FIELD RECORD AND COMPUTATIONS - TELLUROMETER

For use of this form, see TM 5-232; the proponent agency is TRADOC.

BLOCK I - STATION DATA

STATION	HEIGHT METERS	INST. NO.	OPERATOR	WEATHER:
MASTER:	1			**RECORDER:**
REMOTE:	2			**APPROX. DIS.: MILES** **METERS**

3	HEIGHT DIFF: (1) & (2)	4	SUM OF HEIGHTS (1) + (2)	5	MEAN HEIGHT (4) ÷ (2)

BLOCK II - INITIAL COARSE READINGS

A+		A+		A+		A+	
B		C		D		A−	
DIFF		DIFF		DIFF		DIFF	⟋ 2

COMPARE WITH A+

BLOCK IV - FINAL COARSE READING

A+		A+		A+		A+	
B		C		D		A−	
DIFF		DIFF		DIFF		DIFF	⟋ 2

COMPARE WITH A+

BLOCK III - FINE READINGS

SET	REMOTE DIAL	A	FORWARD	REVERSE	MEAN DIFF
1		+			
		−			
		DIFF			
2		+			
		−			
		DIFF			
3		+			
		−			
		DIFF			
4		+			
		−			
		DIFF			

SUM MEAN DIFF	
DIVIDE BY NUMBER OF SETS TIMES 2	
MEAN FINE READING (COMPARE WITH A+)	

BLOCK V - TRANSIT TIME (III, IV & X)

APPROX DIS MILES (X)		0	0	0	0	0	0	0
FINAL } A +, B DIFF				0	0	0	0	
COARSE } A +, C DIFF					0	0	0	0
READING) A +, D DIFF						0	0	0
MEAN FINE READING III								
BRING DOWN UNRESOLVED TRANSIT TIME								
RESOLVED TRANSIT TIME								

BLOCK VI - METER READINGS

		MASTER		REMOTE
AVC				
REGULATOR				
MODULATION	A		A	
	B		B	
LEVELS	C		C	
	D		D	

BLOCK VII - SLOPE DISTANCE, METERS

1	LOG CORRECTED TRANSIT TIME (V)			
2	LOG 1/2 V/N METERS	. 9	175	6509
3	LOG SLOPE DISTANCE METERS (1) + (2)			

BLOCK VIII - VERTICAL ANGLE

SLOPE DISTANCE (METERS) / VERTICAL ANGLE / HORIZONTAL DISTANCE (METERS) / DIFFERENCE IN HEIGHT (METERS)

1	DIFFERENCE HEIGHT METERS		
2	LOG (I)		
3	LOG SLOPE DISTANCE METERS (VII)		
4	(2) − (3) LOG SIN VERT ANGLE		
5	VERTICAL ANGLE EQUAL TO LOG SIN (4)	° ′ ″	

BLOCK IX - SEA LEVEL DISTANCE METERS

1	LOG SLOPE DISTANCE METERS (VII)			
2	LOG COS VERTICAL ANGLE (VIII)			
3	(1) + (2) LOG HORIZONTAL DISTANCE METERS			
4	LOG SEA LEVEL COEFFICIENT (XI)			
5	(3) + (4) LOG SEA LEVEL DISTANCE METERS			
6	SEA LEVEL DISTANCE METERS			

BLOCK X - FIRST FIGURE (TRANSIT TIME)

APPROX DISTANCE MILES (I)	FIRST FIGURE
0–10	0
10–20	1
20–30	2
30–40	3

COMPUTER	CHECKER	SHEET	OF	SHEETS
NOTEBOOK REFERENCE	**AREA**		**DATE**	

BLOCK XI - SEA LEVEL COEFFICIENT

The height used to determine log sea level coefficient is height of known station to the nearest 100 meters. Mean height should be used if the heights of both stations are known.

HEIGHT METERS	LOG SEA LEVEL COEFFICIENT
-100	0.0000068
-50	0.0000034
00	0.0000000
50	9.9999966
100	9.9999931
200	9.9999863
300	9.9999795
400	9.9999727
500	9.9999659
600	9.9999590
700	9.9999522
800	9.9999453
900	9.9999386
1000	9.9999317
1100	9.9999249
1200	9.9999181
1300	9.9999112
1400	9.9999044
1500	9.9998976
1600	9.9998908
1700	9.9998839
1800	9.9998770
1900	9.9998703
2000	9.9998634
2100	9.9998566
2200	9.9998498
2300	9.9998429
2400	9.9998361
2500	9.9998292
2600	9.9998225
2700	9.9998156
2800	9.9998088
2900	9.9998020
3000	9.9997951
3100	9.9997883
3200	9.9997815
3300	9.9997747
3400	9.9997678
3500	9.9997609
3600	9.9997542

NOTE:

The above values were computed for a northing of 3 200 000 and azimuth of 45 degrees and can be used anywhere on the UTM grid without causing an error greater than 1:250,000.

GIVEN:
Height of station - METERS.

FIELD DATA:
a. Approximate distance in both miles and meters.
b. Corrected transit time.
c. Height if not available.
d. Vertical angle *(compute if not possible to measure)*.

GUIDE:
a. BLOCKS II, III & IV - If A+ is less than B, C or A-, add 100 to A+ before determining the difference.
b. BLOCKS II, III & IV - "Compare with A+" means that this figure must compare ± 4 MUS with A+ in the final coarse reading. If necessary add 50.
c. BLOCK VIII *(5)* - Measured or computed vertical angle.

LIMITATIONS:
This form may be used for obtaining artillery survey accuracies.

RESULTS:
A sea level distance is determined which should be treated the same as a taped distance.