Cheap No-name planes – Issues?

Steven Barrett recently asked me if I could assist with sorting out problems he had with a hand plane.

This example is branded MTS #3 and is equivalent in size to the Stanley #3, albeit slightly larger. It is imported into South Africa by Matus and is sold widely in hardware shops - #3, #4 and #5 models are available from about R350- upwards.

Steven had followed the usual steps of flattening the sole and the back of the blade before sharpening it. He was unable to get the plane to cut properly and the lever cap would jump out after a few strokes.

I have included this diagram of the cross section of the Record #3 plane for reference, in case you are unfamiliar with the technical names for the parts of a hand plane. It comes from an old Record book on their planes.

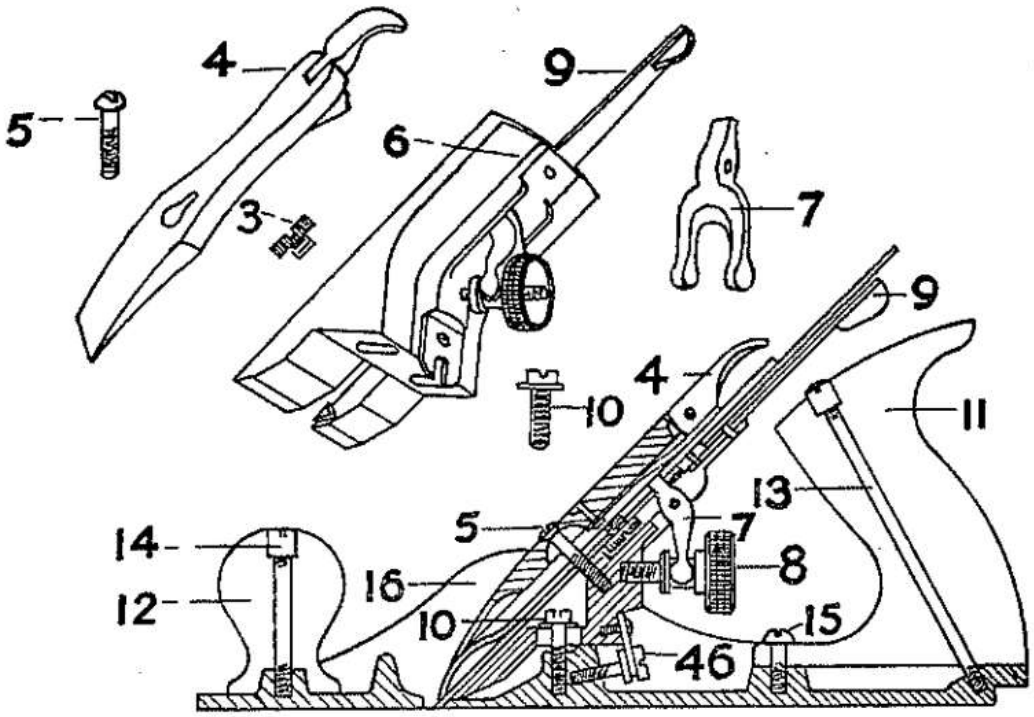

Fig. 22.—Parts of Record Planes.
3—Cap Screw. 4—Lever Cap. 5—Lever Cap Screw. 6—Frog, complete. 7—"Y" Adjusting Lever. 8—Adjusting Nut. 9—Lateral Adjusting Lever. 10—Frog Screw. 11—Plane Handle. 12—Plane Knob. 13—Handle Bolt and Nut. 14—Knob Bolt and Nut. 15—Handle Toe Screw. 16—Plane Body. 46—Frog Adjusting Screw.

On inspecting the plane, we identified a number of issues:

- The MTS #3 iron is too narrow, at 45.5 mm, compared to the cap iron which is 46.7mm. Compare these with a Record #3, where the iron and cap iron are both 44.5mm. The MTS cap iron is plated with some sort of chrome plating, which is unnecessary, and just looks cheap. The cap screw (3) is too long, but fortunately doesn't foul the lever cap. Interestingly, the sole is significantly wider (59.6mm vs 54mm for the Record #3). The MTS plane is also heavier at 1626g vs 1408g for the Record #3 – the blade is a very loose fit in the mouth laterally, which turns out to be a good thing.

- The MTS' lateral adjustment lever (9) protrudes too high above the frog, so it fouls the slot in the bottom the blade. The mounting point protrudes by about 1mm, so even bending the lever downwards, will not correct the restricted movement - the lever cannot perform its lateral adjustment function over the required range. Fortunately, with the wide mouth, there is enough play to make the

necessary lateral adjustment, but I don't think this was intentional.

- The depth adjustment wheel (8) on the back of the frog is brass, but the tolerance of the thread on the stud is such there is excessive play, showing up as a disconcerting wobble. This also manifests itself as extra backlash and uncertainty in the cutting depth adjustment setting.

- The bottom was reasonably flat, and didn't require too much effort by Steven to flatten to a reasonable degree. Testing the sides for perpendicularity to the sole showed both sides out of true, spreading at the top, by 0.5mm on the one side and 0.8mm on the other. The sides were not flat either. This means the plane can't be used with a shooting board, without compromises.

- The most significant flaw appeared when the lever-cap (4) was inspected. The lever-cap is too short, so at the bottom end, it presses down on the upper part of the cap iron. The photo shows the MTS cap iron and blade on the left, next to the genuine Record #3 items on the right. You can clearly see how much shorter the MTS lever cap is compared to the record. You can also see that it contacts the cap iron too high up.

- The lever cap screw (5) that holds down the lever cap and cutting iron assembly onto the frog (6), has a flat surface under the head, rather the more common conical shape seen on the Record. This means that it doesn't positively locate the lever cap in position.

- The toggle lever that the user presses down to secure the lever cap also has a strange shape, so it is stiff and doesn't engage properly. You can see the differences between the two in the picture. The MTS lever cap is at the bottom.

The combination of these latter three flaws means that when the plane is used, vibrations from the cutting forces can cause the lever cap to move backwards and pop off, as Steven has experienced.

Some minor fettling of hand planes is generally accepted by most users. Only exceptional hand planes don't require some tuning out of the box. Examples from Veritas and Leigh-Nielsen are reported to only need a slight touch-up of the edge of the blade before being fully usable.

(I don't have the pleasure of owning one of these.)

Most users understand and accept that some fettling will be required out of the box, in return for a substantial cost reduction.

Typical tasks that a user may expect to do are:

- The sole can be flattened;

- the blade back can be flattened and the blade carefully ground and honed;
- the cap iron can be fitted to the blade to remove any gap;
- and the mouth can be cleaned up.
- The frog fit and flatness can be checked and adjusted with a file if need be.
- The action of the lever on the lever cap can be improved with a file.

However, the following flaws in this particular example are probably not salvageable.

- The lever cap cannot be lengthened,
- the blade cannot be widened,
- and the shape of the lever cap hold-down screw can't be corrected without replacing them,
- and the lateral adjustment lever can't be lowered.

Even if spare parts were available, that actually fit (Do standard Stanley or Record bits fit?) – this would be uneconomical.

So the verdict? Proceed with caution, if offered an MTS or Stanley Handyman series plane. (See a previous Crosscut – August 2016 for an explanation on the issues with the Stanley Handyman series.)

Should you be offered one of these units, bear in mind these potential faults to look out for, and which may be difficult to solve. As an educated user, you can then make the right decision. My real concern is that a lay person may buy one and then face these problems, without knowing how to solve them, and be put off trying to use hand planes.

If you can't afford a new premium plane, then the advice still stands - find an older Stanley or Record (or similar) plane in good condition, at a reasonable price and tune it up to fully working order.

Update:

Subsequent to discussing these issues at the October 2016 meeting, Ken Bullivant offered to see if he could to make the plane more workable. He took it home with him, where he did the following:

- Reshaped the cam on the lever cap to a better shape. To do this, Ken drove out the roll pin that the lever cap cam pivots on and then filed the shape of the cam. He then replaced the roll pin.
- Filed the key-hole slot in the lever cap to extend it to lower the bottom point of contact
- Lowered the lateral adjustment lever to flush with the top surface of the frog. He did this by drilling out the rivet to remove the lever, filing down the bearing surface and then riveting the lever back onto the lever cap.
- Adjusted the frog to properly line up with the throat and the sole.

The work that Ken did requires considerable skill, and would not be within the capabilities of the average woodworker. Although the plane is now usable, it is not up to the standard that can be achieved with more suitable old plane.

In my opinion, the best use for this plane would be to repurpose it as a scrub plane for roughing out, by opening out the mouth and grinding a significant radius on the iron.

Frans also produced an unused example of the MTS #3 and on inspection it also had the same issues, so Steven's example was not an exception.