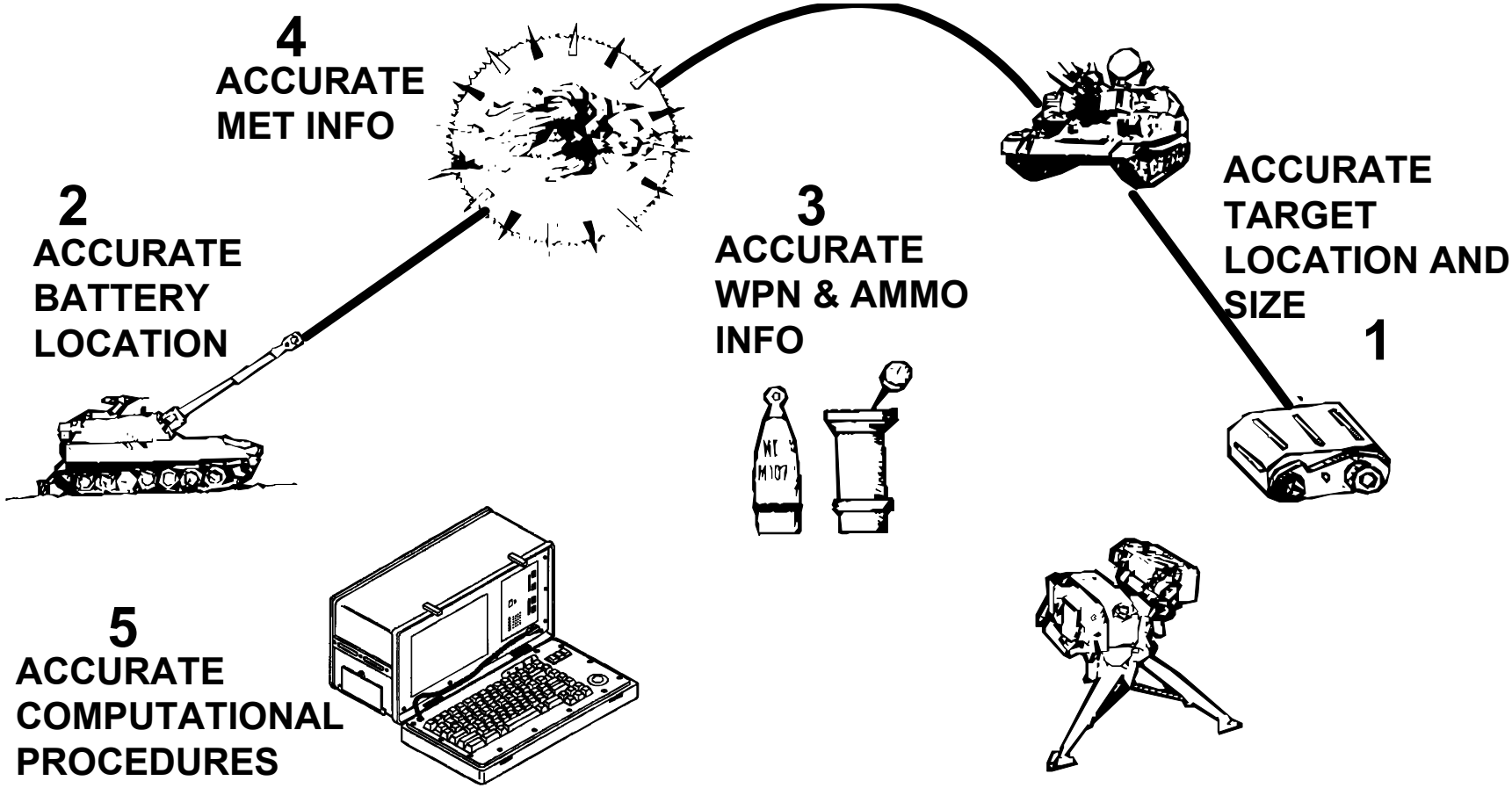
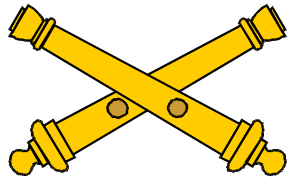
FIRE ORDER

FIVE REQUIREMENTS FOR ACCURATE PREDICTED FIRE





FIRE ORDER CONSIDERATIONS

- LOCATION OF THE TARGET
- NATURE OF THE TARGET
- AMMUNITION AVAILABLE
- UNIT AVAILABLE
- THE OBSERVER'S DESIRES (CALL FOR FIRE)
- GMET/JMEM
- COMMANDER'S GUIDANCE

BTRY/PLT FO ELEMENTS

- UNIT TO FIRE
- ADJUSTING ELEMENT & MOF
- BASIS FOR CORRECTIONS
- DISTRIBUTION

BTRY/PLT FO ELEMENTS

- UNIT TO FIRE
- ADJUSTING ELEMENT & MOF
- BASIS FOR CORRECTIONS
- DISTRIBUTION
- SPECIAL INSTRUCIONS

SPECIAL INSTRUCTIONS

- **WHEN READY**
- AT MY COMMAND

AT MY COMMAND

ALL UNITS FIRE FIRST VOLLEY AT THE SAME TIME

ROUNDS IMPACT AT DIFFERENT TIMES DUE TO VARYING TIMES OF FLIGHT

POPCORN EFFECT <u>MAY</u> RESULT

SPECIAL INSTRUCTIONS

- **WHEN READY**
- **AT MY COMMAND (AMC)**

- BY ROUND, AT MY COMMAND (BRAMC)
- BY PIECE, AT MY COMMAND
- RIGHT (LEFT), BY PIECE AT MY COMMAND
- BY PIECE, BY ROUND AT MY COMMAND

SPECIAL INSTRUCTIONS

- WHEN READY
- AT MY COMMAND (AMC)
- BY ROUND, AT MY COMMAND (BRAMC)
- BY PIECE, AT MY COMMAND
- RIGHT (LEFT), BY PIECE AT MY COMMAND
- BY PIECE, BY ROUND AT MY COMMAND
- TIME ON TARGET

TIME ON TARGET

- ROUNDS IMPACT AT SAME TIME
- MAXIMUM EFFECT

SPECIAL INSTRUCTIONS

- AZIMUTH
- DO NOT LOAD
- CANCEL DO NOT LOAD
- ZONE / SWEEP
- CANCEL TERRAIN GUN POSITION CORRECTIONS
- PRIMARY, LEFT, RIGHT, SECTOR
- HIGH ANGLE
- USE GUNNER'S QUADRANT

BTRY/PLT FO ELEMENTS

- **UNIT TO FIRE**
- **ADJUSTING ELEMENT & MOF**
- **BASIS FOR CORRECTIONS**
- **DISTRIBUTION**
- **SPECIAL INSTRUCTIONS**

- METHOD OF FFE
- PROJECTILE I/E
- AMMUNITION LOT & CHG I/E
- FUZE I/E
- TARGET NUMBER

BATTERY FIRE ORDER SOP

ELEMENT	FIRE ORDER SOP
UNIT TO FIRE	**BATTERY**
ADJ ELEMENT/MOF OF ADJ ELEMENT	**#3 1RD HE, COMP/FDO, Q**
BASIS FOR CORRECTIONS	**FASTEST**
DISTRIBUTION	**PARALLEL**
SPECIAL INSTRUCTIONS	**FDO/OBSR**
METHOD OF FFE	**FDO ANNOUNCE**
PROJECTILE IN EFFECT	**FDO/OBS**
AMMO LOT IN EFFECT CHARGE IN EFFECT	**SAME AS ADJ**
FUZE IN EFFECT	**FDO/OBSR**
TARGET NUMBER	**NEXT AVAILABLE**

FIRE COMMAND STANDARDS

ELEMENT	FIRE COMMAND STANDARDS
WARNING ORDER	
METHOD OF FIRE (PIECES TO FOLLOW, PIECES TO FIRE, MOF)	
SPECIAL INSTRUCTIONS	
PROJECTILE	HE
AMMUNITION LOT	LOT A/G
CHARGE	
FUZE	Q
FUZE SETTING	
DEFLECTION	
QUADRANT ELEVATION	
METHOD OF FFE	

BN FO ELEMENTS

- WARNING ORDER
- UNIT TO FIRE
- UNIT TO ADJUST (MOF)
- BASIS FOR CORRECTIONS
- DISTRIBUTION OR TGT LOCATION
- SPECIAL INSTRUCTIONS
- MOF FFE
- PROJ FFE
- AMMUNITION LOT & CHG FFE
- FUZE FFE
- TARGET NUMBER

BN FO ELEMENTS

ELEMENTS	EXAMPLE
• WARNING ORDER	FFE
• UNIT TO FIRE	BN
• UNIT TO ADJ	N/A
• BASIS FOR CORR	BCS
• DIST OR TGT LOC	454 587 ALT 400
• SPECIAL INSTR	TOT 1210
• MOF IN FFE	3 ROUNDS
• PROJ IN FFE	DPICM
• LOT & CHG IN FFE	F/G CHG 4
• FUZE IN FFE	TI
• TARGET NUMBER	AA5001

FIRE ORDER SOP

ELEMENT	BATTALION SOP
WARNING ORDER	AF OR FFE
UNIT TO FIRE	UNIT(S) TO FFE
ADJ ELEMENT & MOF	ADJ UNIT
BASIS FOR CORR	FASTEST METHOD
DIST OR TGT LOC	BCS SPCL/GRID & ALT
SPECIAL INSTR	WHEN READY
MOF FFE	FDO ANNOUNCE # RDS
PROJ FFE	DPICM
AMMO LOT & CHG FFE	BTRY FDO SELECT
FUZE FFE	FUZE TIME
TGT NUMBER	ALWAYS GIVEN

BN FO ELEMENTS W/SOP

ELEMENTS	EXAMPLE
• WARNING ORDER	FFE
• UNIT TO FIRE	BN
• UNIT TO ADJ	N/A
• BASIS FOR CORR	N/A
• DIST OR TGT LOC	454 587 ALT 400
• SPECIAL INSTR	TOT 1210
• MOF IN FFE	3 ROUNDS
• PROJ IN FFE	N/A
• LOT & CHG IN FFE	N/A
• FUZE IN FFE	N/A
• TARGET NUMBER	AA5001

• Attack Guidance Matrix

SITUATION: YOU ARE THE BN FDO. YOUR BN IS DIRECT SUPPORT. YOU HAVE ESTABLISHED AND ISSUED A BN FIRE ORDER SOP. YOUR BN S-3 HAS JUST GIVEN YOU A MATRIX (BELOW) WHICH CONTAINS THE COMMANDER'S GUIDANCE.

	CATEGORY	DESCRIPTION	WHEN	HOW	ENGAGE WITH
1.	(C3)	DIV FOR/MAIN CP's	I	10%	BN 2 RNDS
2.	(FS)	FA FIRING POSITION	A	10%	BN 4 RNDS
3.	(MAN)	ATGM POSITION	A	10%	BTRY 1 RND VT/TI
4.	(ADA)	ZSU 23-4	A	10%	BTRY 2 RNDS
5.	(ENG)	BRIDGING EQUIP	A	10%	BN 2 RND
6.	(RSTA)	PLT RECON PATROL	A	10%	BN 1 RND
7.	(REC)	FM JAMMING SITE	A	10%	BN 1 RND
8.	(N/CHI)	MISSILE UNITS	I	10%	BN 3 RNDS
9.	(POL)	FUEL DEPOT	A	30%	BN 4 RNDS VT, WP/TI
10.	(AMMO)	DIV AMMO DEPOT	A	30%	BN 2 RNDS VT, WP/TI

A=AS ACQUIRED **I=IMMEDIATELY**

• Attack Guidance Matrix

(CONTINUED)

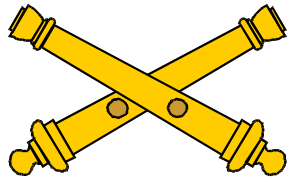
TASK: USING THE FIRE ORDER SOP AND ATTACK GUIDANCE MATRIX ISSUE A BN FIRE ORDER FOR EACH OF THE FOLLOWING CALLS FOR FIRE.

KNOWN DATA: LAST BN TGT NUMBER USED:AC1015

WHEN POSSIBLE MASS THE BATTALION

YOU HAVE LAND LINE WITH ALL UNITS

GUNNERY DEPARTMENT



CALL FOR FIRE:

B15 de F21, FFEk
GRID 332 511k
INFANTRY PLATOON I/Ok

GIVEN: CDR'S GUIDANCE 10% CASUALTIES

BN WILL FFE
LAST TGT # AC1015
TARGET ALTITUDE 335
TOT 1510

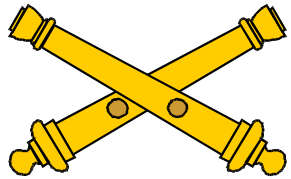
WHAT IS YOUR FIRE ORDER?

1 ROUND ICM

FFE BN, GRID 332 511, ALT 335, TOT 1510, 1 RD
TGT# AC1016

USAFAS

GUNNERY DEPARTMENT



CALL FOR FIRE:

BI5 de F21, AFk

GRID 354 523, ALT 255k

REFUELING SITE, 6 TRUCKSk

GIVEN: CDR'S GUIDANCE 30 % CASUALTIES

B BTRY ADJUSTS, BN WILL FFE

LAST TGT # AC1016

WHAT IS YOUR FIRE ORDER?

4 RNDS VT/WP/TI

AF BN, BRAVO, GRID 354 523, ALT 255, 4 RDS VT/WP/TI I/E TGT#AC1017

USAFAS

M825 SMOKE

M825 CALL FOR FIRE

J32 de Z11 FFE, k
GRID 625 434 ALT 303
SCREEN OP, 500 M, DIR 1900
HEAD 10 MINUTES

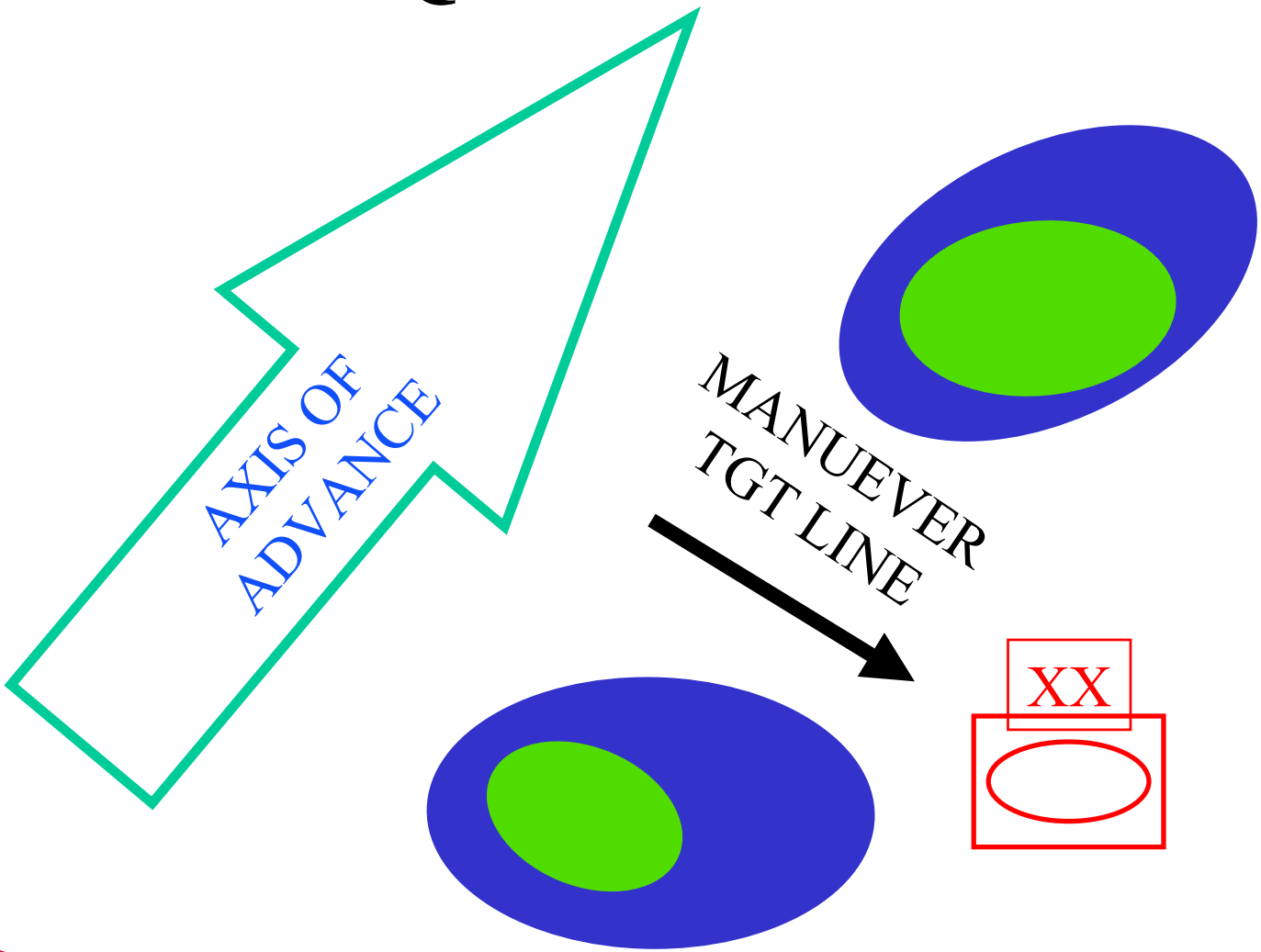
GIVEN INFORMATION

- FIRING M198 HOWITZER
- WARM MORNING, CLEAR SKIES
- TIME 1000
- INLAND
- 50%RELATIVE HUMIDITY
- 8 KT WIND
- VISIBLE SMOKE SCREEN

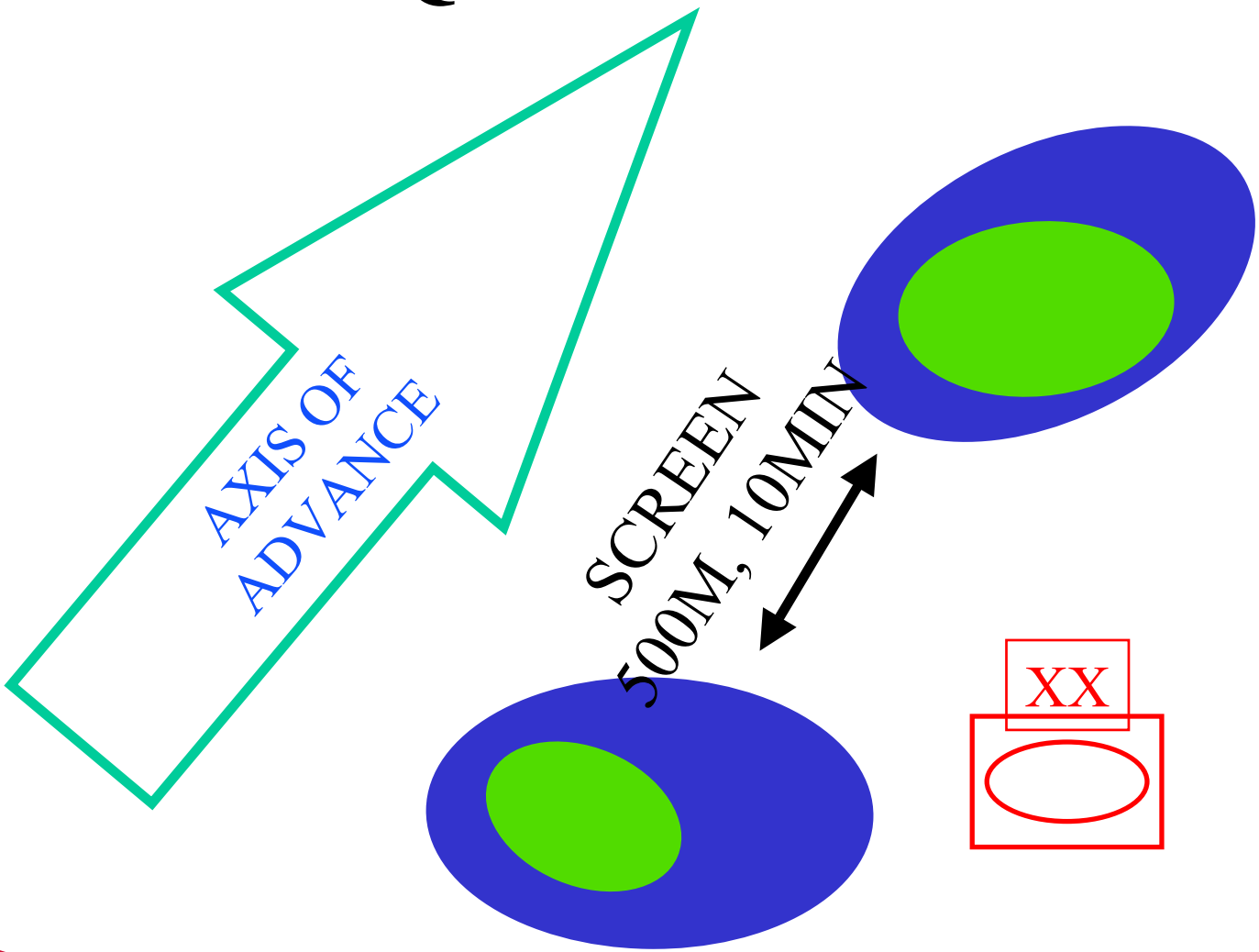
STEP 1: DETM LMDIRT

- LENGTH 500
- MT DIR 1900
- DIR OF WIND HEAD
- TIME 10 MINUTES

QUICK SMOKE



QUICK SMOKE



STEP 2: HUMIDITY/SCREEN REQUIREMENT

- REL. HUMIDITY 50 %
- SCREEN REQ. VISIBLE

STEP 3:DETM SMOKE TBL

- SMOKE TABLE NUMBER I-5

STEP 4:PASQUILL CATEGORY

- TIME OF DAY 1000
- BTRY LOCATION INLAND
- WEATHER TYPE WARM
- WIND SPEED 8 KTS

- PASQUILL CATEGORY C

STEP 5: DETM R1 AND R2

- R1 6
- R2 2
- FIRE INTERVAL 2

STEP 6: DETM VOLLEYS

- NUMBER OF VOLLEYS = DURATION/FIRE INTERVAL
- 10 / 2 = 5
- TOTAL RDS REQUIRED = 14

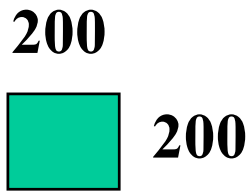
FASCAM

FASCAM CFF

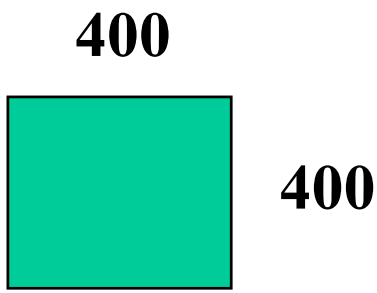
- 400x400 MINEFIELD GRID 435362/410
- ATTITUDE 1800
- MEDIUM DENSITY
- ADAM/RAAMS MIX, FFE

PLANNING MODULES

RAAMS LOW ANGLE 200X200



RAAMS HIGH ADAM HI/LOW ANGLE



PLANNING MODULES

- WIDTH DETERMINES THE PLANNING MODULE SIZE
- WIDTH IS ALWAYS THE SMALLER NUMBER
- EMPLOYMENT TABLES ACCOUNT FOR LENGTH

PLANNING MODULES

- 400 X 800 HI ANGLE RAAMS

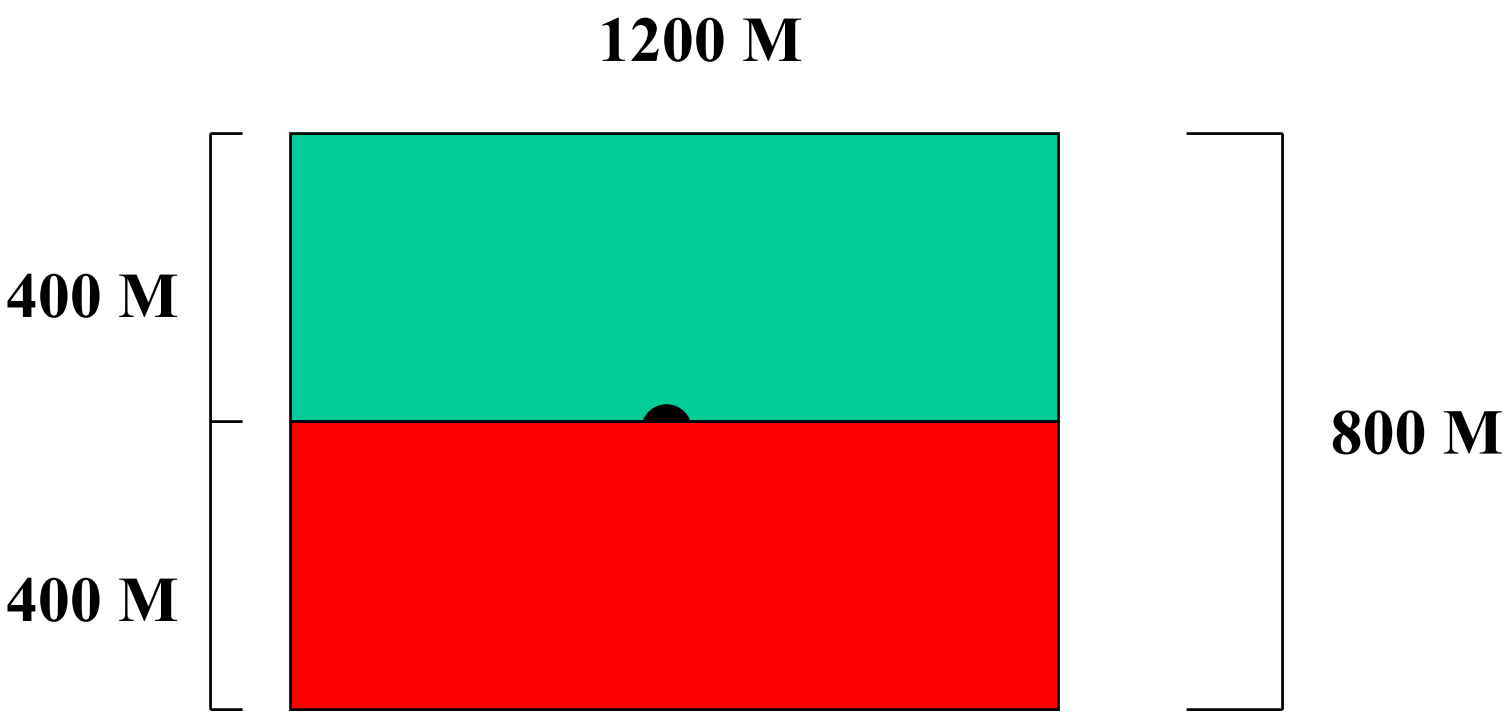
- WIDTH 400
- MODULE SIZE 400 X 400
- # MODULES 1

PLANNING MODULES

- 800 X 1200 HI ANGLE RAAMS

- WIDTH 800
- MODULE SIZE 400 X 400
- # MODULES 2

MODULE LAYOUT

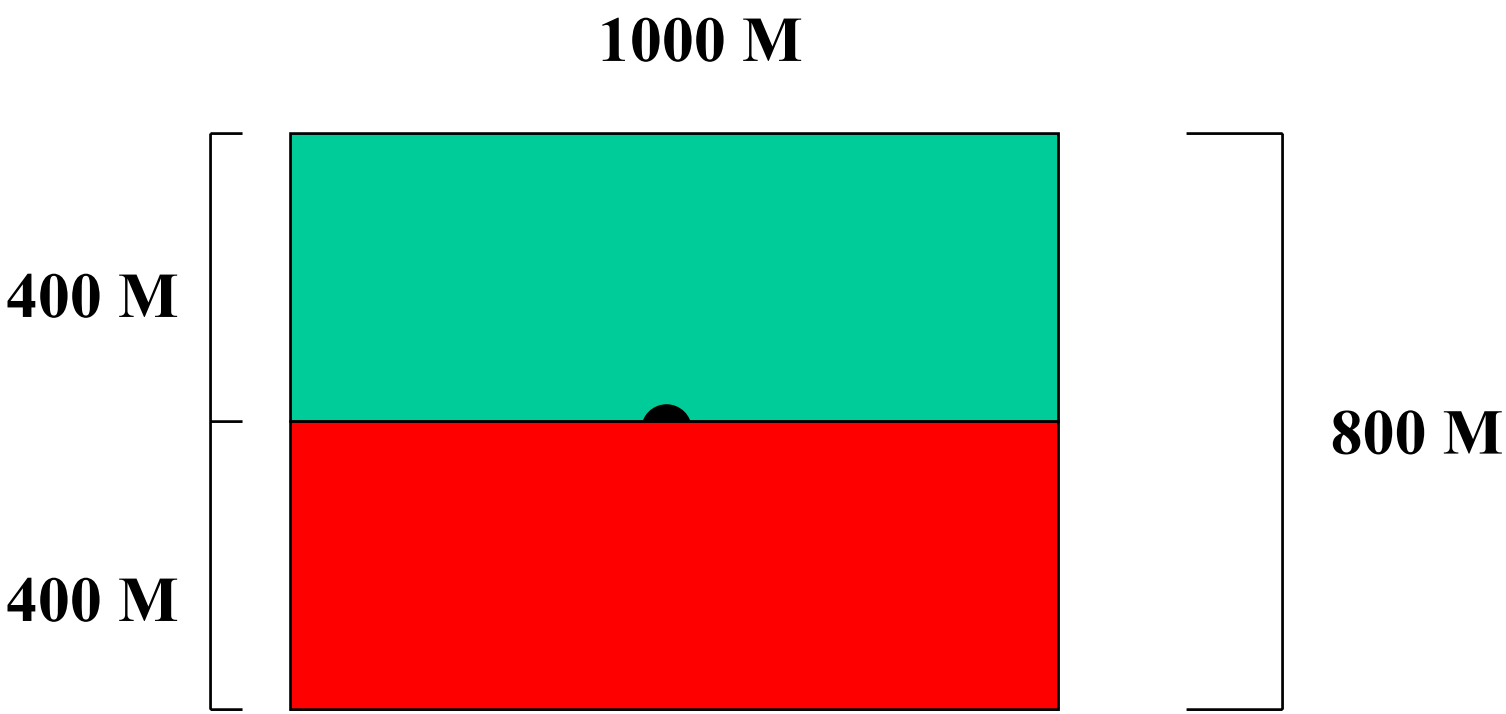


PLANNING MODULES

- 800 X 1000 HI ANGLE ADAM

- WIDTH 800
- MODULE SIZE 400 X 400
- # MODULES 2

PLANNING MODULES

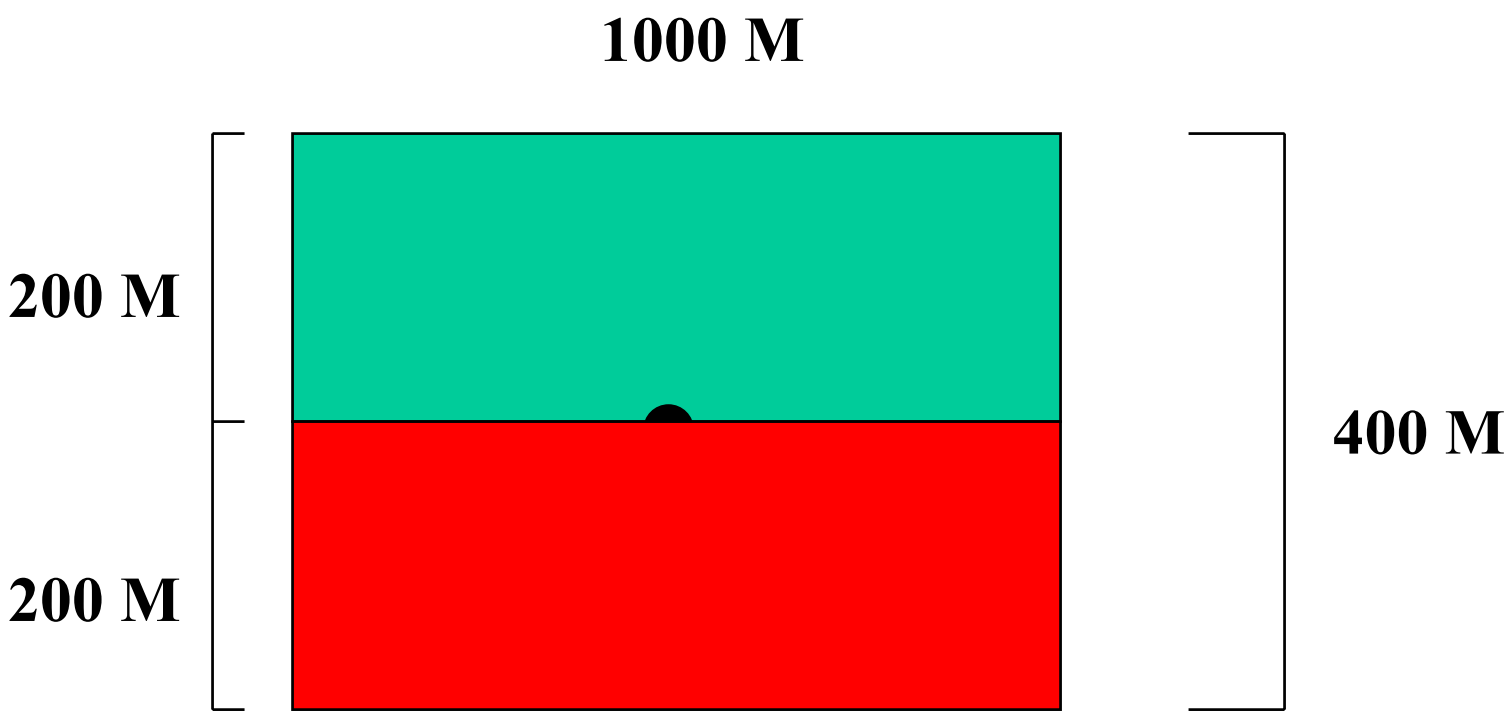


PLANNING MODULES

- 400 X 1000 LOW ANGLE RAAM

- WIDTH 400
- MODULE SIZE 200 X 200
- # MODULES 2

PLANNING MODULES

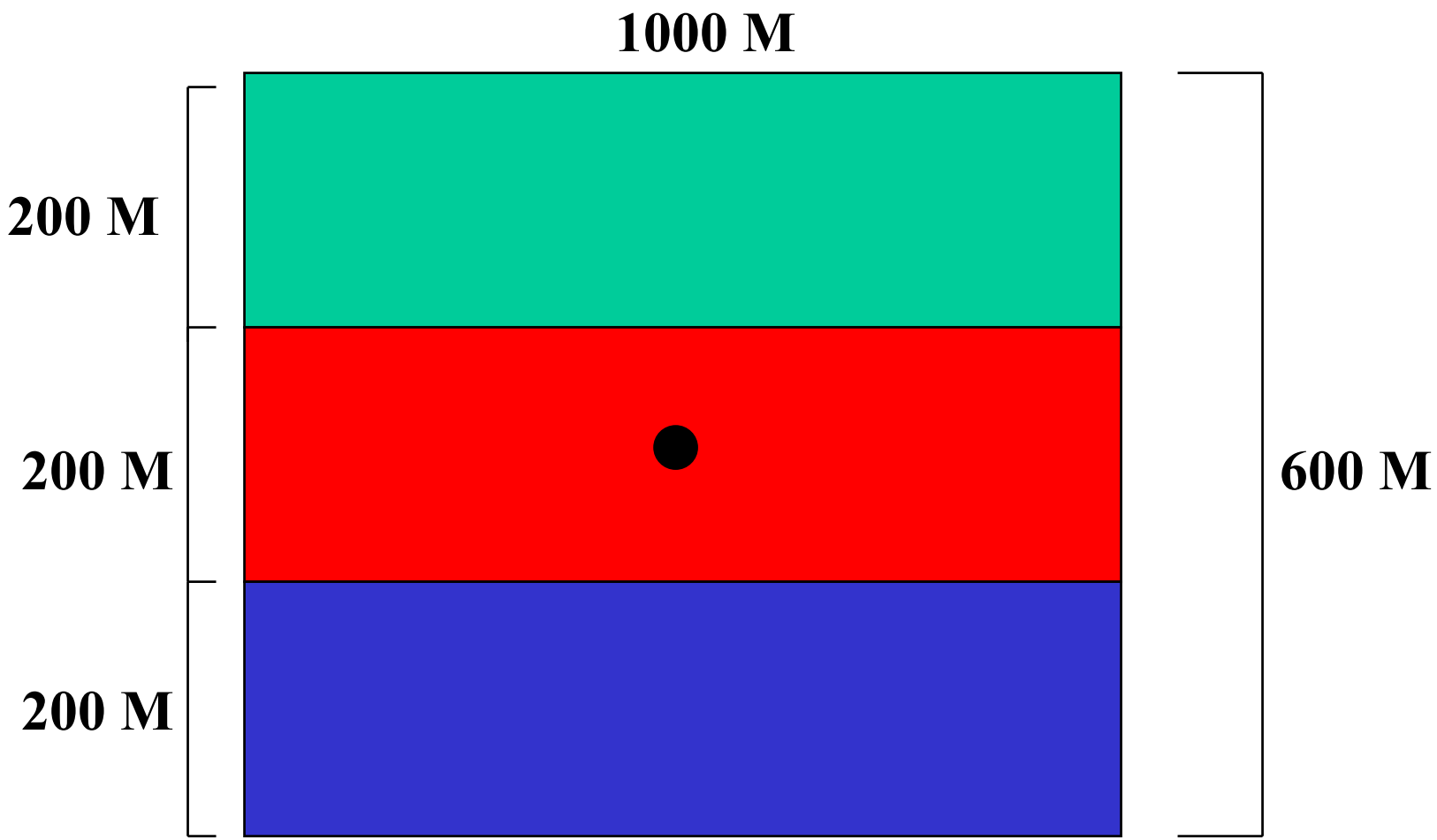


PLANNING MODULES

- 600 X 1000 LOW ANGLE RAAM

- WIDTH 600
- MODULE SIZE 200 X 200
- # MODULES 3

PLANNING MODULES



STEP 1: CFF DATA

- AF OR FFE — FFE
- CENTER GRID — 435 362
- DENSITY — MEDIUM
- LENGTH — 400
- WIDTH — 400
- ATTITUDE — 1800

STEP 2: DETM CHART RG

- **CHART RANGE 3600**

STEP 3: DETM BMA

- BMA=TARGET ATT - DIR OF FIRE
- BMA= 1800 - 0800 = 1000

US

STEP 4: DETM MINE EMPLOYMENT TABLE

- ANGLE OF FIRE HIGH
- TECH SOLUTION MET + VE
- BMA 1000

EMPLOYMENT TABLE NUMBER 4

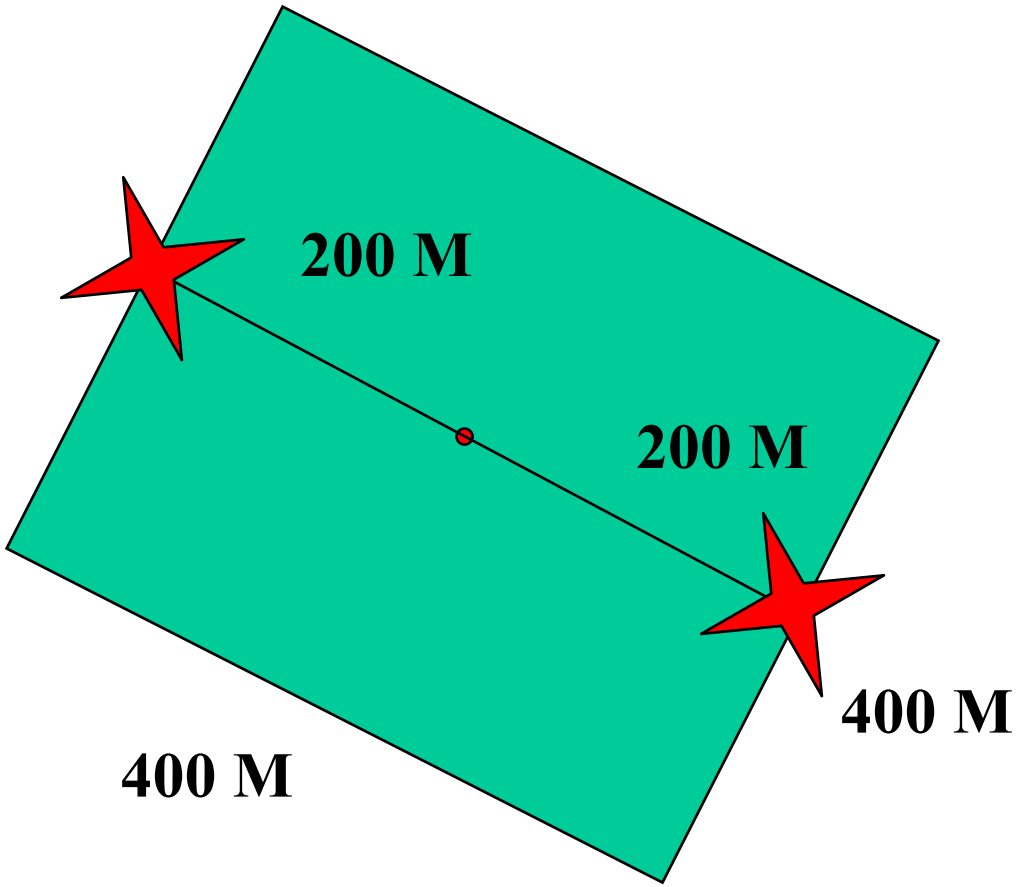
STEP 5: DETM AIMPOINTS

- CHART RG 3600
- LENGTH 400
- # AP/MODULE 2
- # MOD 1
- TOT # AP 2

STEP 6: DETM AP SEP

- MODULE SIZE 400 X 400
- # AIMPOINTS 2 (EVEN)
- DETM AP SEP
- DETM AP GRIDS M17 BOARD

AIMPOINT PLACEMENT



AIMPOINT GRIDS

- AP #1 433 363
- AP #2 437 362

STEP 7: DETM #RDS/AP

• AMMO TYPE	RAAMS/ADAM
• ANGLE OF FIRE	HIGH
• DENSITY	MEDIUM
• RAAMS	48 RDS/AP
• ADAM	6 RDS/AP
• TOTAL	96 RDS RAAMS 12 RDS ADAM

FIRE ORDER

- RATE OF FIRE 3RDS/MIN FOR 3 MIN THEN 1 RD/MIN
- 1 GUN 9 RDS/3MIN
- 6 GUN 54 RDS/3MIN

FIRE ORDER

FFE A GRID 437 362 ALT 400 NLT 1000 8 RDS RAAMS, TGT#AA1000

FFE B GRID 433 363 ALT 410 NLT 1000 8 RDS RAAMS TGT#AA1000

FFE C GRID 437 362 ALT 400, GRID 433 363 ALT 410 NET 1000 AND NLT 1100, 1 RD PER AIMPOINT ADAM, TGT#AA1000