
Gun Array Drop Out

A further advantage of the limited cluster configuration using a single gun type is the effect of gun dropouts on array performance. The TriCluster™ has a very limited number of dropout configurations. Most simple drop out configurations additionally produce a far field signature which would be considered acceptable by most standard criteria. The removal of a single gun (regardless of which gun) produces only 2 different drop out configurations (assuming all guns are fired at the same time).

Basic array configuration is:

- Two 2 gun clusters; single 4 gun cluster.

ONLY Basic drop out configurations are:

- Two 2 gun clusters, single 3 gun cluster.
- Single gun; 4 gun cluster; 2 gun cluster.

With most air gun arrays, the use of many gun sizes and different geometry means that there may be many different drop out configurations. These may occasionally number in the thousands for a particular array.

Extensive dropout modeling of the TriCluster™ array has been carried out and results are available through SeaScan.

Array Modeling

In order to demonstrate the advantage of the symmetry of the TriCluster™ array, signatures, power and phase spectra were generated for both TriCluster™ and a typical linear array. Far-field wavelets were generated for vertically traveling energy as well as for energy traveling at 30° from vertical at azimuths of 0° and 180° for the array centerline to illustrate the forward- and rearward-traveling wavelets.

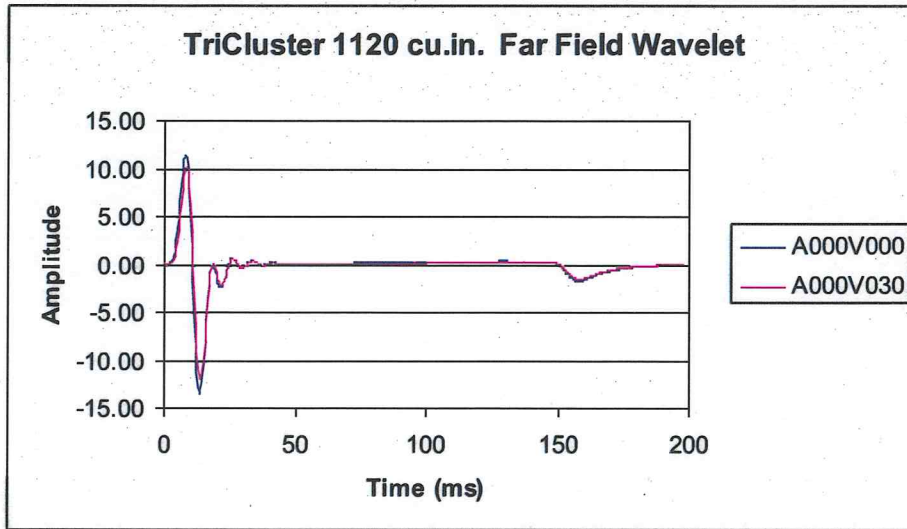


Figure 7 - TriCluster 1120 Far-Field Signatures

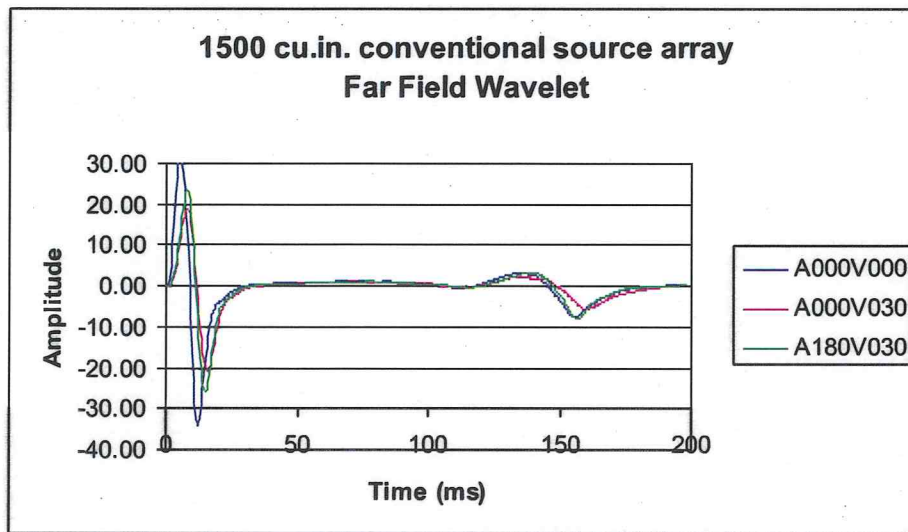


Figure 8 - 1500 Linear Far-Field Signatures

Figure 7 shows two far field signatures for the TriCluster source and Figure 8 shows three far-field signatures for a conventional array. The legend denotes the parameters for each array as follows: A000V000 shows the wavelet traveling vertically downward (0° from Vertical), A000V030 is the forward-traveling (Azimuth 0°) wavelet at 30° from Vertical, and A180V030 is the rearward-traveling (Azimuth 180°) wavelet at 30° from Vertical.