

WHITE'S DISCOVER jr.

HOW GROUND EXCLUSION BALANCE WORKS

The Ground Exclusion Balance works because each kind of "target" actually has two effects on the field. The field produced by a conducting target weakens the transmitted field, and also delays the detected unbalance by a time that is characteristic of the particular target (whether it is made of nickel, silver, gold, etc., as well as being influenced by its size and shape). The field produced by an artificial magnetic material, such as a bottle cap or nail, strengthens the transmitted field, and also makes the field "seen" by the receive coil earlier than the regular field. It advances the time of the detected field.

The effect produced by magnetite bearing ground differs from either of these. This produces quite a strong unbalanced field, which gets bigger as the loop assembly is lowered closer to the ground. This is what, in earlier types of instruments, completely swamps all but the biggest targets you want to measure, so they pass, undetected.

The Ground Exclusion Balance does its work, because the unbalanced field produced by a mass of ground containing magnetite has unique timing characteristics. It produces an unbalanced pickup very close in time to that of the transmitted field.

Because of this closeness in time, the unique, patented circuitry of the Ground Exclusion Balance instrument can tune it out, so the only field detected is one that

differs from this precise timing. If the detected field is later in its timing, the object is conducting; if it is earlier in timing, the material is magnetic. An important feature of this method is the search frequency chosen, so as to achieve maximum penetration in the search, along with adequate exclusion capacity.

Individual areas where ground contains a form of magnetite have slightly differing characteristics, which the instrument can adjust out so as to completely exclude the local ground. In a locality, concentration of magnetite may also vary, but the instrument ignores such variations in the same way that it ignores variation in height at which you hold the loop — **completely!** Such variations do not call for adjustment.

THE G.E.B. MODELS HAVE A INCREASED DEPTH OF DETECTION IN HIGHLY MINERALIZED SOIL OF APPROXIMATELY 200% OVER CONVENTIONAL BFO AND TR MODELS.

