CAPTIONS FOR ILLUSTRATIONS

(Figures 2, 3 and 5 are by Alison Armstrong; Figures 1 and 4 and part of 5 are by Arnold Pacey)

Figure 1: Crucks in Craven (and its Lancashire margin)

A comparison of crucks from standing buildings (A, B and G) with some reconstructed examples (C-F). All drawings are to the same approximate scale. Locations are:

A, Stonyhurst, Lancs.; B, Hacking Hall, Lancs.; C, Small Banks, Addingham;
D, Park House, Eastby; E, Cross Green, Lothersdale;
F, Tithe Barn, Lothersdale; G, Drebley, Barden.

Figure 2: Park House, Eastby.

Roof truss over the housebody whose tie-beam and principals are formed from three cruck blades.

Figure 3: Stannery End, Mytholmroyd

Elevation of the party wall between cottages and the barn, as seen from inside the barn, showing where a cruck has been removed, and indicating different roof lines as the cottages and barn were alternately rebuilt.

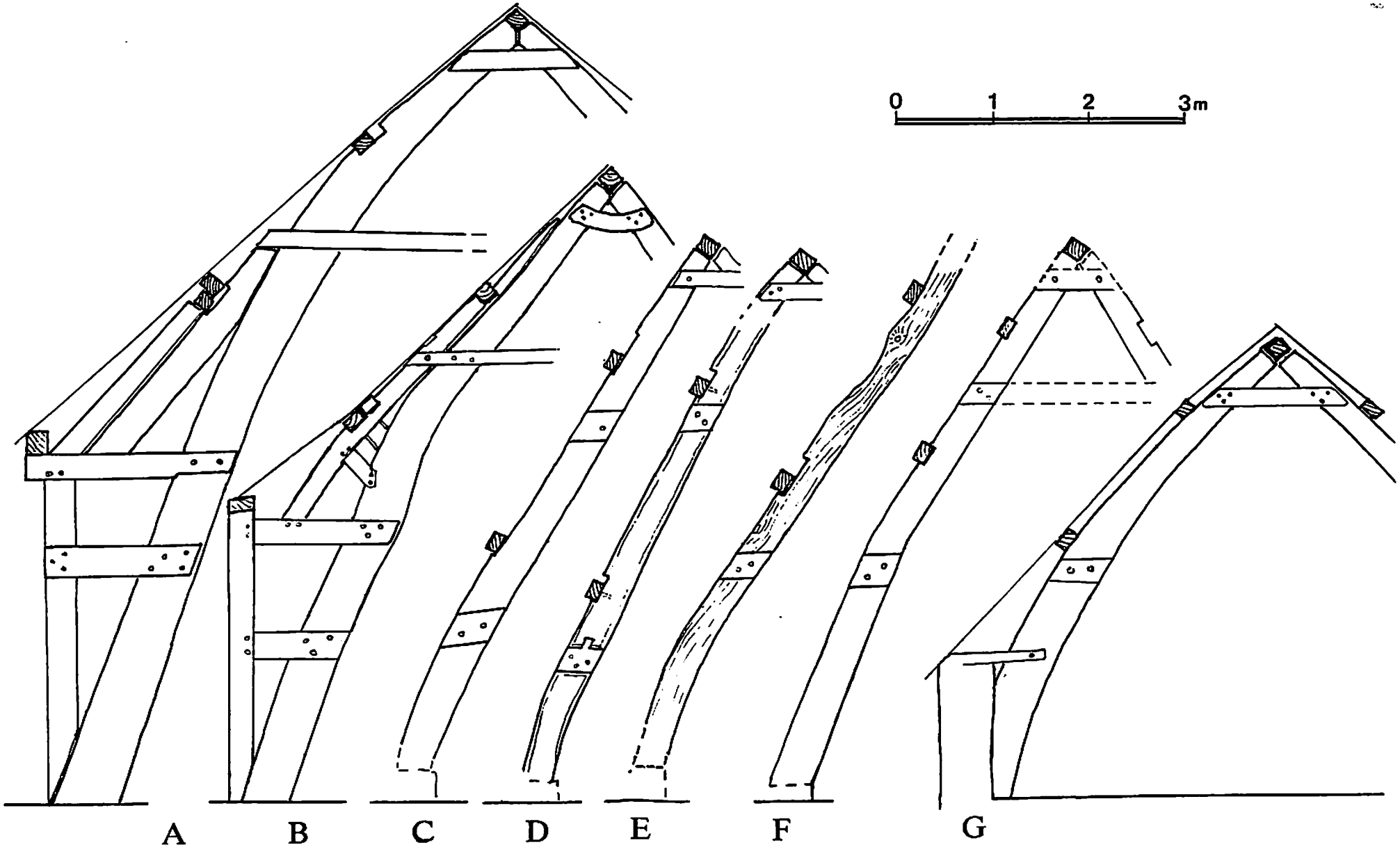
Figure 4: Crucks in Calderdale

Re-used timbers (A-D) compared with crucks in two standing buildings (E, F). Except for C and D, which were measured only roughly, the scale is the same for all drawings. Dashed lines indicate halvings on the reverse face of a cruck blade.

A, Stake Farm, near Mytholmroyd; B, Old Chamber, Spencer Lane, Erringden;
C, Marsh Hall Barn, Northowram; D, Great House Barn, Colden;
E, Bridge Inn, Ripponden; F, Shaw Head, Barkisland.

Figure 5: Cruck Purlins

A typical purlin (top), with h, the halving where it fits the back of the cruck blade, and w, the wind braces. Below is a purlin analysis diagram for timbers in a barn at Small Banks, Addingham, again marking halvings (h), and also g, the end of a purlin that was probably set in a gable wall, and s, where purlins have sawn-off ends.



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PARK HOUSE, EASTBY

TRUSS OVER HOUSE BODY
LOOKING WEST TO SHOW TIE BEAM DETAIL

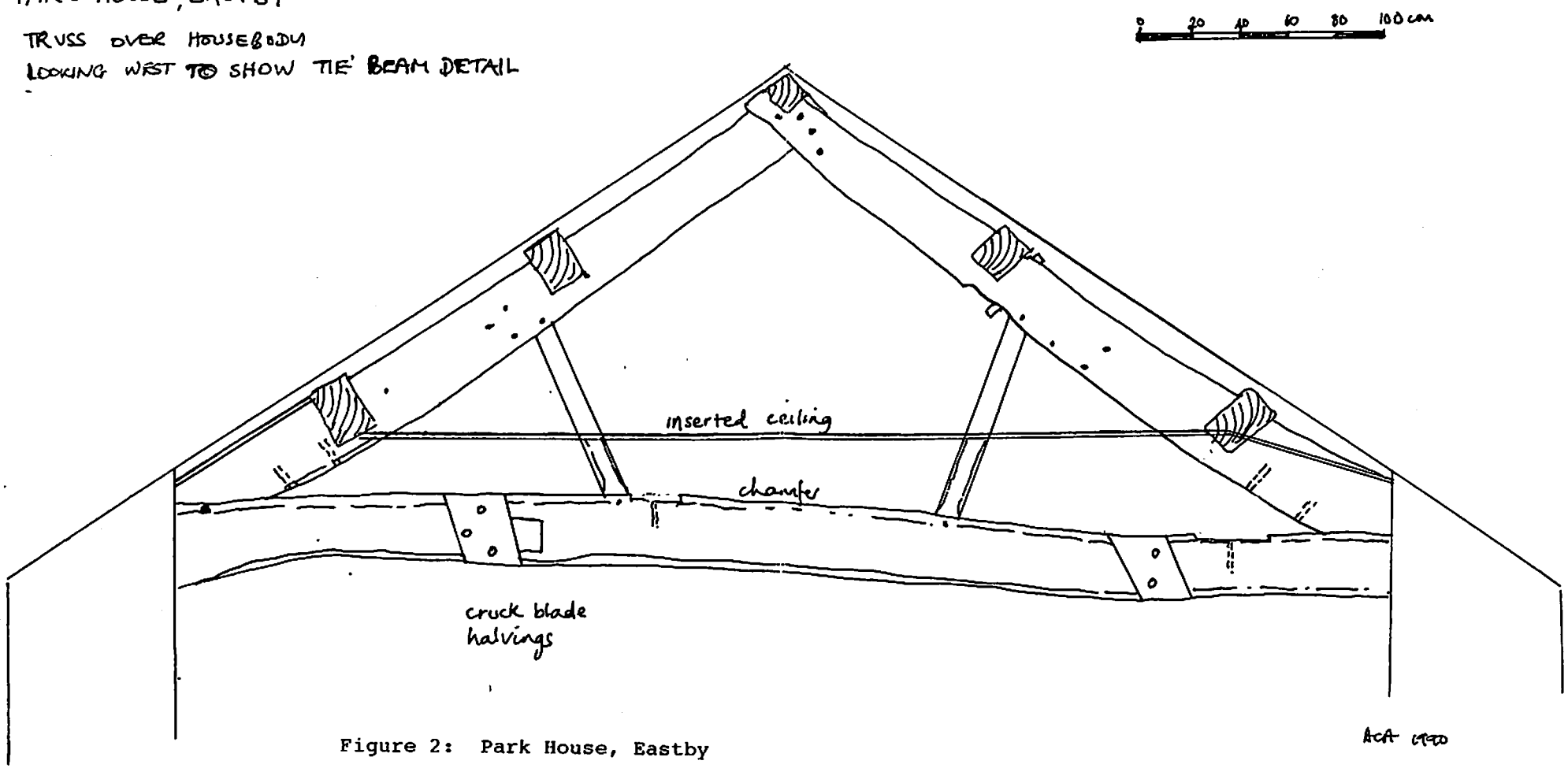
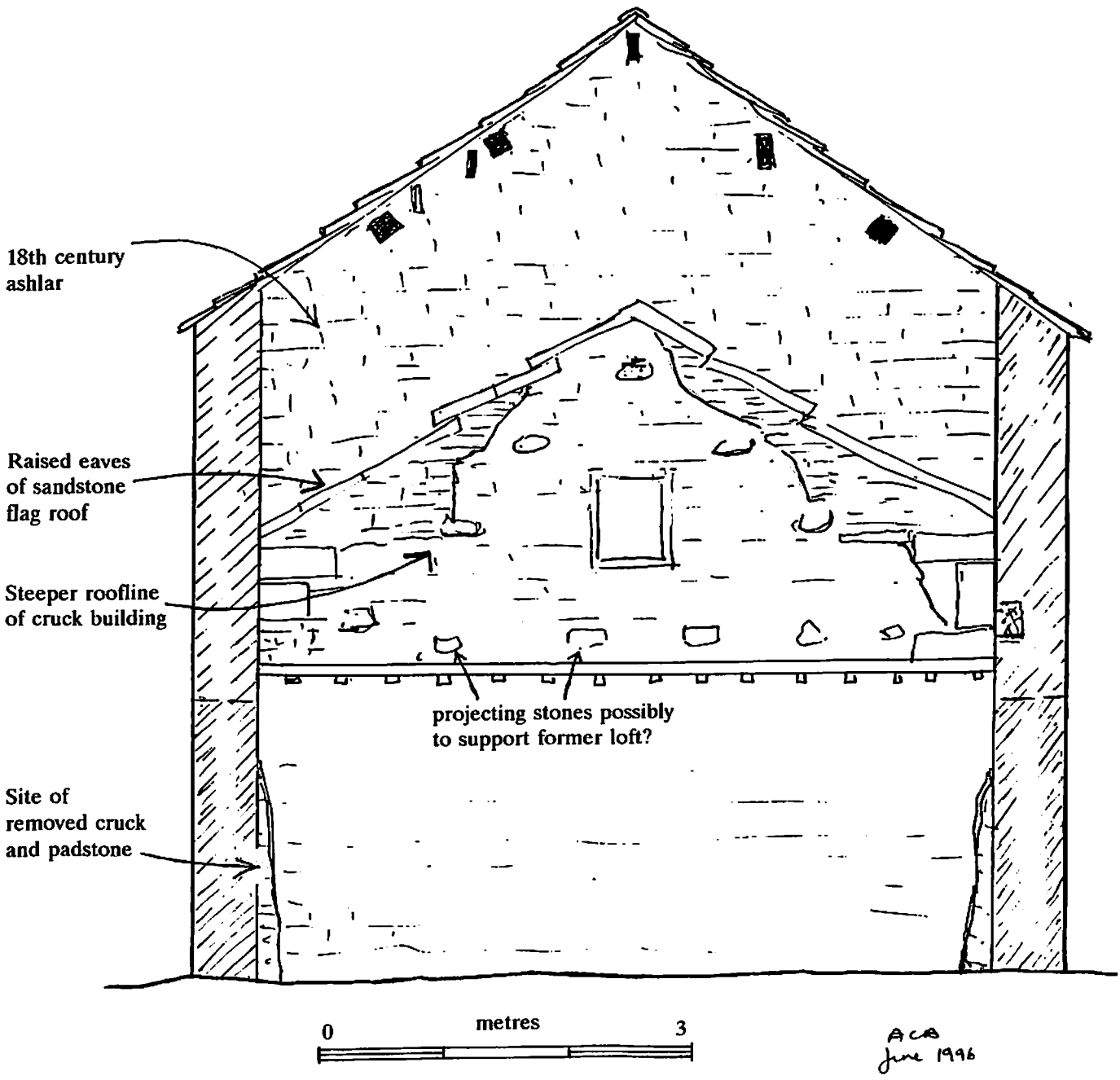


Figure 2: Park House, Eastby

Figure 3
Stannery End



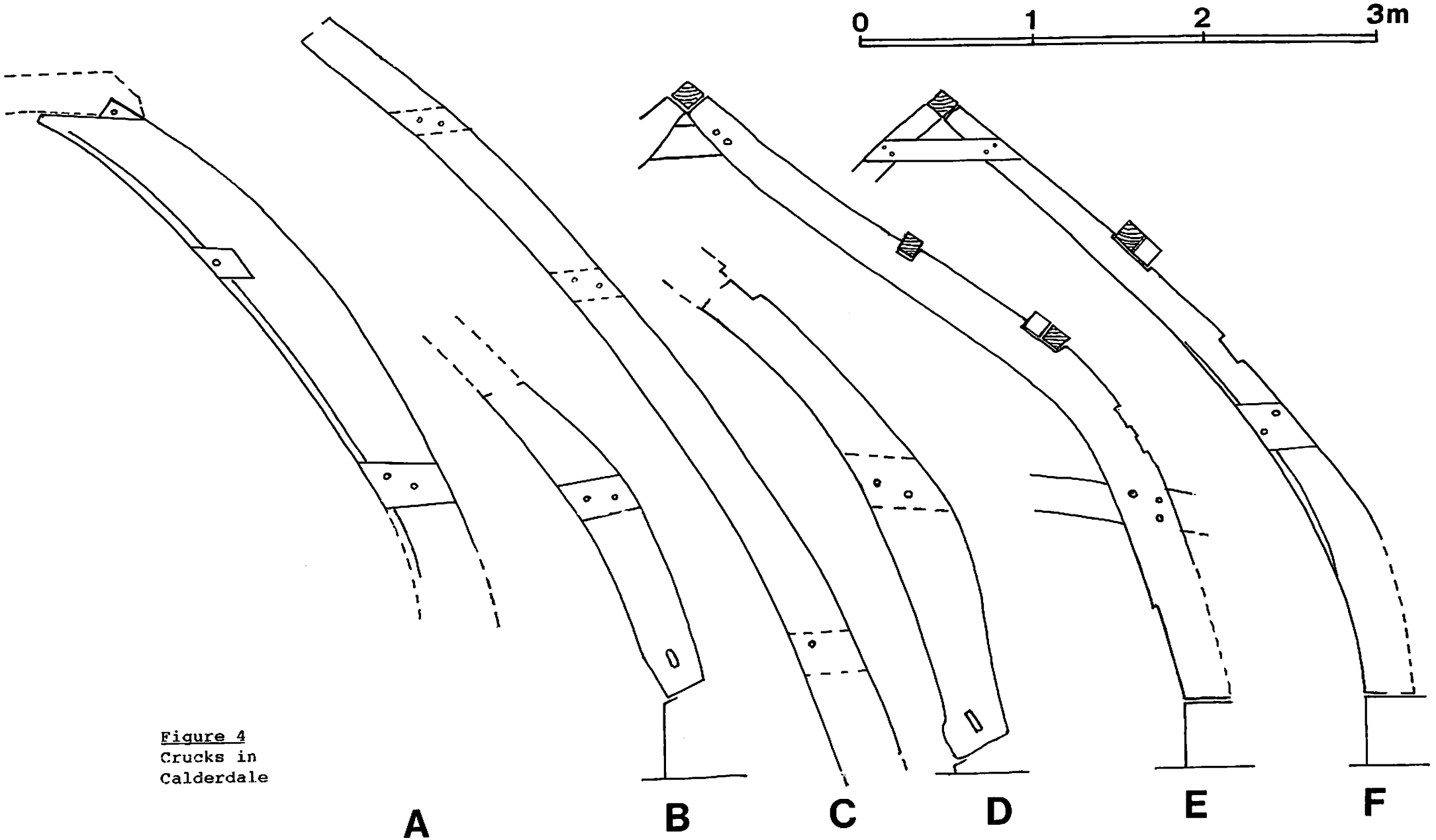
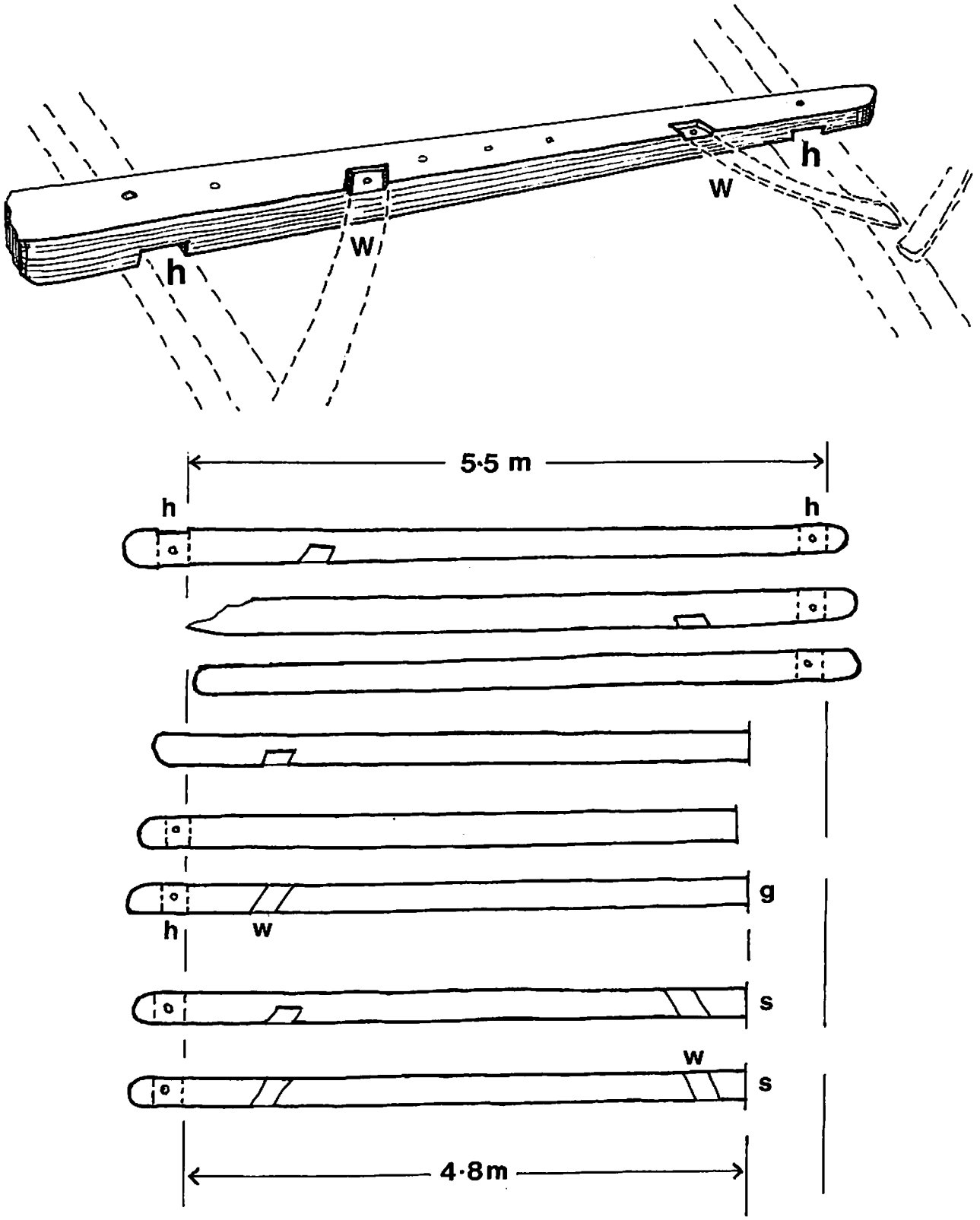


Figure 4
Crucks in
Calderdale

Figure 5



CRUCK BUILDINGS IN THE CENTRAL PENNINES

In October 1586, two men were appointed by the Lord of Skipton Castle to make a survey "both by measure and valuacon" of lands and houses at Cracoe. Nearly thirty years earlier, in 1559, a similar survey had been made of Silsden Moor, seven miles to the south, which like Cracoe, lies between the Aire and Wharfe valleys[1].

Both surveys are remarkable for their detailed descriptions of houses and barns, and it is notable how often cruck construction is mentioned. One building is described as "of iij payre of crocks", and some cruck buildings were said to be "new builded" in 1559. Descriptions of the Cracoe buildings make an interesting distintction between crucks made of "ash tymbre" and crucks of oak. One gains the impression of many cruck buildings being erected in the sixteenth century, and evidence from fieldwork supports this view. Almost every old site we investigate reveals timber from cruck buildings re-used in a roof, or as a floor beam or lintel. We have used dendrochronology to date one re-used piece from Silsden Moor, and have found that it came from a tree probably felled in the 1590s. On other sites where re-used cruck timbers have been found, study of the development of the site provides circumstantial evidence for dates close to 1600. An example is the small tithe barn at Lothersdale.

More evidence of just how numerous cruck buildings once were comes from the parish of Horton-in-Ribblesdale. Before the YVBSG had a guided walk there in 1995, and then a recording conference, this parish was a complete blank on national maps showing cruck distribution. Horton Local History Group knew of one or two re-used crucks, but the walk and conference led to several others being identified, so that we now know of eight sites in this one parish where cruck timber has been found.

That may be relatively recent knowledge, but the prevalence of

Calderdale begins at the arrow on p. 4.

(everything previous is an abbreviated version of what you've seen before)

re-used crucks has often been remarked on, and the Silsoe and Cracoe documents have been discussed in pioneer work on vernacular architecture by Barley[2]; and in standard books by Alcock[3] and Giles[4]. It was disappointing, therefore, at a meeting held during 1999, to hear two leading experts on Yorkshire buildings (who shall be nameless) saying that they did not think there were many significant cruck buildings in this part of Yorkshire (Craven and Calderdale), nor when they might date from.

Perhaps expert thinking only takes account of the relatively few standing crucks. Perhaps, though, the nature of the evidence from former cruck buildings is not understood. We have had the experience of presenting detailed information for inclusion in YVBSG survey reports only to find later that it has been omitted. Presumably, this is because the compilers of reports did not appreciate the significance of the data they were given.

The point needs to be made, then, that if all the cruck material identified in a later building is recorded in sufficient detail, it is often possible to reconstruct, at least partially, the structure from which that material originally came. Thus fairly detailed records can sometimes be made of "lost" cruck buildings.

Reconstructing cruck trusses

The original shape of a former cruck building can be most easily envisaged when fragments identified in the successor building include stone walls associated with the cruck phase as well as some re-used timber. Such walls can sometimes be identified by the presence of large, projecting padstones on which crucks once stood, and their existence allows the <u>width</u> of the former cruck building to be measured. If re-used cruck blades survive sufficiently completely for their original <u>lengths</u> to be estimated, then the basic geometry of the original cruck truss is established.

At Lothersdale Tithe Barn, for example, a nearly complete cruck blade is re-used as a tie-beam, and lengths of walling remain in which one can see where crucks were mounted. The building has been fully recorded (YVBSG Report No. 1267), and a partial reconstruction of the original cruck truss is illustrated in Figure 1 at F.

Another example is Park House at Eastby (near Skipton) where early walling was incorporated in the rebuilding of c.1680, and a great deal of cruck timber was adapted for the new roof (Figure 2). One cruck blade was considerably reduced in length to make it into a tie-beam, and its upper parts were removed. However, the principals in this roof-truss were cut from the upper ends of two other cruck blades, and they show clearly what type of apex the original structure had. Assuming that the tie-beam came from a similar pair, we can reconstruct its missing parts (Figure 1 at D).

This method of reconstruction falls down, obviously, if cruck timber was brought from another site for re-use and does not belong with the walls in which we are fitting it, but we have documents[5] describing the rebuilding of barns in the eighteenth century which make clear that it was usual to reclaim timber and stone from a demolished building when putting up a new structure on the same site.

Several other reconstructions of lost cruck buildings in the Craven area, extending into Ribblesdale, have been attempted, and four are illustrated in Figure 1. This diagram also includes three standing crucks for comparison, and demonstrates some significant similarities (especially with regard to apex details) and differences (with regard to size). While most of these cruck trusses are of modest height and span, we have recently found much larger cruck buildings by travelling a little further down Ribblesdale to the point where it leaves Craven and enters Lancashire. Within a few metres of the old county boundary, but on the Lancashire side,

is the enormous Hall Barn of Stonyhurst, six bays long and approximately 8 metres high from floor to apex. Not far away are other large cruck barns at Bailey Hall and Hacking Hall. Two of these structures are illustrated to the same scale in Figure 1 A and B, though it should be stressed that some dimensions are approximate, the upper parts of these large structures being out of reach.

All three Lancashire examples quoted are on medieval sites (one moated, and one with a history of monastic barns going back to 1265), but precise dating for any of them, by dendrochronology or otherwise, is frustratingly lacking.

Moving from the Craven area to Calderdale, several authorities imply that cruck distribution thins out. They say that crucks only become common again to the south of Calderdale where there are one or two very large cruck barns that can be compared with the Lancashire examples. One is the barn at Thorpe House Farm, Almondbury, where the cruck apex is 7.3 metres above the ground[6].

The maps compiled by Alcock[7] certainly show Calderdale as an area with fewer crucks than to the north and south, but our experience is that, as in Horton-in-Ribblesdale, when one begins to look for re-used timber, the blank areas on the map quickly fill up. The cruck tradition may have been obscured in Calderdale by the impressive seventeenth century rebuilding of houses for which the area is famous, but as in other parts of the Pennines, many sites with a long history of occupation show evidence of crucks. Christopher Stell's classic study[8] noted cruck structures as one of three main types of timber framing once common in the upper Calder valley. He referred to numerous crucks that were re-used as lintels, but we have found more than he mentions. Cruck timbers are also re-used as tie-beams, posts and purlins, extending from Todmorden as far down the valley as Northowram.

Two examples relatively close to one another are barns at Stake and Stannery End, near Mytholmroyd (YVBSG report nos. 1558 and 1523). These not only contain substantial amounts of re-used timber, but also have walling that survives from former cruck buildings, thereby demonstrating their widths and heights (Figure 3).

Figure 4 illustrates four re-used crucks from Calderdale, most of which are less complete than the Craven crucks discussed earlier, making similar reconstructions more difficult. Two of them, though, have lifting holes, showing that at least the base of the cruck is complete, and when they are presented alongside the two standing crucks represented at E and F in the diagram, one can begin to see a pattern, with crucks more sharply curved and hence giving less steeply sloping roofs than in Craven.

However, the cruck fragment from Stake Barn shown at A in Figure 4, is quite different from the others. It is very wide (50 cm at its widest) and is chamfered on both sides. At the top is a tenon which suggests that the apex of the truss was a yoke, as shown by the dashed line in the diagram. This makes it "type C" in Alcock's classification, as compared with the "type A" apex seen on other Calderdale and Craven crucks illustrated. The type C or yoked apex is thought to be an earlier form[9].

When considering how early that may be, we may recall circumstantial evidence that some type A crucks in our area seem to date from c.1600, for example, at Lothersdale. The earliest Pennine example we know, well to the south of our area, has recently been dated by dendrochronology[10] to the period 1522-1542. So it could be that the "type C" or yoked apex at Stake Barn is as early, or earlier than the latter dates. To settle the issue, the Stake Barn timber should clearly be a candidate for dendro-dating. Noting its high quality, we suggest that it originated in a house rather than a barn, and that it was made at a time when cruck buildings had higher status than in the later sixteenth century.

Reconstructing plans

So far, we have discussed the size of cruck buildings only in terms of the heights and widths of their structures, but the lengths of former cruck buildings are of greater significance, particularly when it comes to understanding their plans. Cruck cottages were sometimes only two bays long; small barns were typically of three bays with a threshing floor in the middle bay; and the enormous Lancashire barns were of six or seven bays.

Crucks were most often re-used when a structure was being rebuilt, not in "new build". Timbers from a cruck cottage would be adapted when altering the cottage to make a bigger house, and timbers from a cruck barn in making an enlarged barn on the old site. However, one other building type in our area, for which there is evidence from documents and also standing structures, is the long-house[11]. One characteristic pattern of rebuilding in these instances was that the inhabited part of the structure would be rebuilt first, and the byre/barn component later. Since the party wall would need to be left in place during both rebuildings, it would preserve masonry from the earliest phase. At Stannery End near Mytholmroyd, a site previously mentioned, there is a barn with attached cottages ~~we have already mentioned~~ which appears to have undergone precisely this kind of alternate rebuilding, as shown by the party wall illustrated above in Figure 3.

Interpretation of the cruck-framed long-houses for which we have found evidence must be postponed to some later occasion, but on the face of it, the early structure at Stannery End might well be a representative of this building type. With other kinds of cruck building, much of the information we can glean from re-used timber comes from ~~examining re-used~~ early "cruck purlins", which often survive in quantity because they were so easy to

I have rephrased this clumsy wording, but without changing its sense.

re-employ as purlins in the successor building. Characteristic features of "cruck purlins" are the halvings where they were once attached to cruck blades, and joints made for wind-braces (h and w in Figure 5). The opposed angles of each pair of wind-braces make a particularly noticeable pattern.

Having recognised these features, the way to extract information from them is to plot a purlin analysis diagram in which the purlins are drawn as if laid out side by side (bottom drawings in Figure 5). Then one can tell at a glance which purlins represent a full bay-length and which have been cut down before being re-used. One can often also see that some purlins were attached to a cruck at only one end, because the other, unbraced end was set in the stone gable wall usual in the Pennines.

The purlin analysis diagram in Figure 5 refers to a barn at Small Banks, Addingham. While re-used cruck blades from this barn allowed us to reconstruct its cross section as shown in Figure 1 at C, further studies of the timber show that the cruck building was of three bays with stone gable walls. Figure 5 indicates that the one purlin braced at both ends must have come from the central bay, and this measured 5.5 metres. We can then compare other purlins, many of which have had an end sawn off (or rotted away), and note that some might also have come from the centre bay. But at least one with bracing and a halving at only one end must have spanned between a cruck truss and an end wall. Thus a fairly complete reconstruction of this barn has been possible, and has been illustrated elsewhere by Kate Mason[12].

A similar analysis of roof timbers at Priest Ing Barn, Kildwick, has revealed cruck purlins that were scarfed midway between crucks, and suggests a barn of more sophisticated form than most. Other Craven cruck buildings have longer bays than is usual in most types of timber-framed building, or in the spacing of trusses in barns with stone walls. In Calderdale, however, the shortest bay-length we have found is associated

with the unusual cruck at Stake, which tends to confirm the distinctive status of this fragment.

Table 1 summarises dimensions of some of the "lost" cruck buildings that we have been able to reconstruct. We have done more fieldwork in Craven than in Calderdale, and therefore have a smaller sample from the latter area. Preliminary indications, though, are that the upper Calder valley may have had earlier and better quality crucks than elsewhere. But simply because Calderdale was an area of vigorous building activity and of architectural innovation, evidence of its earlier structures is more heavily masked by later work than in Craven (or in the southern Pennines). Even so, we hope to have demonstrated that it is still possible to collect evidence of cruck types, and (in outline) of plan forms.

Acknowledgements

We found the cruck at Eastby, and several others, by following up Barbara Hutton's surveys and reports. So we are most grateful for her pioneering work, though we have re-surveyed the cruck material on each site in greater detail. We are also indebted to our good friend Penny Jerome for suggesting the foray into Lancashire, and for providing the military-style vehicle essential in such a risky venture.

Table 1

RECONSTRUCTION OF SOME "LOST" CRUCK BUILDINGS
(* denotes Craven buildings, † denotes Calderdale, n.d.= no data)

Existing building containing re-used timber (with map reference)	Internal width (metres)	Typical bay-length (metres)	Number of bays
former COTTAGES, HOUSES			
*SE 017543 Park House, Eastby	5.0	5.1	3
†SE 019252 Stake, Mytholmroyd	?5.8	4.1	n.d
†SD 996291 Akroyd, Wadsworth	n.d.	4.8	3
possible LONG-HOUSE			
†SE 017250 Stannery End, Mytholmroyd	5.9	c.4.5	?4
former BARNS			
*SE 013462 Priest Bank, Kildwick	n.d.	4.6	4+
*SE 123495 Fryer's Barn, Middleton, Ilkley	n.d.	5.1, 4.9	?3
*SE 078486 Ivy House Barn, Small Banks, Addingham	c. 5.0	5.5, ?4.8	3

References

There are YVBSG reports for all the buildings in Table 1 except Akroyd (Wadsworth) and Fryer's Barn (Middleton). Report numbers for the other buildings, in the order they come in the table, are: 539, 1558, 1523, 1362, 1348. Several of these buildings are also illustrated in Figure 1, but G in this diagram is a barn at Drebley not otherwise represented, and its report no. is 598. There are also reports for buildings represented in Figure 4, at A, B, E, and F, numbered respectively, 1558, 1338, 1297 and 1432. In many cases we have done extra fieldwork and reports do not contain all the information we have quoted.

1. Surveys of Silsden and Cracoe, Clifford Estate Papers, Yorkshire Archaeological Society, DD 121/31/1 and DD 121/31/10

2. M.W. Barley, The English Farmhouse and Cottage, London: Routledge, 1961, p. 118.

3. N.W. Alcock, Cruck Construction: an Introduction and Catalogue, London: Council for British Archaeology, 1981, p. 21.

4. Royal Commission for the Historical Monuments of England, Rural Houses in West Yorkshire 1400-1830, London: HMSO, 1986 [by Colum Giles].

5. Day-books of Thomas Parker, land agent, c.1790, describing repairs/ rebuilding of Craven barns. MS. notebooks in possession of Mr. and Mrs. Shepherd of Embsay, to whom we are indebted for access. For a published example of rebuilding procedures, see the building contract quoted by Marie Hartley and Joan Ingilby, Dales Memories, Dalesman Books, Clapham, 1986, p. 60.

6. Royal Commission for Historical Monument of England, as above, p. 39.

7. N.W. Alcock, Cruck Construction, as above, map on p. 77.

8. C.F. Stell, Vernacular Architecture in a Pennine Community, MA thesis, University of Liverpool, 1960.

9. J.T. Smith, writing in N.W. Alcock, Cruck Construction, pp. 5-9.

10. I. Tyers, Dendrochronological Analysis of Timbers from Apethornfold Farhouse, Hyde, Tameside, London: English Heritage, Ancient Monuments Laboratory, Report 59, 1999.

11. The Silsden and Cracoe documents quoted in Note 1 above offer clues concerning long-houses, and there is a discussion of standing buildings near Ilkley and at Ripponden and Barkisland in YVBSG Reports nos. 1259 and 1297.

12. Kate Mason, Addingham, from Brigantes to Bypass, Addingham Civic Society, 1996, p. 47.