

## APPENDIX D

**FIRE PLANNING TERMS, SYMBOLS, SCHEDULES, AND TOOLS**

This appendix implements portions of STANAG 2031, Edition 5, and QSTAG 515, Edition 1.

**Target Terms**

The term target is the most fundamental term used in fire support planning. A target is personnel, materiel, or a piece of terrain that is designated and numbered for future reference and/or attack.

**Target of Opportunity**

A target of opportunity is a target that appears during combat and against which no attack has been prearranged.

**Planned Target**

A planned target is a target upon which fires are prearranged. The degree of prearrangement varies, but some prior coordination or action has been done to facilitate its engagement. Planned targets may be further subdivided into scheduled, on-call, and priority targets.

**Scheduled Target.** A scheduled target is a planned target that will be attacked at a specific time. This time may be related to an H-hour or to another time reference.

**On-Call Target.** An on-call target is a planned target which has not been scheduled for attack at a specific time but which may be attacked when requested. The on-call target requires less reaction time than a target of opportunity.

**Priority Target.** A priority target is a target the attack of which, when requested, takes priority

over all other requests. Priority targets are designated by the maneuver commander. He also gives specific guidance as to when the targets will become priority, the munitions to use, the accuracy required, and the desired effects. When not engaged in fire missions, firing units lay on priority targets. FSOs should note that they can get as many as three priority targets from a six-gun battery or four priority targets from an eight-gun battery. Two priority targets may be assigned to an 81-mm mortar platoon – one per section.

**Final Protective Fires.** Final protective fires are a special set of priority targets. They are designed to create a final *barrier of steel* that keeps the enemy from moving across defensive lines. Final protective fires are desperation fires.

**Target Numbering System**

This paragraph implements STANAG 2147, Edition 4, and QSTAG 221, Edition 2.

To designate nonnuclear targets for fire support operations, the Army adheres to the provisions of STANAG 2147 and QSTAG 221. Target designators consist of two letters followed by four numerals; for example, CB3002. This numbering system is used for each corps-size force.

Normally, nuclear targets are not assigned a special block of target numbers. A target

should be assigned a number when it is received at a fire planning agency. If a target is selected for attack, the most appropriate means (nuclear, chemical, or conventional), as determined by target analysis, will be used to attack the target. That analysis is guided by the commander's attack guidance and other factors such as nature of the target and munitions available.

The first letter of the two-letter group designates a particular nation or a corps associated with a particular nation.

**NATIONAL IDENTIFYING LETTERS**

| NATION  | LETTER     |
|---|------------|
| Australia   | V          |
| Belgium   | B          |
| Canada  | C, Z       |
| Denmark   | D          |
| France  | F          |
| Germany   | G          |
| Greece  | E          |
| Italy   | R          |
| Luxemburg   | L          |
| Netherlands   | H          |
| Norway  | N          |
| Portugal  | P          |
| Spain   | S          |
| Turkey  | T          |
| United Kingdom  | U, X       |
| United States   | A, K, Y, W |
| AMF (L)   | M          |
| <b>LEGEND:</b><br>AMF (L) = ACE (Allied Command Europe) Mobile Force (Land)<br><b>NOTE:</b> The letters O and I are not used. |            |

Each Army headquarters allocates a first letter to its corps. A corps may be assigned more than one letter. Letters assigned to each nation may be reused as long as adjacent corps of that nation do not share the same letter.

The second letter is assigned by corps down to brigade level. Also, second-letter designators are made for corps artillery CPs, corps FS cells, div arty CPs, and division FS cells.

**EXAMPLE LETTER DESIGNATORS FOR 12TH (US) CORPS WITH 54TH MECH DIV AND 16TH ARMD DIV**

| ORGANIZATION                 | LETTER DESIGNATOR |
|------------------------------|-------------------|
| 12th (US) Corps              | A                 |
| 12th (US) Corps Artillery CP | AX                |
| 12th (US) Corps FS Cell      | AY                |
| 54th Mech Div FS Cell        | AA                |
| 54th Mech Div Arty CP        | AB                |
| 1st Bde, 54th Mech Div       | AC                |
| 2d Bde, 54th Mech Div        | AD                |
| 3d Bde, 54th Mech Div        | AE                |
| 4th Bde, 54th Mech Div       | AF                |
| 16th Armd Div FS Cell        | AG                |
| 16th Armd Div Arty CP        | AH                |
| 1st Bde, 16th Armd Div       | AJ                |
| 2d Bde, 16th Armd Div        | AK                |
| 3d Bde, 16th Armd Div        | AL                |
| 4th Bde, 16th Armd Div       | AM                |

Blocks of numbers are assigned by those headquarters having two assigned letters. Field artillery CPs assign blocks from 0001 through 7000 as needed.

**ASSIGNMENT OF BLOCKS OF NUMBERS**

| NUMBER                                 | ASSIGNED TO  |
|--|--|
| 0001-1999                              | FS cell  |
| 2000-2999                              | FSO, lowest numbered maneuver battalion or squadron <sup>1</sup> |
| 3000-3999                              | FSO, second lowest numbered maneuver battalion or squadron       |
| 4000-4999                              | FSO, third lowest numbered maneuver battalion or squadron        |
| 5000-6999                              | Additional FSOs  |
| 7000-7999                              | FDC, direct support artillery                                    |
| 80000-8999                             | Counterfire targets  |
| 9000-9999                              | Toxic chemical targets   |
| <sup>1</sup> Lowest regimental number. |  |

A battalion- or squadron-size element with a block of numbers may suballocate numbers as shown below.

**SUBASSIGNMENT OF BLOCKS OF NUMBERS**

| NUMBERS | ASSIGNED TO   |
|---------|---|
| 000-199 | FSO   |
| 200-299 | FIST, Co A  |
| 300-399 | FIST, Co B  |
| 400-499 | FIST, Co C  |
| 500-699 | Additional FISTs and/or COLTs                           |
| 700-799 | Battalion mortar platoon, squadron, or howitzer battery |
| 800-999 | As required.  |

**NOTE:** If additional numbers are needed, company FSOs get them from the battalion FSO. The target numbering system in effect within your unit should be a part of the unit SOP, when possible. For contingency units, the system is OPORD-dependent.

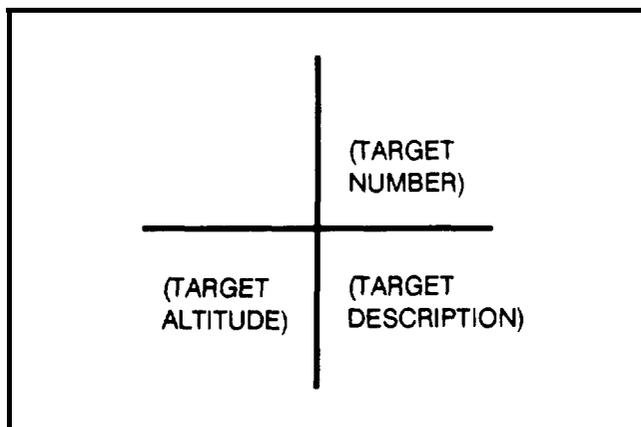
**Target Symbols**

Standard symbols are used in the preparation of maps, charts, and overlays to identify targets by type.

**Point Target**

A point target is a target that is less than 200 meters wide. The symbol with relevant information is as shown below.

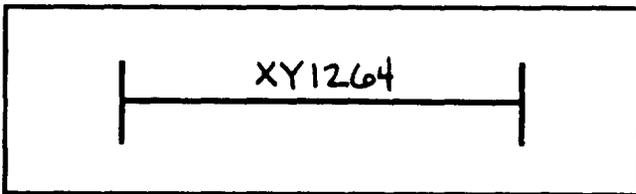
**POINT TARGET SYMBOL**



**Linear Target**

A linear target is more than 200 meters but less than 600 meters long. Targets longer than 600 meters require fire support assets other than field artillery or must be further subdivided into multiple targets for attack by field artillery. A linear target is designated on the target list by two grids or a center grid, length, and attitude.

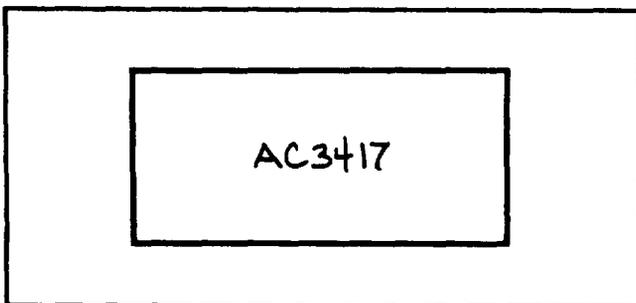
**LINEAR TARGET SYMBOL**



**Rectangular Target**

A rectangular target is wider and longer than 200 meters. It is designated on the target list by four grids or by a center grid, length, width, and attitude.

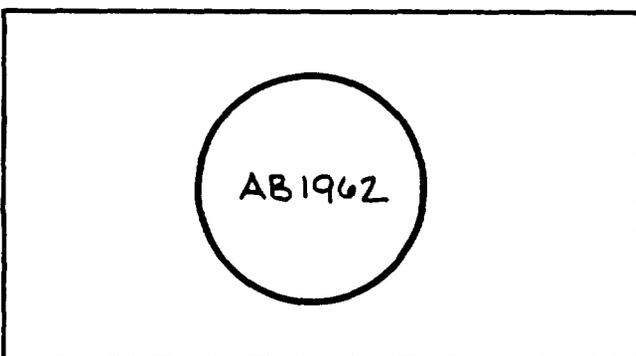
**RECTANGULAR TARGET SYMBOL**



**Circular Target**

A circular target is circular in nature or its exact shape is vague. On the target list, it is designated by a center grid and a radius.

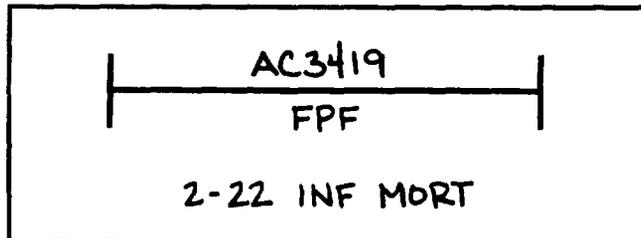
**CIRCULAR TARGET SYMBOL**



**Final Protective Fire**

An FPF is a type of priority fire which is similar to a linear target. The symbol used includes the target number, the designation of FPF, and the system and/or unit to deliver the fires.

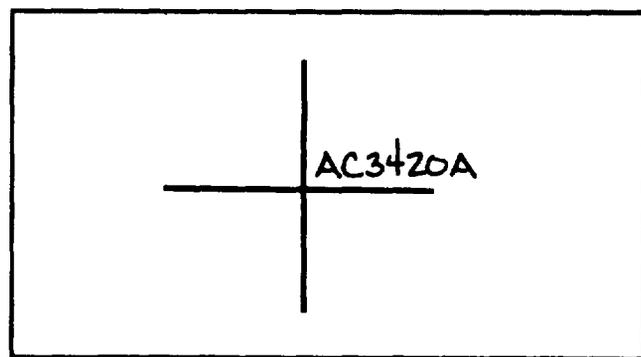
**FINAL PROTECTIVE FIRE SYMBOL**



**Target Reference Point**

Maneuver elements use an easily identifiable target reference point to orient direct fire weapon systems. This is one of our direct interfaces into the direct fire system. All TRPs should be dually identified in terms of the direct fire system and the target numbering system. The symbol is the same as that for a standard target with a target number and a TRP letter. Each TRP should be plotted on the map and identified as a target. Maneuver will call for it to be fired. TRPs are included on the target list and are identified in the remarks section as TRPs.

**TARGET REFERENCE POINT SYMBOL**



### Target List Work Sheet

The target list work sheet is a form that facilitates fire planning by the fire support coordinator. It is a preliminary listing of all targets and their descriptions from which the FSO can select and plan. (See Appendix L.)

### Preparation of the Target List Work Sheet

The procedure for preparing DA Form 4655-R is outlined below.

#### Line Number

This is an administrative control measure for internal use. Assign each target a line number.

#### Target Number

Assign each target a target number from the block of numbers given to the planning source.

#### Description

Enter a concise target description that is adequate for a decision on how the target should be attacked.

#### Location

Enter grid coordinates for point, rectangular, and circular targets. For linear targets, enter the coordinates of the center point.

#### Altitude

Show the altitude of the target in meters, unless otherwise specified.

#### Attitude

Enter the attitude of linear and rectangular targets in grid azimuths.

#### Size (Length and Width)

Enter no dimensions for a point target, one dimension (length) for a linear target, two dimensions (length and width) for a rectangular target, or the radius of a circular target (width).

#### Source and/or Accuracy

The information this column aids in determining how to attack the target. When known, enter the source and accuracy of the target data.

## TARGET LIST WORK SHEET

| TARGET LIST WORK SHEET   |            |                                 |          |          |          |               |       |                   |                |                            |
|--|------------|---------------------------------|----------|----------|----------|---------------|-------|-------------------|----------------|----------------------------|
| For use of this form see FM 6-20-40 or FM 6-20-50; the proponent agency is TRADOC. |            |                                 |          |          |          |               |       |                   |                | SHEET <u>1</u> OF <u>1</u> |
| LINE NO  | TARGET NO  | DESCRIPTION                     | LOCATION | ALTITUDE | ATTITUDE | SIZE          |       | SOURCE / ACCURACY | REMARKS        |                            |
|  |            |                                 |          |          |          | LENGTH        | WIDTH |                   |                |                            |
| 1  | AA<br>3411 | 82-mm MORTAR POSITION (4 TUBES) | 923435   |          |          |               |       |                   |                |                            |
| 2  | AA<br>3412 | MBEN INF IN TRENCH LINE         | 918560   |          | 1600     | 400           | 50    |                   |                |                            |
| 3  | AA<br>3413 | AIRCRAFT LANDING STRIP          | 920450   |          | 4800     | 1200          | 200   |                   |                |                            |
| 4  | AA<br>3414 | SUSP REGT CP                    | 947343   |          |          | (RADIUS 800m) |       |                   |                |                            |
| 5  | AA<br>3415 | FPF                             | 875689   | 340      | 1650     | 200           |       |                   | ADJ W/+2 DELAY |                            |
| 6  | AA<br>3416 | ROAD JUNCTION                   | 885670   |          |          |               |       |                   | TRP A3         |                            |
| 7  |            |                                 |          |          |          |               |       |                   |                |                            |
| 8  |            |                                 |          |          |          |               |       |                   |                |                            |

**Remarks**

Enter any special consideration(s) for attack of the target. The target description may be amplified here.

**Work Columns**

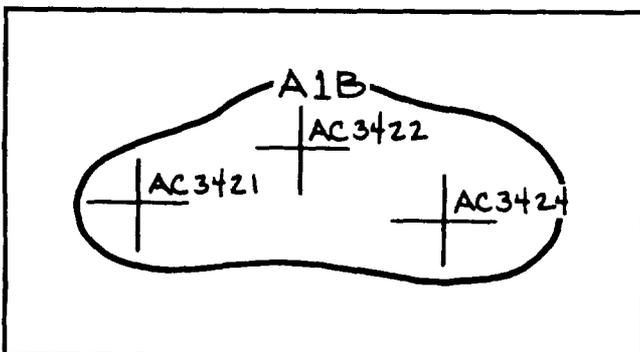
These columns are used to indicate targets that are to be included in a particular fire support schedule. Enter one diagonal line (/) under the appropriate column to show the target is to be included in a particular schedule. When the target has been scheduled, enter an opposing diagonal line, forming an X to show the action is complete.

**Types of Planned Fires**

**Group of Targets**

A group of targets consists of two or more targets on which the maneuver commander desires simultaneous attack. It is graphically portrayed by circling the targets and identifying them with a group designator. This designator consists of the two letters assigned to the maneuver brigade with a number between the letters. The numbers should be assigned sequentially as they are used. The number of FA firing batteries and/or battalions available must be considered in planning groups of targets. Inclusion of individual targets in a group does not preclude them from being attacked individually.

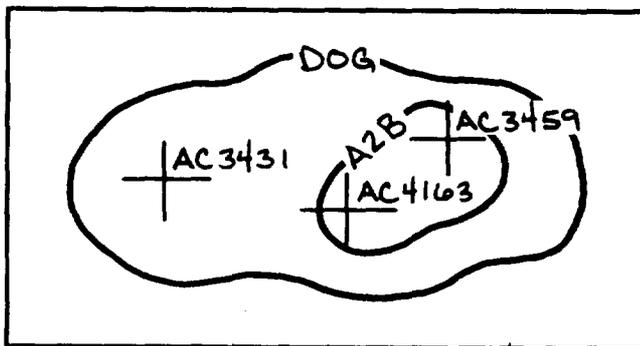
**GROUP OF TARGETS**



**Series of Targets**

A series of targets is a number of targets and/or groups of targets planned to be fired in a predetermined time sequence to support a maneuver operation. A series may also be fired on call, at a specified time, or when a certain event occurs. The maneuver commander determines the need for a series on the advice of his FSO. The series is indicated by a code name or nickname. Inclusion of individual targets or a group of targets in a series does not preclude targets from being attacked individually.

**SERIES OF TARGETS**



**Program of Targets**

A program is the predetermined sequential attack of targets of a similar nature. It may be executed on call, at a specific time, or when a particular event occurs. Targets are designated by their nature and are based on the commander's guidance. For example, in a counterfire program, all the targets are artillery-system-related -OPs, artillery batteries, mortar platoons, CPs. A program is not graphically displayed.

**Preparation Fire**

Fire delivered on targets preparatory to an assault is called preparation fire. The preparation is planned by a direct support FA battalion or higher echelon. It is an intense volume of fire delivered in accordance with a

time schedule. The fires normally begin before H-hour and may extend beyond it. They may start at a prescribed time or be held on call. The duration of the preparation is influenced by factors such as the fire support needs of the entire force, the number of targets, and the firing assets and ammunition available.

### Counterpreparation

A counterpreparation is an intense volume of prearranged fire that is delivered when the threat of enemy attack is discovered.

**NOTE:** The decision to plan and/or fire a preparation or counterpreparation is made by the maneuver commander with advice from his FSO. These fires, along with the other types of fires discussed, are an integral part of the overall operation and must be synchronized with other activities.

### Scheduling of Fire Support Assets

Once the decisions are made concerning planned targets, the FSO coordinates fire support assets to implement the plan. For example, if mortars and artillery are available assets, the FSO, with input from personnel of those various systems, coordinates which targets and when the mortars will attack. The same is true for the artillery. The various fire support systems retain the responsibility for the more precise scheduling of their integral fire units.

### Target Overlay

The target overlay is used to supplement the DA Form 4655-R. The overlay is a graphical representation of the target list work sheet. Symbols used on it should be standard military symbols. Targets are plotted on the overlay by symbols and target numbers. Fire support assets supporting the maneuver unit, as well as

all coordinating measures, should be plotted on the overlay. The overlay is used as a tool –

- To resolve duplications of targets.
- To integrate the scheme of maneuver with the plan of supporting fires.
- To determine the most appropriate unit to engage the target.

### Scheduling Work Sheet

The FSO finds the commander's guidance and the fire support requirements in the fire support plan. He analyzes this information, plus that on DA Form 4655-R, and determines what schedules of fire must be prepared to support the scheme of maneuver. The FSO then passes these requirements to the DS battalion CP where the necessary DA Forms 4656-R (Scheduling Work Sheets) are prepared. (A reproducible copy of DA Form 4656-R is in Appendix L.) Any of the following schedules may be prepared, depending on the situation:

- Groups.
- Series.
- Programs.
- Preparations.
- Counterpreparations.
- Illumination.
- Harassing.
- Interdiction.
- Smoke.

A separate DA Form 4656-R is prepared for each. It is the fire planner's tool for organizing the targets that appear on the DA Form

4655-R into specific schedules. The DA Form 4656-R provides the following information:

Ž A specific sequence during which the targets scheduled will be engaged.

- Targets requiring more than one volley. These will be scheduled at the sustained rate of fire for the weapon system being used.
- The total expenditure of ammunition by each firing unit on each target.
- The shell-fuze combination for each target if it deviates from the standard of HE-quick.
- Any targets that are to be engaged on call.
- Any special instructions, such as 50 percent VT on OPs.

Ž The fire support assets available.

Unless otherwise indicated in the REMARKS column, all targets will be engaged with HE-quick. For planning purposes, the schedule -- reflects time of impact (TOT) for all targets. Targets that appear on the target list work sheet but do not appear on the scheduling work sheet are on call.

### **Preparation of the Scheduling Work Sheet**

The procedure for preparing a DA Form 4656-R is outlined below.

#### **Heading**

Enter the type of schedule, the supported unit, and the OPORD for which it is being prepared.

#### **Line Number**

This is an administrative control number. Number each line sequentially. This gives all holders of the schedule a means of quick reference for finding which units have been

scheduled and specific information that relates to those targets.

(H-hour) or may be scheduled on call (start plotting at time 0).

**Organization and Caliber**

Enter the organizational information, to include caliber and weapon type, for each unit for which you have planning authority.

**Firing Units**

Information entered here reflects the size and designation of the firing unit.

**Scheduling Targets**

To the upper right of the FIRING UNITS column is an untitled portion of the work sheet, referred to as the timing block.

The upper portion of the block is used by the firing units to establish time to fire, or *lanyard pull time*, so that the rounds impact at the scheduled times.

Information on the lower portion of the block is based on time of impact of rounds fired. The purpose of the block is to establish the duration of a particular schedule relative to time. Schedules may start at a specific time

Below the timing block is a block of intersecting horizontal and vertical lines, called the time matrix. It is used to assign targets to firing units. This assignment is based on the ability of the unit to adequately engage the target as shown by the target overlay. The time matrix graphically portrays time of impact and duration of fires and may refer to a specific shell-fuze combination to be used. This is done by representing the target to be engaged by either a dot (one volley) or a horizontal line (more than one volley). The interval between the vertical lines is based on the weapon system rate of fire and the number of different systems being scheduled on the same work sheet. For example, for a 155-mm howitzer, the normal interval is 60 seconds. Thus, a target being engaged by three 155-mm volleys would have a duration line three vertical lines long with impacts on each of the vertical lines. Another factor that must be considered in scheduling is the shift time of the weapon system being scheduled. Shift time is the length of time needed for the firing unit to cease firing on one target and commence firing on the next scheduled target.

**SHIFT TIMES**

| WEAPON                  | SUSTAINED RATE OF FIRE | SHIFT TIME |
|-------------------------|------------------------|------------|
| 60-mm mortar            | 15 rd/mln              | 1 min      |
| 81-mm mortar            | 8 rd/mln               | 1 min      |
| 81-mm mortar (improved) | 15 rd/min              | 1 min      |
| 105-mm howitzer         | 3 rd/min               | 1 min      |
| 155-mm howitzer         | 1 rd/min               | 1 min      |
| 203-mm howitzer         | 0.5 rd/min             | 2 min      |

**LEGEND:** min = minute      rd/min = rounds per minute

**Remarks**

The REMARKS column is used to amplify information in the time matrix portion of the work sheet and to include information for the engagement of on-call targets. A parenthetical letter refers to the amplifying information in the REMARKS column. On-call targets are listed on the line of the firing unit assigned to engage them. Any other amplifying information is listed starting under the last firing unit line. No duration lines or dots are used for on-call targets because the duration of fire is not specified. If a unit is ordered to fire its on-call target while it is firing the schedule, it will –

- Leave the schedule.
- Fire its on-call target at the maximum rate of fire.
- Rejoin the schedule at real time.
- Report to its controlling headquarters those scheduled targets that were not engaged and those targets on which commander's effects were not achieved.

It is up to the controlling headquarters to notify the commander and recommend appropriate action to engage these targets.

**SAMPLE GROUPS OF FIRES SCHEDULE**

| (GROUPS FOR 53 MECH DIV ) |                          | SCHEDULING WORK SHEET   |       |      |  |    |      |       |    |      |  | SHEET <u>1</u> OF <u>1</u> |         |            |
|---------------------------|--------------------------|---|-------|------|--|----|------|-------|----|------|--|----------------------------|---------|------------|
| OPORD 20                  |                          | <small>For use of this form see FM 6-20-40 or FM 6-20-50 the proponent agency is TRADOC</small> |       |      |  |    |      |       |    |      |  |                            |         |            |
| LINE NO                   | ORGANIZATION AND CALIBER | FIRING UNITS  | (D1Y) |      |  |    |      | (D2Y) |    |      |  |                            | REMARKS |            |
|                           |                          |   | AB    | 4074 |  | AB | 410B |       | AA | 3251 |  |                            |         |            |
| 1.                        | 3-42 FA                  | A   | 24    | (a)  |  | 48 | (a)  |       |    |      |  |                            |         |            |
| 2.                        | (155, SP)                | B   | 32    | (a)  |  | 48 | (a)  |       |    |      |  |                            |         |            |
| 3.                        |                          | C   | 32    | (a)  |  |    |      |       |    |      |  |                            |         | (a) 50% VT |

### SAMPLE SERIES SCHEDULE

(SERIES PAUL FOR 53 MECH DIV)  
OPORD 20

**SCHEDULING WORK SHEET**  
For use of this form see FM 6-20-40 or FM 6-20-50; the proponent agency is TRADOC

SHEET 1 OF 1

| LINE NO | ORGANIZATION AND CALIBER | FIRING UNITS |         |         |   |   |   |   | REMARKS |                           |
|---------|--------------------------|--------------|---------|---------|---|---|---|---|---------|---------------------------|
|         |                          |              | 0       | 1       | 2 | 3 | 4 | 5 |         | 6                         |
| 1       | 3-42 FA                  | A            | AA 3251 | AA 3246 |   |   |   |   |         | AA 3260<br>16 (b)         |
|         |                          |              | 24 (a)  | B (b)   |   |   |   |   |         |                           |
| 2       | (ISS SP)                 | B            | AA 3251 | AA 3246 |   |   |   |   |         |                           |
|         |                          |              | 24 (a)  | B (b)   |   |   |   |   |         |                           |
| 3       |                          | C            | AA 3251 | AA 3246 |   |   |   |   |         | (a) 50% VT<br>(b) 50% SMK |
|         |                          |              | 24 (a)  | B (b)   |   |   |   |   |         |                           |

### SAMPLE COUNTER-OP PROGRAM SCHEDULE

(COUNTER-OP PROGRAM FOR )  
53 MECH DIV OPORD 20

**SCHEDULING WORK SHEET**  
For use of this form see FM 6-20-40 or FM 6-20-50; the proponent agency is TRADOC

SHEET 1 OF 1

| LINE NO | ORGANIZATION AND CALIBER | FIRING UNITS |         |         |   |   |   |   | REMARKS |             |
|---------|--------------------------|--------------|---------|---------|---|---|---|---|---------|-------------|
|         |                          |              | 0       | 1       | 2 | 3 | 4 | 5 |         | 6           |
| 1       | 3-42 FA                  | A            | AA 3232 | AY 0074 |   |   |   |   |         |             |
|         |                          |              | 32 (a)  | B (a)   |   |   |   |   |         |             |
| 2       | (ISS, SP)                | B            | AB 4092 | AY 0074 |   |   |   |   |         |             |
|         |                          |              | 32 (a)  | B (a)   |   |   |   |   |         |             |
| 3       |                          | C            | AY 0063 | AY 0074 |   |   |   |   |         | (a) 50% SMK |
|         |                          |              | 32 (a)  | B (a)   |   |   |   |   |         |             |