A DOVETAIRED STEEL MITRE PLANE
MADE BY LAURITZ BRANDT OF NEW YORK CITY
by Dominic Micalizzi

Most of my weekends last summer were spent making overdue repairs about the house. This limited my tool hunting to early Saturdays at English-town and Sunday mornings in the Manhattan flea marts.

In early October I saw an ad for a New Jersey antique show with an unusual 8:00 a.m. starting time. This offered a welcome change of scene. I arrived so early that I was able to walk in as the dealers were setting up (I had to be early to beat the Garden State collectors in their own back yard).

On entering, I spied George Hower, a tool dealer from Red Bank, and was relieved to find he was still setting up and not yet searching for tools himself. As I approached he called out, "I've got something," and reaching into a box, he came out with a dovetailed steel mitre plane. "It's English," I thought, "and he will want a small fortune." But both thoughts were dispelled when I saw the price tag and when he said that the plane was made in New York City.

I hoped it was an Erlandsen, as I had wanted one for a long time. But its lever was stamped, in three different styles of type, L BRANDT/No 220 1/2 5t St/ N.Y. (See Figure 1).

I was not disappointed, as it was a rare and handsome piece. As a matter of fact, I was so excited by the purchase that I was almost out the door and heading home before I realized that I had not covered the rest of the show.

I returned, but I knew that I had my find for the day. Within a half-hour or so, at least three other collectors showed up. I had been none too soon!

Figure 1: Plane Lever marked L BRANDT.

As I drove home, many questions entered my mind. Who was Brandt? Was he a dealer? Did he make the plane? If so, what were his working years? I was also curious to know if he was in any way connected with the late-nineteenth-century toolmaker Napoleon Erlandsen or his son Julius, both of whom worked in New York City.

Upon arriving home I checked my 1847-48 NYC directory, but Brandt was (continued on page 15)

NEXT MEETING FEBRUARY 6th.
DETAILS ON PAGE 2.
CRAFTS of New Jersey

Collectors of Rare and Familiar Tools Society of New Jersey

President ___________ STEPHEN ZILUKY, Whithensburg
Vice President ___________ HARRY J. O'NEILL, Annandale
Secretary ___________ WILLIAM A. GUSTAFSON, New Providence
Treasurer ___________ 

Membership in CRAFTS is open to anyone interested in early trades and industries, and the identification, study, and preservation of tools and implements used and made in New Jersey. Annual dues are 7 dollars for the membership year of July 1 to June 30.

The Tool Shed
Published five times per year for members of CRAFTS of New Jersey. Editor: Robert Fridlington, 8 Keith Jeffries Ave., Cranford, NJ 07016. Contributions, especially about New Jersey tools and trades, are welcomed.

GARGUILI COLLECTION EXHIBITED IN PLAINFIELD

The Public Library in Plainfield, N.J., welcomed the New Year with an impressive exhibition of antique and unusual tools from the collection of CRAFTSman Robert Garguili. The tools were on exhibit during the month of January.

Displayed along with Bob's tools was a selection of books on early tools and crafts.

WILBUR O'NEILL

It is with deep sadness that we note the loss of Wilbur O'Neill, one of CRAFTS most dedicated members and brother of CRAFTS Vice President Harry O'Neill.

Wilbur, who had been in failing health for some time, died January 5, 1983.

JAMES DAVIDSON TO SPEAK AT FEBRUARY 6th MEETING

The next meeting of CRAFTS of New Jersey will be held on Sunday, February 6, at East Jersey Olde Towne in Piscataway.

In deference to the weather and the early sunset the meeting will begin with the Swap & Sell at 1:00 p.m. Promptly at 2:00, activities will move inside the Indian Queen Tavern for the formal program.

The speaker for the afternoon will be Mr. James Davidson of Clinton. His topic will be "Agricultural Tools and Implements." Jim Davidson not only collects agricultural tools, he actually uses them. But you will undoubtedly hear more about that on the sixth.

Harry O'Neill will again conduct the "Whatsit?" session. Members are asked to bring no more than one item for identification.

Harry O'Neill and Chuck Granick, co-managers of the Spring Auction, will also bring the members up to date on the plans for the sale.

And if you want to come a little early, you can now enjoy a leisurely brunch before the meeting (See the notice on page 3).

Looking ahead to spring: at the April 10 meeting Emil Pollak will speak on "American Wooden Planes and Their Makers," and of course, there will be a lot of interesting planes on exhibit (For more about Emil Pollak and wooden planes, see the announcement on page 9).

Due to a combination of circumstances the June program is still tentative; but it will be announced in the next issue.

Note: the date of the June meeting, which was originally scheduled as the 5th, has been changed to June 12. This change was made to avoid a conflict with the spring EAIA meeting in Rochester.
SUNDAY BRUNCH AT EAST JERSEY OLDE TOWN

The restaurant on the main floor of the Indian Queen Tavern at East Jersey Olde Towne is now serving brunch every Sunday between 10:30 a.m. and 2:00 p.m.

**Prices are $6.50 per person, or $3.25 for children under 10. So come to the CRAFTS meeting early, have something to eat, and finish in time for the Swap & Sell.***

MENU

Fresh Orange or Tomato Juice

1. Orange Blossom French Toast — Orange Syrup
2. Cheese Omelette with Philadelphia Scrapple and Sautéed Apples
3. Tavern Welsh Rabbit on Toasted English Muffin with Sautéed Tomato
4. Smoked Virginia Ham and Mushrooms in Cream, Served in Puff Pastry Shell
5. Juice, Fruit, Bread and Beverage Only

Choice of Beverage

GUSTAFSON RESIGNS AS SECRETARY

William Gustafson has resigned as Secretary of CRAFTS of New Jersey, effective December 15, 1982. Although Bill intends to remain active in the organization, his recent move to Austerlitz, N.Y., made it impossible for him to continue as an officer.

One of the founding members of CRAFTS, Gustafson has served as a Director of the Society from its beginning and as Secretary since last June. He and his wife Sue have been among the most industrious members, serving in a variety of capacities at the meetings, the auctions, the fall picnics, and the Fourth of July celebrations at East Jersey Olde Towne. Their services are going to be missed.

Bill’s move has taken him only about 150 miles from his former home in New Providence, N.J., but it has also taken him a step back in time. He has left a career in computer engineering, moved into a pre-Revolutionary house, which he is restoring, and is planning to open an antique business in Austerlitz. So much for the allures of microchips and memory discs.

We wish Bill and Sue Gustafson much happiness in their new home and success in their new business.

He gave a sort of conditional answer to my offer. He said: "When Hell freezes over!"
Toward the end of a four-year apprenticeship in cabinetwork, a half century ago, I undertook a special project which changed significantly my outlook on the trade. An unexpected larger world was opened up by the decision to make an airplane propeller of wood. In 1928, few propellers were made of magnesium, phenol plastic, fiber glass, or forged aluminum alloy. Laminated wood was widely used. Evidently this material satisfied the usual needs of the relatively small, low-speed aircraft.

Prior to this undertaking, I had learned not only to sharpen edge tools to the satisfaction of the Swedish master cabinetmaker (Gus) of a custom woodworking shop (in upstate New York, where we were both employed), but also in spare time I had completed several pieces of furniture under his strict supervision—a mahogany piano bench for my mother; a pair of three-drawer night stands of black walnut for an aunt; a mahogany tea wagon, with legs turned on a hand-driven rope lathe; a two-story, octagonal bird house, which provided nesting places for martins; plus a miscellany of other tasks featuring joinery and hand craftsmanship. During the apprenticeship pilgrimage, the master cabinetmaker had shared hundreds of noon-time hours, teaching me the basic skills of the trade.

Because of the variety of cabinetry jobs already completed, I was searching for another project of major difficulty. Such an opportunity lay just around the corner. My younger brother, owner of a racing car and an airplane (Travel Aire OX 5), challenged me to make a wooden propeller. But I hesitated, fearing that the project would become a detour away from cabinetwork. The proposed task probably would involve extensive work with protractor, intricate layouts and twisting contours peculiar to aero-mechanics. Perplexed over whether or not to get involved, I sought advice from my cabinetmaker friend. Surprisingly, instead of discouraging the project, he reminded me of my recent expressed desire to tackle something different and difficult. He then volunteered to provide technical guidance during future workday noon hours. That settled the matter.

At the outset, Gus encouraged me to spend several evenings at the municipal library in search of propeller designs. Eventually my notes included a design from the Encyclopedia Britannica. This set of working drawings described a nine-foot propeller powered by a Liberty engine, mounted on an aircraft which had been developed toward the end of World War I. But my brother had specified a six-foot propeller!

Hence a preliminary inspection indicated that the design would not be usable. Such was my convenient alibi. However, Gus pointed out that the drawings did provide three items of valuable information: (1) the specific details of varying pitch along the face of the nine-foot blade; (2) the cross-sectional profiles of the propeller at selected linear intervals; and (3) the contrasting contours of the leading versus trailing edges. Because of these relevant features, he urged the adaptation of the design to my purposes by introducing necessary modifications—e.g., shortened linear intervals.

At first, the problem of adaptation seemed too formidable. My background included neither geometry nor aero-mechanics. I did not know an ellipse from an airfoil. Further, a distracting complication surfaced when fellow craftsmen in the shop voiced skepticism over whether an apprentice should undertake the project at all! But the master cabinetmaker did not share the general pessimism. Nor would he
tolerate thoughts of quitting merely because the project appeared difficult. Instead, Gus urged that work with a protractor, with sundry geometrical designs and with special contour templates can provide a worthwhile learning experience which an apprentice should welcome. Without doubt, the task would call for a considerable expansion of my limited knowledge of cabinetwork.

To get the project under way, Gus proposed a viable, step-by-step procedure. He suggested a laminated propeller design, comprising alternate boards of mahogany and pine. (Unfortunately, sufficiently dry birch, maple or walnut were not available.) Each board was hand planed to remove "mill marks" from the gluing surfaces. Then the laminations were assembled and glued up, utilizing large wooden hand clamps of the type commonly used in the veneering of door stiles and rails. The outcome was a laminated workpiece of dry, straight-grained wood, four-and-one-half inches by six inches, six feet long.

Next the workpiece was centered lengthwise. Layout work began on a three-foot half. Overall profiles for the propeller were drawn showing desirable front and edge views. These profiles were redrawn many times until the diagrams conformed satisfactorily with the general outlines of the aforementioned Liberty propeller. This activity comprised part of the adaptive process. When the profiles were perfected, the design was applied to the other half. The lines were then traced upon the workpiece. Eventually the face and edge profiles were cut out on a band saw. The outcome yielded diagonal lateral limits for the leading and trailing edges of the propeller.

At best, the workpiece was still a crude appearing object (as an uncarved block of stone awaiting the sculptor's tools), which a fellow workman nicknamed "Fred's Folly." However, Gus did not find the epithet amusing. Hence he urged me to ignore the detractors and to concentrate on the next steps needed in shaping the workpiece. Realistically, he described the procedure as a demanding one in terms of layout and of hand craftsmanship. The encouragement proved timely.

Further, Gus suggested that the design from the encyclopedia be reexamined carefully, focusing adequate attention on the changes of pitch required at various points along the propeller blade. This was done. Then I subdivided each half of the propeller into five equal parts. Next the decision was made to lay out initially the face side of the blade. Astraddle each division line I laid out a transverse slot three-fourths of an inch in width, squared off from the longitudinal center line of the propeller. Then, utilizing a protractor, I set a bevel square on the appropriate pitch required for the face of the propeller blade at the first slot. It was discovered here that the face side contour is relatively flat at 15 degrees, and that it forms a straight transverse line. The variable pitches of 15, 19, 23, 30, and 48 degrees along the face side were taken from the working drawings and then applied at appropriate intervals along the three-foot half of the blade, working from the tip to the hub of the propeller (See Figure 1).

After the five points had been carefully rechecked for pitch and for
contour respecting the face side of the blade, a hand saw was utilized to cut down both sides of each slot. The the wood within the slot was chipped out. Care was exercised to preserve the appropriate contour. The bottom of each slot was left "full," i.e., not cut down quite to the guidelines. Special templates, prepared in advance, were used in order to guarantee that the angle and shape of the face of the blade would be properly cut. After the five slots had been cut down according to template requirements, the surplus wood remaining between the slots was removed with a sharp chisel, leaving the face side "full." Later, in a final stage, a spoke shave and fine sandpaper completed the work in a smooth but twisting contour on the face of the blade. Subsequently, this complex process was duplicated along the face side of the other half of the blade.

A corresponding set of slots was laid out and cut into the back side of the propeller workpiece (Cf. Figure 2). This procedure required the use of an additional, new template for each slot along the back portion of the blade. Particular attention at each transverse slot was give to the appropriate contours of the leading and trailing edges. Such data were taken from the Liberty propeller drawings. After the back side slots had been rechecked for accuracy and cut down to the required cambered contours, the surplus wood was chiseled away carefully. However, this paring operation left the back side slightly "full" in readiness to be trued up and finished later by spokeshave and sandpaper. The overall outcome of these painstaking efforts is shown in the above sketch.

Upon its completion, the wooden propeller was attached to the rear end of the drive shaft of an automobile engine. So mounted, it functioned effectively as a "pusher" type, propelling a home-made recreational vehicle (a crude forerunner of the modern snowmobile!) over snow and ice during several winter seasons in New England. Flying debris have chipped the leading edge slightly. Otherwise, the fifty-five year old propeller remains in fine condition.

Not until I undertook this project did I discover how inadequate was my knowledge and experience in the trade. Fortunately, it afforded a favorable opportunity through which Gus taught me to read complex drawings, to

(continued on page 11)
Before we go too far on this subject, let me say that this is a review of the talk given at our last meeting back in 1982—November 21st to be exact. Remember? So, for those who wish to read on, fine. All others are excused.

Leather carving and tooling is not a modern-day hobby, craft or art. Its roots began with the early cave dwellers needing clothing and using the hides of the animals they killed. Their stone axes were bound together with thongs cut from the hides. Later, they made canoes of leather as well as breastplates and shields for protection in warfare.

As man progressed in his journey toward civilization, leather was used in decorative ways—furniture, wall hangings and, of course, fancier clothing. Monks in their secluded monasteries designed tools for leather bindings for books, using only geometric designs. Mosaic law forbade "graven images" to be made.

Later on in history the Spaniards brought their tools and knowledge of leathercraft to the New World. It was here in response to the tropical growth that the break from traditional geometrics occurred. Floral designs were created. By cutting part way through the leather and hammering down the background with small tools, a new form of leathercraft emerged.

For nearly six-hundred years the secrets of leather carving were known only to a relatively small group of artisans. It was a closely knit father and son arrangement. Outsiders were not allowed to learn the trade or even to observe carving being done.

Leathercraft came to America via California, which as we know was formerly a part of Mexico. As Americans took over the towns changes in leather patterns appeared in saddles, holsters, and gun scABBards.

Enough of leather history. How about leather tanning today. Here are some bits of information. There are two kinds of tanning: chemical and vegetable. All leather for carving and tooling must be vegetable tanned, as the leather must be able to absorb water for proper "casing."

Chemical tanning uses compounds of metal chromium, hence the name chrome tanning. Chrome tanned leather has its fibers greatly tightened and is water resistant. It also has greater tensile strength. In vegetable tanning the extracts of tree bark are
used. South America supplies us with most of these tanning materials.

Figure 3: Swivel Knife

In tanning the freshly salted hides are brought to the tannery where they are hung in huge tanks of lime water. Here the salt, dirt, and hair are loosened and subsequently removed. When the hides are ready for tanning they are hung on racks and placed in weak solutions of tanning bark. Every few days they are placed in vats of stronger solutions, until the tanning is completed.

Then the hides are put in a tumbling machine where the tanning solution is washed off. Fatty materials are added to restore the natural oils to the hides. They are then hung out to dry, followed by what is called "toggling" or "staking." This step smooths the leather and takes out the stretch.

Figure 4: Hole Punch

Today's leathersmith has many tools, patterns, and styles of carving to call upon. Carving, for instance, can be divided into standard (acanthus leaf and flower) carving, figure carving, pictorial carving, and inverted carving. However, they all require fundamental steps and basic tools, with variations, of course.

Some of the basic tools are: marble slab, tracing paper and tracing stylus, mallet, swivel knife, shell tool, camouflager, bevels, cutting knife, skiving knife.

Figure 5: Stamping Tools

Here are the steps that I would take to make a belt for myself:

1. Double check my measurements: waist size and buckle size.
2. "Case" the leather—pull the belt blank through a bowl of water. Allow the water to soften the fibers. When leather has returned to natural color it will be ready for tracing and cutting.
3. Make tracing from the pattern.
4. Cut the borders of the belt with edge cutter or swivel knife.
5. Transfer the design to the belt, and repeat as often as necessary.
6. Cut the design into the leather with the swivel knife.
7. Bevel the borders using beveler tool and mallet on marble slab.
8. Use the camouflage tool on leaves and stems.
9. Bevel all cuts, holding the bevel perpendicular and flush with the cut. This tool adds relief and a third dimension to the design.
10. Pear shader gives "dished" appearance to petals.
11. Veiner or shell tool puts veins in the leaves.
12. Background tool is held perpendicular and struck with the mallet to push down the background.
13. Decorative cuts are added after all other tooling is completed.

Figure 6: Beveling the Design with Beveler and Mallet.

To complete the belt a few more tools and materials are necessary. However, time and space do not permit a full description of those steps. Suffice it to say, it is now time to bur the belt edges, apply leather dye or leather dressing, install buckle and snaps, punch the holes, and make a leather loop or keeper. And that is it!

My thanks to a friend, who wishes to remain nameless, for the drawings accompanying this article.

TWO NEW OFFICERS APPOINTED TO VACANCIES

The CRAFTS Board of Directors has filled the offices of Secretary and Treasurer, made vacant by recent resignations.

The new Secretary is Barbara (Mrs. Alexander) Farnham of Stockton, at whose home CRAFTS has held its fall picnics for the past three years. She replaces Bill Gustafson. Barbara's interests run to kitchen and gardening tools and, of course, to tools relating to wool and sheep.

The new Treasurer is John M. Whelan of Murray Hill, who will fill the unexpired term of Carroll Palmer. John is a tool collector with a particular passion for wooden planes.

POLLAKS TO PUBLISH WORK ON WOODEN PLANES

When Martyl and Emil Pollak of Mendham began collecting wooden planes, they had difficulty tracking down information on the tools and their makers. Although a lot of plane lore had been published, it was not always easily accessible. Other information was known only to individual collectors. The Pollaks decided to rectify this problem, and they began to store their plane data in a computer.

The results of these labors will soon be available to everyone. In March their A Guide to American Wooden Planes and Their Makers will be published. It is intended to be a handbook for beginners and advanced collectors alike.

Compressed into its 336 pages will be everything you always wanted to know about wooden planes—well, almost everything. There is a brief overview of wooden planes, with illustrations of various types and with profiles of about 40 of the most common moulding planes. And there are actual (continued on page 12)
Author's Note: Other researchers have placed Napoleon Erlandsen at 615 Fifth Avenue. This is in error, it should be Fifth Street. The reason for the confusion is that early directories give the address as "615 Fifth." For Fifth Avenue the address would have read: "615 Ave 5."

Between 1848 and 1880 Lauritz Brandt is listed at 222, 220 1/2, 417 and 615 Fifth Street. Yet all of these addresses were located between Avenues B and C. The reason for the wide range of numbers, from 220 1/2 to 615, is that Fifth Street was frequently renumbered during these years. He might have moved, but he did not move very far. — D. M.

machiinst, and like Erlandsen, he was located on Fifth Street. But twenty years appeared to separate them.

Could I establish a link between the two men?

Over the next month, as time permitted, I went forward and backward from the 1854-55 listing. Brandt first appears in the 1841-42 directory as Lawrence Brandt, a machinist at 13 Chambers Street. He next appears in 1843-44 as Lauritz Brandt, still at 13 Chambers. He is not listed again until 1848-49, when he is at 222 Fifth Street. Sometime in 1850-51 he moved to 220 1/2 Fifth, where he remained until 1859-60. Thus my plane was made sometime between 1850 and 1860, predating N. Erlandsen by at least five years.

In 1860-61 Brandt is listed at 417 Fifth. He was nearing Erlandsen in both time and location. From 1860-61 to 1867-68 he is listed at either or both 417 Fifth Street or 136 Second Street, which was his home. Brandt's last listing as a machinist was in 1868-69, at 615 Fifth Street. This was Erlandsen's address (See author's note above). I had found a link at last!

Now I backtracked and began checking Erlandsen. He first appeared in a directory for 1864-65, when he

Figure 2 (Photo by the author)

This set me off on a search of NYC directories. Roger Smith's PTAMPIA (p. 208) gave a working date of 1874-75 for Erlandsen, and thinking Brandt might be a contemporary, I started with that year. But no luck. At random, I then tried 1854-55. And there he was—Lauritz Brandt at 220 1/2 Fifth Street.

Like Erlandsen, he was listed as a
lived at 519 Fifth Street. In 1865-66 he is listed as living at 419 and working in the rear of 417 Fifth. Again the same address as Brandt. Another link. Ever since I saw the Brandt and Erlandsen planes together, I felt that they were somehow connected.

The surfacing of Joseph Popping, Dan states, "is further evidence for a hypothesis of mine, to the effect that there was an industry (albeit a small one) in New York City (more accurately Manhattan) in the second half of the 19th century which made distinctive metal tools: mitre planes, shoulder/rabbet planes and bow drills."

With the discovery of Brandt, this theory should be considered fact. An idea of the size of the industry can be gained from the Annual Reports of the Factory Inspector of the State of New York. At their height, in 1897, J. Popping employed three men and J. Erlandsen employed four.

Postscript: Little did I realize how valuable Dan Semel's notes were to be. But on my second tool-hunting excursion after receiving them, I found and purchased a 1 1/2" x 8 1/2" J. Popping shoulder plane.

(Apprentice, continued from page 6) recognize major principles of design, to develop step-by-step procedures, and to execute fine cabinet work.

Prior to involvement in this aero-mechanical task, I supposed that a cabinetmaker was scarcely more than an expert worker with hand tools. I did not know then that a master craftsman's all-round competence embraces both sophisticated theory and extraordinary skill. I now understand the painstaking labors which go into the making of a staircase volute and kindred curvilinear objects.

Truly, the making of a wooden propeller provided a significant turning point in my apprenticeship experience. Indeed, it enabled me to find my way out of a vague, easy-going sphere of "rough" carpentry and into the disciplined world of the cabinetmaker.
Max Richardson of Garrison House Antiques in Summit has identified the "bench-mounted clamping device" belonging to John Dempsey and portrayed in Pop Rivet's "What's It?," No. 6, in the last issue of The Tool Shed.

It is, says Max, a bench for holding chairs while their seats are being rerushed or recaned. The two clamps on top of the bench are to hold the chair legs.

Most valuable of all is a 260-page biographical directory of over 1300 makers—some entries are short, some are long, and some appear for the first time. And there are also about 700 makers' imprints shown (in some cases, several stamps of the same maker).

There is even more. But buy the book. It will probably be available by the next CRAFTS meeting. Retail price: $15.00.