

LAYING BY THE HOWITZER BACKLAY METHOD

USING THE M2 COMPASS, ALIGN TWO STAKES ON THE AZIMUTH OF FIRE AND POSITION ADJUSTING PIECE PARALLEL TO THE STAKES.

SEQUENCE	MEMORY AID	STEPS
Do this FIRST	P antel	[a] Set up the aiming circle where it can be seen by howitzers and level it.
Do this SECOND	L	[b] After the adjusting piece fires the first round, command the gunner to refer to the aiming circle.
Do this THIRD	A y's	[c] With the Upper Motion , place the referred deflection on the aiming circle.
Do this FOURTH	U	[d] With the Lower Motion , sight on the panoramic telescope of the adjusting piece.
Do this LAST	Y ou	[e] With the Upper Motion , lay the remainder of the battery.

MEASURING

THESE PROCEDURES ARE PERFORMED WITH THE AIMING CIRCLE AND THE HOWITZER PANTEL.

1. MEASURE THE AZIMUTH (WITH SURVEY) YOU MUST USE THE DF GIVEN TO YOU BY THE HOWITZER.

SEQUENCE	MEMORY AID	STEPS
Do this FIRST	U	[a] Place the DF read to you by the howitzer on the Upper Motion of your aiming circle.
Do this SECOND	L	[b] Sight on the howitzer pantel with the Lower Motion .
Do this THIRD	U	[c] Sight on the EOL with the Upper Motion .
To find AOF	(SOL)	[d] MATH STEP: OL-OA(on AC)=AOF
Do this LAST		[e] Report the measured azimuth to the FDC.

2. MEASURE THE AZIMUTH (WITHOUT SURVEY)

YOU MUST USE THE DF GIVEN TO YOU BY THE HOWITZER.

SEQUENCE	MEMORY AID	STEPS
Do this FIRST	U	[a] Place the DF read to you by the howitzer on the Upper Motion of your aiming circle.
Do this SECOND	L	[b] Site on the howitzer pantel w/the Lower Motion .
Do this THIRD	U	[c] Center magnetic needle with the Upper Motion .
Do this FOURTH	(SID)	[d] MATH STEP: DC-IR(on AC)=MA
Do this LAST	Subtract Instrument reading from the Declination Constant	[e] Report the measured Azimuth to the FDC.

REPORTING

1. PHYSICALLY GO TO THE HOWITZER.
2. CHECK TO ENSURE THAT THE BUBBLES ON THE SIGHT MOUNT ARE LEVEL. IF NOT, LEVEL THEM WITH LEVELING KNOBS.
3. CHECK THE SIGHT PICTURE. IF INCORRECT.
4. CORRECT IT BY MOVING THE HEAD OF THE PANTEL ONLY. DO NOT TRAVERSE THE TUBE.
5. READ AND REPORT THE DF ON THE PANTEL. **"CORRECT DF XXXX"**

VERIFYING THE LAY OF THE PLATOON

After laying of the platoon has taken place the platoon leader will verify the lay by use of another M2A2 aiming circle referred to as the safety circle. To safe the platoon, the platoon leader or designated Safety Officer, will perform the following steps:

1. Set up and orient an M2A2 aiming (safety) circle using a method other than that used by the lay circle. This safety circle must be located where it can be seen by all howitzers and should not be any closer than 10 meters to the lay circle. Care must also be taken not to position the safety circle along the line of sight between a howitzer and the lay circle.
2. After the safety circle is established, command the instrument operator on the lay circle to measure a deflection to the safety circle. If the instrument operator on the lay circle measures a deflection greater than 3200 mils, then he should read red numbers to the safety circle. This procedure serves to verify that the lay circle was oriented properly when it laid the platoon. The tolerance allowed between the deflections of the lay circle and the safety circle can be found in the Local Range Regulations for the firing range you are using.
3. If the lay circle and the safety circle deflections are within tolerance, as specified by local Range Regulations, the instrument operator on the safety circle will, place the deflection read by the lay circle on the Upper Motion, the instrument operator will sight back in on the lay circle. This serves to align the 0-3200 line of the safety circle parallel to the 0-3200 line of the lay circle and howitzers.

NOTE: When an aiming circle is used to orient another aiming circle for direction, the readings between the two circles will be 3200 mils apart because both circles measure horizontal clockwise angles from the line of fire. Confusion can be prevented if it is remembered that, **"if you see red, read red,"** Safety Circle command, "Lay Circle Refer Aiming Point this Instrument" Lay circle will reply with, "Aiming Point identified, Deflection XXXX." If the deflection on the safety circle and the aiming circle are within Local Range Regulations. Set the announced deflection on the safety circle red scale and using the lower motion sight in on the aiming circle.

4. The instrument operator on the safety circle will command: **"Platoon Refer, Aiming Point This Instrument."** All gunners will refer a deflection to the safety circle. If the deflection referred by a howitzer is within that tolerance given in Local Range Regulations, then the operator on the safety circle will announce that the howitzer is safe. Once all howitzers are safe the operator will announce: **"The Platoon is Safe."**

ZEROING THE LAY CIRCLE AND THE SAFETY CIRCLE

SEQUENCE	MEMORY AID	STEPS
Do this FIRST	U	[a] Place announced DF on Upper Motion . (Subtract or add 3200 mil to the deflection from the lay circle to the safety circle). If you see Red, read Red.
Do this SECOND	L	[b] Sight on lay circle with Lower Motion .
Do this THIRD	U	[c] Sight on pantel of weapon with Upper Motion .