, primary targets, and engagement priorities. But even a hasty SBF will succeed if the principles discussed here are incorporated into a unit standing operating procedure (SOP). The unit will simply be able to accomplish more in less time.

Concept. The SBF element is built at the lowest level—a team consisting of M60 machinegun, M249 light machinegun (or (SAW), M203/M16, and M16 marksman. This team concept

facilitates the control and distribution of fire that will be discussed later. It also allows teams to be placed together to form larger SBF elements.

The team is formed with the M60 on the left or right limit, with the M249 next to it, then the M203 and the M16. This team allows for the matching of the two key weapon systems, the M60 and the M249, to cover both the primary and the secondary sectors of the M60. This enables the leaders to control the distribution of fires as well as the rapid execution of battle drills and fire commands.

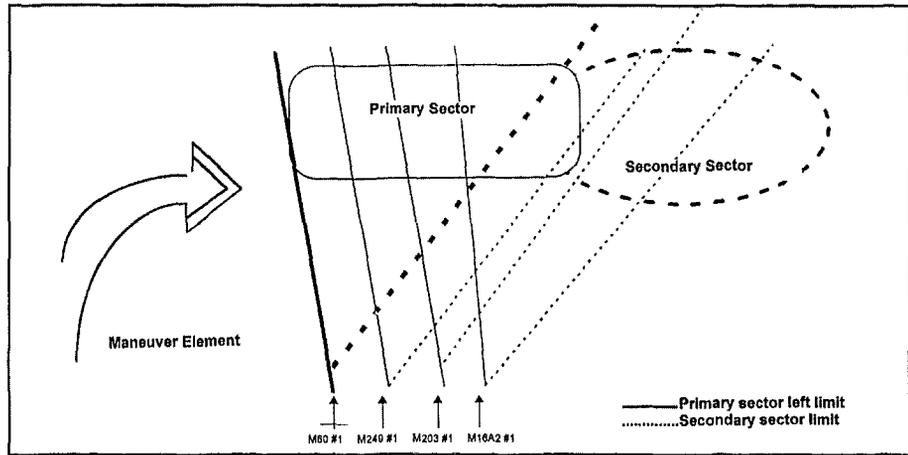
Distribution of Fires. The effective distribution of fires covers the objective in both width and depth. It includes the assignment of primary, secondary, shift, and lift sectors of fire and priority targets in each sector. This insures complete coverage of the objective in terms of specified targets and the denial of positions or terrain to the enemy.

First, leaders must look at the target

area and decide which targets or areas are critical to the mission (bunker, trench). They compare this information to the intended effect of munitions, weapon priority targets (M60 on group of 3-5 personnel, M203 on bunker, and so on), and the effective range of the weapon systems. The distance of the SBF position from the objective will depend upon an analysis of METT-T (mission, enemy, terrain, troops, and time) and the maximum effective ranges of the weapons. This can also create two or more SBF positions to accomplish the assigned task.

Target Area. Obviously, the siting of support-by-fire positions is a METT-T decision on where to place effective fire in order to achieve the desired result. The target area must be divided into an area covered by fire in both width and depth. This insures an area that is covered by fire and observation, regardless of the rate of fire. The target area dictates the assignment of primary and secondary sectors, priority targets, shift sectors, and lift sectors. Sectors of fire should be assigned on the basis of the criticality of that area and the weapon best suited to deliver fires on the target. For instance, the commander assigns first a primary sector, then a secondary sector. Within a sector of fire, he assigns primary and secondary targets and establishes weapon priorities.

Primary and Secondary Sectors of Fire. Each weapon system is assigned a primary and secondary sector of fire that complements the maneuver plan. In the case of the M60 and the M249, these sectors are assigned to complement each other as well as to support the maneuver plan—the M60's secondary sector of fire becomes the M249's primary sector, creating a mutually supporting team. This is done for two reasons: First, it allows the M249 to shift rapidly to the M60's primary sector in the event the M60 malfunctions, is destroyed, or must conduct a barrel change. Second, it provides complete coverage of both the primary and secondary sectors of the M60—a need based on the criticality of the M60's sectors of fire. In this concept, the M60 and M249 form a team and complement



each other during the course of fire and cover the most critical sector or sectors. It may be necessary to assign the M249 three sectors of fire—a primary sector (the M60's secondary), a secondary sector, and the contingency sector (the M60's primary). The number of M249s in the rifle platoon makes it possible to support two sectors of fire while assigning other sectors to M249s that are not paired with M60s.

Weapon Priorities. Weapons must be given priorities for engagements within their sectors of fire. The M60 has priority for thin-skinned vehicles, three to five personnel, bunker suppression, trench suppression. The M249 has priority to three to five personnel, individual targets, bunker suppression, and trench suppression. The M203 has priority to thin-skinned vehicles, area personnel targets, and bunker suppression. M16 marksmen are given individual target criteria or placed in a security role. This all becomes SOP within the unit and changes only when dictated by METT-T. This makes it easier to define each weapon's sector of fire and to control the weapons during the execution phase. It also reduces the number of fire commands that must be issued during the SBF and allows personnel to more rapidly engage the targets that appear in their sectors. (Example order to an M60 gunner: *Your priorities will be to Bunker #1 followed by Bunker #2; once the maneuver element destroys the bunkers with AT4s, you will engage 3-5 personnel targets in your secondary sector; we do not expect any vehicles on the objective; however, if a thin-skinned vehicle enters your current sectors, it becomes your priority target, and you*

are to engage it immediately.)

Shift or Lift? Either a shift-fire or a lift-fire sector is assigned, depending on the mission. A *shift* sector complements the form of maneuver by allowing a gradual shift of preparatory fire in front of the maneuvering element. Priority targets are assigned to facilitate the "creep" of the fires and deny the enemy the ability to regain key positions or place effective fire on the maneuver force. A *lift-fire* command is just that—a command. It is not a cease-fire with respect to marksmanship ranges. It means that SBF personnel are scanning an assigned sector, weapons are on safe, and targets are engaged only when a leader issues a specific fire command. One technique, if it suits the form of maneuver, is to keep the lift sector the same as the shift sector.

Control of Fires. The control of fires allows for the effective placement of fires on the objective and also helps prevent fratricide. There are many different techniques, but nothing can substitute for the placement of the key leaders in the SBF position. Properly positioned leaders can control the rate and distribution of fires and enforce the planned control measures. Leaders identify targets and sectors of fire either by using laser designators, or by actually pointing them out to the individual soldiers.

When not using laser designators, a good technique is for the leader to lie directly on top of the SAW, M203, and M16 firers to show them their sector while sighting down the top of the individual weapons. This will immediately confirm that the soldier understands his targets and sectors of fire. The M60 is

easier to confirm with the use of the tripod and the metal-to-metal technique. The best way of controlling the limits of fires with respect to the maneuvering element is the M60 tripod-mounted machinegun. With the volume of fire on the objective, the light due to fires, and noise resulting from the impact of munitions, the M60's burst of six to nine rounds is the clearest, most visible signature. All of the personnel in the SBF position can control their fires by keeping them inside the limit established by the M60. The assaulting soldiers can also see this line. This will allow the leaders in the SBF position to walk the supporting fire based on the maneuver element's rate of advance. Other weapons subordinate to the M60 are lost in the volume of fire on the objective. Soldiers with night-vision goggles can see the fire better, but other soldiers can still see it. Leaders must ensure that the #1—or "control"—M60, is using a 4x1 mix of ammunition (DODIC A131), not straight ball (A143).

Rate of Fire. The rate of fire is an absolutely critical part of the SBF position. It is easy for a leader to dictate a rate of fire in a fire command, but this is useless if a soldier does not understand how to achieve that rate of fire. For instance, a command to an M60 gunner to fire a rapid rate of fire should mean to him that he will fire a 6-to-9-round burst, followed by a one-second pause, then another 6-to-9-round burst, and continue this for a specific period of time. This rate will be approximately the 200 rounds per minute dictated by a rapid rate of fire; it also tells the gunner that he must change his barrel every two minutes. Determining the desired rate of fire includes considering the desired effect on the enemy, the amount of ammunition on hand, and the amount of time needed to support the form of maneuver. (It is important to remember that the trigger of the M60 machinegun is squeezed and released each time during the cyclic rate of fire. The only time a machinegun trigger is depressed continuously is during aircraft engagements.)

Barrel Changes. Preventive maintenance requires that barrel changes be

RATES OF FIRE				
	M60 MG	Burst Rate	M249 MG	Burst Rate
CYCLIC	550 RPM	6-9 rounds as fast as trigger can be squeezed.	850 RPM	3-5 rounds as fast as trigger can be pulled.
RAPID	200 RPM	6-9 rounds with a 1-second pause between bursts.	200 RPM	3-5 rounds with a 1-second pause between bursts.
SUSTAINED	100 RPM	6-9 rounds with a 2-second pause between bursts.	85 RPM	3-5 rounds with 3-second pause between bursts.

made at specific times during the three specific rates of fire. This is a battle drill that the M60 team and M249 gunners execute at a specific time or event. To facilitate this, leaders can program the amount of ammunition to coincide with the rate of fire and barrel change. For instance, if the M60 is firing at a rapid rate, 400 rounds should be programmed in the first ammunition can to ensure the correct stopping point. This also facilitates the control of barrel changes by keying secondary weapons to begin covering the primary sector.

Ammunition Formula. After the mission analysis is completed, leaders can use several factors that will help them estimate the amount of ammunition needed to complete the mission. These factors—duration of fire, rate of fire, ammunition needed, and preventive maintenance drills—combine to produce an SBF position that is well controlled, timed to the event, and executed with little or no unplanned lulls in the rate of fire. Given an estimate of the amount of time needed to support the maneuver element, leaders can compare this to the ammunition on hand and the rate of fire needed to accomplish the mission. Ammunition constraints may drive them to a specific rate of fire to provide sustained fire during movement of the maneuver element. Leaders can further designate the initial (and subsequent) rate of fire for each weapon system to accomplish the task. (This is not a foolproof system that will lead to a perfect execution of the task. Enemy reaction, mishaps, and weapon malfunctions will force the SBF

element to adjust the plan, but *having* a plan will allow for a much faster adjustment without loss of supporting fires.) This is accomplished by taking an individual weapon, its issued ammunition, the expected duration of fire, the desired effect of fire, and the programmed barrel changes, and then planning a fairly accurate sequence of fire. For instance: M60—1,000 rounds of ammunition; duration of event—five minutes, desired effect = suppression (cyclic for 30 seconds, rapid for 1:30, sustained for 3:00), barrel changes based on rate of fire = 1 (at the 2-minute point).

In this case, ammunition can #1 is loaded with 525 rounds and a second can with 475 rounds. The gunner is told to fire can #1 at the specified rate of fire—30 seconds at cyclic and 1:30 at rapid. Upon completion of the first can, he changes barrels. Can #2 is then loaded for the 3 minutes of sustained fire. Obviously, this will tie in with the target area and his assigned sector of fire, but at least there is a plan for the servicing of the target area, the consumption of ammunition, and the barrel changes.

SBF Equipment. Success depends upon having the required equipment in the SBF position:

- Ammunition cans are an excellent way of carrying ammunition into the SBF position. They can be used as ready boxes for the M60, the SAW, and even the M203 (an enormous number of M203 illumination rounds are required for an illuminated attack). The soldiers can carry larger quantities of ammuni-

BARREL CHANGE REQUIREMENTS		
Rate of Fire	M60 MG	M249 MG
CYCLIC	Every 1 minute	Every 1 minute
RAPID	Every 2 minutes	Every 2 minutes
SUSTAINED	Every 10 minutes	Every 10 minutes

tion, the ammunition is protected from the elements, and leaders can program the exact amount of ammunition into each can for the planned task. With proper execution, the ammunition will be clean, effectively fed into the weapon and—in the case of the M60—the assistant gunner can have both hands free to facilitate crew drill and the acquisition of targets. The cans should be noise-proofed with towels, dunnage, or tape. The cans can even be carried in ammunition rucksacks or by individuals during a movement to contact.

- The tripod, traversing and elevation mechanism, and pintle mount are absolutely necessary for the SBF position. This equipment allows for the accurate placement of fire by the leader assigning the sector. When used on the left or right limit, it allows the leader of the support element to walk the fire to the front of the maneuver element with greater accuracy. When the M60 is used as a limit, all other SBF weapons fire to the inside of it.

- Binoculars are necessary for leaders and assistant gunners so they can rapidly and accurately identify targets and friendly forces.

- Night vision devices give the edge to our forces during limited visibility engagements. Their use allows for the placement of precision fires on the objective and helps enforce antifraticide measures.

- The cleaning rod, Leatherman's tool, SAW tool, and M60 wrench are used to clear weapons during misfire procedures. The Leatherman's tool is excellent for clearing brass and links from the chambers of the machineguns.

- Asbestos gloves are a must for barrel changes. An M60 gunner who does not have them cannot change the barrel at the required time. Two gloves should be carried with each M60.

- Spare barrels must be available. The most flagrant violation that often occurs during an SBF is the lack of extra barrels for the SAWs. Leaders must ensure that the crew changes barrels as needed, and that this is planned into the SBF task. The barrels must be carried into the position and the bags unzipped, with the barrels on top ready to go.

- The laser designator is a fairly new device that enables leaders to assign sectors of fire to their soldiers at night. Each soldier can see his sector of fire when the leader turns on the designator and illuminates the target. The obvious problem with this is that the enemy can also see the beam. But this device is extremely useful when under preparatory indirect fire or when in contact.

Training. Training is essential if the readiness and proficiency of the SBF element are to be maintained. From leader training to Skill Level 1 training, all are equally important. At the individual level, soldiers must train continually on maintaining assigned weapons; practicing misfire procedures, barrel changes, drum and ammunition changes; sustaining marksmanship; and manipulating the M60 tripod. The crew-level training includes barrel and ammunition drill, assistant gunner target acquisition and adjustment, malfunction drills, tripod drills, target identification, fire commands, and gun evacuation drills. The unit can train on all of these individual and crew drills in garrison, and they should be a part of concurrent training on every qualification range.

In leader training, the OMEGA(?) technique is very effective in teaching the principles of SBF. At the rifle company level, the platoon leaders, platoon sergeants, weapon squad leaders, first sergeant, executive officer, and company commander form the SBF element.

The training starts with the mastery of the individual and crew level tasks and then moves to the collective level, which can include qualification on each of the weapon systems. Once the leaders have mastered the individual and crew tasks, they are given classroom instruction on the principles of the SBF. This includes everything discussed earlier and culminates in a sand-table exercise. During this exercise, the leaders establish a mock SBF position and use sand table aids to demonstrate the coverage of the objective area with each weapon. Each leader then backbriefs his area of responsibility and his weapons' engagement plan. The successful completion of the sand-table exercise is followed first by a hands-on blank fire

exercise and then by a live-fire exercise.

The company commander receives an operations order that includes the SBF mission, the specific amount of ammunition, and the expected duration of the event. The company commander then plans the SBF, issues an operations order that covers the specifics on servicing the objective area, and supervises the rehearsals.

The SBF element is first issued blank ammunition and tactically moves to the position, occupies it, and executes the task. The first blank fire exercise is followed immediately by an after-action review. The element is given time to conduct retraining and another blank-fire run, if needed. The training culminates in a live-fire assault on the objective area.

This training does not require a complex maneuver range. In its simplest form, a machinegun qualification range that allows for the addition of fixed targets can be used. The objective can be of simple design and does not necessarily have to be at the maximum range of the weapons. This allows the leaders to confirm, through action and evaluation, the required principles of the collective task—day or night.

Once the final after-action review is completed, the leaders can return to their company, where they should immediately have the resources to take the company through the same training. The desired result is the execution of the event on a complex maneuver range, at night. This training will produce a unit that not only can conduct an SBF task but that can also execute the *react to contact*, *break contact*, *defense*, and *ambush* subtasks to standard.

Captain Chris Toner has led Bradley and scout platoons in the 3d Infantry Division, commanded companies in the 2d Battalion, 187th Infantry, 101st Airborne Division, and served as an assistant brigade S-3 in the 7th Infantry Division. He is a 1987 ROTC graduate of Emporia State University in Kansas.

Captain Josh M. Williams served as a Senior Platoon Trainer for the Infantry Officer Basic Course at Fort Benning and a small group instructor for the Infantry Officer Advanced Course. He has led platoons in the 2d Battalion, 187th Infantry, 101st Airborne Division and served as a brigade S-3 Air. He is a 1993 graduate of the United States Military Academy.
