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TRADE HATCHETS FROM THE GILBERT SITE

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In my opinion, to this day the Gilbert Site (41RA13) continues to date after ca. 1730 and to terminate by ca. 1770 according to time sensative gun parts and other key artifacts. The initial report (BTAS Vol. 37) remains a frequent reference source for mid-18th century French trade-oriented sites comparisons, and the now recovered group of axes offers additional insight for this period. Such data are not yet common.

With permission, work continued at the site after the 1962 investigations but, regrettably, periodic relic or pot hunting also has taken place. It even became necessary to conceal any signs of tests since these would occasionally be shoveled over before completion. However, proper controls were maintained ultimately and the author has remapped the entire site for consistency in recording artifact and feature locations and other data.

Regarding this new axe sample, it is noteworthy that only three fragments were found associated in areas with such features as the highly productive midden concentrations described in the original report. The site also has proven to be larger than originally delineated.

All metal artifacts have been conserved by professional conservation standards.

Axe, half axe, hatchet, trade hatchet, tomahawk. These all are names commonly used for the axes supplied to the North American Indian trade during the 18th century. The contemporary trade lists do not directly identify differences behind selections between these terms, but hatchets and tomahawks can appear as separate items, as well as axes, by 1770 for example (Bolton 1914:132-133, 144-145). It thus seems apparent that suppliers, traders, and probably customers in a given period had a mutual understanding of real selective differences although these were not detailed. Unfortunately, the picture has been blurred further by many writers, both early and modern, through rather indiscriminate usage of these terms without attempting any additional qualification. In order to most usefully identify archeological specimens and better utilize the primary references, the trade material lists and other contemporary data, the historical archeologist needs better insight. More attempts toward a better system to organize the data seem useful and none too soon.

The basic form examined here is always the axe (*hache* in French), a comparatively large and heavy edged tool usually meant to employ the longer hafts or handles and intended for use with both hands. Smaller and lighter axe versions, hatchets (*hatchette* in French), usually employ shorter hafts and are intended for use with one hand. An immediate contradiction is in the term "squaw axe", a short hafted but heavy headed axe, observed in early 19th century camp use by Indian women (Peterson 1965:5-6). Simply stated this was a camp axe with a hatchet length haft. Hatchets themselves were those smaller axes considered light and/or small enough to be easily portable, easily transported in the field for hunting or war and convenient to carry thrust under the belt, giving rise to another somewhat misleading useage, "belt axe".

Half axe can describe the shape for all axe heads in this sample from the Gilbert Site. Each blade flares or sweeps back from below the eye to the cutting edge and only on the edge toward the hand. The front edge is straight. At one time axe blades commonly flared outward, symetrically, below the eye. Peterson (1965:6) observes the half axe shape is the common form for this era.

As noted above "hatchets" and "tomahawks" may appear as separate items on the same trade or gift lists. Both would normally be hafted for use with one hand; the difference would appear basically one of head size and weight. "Hatchets", as will be shown below, can weigh up to over two pounds in this time period. While I can find no specific mid-18th century criteria for separating the two, there is a suggestive clue from the early 19th century. "Hatchet-tomahawks" of one pound weight were isloated among those paid for by the U.S. Office of Indian Affairs in 1808 (Russell 1967:242). It is probable this approximate weight selection reflects an 18th century reality, for Russell (1967:253) states that the lighter axes and hatchets weighing approximately one pound became widely favored for "trail" use during that period. This progression is also traced by Peterson (1965:13). Prices also generally support the premise that as a general term "tomahawk" simply referred to the lighter version of trade hatchet during the 18th century.

The term "tomahawk" or "tomahak", Indian derived, was brought into the English language by Captain John Smith by 1609, who recorded that the Indians were using it for both native war clubs and the iron trade hatchet (Russell 1967:307). Once so translated, the term has steadily maintained often misleading special connotations of bloody strife, even execution.

To be realistic, during the 18th century it commonly only identifies the poll-less form of light hatchet which lacks such specialized features as those designed for

shingling, carpentry, etc. (Peterson 1965:5). The term *poll-less*, as used herein, indicates an eye with no thickening (poll) at the top.

In July of 1961 an outstanding sample of 36 trade axes was recovered from the Basswood River on the Minnesota - Ontario border. Apparently the contents of a single crate or bale of fur trade axes, ice chisels, and spears were represented (Woolworth and Birk 1975:69). The axes sorted into three size ranges. The smallest (23 hatchets) ranged from 5 1/4 in long to almost 7 in and weighed from 9 oz to almost 16 oz. The medium group (12 hatchets) averaged approximately 7 in in length and 1 lb 8 oz in weight. Largest size (1 axe) was 7 3/4 in long and weighed 3 lbs, 2 oz.

Another 29 hatchet heads, with remains of their crate, were found at Boundary Falls on the Winnipeg River. These are stamped "B.A.R." and range from 6 in to 6 3/4 in in length and vary from 1 to 1 1/2 lbs in weight. Both groups are believed to be of a late 18th century British origin (Woolworth and Birk 1975:82-83).

Utilizing such findings, Brain examined 21 apparently undamaged axes from the Trudeau Site (mid-18th century Tunica) and concluded that 18th century trade axes apparently were graded by small, medium, and large sizes (1979:140). The axe sample from the Gilbert Site also sorts into these three size ranges. However, in contrast to all of the above axes, the Gilbert Site axes have been used and damaged - many obviously suffer significant weight loss. Size and proportions, then, here are more reliable attributes than weight. Since these axes have been cleaned of oxides where condition permitted (Trudeau axes were not) it is apparent that undamaged axes of the same "size" could vary in weight, sometimes significantly, because of obvious variations in thickness of basic forging stock and in forging techniques.

Nineteen metal trade hatchets in small, medium, and large sizes can be isolated in this sample from the Gilbert Site. Four large hatchets are represented (Figure 1a, d). Two are stamped with smiths' marks. One is marked "CB" with raised letters within an elliptical depression (Figure 1c) and one with a "+" (Figure 5). The eye is gone on two of the group (Figure 1a, b) and the top of the blade remaining is thoroughly battered with curled edges. This morphology is consistent with the hard hammer-like battering exhibited by such tools as well-used cold chisels. Both bear several narrow cut marks on one face. The one representative weight is 2.10 lbs (Figure 1c). Internal eye diameter is 4.0 cm.

At least twelve medium size hatchets are present (Figure 2a-d; Figure 4a-e). Figure 3 shows proximal edge views. The same axes are shown in Figure 3a and Figure 4a; Figure 3b and Figure 2d; Figure 3c and Figure

Figure 1. Large trade hatchets. A - (Feature 5) Blade with hammered top. B - (No. 460) Steeled blade with hammered top. C - (No. 16) Complete hatchet with smiths' mark and bent and broken bit. D - (No. 510) Steeled blade broken through "steel" and across wrought iron upper blade.

Figure 2. Medium trade hatchets. A - (No. 15) Damaged bit. B - (No. 312) Damaged steel bit. C - (No. 138) Broken eye. D - (No. 17) Smith's mark and broken across bit.

Figure 3. Medium trade hatchets, proximal view. A - (No. 274) Crushed eye. B - (No. 17) Distally bent top of eye. C - (No. 312) Eye intact. D - (No. 138) Lateral break in eye base and distally bent eye top.

2b; Figure 3d and Figure 2d. Shown in Figure 3c is the round eye typical of all axes from the sample. The other axes in Figure 3 exhibit degrees of distortion.

Three blade remnants are not shown but another bit edge (Figure 4c) is typical. All of these are broken across the blade over one inch above the cutting edge. Three fragments of different eyes, not pictured, also would belong with this size group. Four of the hatchets are stamped with smiths' marks. One (Figure 2d) faintly shows a stamped circular depression approximately 1.8 cm in diameter. Within this circle is a concentric remnant of raised ridge centering on a raised central boss or dot. The second mark (Figure 4b) is the "**CB**" as that on the large hatchet above (Figure 1c). This now eyeless blade also exhibits the same top hammering morphology as the two large hatchet remnants. The third marked axe (Figure 4a) is stamped with a pair of daisy-like marks. This axe eye is completely crushed from above (Figure 3a). The fourth marking in this medium size group appears to most resemble a raised lyre-like form within a circular depression (Figure 4e). This axe also now lacks an eye and again shows a subsequent hammering flare at the top. Representative weight is 1.09 lbs (Figure 2a-c). Representative internal eye diameter is 3.5 cm.

Three small size hatchets are present. One broken eye section is not pictured. One axe (Figure 6a) is virtually intact and retains part of a stamped mark. Only a circular depression some 1.8 cm in diameter can be noted. The second illustrated axe (Figure 6b) is a flattened remnant. Approximately one-half of the flattened eye remains and all but some 0.5 cm of the blade length. Only half of the blade thickness remains and evidences a clean split along what should be fused surfaces. The only representative weight is 0.53 lbs (Figure 6a). Internal eye diameter is 2.6 cm.

The above smiths' marks can now be added to a small list of such "touch marks". Russell (1967:408-413) illustrates and discusses such punch marks and identifies sundry names and initials of pertinent axe makers. Peterson also submits a directory of makers and dealers (1965:46-52). No match with any of the Gilbert Site axe markings are found. There are actually three "**CB**" markings from the Gilbert Site - the third is stamped in a hoe. Russell (1967:413) observes most old trade axes in collections do not exhibit markings. We both regret that identifying the smiths whose marks do occur on such trade articles has not progressed. At least we now can state that "**CB**" was a source for both axes and hoes supplied to the mid-18th century French trade here.

At first glance this assortment of damaged hatchets could simply be dismissed as a sorry lot of "typical" inferior trade quality. Splits along forge welds, broken or peeled back cutting edges, and damaged or missing hafting eyes are frequent conditions. Obviously these hatchets could not reasonably have come to this state employed solely as tools for striking other folk, i.e. "tomahawks", light wood chopping, or dismembering game by these people. In fact, most could still be "tomahawk" servicable as hafted in known native ways. Cutting into hard wood could reasonably explain those obvious brittle, but not soft, bits snapped off one inch or more above an undamaged cutting edge. Eyes crushed or

Figure 4. Medium trade hatchets. A - (No. 274) Smith's mark. B - (No. 93) Smith's mark and hammered top. C - (No. 230) Snapped bit. D - (No. 3) Blade only. E - (No 309) Smith's mark and hammered top.

Figure 5. Large trade hatchet. (No. 460) Smith's mark.

broken away can also be one known result of reversing such poll-less hatchets and misusing them as hammers. The lack of a "steel" quality for some of these cutting edges is common and documented as a known practice for complaint from as early as 1701 through at least the next 140 - odd years (Peterson 1965:19, 46). But evidence also shows a lack of steeling found in hatchets from military sites of the French and Indian War (Neuman 1973:254).

I believe such first glance impressions have been all too frequently misleading, particularly so in this mid-18th century context. For one thing, the ordinary or good grade of iron and steel stock available during this period caused edged tools to be inherently vulnerable to even moderate usage. The basic laminated wrought iron normally contained impurities which both weakened it and made it somewhat brittle. These could only be partially removed by a lengthy and laborious process of repeated hammering at heat. The comparative expense involved would restrict the most refined wrought iron to use for only the highest grade articles, i.e. expensive ones. To me, all of the evidence indicates the snapped blade ends and broken eyes can be an expectable result of service, abuse, and stress in the average, not necessarily cheapest, grade of wrought iron available in this period. The best "steel" available until this time for cutting edges was known as "blister steel" and this too was unavoidably flawed with imperfections containing uncombined carbon and other impurities (Russell 1967:369, 371). Adding to the already built-in potential for axe failures was the degree of skill available in the blacksmith who forged them and utilized this "blister steel" for the hard cutting edge. Russell (1967:371) comments on repeated axe failures involving smith's skills with this metal as late as 1836! In fact, as late as the 1890s trade publications quoting conscientious and skilled blacksmiths illustrated fundamental disagreements about proper forging techniques and reasons for failure with similar metals (Richardson 1889-1891). Therefore, when criticizing trade hatchets in general, it seems especially necessary to exercise caution in judging quality for any hatchets "mass" produced in the 18th century. The earliest axes were commonly more massive and, if for this reason alone, can be more hardy than the increasingly lighter trade hatchets preferred as the 18th century progressed. General metallurgy constraints in particular, would not begin to diminish until the later 18th century. The 19th century creates a different context and a common inference that trade hatchets were simply a deliberately inferior and shoddy product, a reflection of traders' greed utilized to cheat the Indians, possibly can be proven accurate.

With such factors in mind, the Gilbert Site hatchet sample is examined. All share the same basic construction revealed by both damage results and clearing away of corrosion products. A flat laminated iron bar was selected as suitable in thickness, width, and length for the desired size of axe head. At its middle the bar was formed

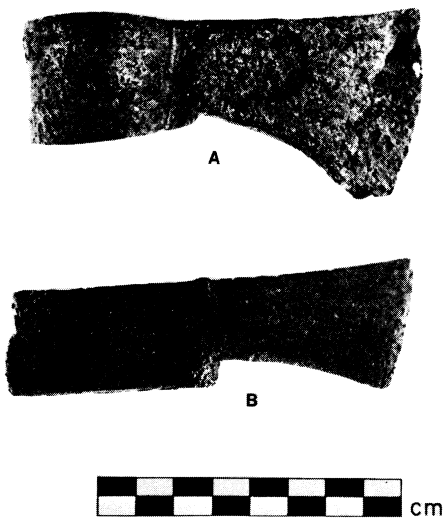

Figure 6. Small trade hatchets. A - (No. 294) Smith's mark. B - (No. 47) Opened and flattened (almost 1/2 of small hatchet, minus approximately 0.5 cm in blade length).

around a cylindrical pin or mandrel (haft pattern) selected to shape and size a circular and untapered eye. Commonly the eye wall became somewhat thinner than the parent stock during this step, but there is no evidence the inner eye surface was pre-thinned to facilitate bending. The two opposing sides were brought together as closely as possible below the formed eye and joined by forge welding from this point on to form the blade (Figure 3b, c). Noticable short (0.5 cm) "cold shuts" (failure to fuse together) are common just below the eye and, together with relatively thinner eye walls, contribute to a weak point in such axes. The blade itself is forge tapered downward to the cutting edge. Revealed wrought iron grain parallels the distal edge, straight from eye to cutting edge. On the proximal edge which flares toward one's hand, the grain curves and parallels this flaring and curved edge (Figure 2b). This demonstrates the smith "moved" metal outward as well when tapering the blade down to the cutting edge along the proximal side. One result is, with less metal available to move downward along this side the blade is shorter here, producing the characteristic upward (toward the hand) cutting edge profile of these hatchets. It is a direct result of forging technique. Interruption of the grain, and chisel marks, show metal had to be removed below the eye to form the prominent and characteristic notch at the top of the proximal edge on these axes. What justified this extra step I have not determined. Final axe blade smoothing was probably done by grinding since no filling evidence was observed.

Three of the hatchets clearly were "steeled" by forging in a piece of apparently "blister steel" between the blade halves before they were fused together near the bit. These axes and blade fragments are shown in Figure 1b, d and Figure 2b. All three show insertion of a one or two millimeter thick and 1.5 to 2 cm tall plate, forged between the blade halves along the bit. Their grain is invisible; they were inserted cross-grained to the wrought iron body. They are noticeably darker than the adjacent wrought iron but very little finer in texture, and any difference in resistance to corrosion is not readily apparent. Certainly this is an intended and requested level of improvement but the "steel" axe bit edges shown in Figure 1d and Figure 2b are simply shattered. How many extra deer skins could be demanded for such an "improvement"? Notice also that even the thin wrought iron upper blade of the axe in Figure 1d is snapped completely across the blade. The hammered top and now eyeless blade shown in Figure 1b and Figure 5 does retain a completely serviceable "steeled" cutting edge. Use has produced very even (1 mm or less wide) flattening all across the edge, probably inferring repeated use to cut relatively soft and thin metals, such as the thin kettle brass tinkler blanks found at this site. Two additional blade sections (Figure 4b, e) possibly are "steeled" judging by the relatively good condition of cutting edges despite loss of their eyes and subsequent battering at that area. However, to remove the corrosion for inspection would have obliterated the smiths' marks. The unsteeled axes shown in Figure 2a and Figure 4a most clearly show damage-breakage characteristics of impact with other metal such as iron. The site has produced many examples of true chop marks on gun barrels, bridle bits, kettle rim iron reinforcements, etc. Possible, but considered unlikely, are impacts with stone. The unsteeled hatchet shown in Figure 2d has lost approximately 1 cm in length, clear across an obviously brittle bit area, in one snap. The unsteeled hatchet shown in Figure 2c and Figure 3d has an undamaged, even pristine, cutting edge, yet the eye is split away at one lower side and the eye top is flattened inward at the distal edge. This particular kind and degree of damage would not usually result with a supportive haft inserted. Considering the foregoing observations it is postulated that the kinds of damage/use exhibited above strongly suggest at least many of these failures should not be dismissed as simply a result of supplying shoddy trade quality goods - they could be found among any average quality light axes of the time because of metallurgical and forging skill constraints. Perhaps more significant here are the many indications these hatchets may well have often been perceived by this particular group more as a metal working tool resource than as hatchets, per se. Our perceptions may obscure a different reality and value system.

The axe blades in Figure 4b and 4e are now relatively short. Such objects have been labeled "wedges" in some site reports, usually based on the fact the blade remnant appeared to flare to both front and rear as it widened toward the bit. In shorter examples any in-curve of one edge can be of slight degree and use alteration of the top and at the cutting edge can make the original axis of orientation obscure. However, virtually all "wedges" I have examined closely can be identified as reduced hatchet blades and I have not yet found either the term *wedge* or any items that might be so construed in 18th century trade lists or other trade sources. Significantly, their final condition normally shows morphology most typical of repeated metal to metal impacts.

Stylistically, the Gilbert Site hatchets all display round eyes, well-developed notches below the eye where the blade starts to widen, a strong blade flare toward the haft, and exhibit a definite sweeping in-curve of this blade edge. The distal blade edge is straight and vertical.

The strongly in-curved sweep of the proximal blade edge, together with the large degree of flare, are most significant attributes. Constantly repeated throughout this assemblage in various sizes and by different smiths, they identify at least a major pattern for the mid-18th century trade hatchet supplied by French trade sources from continental Europe. They contrast significantly with the uniform Basswood River sample believed to be British in origin (Woolworth and Birk 1975:70, 83). While the latter are believed to be from a later era, they appear typical in form to many of good British-affiliated provenience in earlier times (Grimm 1970:Plate 24).

Geographically, the largest hatchet sample nearest to the Gilbert Site is from the Trudeau Site (1731-1764) in

Louisiana. As noted previously, hatchets from that site had not been cleaned but I suspect virtually all the photographed series (Brain 1979:140-142) show a meaningful stylistic affinity with those from the Gilbert Site and do contrast significantly with such large samples of probable British affiliation as the Basswood River series (Woolworth and Birk 1975:70, 82-83). Both European artifacts and documentary evidence from Trudeau investigations testify to predominantly French source affiliations for the Tunica tribe during the cited period occupation.

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