5600 5800 6000 6200 0 200 400 600 800

1000
1200
1600

OBSERVED FIRE REFERENCE CARD

GRID COORDINATE

GTA 07-01-032
JUNE 1987

   (1) "____DE _____ AF/FFE, k"
   (2) "GRID _____ , k"
   (3) (TGT DESC) " _____IN EFFECT, k"

       (DIR SENT AFTER M. T. O.)

  I. GRID:
    A. DETERMINE A TWO CHARACTER, SIX DIGIT GRID FOR THE TARGET.
    B. DETERMINE A GRID DIRECTION TO THE TARGET AND SEND AFTER THE
       CALL FOR FIRE AND BEFORE ANY SUBSEQUENT CORRECTIONS.

POLAR PLOT
   (1) "___ DE _____ AF/FFE, POLAR k"
   (2) "DIR___ DIST ____UP/DOWN ____ , k"
   (3) (TGT DESC) " _____ IN EFFECT, k"

  II. POLAR:
    A. DETERMINE THE GRID DIRECTION TO THE TARGET.
    B. DETERMINE THE DISTANCE FROM THE OBSERVER TO THE TARGET.
    C. DETERMINE IF ANY SIGNIFICANT VERTICLE INTERVAL EXISTS.

SHIFT FROM A KNOWN POINT
   (1) "___ DE _____ AF/FFE, "SHIFT (TGT#/REG PT#), k"
   (2) "DIR ___, R / L,___ DD /DROP___ UP/ DOWN___, k"
   (3) (TGT DESC) "_____ IN EFFECT, k"

  III. SHIFT:
    A. DETERMINE THE GRID DIRECTION TO THE TARGET.
    B. DETERMINE THE LATERAL SHIFT TO THE TARGET FROM THE KNOWN
       POINT.
      W = R𝔪 (MIL RELATION FORMULA)
      W = WIDTH OF LATERAL SHIFT (THE UNKNOWN)
      R = DISTANCE TO THE KNOWN POINT DIVIDED BY 1000 AND ROUNDED TO
        ONE DECIMAL PLACE
      𝔪 = MEASURED ANGLE IN MILS FROM THE KNOWN POINT TO THE TARGET
    c. DETERMINE THE RANGE SHIFT FROM THE KNOWN POINT TO THE TARGET

5400
5020
5000
4800
4600
4400
4200

1400
1800
2000
2200

4000 3800 3600 3400 3200 3000 2800 2600 2400

OBSERVED FIRE REFERENCE CARD

FIST REPORT
OBS I.D.
DATE TIME GROUP
LOCATION ALT °
VISIBILITY
ENEMY ACTIVITY
FPF (GRIDS) °

INTELLIGENCE SPOT REPORT
IDENTIFICATION
  S SIZE
  A ACTIVITY
  L LOCATION °
  U UNIT °
  T TIME
  E EQUIPMENT
° ENCODE
FLASH-TO-BANG TIME
ELAPSED TIME BETWEEN
IMPACT AND SOUND
x 350 M (DISTANCE IN
METERS)

MEASUREMENT OF ANGLES WITH THE HAND

30   70   100

125   180   300

TGT LOCATION - SHIFT FROM KNOWN POINT
Complete Target Location
Direction 3570, Right 290, Add 500

BMP

500 meters

AA 4165

DIR 3500 ɯ̸
DIS 4200 meters

DIR 3570 ɯ̸

70 ɯ̸

RG FACTOR: 4.2
4.2 x 70 = 294
294 expressed as 290

NAVAL GUNFIRE REQUEST
DATA
SEGMENT   TRANSMITTED

Firing   Spotter Identification
Alert   Warning Order
          Target Number
        break and read back

Target   Grid, Polar, or Shift
Location from a Known Point
        break and read back

Attack   Target Description
Data   Method of Engagement
        Method of Fire and
        Control

OT FACTOR
Distance to the target
expressed in thousands
Example: 1800 QT Factor 2
        2600 QT Factor 3
         800 OT Factor 0.8
        2500 QT Factor 2

ADJUSTMENT PROCEDURES
Deviation Correction IL R
from the round to the target)
W R x ɯ̸. R is the OT Factor.
ɯ̸ is mils from round to tgt
Range Adjustment (Add Drop
from the round to the target)
Successive Bracket Technique
400
200
100
  50   FIRE FOR EFFECT
        when you are within
        50 meters

CAS REQUEST
OBS I.D.
WARNING ORDER (REQUEST
    CAS)
TGT LOCATION
    (GRID COORDINATES)
TGT DESC
    - FRIENDLY LOCATION
    - ADA THREAT
RESULTS DESIRED
DESIRED TIME ON TARGET
    (TOT)

ATTACK INFORMATION
DIRECTION IP TO TGT
    (DEGREES)
DISTANCE IP TO TGT
    (NAUT MILES)
TYPE MARKING ROUND
REIDENTIFY TGT (DESC)
REIDENTIFY ADA
    THREAT / RESTRICTIONS

1000
900
800
700
600
500
400
300
200

300 400 500 600 700 800 900 1000
100

$\dfrac{1}{25,000}$ METERS

$\dfrac{1}{50,000}$ METERS

1000

1000

500