

| HIGH BURST (MEAN POINT OF IMPACT) REGISTRATION                                                    |    |                          |    |                                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              |                                         |                             |  |
|---------------------------------------------------------------------------------------------------|----|--------------------------|----|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------|-----------------------------------------|-----------------------------|--|
| For use of this form, see FM 6-40; the proponent agency is US Army Training and Doctrine Command. |    |                          |    |                                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              |                                         |                             |  |
| COMPUTATION OF HB (MPI) LOCATION                                                                  |    |                          |    |                                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              |                                         |                             |  |
| Message to Observers                                                                              |    |                          |    |                                        |                                                                                                                                                                                           | Dis<br>01—02 |                                                                                                                                                                                                   | Az 01 —02                |                              | 3200                                    |                             |  |
|                                                                                                   |    |                          |    |                                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   | +<br>-                   |                              |                                         |                             |  |
|                                                                                                   |    |                          |    |                                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   | Az 02 —01                |                              |                                         |                             |  |
| Data Fired                                                                                        |    | Chg                      |    | Df                                     |                                                                                                                                                                                           | FS           |                                                                                                                                                                                                   | QE                       |                              |                                         |                             |  |
| Observer Readings                                                                                 |    |                          |    | Interior Angles                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              |                                         |                             |  |
| Rd                                                                                                | 01 |                          | 02 |                                        | 01 on Left                                                                                                                                                                                |              |                                                                                                                                                                                                   |                          | 01 on Right                  |                                         |                             |  |
| No                                                                                                | Az | VA                       | Az |                                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              |                                         |                             |  |
| 1                                                                                                 |    |                          |    |                                        | Az 01→ HB (MPI)                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          | Az 02→ HB (MPI)              |                                         |                             |  |
| 2                                                                                                 |    |                          |    |                                        | + 6400 if necessary                                                                                                                                                                       |              |                                                                                                                                                                                                   |                          | + 6400 if necessary          |                                         |                             |  |
| 3                                                                                                 |    |                          |    |                                        | Total                                                                                                                                                                                     |              |                                                                                                                                                                                                   |                          | Total                        |                                         |                             |  |
| 4                                                                                                 |    |                          |    |                                        | -Az 02→ HB (MPI)                                                                                                                                                                          |              |                                                                                                                                                                                                   |                          | -Az 01→ HB (MPI)             |                                         |                             |  |
| 5                                                                                                 |    |                          |    |                                        | APEX →                                                                                                                                                                                    |              |                                                                                                                                                                                                   |                          | APEX →                       |                                         |                             |  |
| 6                                                                                                 |    |                          |    |                                        | Az 02→ HB (MPI)                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          | Az 02→ 01                    |                                         |                             |  |
| 7                                                                                                 |    |                          |    |                                        | + 6400 if necessary                                                                                                                                                                       |              |                                                                                                                                                                                                   |                          | + 6400 if necessary          |                                         |                             |  |
| 8                                                                                                 |    |                          |    |                                        | Total                                                                                                                                                                                     |              |                                                                                                                                                                                                   |                          | Total                        |                                         |                             |  |
| 9                                                                                                 |    |                          |    |                                        | -Az 02→ 01                                                                                                                                                                                |              |                                                                                                                                                                                                   |                          | -Az 02→ HB (MPI)             |                                         |                             |  |
| 10                                                                                                |    |                          |    |                                        | → at 02                                                                                                                                                                                   |              |                                                                                                                                                                                                   |                          | → at 02                      |                                         |                             |  |
|                                                                                                   |    |                          |    |                                        | Total                                                                                                                                                                                     |              | Bearing =<br><u>6400 - Az</u><br>dE -<br>dN +                                                                                                                                                     |                          | Bearing = Az<br>dE +<br>dN + |                                         | Az 01→ HB (MPI)→<br>Bearing |  |
|                                                                                                   |    |                          |    |                                        | Average                                                                                                                                                                                   |              |                                                                                                                                                                                                   |                          |                              |                                         | Bearing                     |  |
| Distance 01 HB (MPI)                                                                              |    |                          |    |                                        | <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">IV<br/>III</div> <div style="text-align: center;">I<br/>II</div> </div> |              | <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">dE -<br/>dN -</div> <div style="text-align: center;">dE +<br/>dN -</div> </div> |                          | Bearing =<br>Az - 3200       |                                         | Bearing =<br>3200 - Az      |  |
| Log base 01→ 02                                                                                   |    |                          |    |                                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              |                                         |                             |  |
| + log sin → at 02                                                                                 |    |                          |    |                                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              |                                         |                             |  |
| Sum                                                                                               |    |                          |    |                                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              |                                         |                             |  |
| - Log sin Apex Angle                                                                              |    |                          |    |                                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              |                                         |                             |  |
| diff = Log dist 01 hb (MPI)                                                                       |    |                          |    |                                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              |                                         |                             |  |
| Dist 01→ HB (MPI)                                                                                 |    |                          |    |                                        | dE -<br>dN -                                                                                                                                                                              |              | Bearing =<br>Az - 3200                                                                                                                                                                            |                          | dE +<br>dN -                 |                                         | Bearing =<br>3200 - Az      |  |
| Log of dE, dN, and dH                                                                             |    |                          |    |                                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              |                                         |                             |  |
| Log dist<br>01→ HB (MPI)                                                                          |    |                          |    | Log dist<br>01→ HB (MPI)               |                                                                                                                                                                                           |              |                                                                                                                                                                                                   | Log dist<br>01→ HB (MPI) |                              |                                         |                             |  |
| Log sin<br>Bearing                                                                                |    |                          |    | Log cos<br>Bearing                     |                                                                                                                                                                                           |              |                                                                                                                                                                                                   | Log Tan<br>Vert →        |                              |                                         |                             |  |
| Sum =<br>Log dE                                                                                   |    |                          |    | Sum =<br>Log dN                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   | Sum =<br>Log dH          |                              |                                         |                             |  |
| Coordinates of 01                                                                                 |    |                          | E  | N                                      |                                                                                                                                                                                           | H            |                                                                                                                                                                                                   | +<br>- dE                |                              |                                         | +<br>- dN                   |  |
| Location of HB (MPI)                                                                              |    |                          | E  | N                                      |                                                                                                                                                                                           | H            |                                                                                                                                                                                                   | +<br>- dE                |                              |                                         | +<br>- dN                   |  |
| COMPUTATION OF GFT SETTING                                                                        |    |                          |    |                                        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              |                                         |                             |  |
| Alt HB (MPI)                                                                                      |    | QE fired                 |    | Chart data to HB (MPI) location        |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              | Df corr                                 |                             |  |
| - Alt Btry                                                                                        |    | - Site<br>VI/HB (MPI) Rg |    | Deflection _____ m    Range _____ M    |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              | GFT " _____ "    Charge _____ Lot _____ |                             |  |
| VI                                                                                                |    | Adj Elev                 |    | Range _____ Elevation _____ Time _____ |                                                                                                                                                                                           |              |                                                                                                                                                                                                   |                          |                              |                                         |                             |  |

# HIGH BURST (MEAN POINT OF IMPACT) REGISTRATION

(FM 6-40)

## COMPUTATION OF HB (MPI) LOCATION

|                             |        |                          |         |                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
|-----------------------------|--------|--------------------------|---------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------|
| Message to Observers        |        |                          |         |                                                                                                                          | Dis<br>01—02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Az 01 —02                   | 3200    |
|                             |        |                          |         |                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | +<br>-                      |         |
|                             |        |                          |         |                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Az 02 —01                   |         |
| Data Fired                  |        | Chg                      | Df      | FS                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | QE                          |         |
| Observer Readings           |        |                          |         | Interior Angles                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| Rd                          | 01     |                          | 02      | 01 on Left                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 01 on Right                 |         |
| No                          | Az     | VA                       | Az      |                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| 1                           |        |                          |         | Az 01→ HB (MPI)                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Az 02→ HB (MPI)             |         |
| 2                           |        |                          |         | + 6400 if necessary                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | + 6400 if necessary         |         |
| 3                           |        |                          |         | Total                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Total                       |         |
| 4                           |        |                          |         | -Az 02→ HB (MPI)                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -Az 01→ HB (MPI)            |         |
| 5                           |        |                          |         | APEX →                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | APEX →                      |         |
| 6                           |        |                          |         | Az 02→ HB (MPI)                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Az 02→ 01                   |         |
| 7                           |        |                          |         | + 6400 if necessary                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | + 6400 if necessary         |         |
| 8                           |        |                          |         | Total                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Total                       |         |
| 9                           |        |                          |         | -Az 02→ 01                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -Az 02→ HB (MPI)            |         |
| 10                          |        |                          |         | → at 02                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | → at 02                     |         |
|                             |        |                          |         | Total                                                                                                                    | <div style="display: flex; justify-content: space-around;"> <div style="text-align: left;">                     Bearing =<br/> <u>6400 - Az</u><br/>                     dE -<br/>                     dN +                 </div> <div style="text-align: center;"> <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;">IV<br/>III</div> <div style="text-align: center;">I<br/>II</div> </div> </div> <div style="text-align: right;">                     Bearing = Az<br/>                     dE +<br/>                     dN +                 </div> </div> | Az 01→ HB (MPI)→<br>Bearing |         |
|                             |        |                          | Average |                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| Distance 01 HB (MPI)        |        |                          |         |                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| Log base 01→ 02             |        |                          |         |                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| + log sin → at 02           |        |                          |         |                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| Sum                         |        |                          |         |                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| - Log sin Apex Angle        |        |                          |         |                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| diff = Log dist 01 hb (MPI) |        |                          |         | dE -<br>dN -                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | dE +<br>dN -                |         |
| Dist 01→ HB (MPI)           |        |                          |         | Bearing =<br>Az - 3200                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Bearing =<br>3200 - Az      |         |
| Log of dE, dN, and dH       |        |                          |         |                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| Log dist 01→ HB (MPI)       |        |                          |         | Log dist 01→ HB (MPI)                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| Log sin Bearing             |        |                          |         | Log cos Bearing                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| Sum =<br>Log dE             |        |                          |         | Sum =<br>Log dN                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| Coordinates of 01           |        | E                        |         | N                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | H                           |         |
|                             |        | +<br>- dE                |         | +<br>- dN                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | +<br>- dH                   |         |
| Location of HB (MPI)        |        | E                        |         | N                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | H                           |         |
| COMPUTATION OF GFT SETTING  |        |                          |         |                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| Alt HB (MPI)                |        | QE fired                 |         | Chart data to HB (MPI) location                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             | Df corr |
| - Alt Btry                  |        | - Site<br>VI/HB (MPI) Rg |         | Deflection _____ m    Range _____ M<br>GFT " _____ "    Charge _____ Lot _____<br>Range _____ Elevation _____ Time _____ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |
| VI                          | +<br>- | Adj Elev                 |         |                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |         |