



EFFECTS OF PLACEMENT ERRORS ON PERFORMANCE OF VLF METAL DETECTOR HEADS

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Abstract- Metal-detector performance depends heavily on the sensor head. Errors in coil placement within the head can lead to degradation in detector performance. Electromagnetic modelling of typical very-low-frequency detector heads shows the effect of coil placement errors on detector sensitivity. Provided the bucking coil 'tracks' the receive coil, required error corrections can remain small. A correctly-aligned head could detect a gold ring target at a range of about 12 cm.

Index terms: metal detector; sensor head modelling; metal detector sensitivity