

Capo, Kincardineshire: investigation of a Second World War bomb crater

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ABSTRACT

Discusses the problems of distinguishing between bomb crater sites and archaeological sites on aerial photographs.

INTRODUCTION

An annular cropmark located at NO 628 676 (illus 1), noted following aerial reconnaissance by Aberdeen Archaeological Surveys, was interpreted as a hut circle (DES 1981, 14). In 1983 the cropmark was threatened by an extension to the same sand and gravel quarry which had previously threatened Dalladies Iron Age settlement (Watkins 1980) and Dalladies Long Barrow (Piggott 1972). Excavation by the then CEU (SDD–HMB) demonstrated that it was a bomb crater. RAF Edzell, once a Second World War airfield, lies some 800 m to the north (illus 2).

EXCAVATION

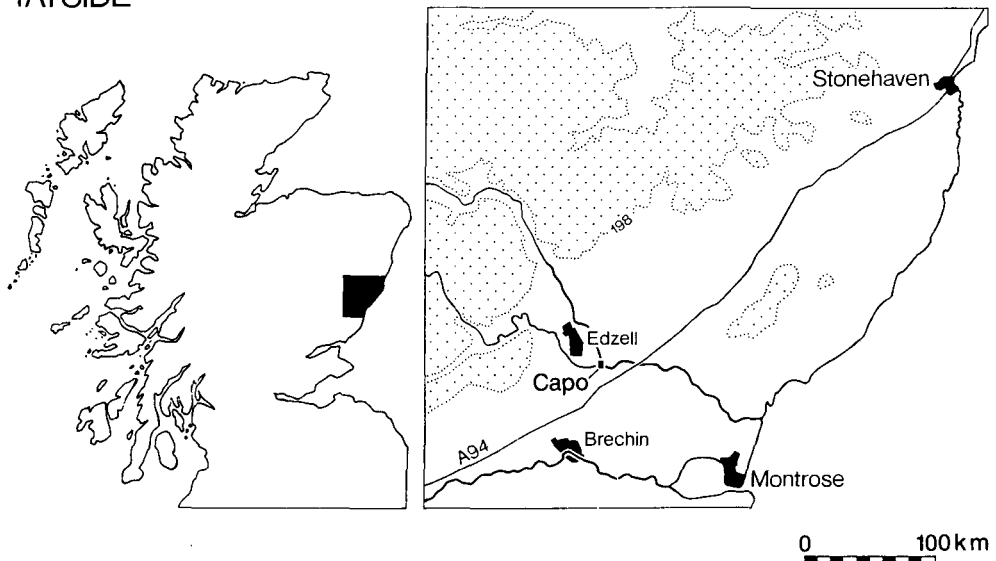
In 1983 an excavation area, 20 m square, was opened with the circular cropmark feature at its centre. The ploughed topsoil, which was 0.3 m deep, was removed by machine to the top of a transitional horizon consisting of gravel with some loam, which lay between the ploughsoil and undisturbed subsoil. In addition, two furrows belonging to a rig and furrow cultivation system of unknown antiquity, were revealed (illus 3).

At the surface, the annular feature was 8 m in diameter, with sharply defined edges. Outside the feature, and immediately adjacent to the edge, the transitional horizon between the topsoil and subsoil had been removed by ploughing leaving a band of undisturbed subsoil (clean gravel) 0.4–0.7 m wide. Within this band there were numerous stress cracks filled with ploughsoil which ran concentrically with the edge of the feature. A band of dark loam 0.4–0.9 m wide was located around the inner edge of the feature. It seems likely that this was formed from ploughsoil following differential settling and consolidation of the underlying backfill. The surface fill of the remaining central portion of the feature was mixed loam and gravel.

A trench was dug across the middle of the crater (illus 3 section a–b). This revealed that the sides sloped steeply to a depth of 1.5 m and then shelved gently to a roughly central depression with maximum depth of 2 m. The feature was filled with deposits of loam, gravel or a mixture of the two, with loam more predominant towards the bottom. The fills were still fairly loosely packed and all boundaries between layers were very abrupt. It was obvious that the crater had been deliberately filled in soon after its creation.

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CAPO
ANGUS
TAYSIDE

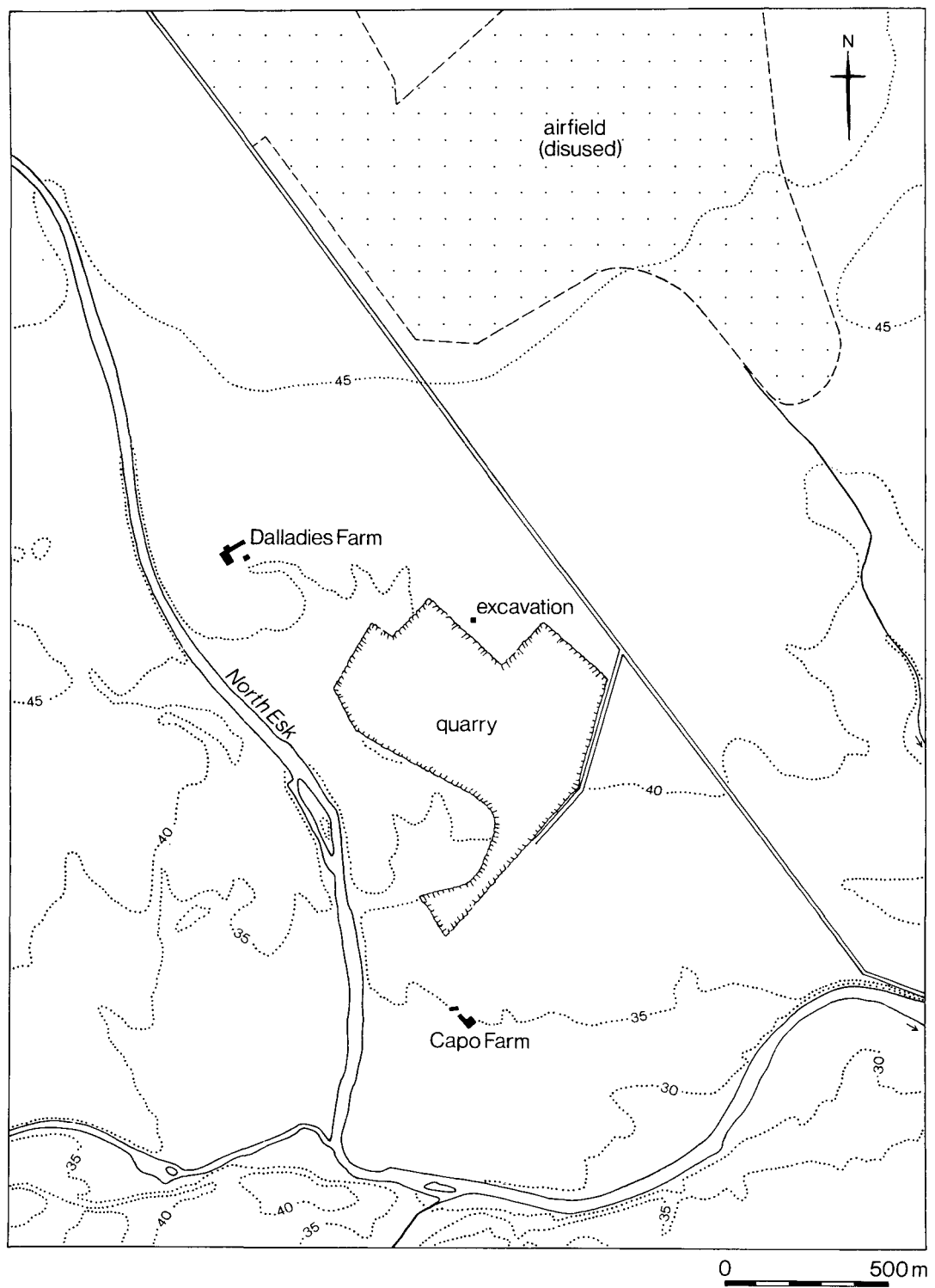


ILLUS 1 Location plan

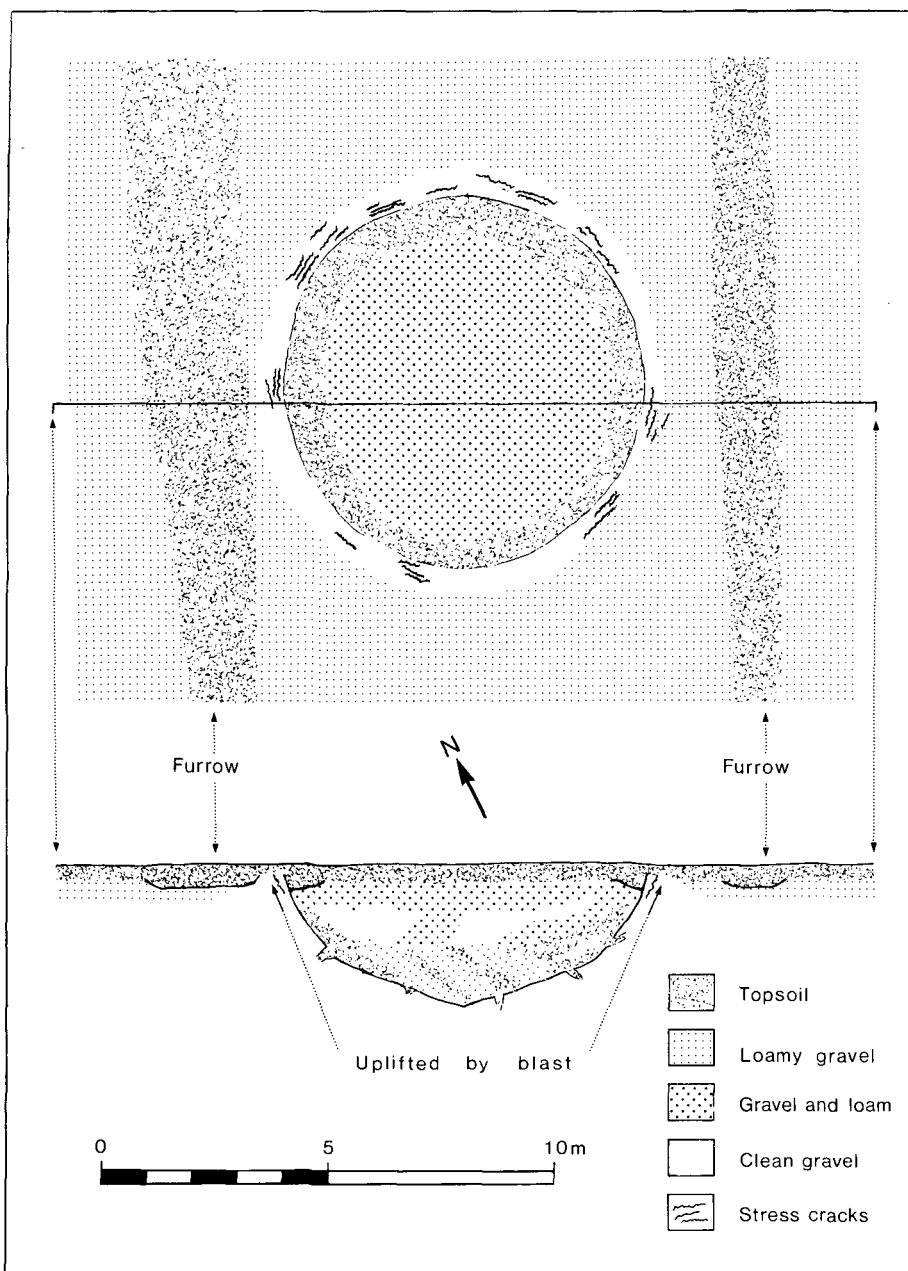
There were several loam-filled tunnels running outwards into the subsoil from the sides and bottom. It seems probable that these were created by shrapnel from the blast. Scattered through the fills were several rusted fragments of bomb casing as well as numerous sheep bones and parts of a wooden farm gate.

DISCUSSION

The importance of the bomb crater at Capo from an archaeological point of view is that it produced a cropmark which convincingly resembled a ring-ditch house. The cropmark at Capo (illus 4), formed by shadow rather than tone, was created mainly by the shallow ring of topsoil within the edge. The cultivation furrows (also evident as cropmarks) were a mere 0.1–0.15 m deep. The slight difference in tone between the area inside the topsoil ring and large areas of the surrounding field was caused possibly by similarities in soil type between the upper fills of the crater and the upper subsoil horizon in the vicinity. In other craters, following settling of the fill, the right conditions could be created for the formation of a cropmark similar to a house scoop with a sunken floor, especially if the uppermost backfill was topsoil. The cropmark was accentuated by the reversed tone halo created around the crater by the uplifting of the subsoil (presumably by shock waves from the blast) and its subsequent truncation by ploughing. This is a characteristic likely to be present around all bomb craters but variations in the subsoil may produce an irregularly shaped halo. Sharpness of definition may be a characteristic of bomb craters, but very heavy plough truncation of genuine ring ditches, scoops or pits could produce the same effect. Many house sites occupy slight ridges and knolls (see Maxwell 1983, 30, fig 22) which, being relatively dry areas, show in lighter tone as haloes around the house on aerial photographs.

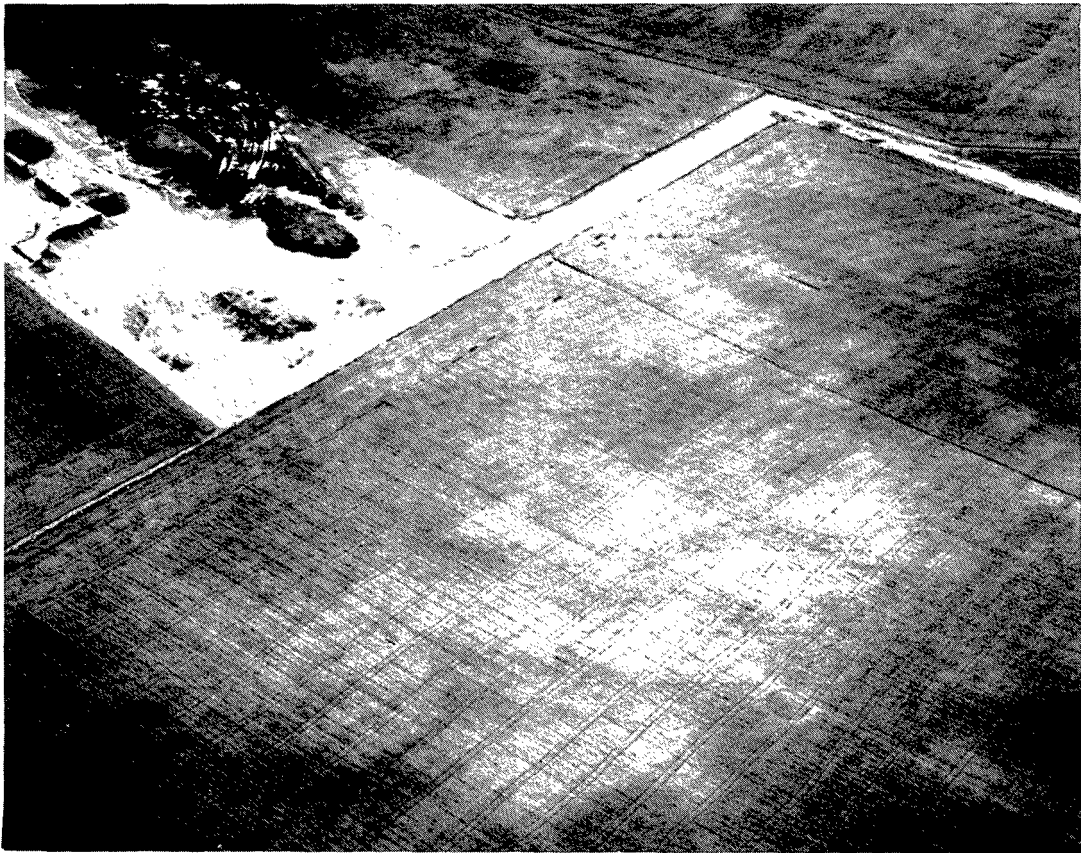


ILLUS 2 Area plan



ILLUS 3 Site plan and section

Bombs were often dropped in 'sticks' leaving a roughly linear configuration of craters often with only slightly varied spacing. In such cases identification may be easy but there are also linear configurations of ring-ditch and house scoop cropmarks, eg in the nearby Lunan Valley (G Barclay pers comm) and elsewhere (Macinnes 1983 and Maxwell 1983a, 253). The phenomenon of the reversed tone 'halo' created during the excavation of small pits has also been noted (Wilson 1982, 175). At Skateraw, Dunbar, excavation in 1980 of two cropmarks interpreted as sunken house floors with ring-ditches proved them to be 18th-century quarry pits. The 'outer rings' had been created by plough truncations of the fills (Triscott, forthcoming). On good agricultural land, bomb craters will have been backfilled but on marginal land this is less likely. A survey in the Lomond Hills undertaken by Andrew Barlow (pers comm) investigated a group of four 'house scoops' which proved to be bomb craters. These were shallow depressions with angular stones lying in the periphery. The latter presented the appearance of walling. Bombs hitting bedrock not too far below the surface are likely to leave shallow craters but the intensely angular nature of associated stone debris should aid identification. A crater such as this was observed beside the excavated blockhouse at Scatness, Shetland (J Barber, pers comm).



ILLUS 4 Cropmark at Capo

Unlike shells, which are likely to be confined to artillery ranges, bombs were often dropped indiscriminately for a variety of reasons, and can thus be found almost anywhere. Wilson (1982, 173) states that bomb craters in Britain 'seem surprisingly infrequent'; however, this may not necessarily be the case. Several have been identified in Scotland and Capo demonstrates that at least one has found its way into the archaeological monuments record.

ACKNOWLEDGEMENTS

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REFERENCES

- Macinnes, L 1983 *Later prehistoric and Romano-Settlement north and south of the Forth – a comparative survey*, unpublished PhD thesis, Newcastle University.
- Maxwell, G S 1983a 'Recent aerial survey in Scotland' in G S Maxwell (ed), *The Impact of Aerial Reconnaissance on Archaeology* Counc Brit Archaeol Res Rep, 49, 27–40.
- Maxwell, G S 1983b 'Roman settlement in Scotland', in Chapman, J C & Mytum, H C (eds), *Settlement in North Britain from 1000 BC to AD 1000*, Oxford, 233–61. (=BAR Brit Ser 118).
- Piggott, S 1972 'Excavation of the Dalladies long barrow, Fettercairn, Kincardineshire', *Proc Soc Antiq Scot*, 104 (1971–2), 23–47.
- Watkins, T 1980 'Excavation of an Iron Age open settlement at Dalladies, Kincardineshire', *Proc Soc Antiq Scot*, 110 (1980), 122–64.
- Wilson, D R 1982 *Air Photo Interpretation for Archaeologists*. London.

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