

## **A Plotting Board for the 82 mm Mortar for the Afghan National Army**

By; Shadow Gulf 16

In late June 2007, as a member of the OMLT on Roto 3, I was handed the reins as the mortar mentor with 2<sup>nd</sup> Kandak, 1<sup>st</sup> Brigade, 205<sup>th</sup> Corps of the Afghan National Army. Having spent the previous 3 months as the FOO for the Kandak I had worked with the Weapons Company on several occasions and I knew most of the troops by name anyway.

It was then decided by the Kandak Commander that he would like his mortar platoon to fire in support of the Kandak while on operations. Ours is not to question why... As the newly minted mortar mentor I was volunteered to come up with a technique that would allow the ANA to do just that.

While the mortar crews could engage targets within direct observation of the mortar position it became readily apparent that the mortars had no capability to conduct missions via indirect fire. The troops had never received training and the survey equipment and firing computers with which each Weapons Kandak is supposed to be equipped was no where to be found. We didn't even have a proper protractor. On the plus side; we did have an abundance of both HE and Illumination as well as all the enthusiasm a low protein diet could muster.

Given the level of education of the average ANA soldier the method had to be simple. To suit the needs of the ANA the final result needed to be very visual and any math had to be kept to an absolute minimum (read "no math"). As a Gunner; MAPS is usually the answer to any problem – usually.

The process began with a serious sit down with the ANA CSM, a very clever man who lucky for me spoke some English. If he couldn't help me at least I'd get a decent cup of chai out of the deal. After many hours of trial and error the end result that the ANA went live with in July and August of 2007, was a very simple plotting board. A version of MAPS that I like to call SPAM (Simple Plotter, Afghan Mortar).

The plotting board was literally a piece of white paper, scaled to 1:25 000 with a hand drawn table along the top of the paper for recording the base-plate location, the bearing to the aiming point, and the data required to fire the mission.

The paper was talced to recycled MRE box cardboard, mostly because it's crazy strong. The board measured roughly 50 cm square. Permanent Staedlers were used to mark on the board and hand sanitizer, it seemed to be everywhere, was used to clean off the board after every mission.



To make things more difficult, the sight on the 82mm mortar is graduated to 6000 gon, the Russian convention for most sighted weapons systems. And since the ANA had no compasses or protractors using this 6000 gon scale an additional “angle” wheel was added to the home-made Protractor - GPO mils. The angle wheel was graduated to 6000 gon, marked every 100 gon and labeled every 500 gon. The angle wheel also had an index arrow at 6000/0000 gon.

As a result of the very basic equipment, the drill to set up the plotting board is equally simple.

The mortar base-plate location is plotted on the board and the grid lines are labeled accordingly. The grid was determined using DAGR and double-checked with a map.

The Protractor - GPO mils; much like our template, is taped in location using the romers for placement.

A compass shot is taken to the platoon aiming point and the index on the angle wheel is pointed at the bearing taken and taped in place. The aiming point may change from day to night. During the day we normally used mountain peaks, at night we switched to prominent lights in a nearby village (and prayed for the power to stay on).

Engagement of targets was quick and dirty. Given the short ranges to targets, accuracy was not a major concern. While the ANA are not huge fans of the concept of adjustment, they did come around quite quickly when they realized that using adjustment guaranteed that they would hit the target every time

Data is recorded in the spaces provided on the plotting board and sent in that sequence, either during the production of data or once all data is produced.

Record the target grid and plot the target on the board. Record and relay to the mortars the ammunition to be used.

Lay the range arm on the target. From the range, determine the Fuse, Increment (Charge) and Elevation. Each crate of ammo came with firing tables – the accuracy of which was questionable but as previously stated close was good enough for the first round.

