

Rasps, fish hooks and The Battle of Trafalgar

Part 1 of 2 By Jeffrey Newnham DWCF

“Most farriers probably have enough old rasps kicking around that could, if sharpened, keep them in rasps for a year”

UK farriers spend approximately £1.5m per year on rasps. After speaking in depth with farriers over a two-year period, anecdotal evidence revealed that in every box of six rasps used for trimming, two were poor quality and rarely lasted more than a couple of days, two were ‘okay’ and lasted up to a week, and two lasted more than a week before being used for ‘clenching up’. These figures did not vary significantly between manufacturers or models. In some cases, complete consignments of rasps were returned to suppliers. With £1m spent annually on rasps that were at best good and at worst OK, and £.5m on rasps that did not work, I looked at ways of lengthening the useful life of rasps that could dramatically reduce waste/replacement.

After using a buffing mop and various abrasive products to mechanically sharpen my rasps for many years, my attention was drawn to whether a method of chemically sharpening (as used for products such as fish hooks) could be used for rasps. My research took me to the work done by Tumminaro in 1995. Following a year of my own testing using an etching and sharpening solution, manufactured by Chemsharp Inc on 30 used and discarded rasps, I found that chemically sharpening and/or etching a sharp edge were not only simple and effective but the ‘pickling’ process was easily performed with a suitable dip tank and a good quality solution. Chemical sharpening was, I discovered, a simple, effective treatment system that took up very little space.

The only down side seemed to be the reliability of production and distribution. By teaming up with a UK chemical company and, after testing on hundreds of rasps, a new ‘pickling solution’ was developed. The main focus on developing a new liquid was to take into account the arena in which the liquid would be used. The liquid had to:

- ! Be as safe and stable as possible;
- ! Be able to be used by untrained operators;
- ! Conform to new detergent regulations;
- ! Comply with REACH (Registration, Evaluation, Authorisation and restriction of Chemicals);
- ! Overcome the frothing reaction (when rasps are immersed in a pickling solution, the reaction was to lift debris from the rasp; this debris rose to the top of the liquid in a ‘foam’ where it either stayed or overflowed the dip tank. When the rasps were removed from the dip tank muck of this contaminant was deposited as the rasps were removed, thus coating them with a sticky residue that needed removing by washing/scrubbing);
- ! Flexible, the ‘pickling’ process should not be time critical;
- ! Remain ‘still’ (no frothing or foaming, so that the

etched debris would fall to the bottom of the tank), and Efficient

Testing

The primary method for testing the liquids we developed was simple; ‘lets stick a rasp in it and see what happens!’ This progressed to, ‘lets try this rasp on a foot’. Not very scientific I agree, but it gave us the feedback that we needed to progress. After a year of ‘sticking a variety of rasps in various solutions’ and then testing them on their effectiveness for trimming and clenching up (bearing in mind that these were already rasps that had been discarded as useless, the results were very encouraging. Making this liquid available to farriers has provided essential feedback for further product improvement.

We then reached a point where anecdotal evidence and simply saying ‘this is great’, was insufficient to help other farriers reduce the number of new rasps they were buying and show them that rasps, far from being a disposable hand tool, could easily be sharpened and re-used.

We then looked at ways we could test the restorative qualities of our liquid, and called on the services of the Cutlery and Allied Trades Research Association (CATRA), which has been carrying out this type of testing since 1952.

The tests we asked CATRA to perform for us had the following parameters:

We would test three out of a possible 20 different rasps (one economy rasp, one mid-price rasp and one top of the range rasp)

We would not examine any rasp prior to testing

We would test both sides of the rasps

Test equipment used, included a CATRA rasp machine, CATRA software and CATRA measuring devices, and a mild steel block.

The tests

Test 1. Treat a new, unused rasp with EasySharp Liquid

Using one of each of the rasps, soak them for four hours in the EasySharp Liquid, remove and dry.

1. Using the CATRA flat file test machine, take a 100 cut light load test and measure the metal removed.
2. Take a 200 cut heavy load test and measure the metal removed
3. Repeat the light load test and measure the metal removed
4. Repeat steps 1 to 3 on the other side of the rasps.

Test 2. Test untreated new rasps

Using the other three rasps

1. Using the CATRA flat file test machine, take a 100 cut light load test and measure the metal removed.
2. Take a 200 cut heavy load test, and measure the metal removed.
3. Repeat the light load test and measure the metal removed.
4. Repeat steps 1 to 3 on the other side of the rasp.

Test 3. (a) Test rasps used in Test 2 that had been treated with EasySharp Liquid and (b) test same rasps after they had been used

1. Subject the rasps to EasySharp treatment.
2. Using the CATRA flat file test machine, take a 100 cut light load test and measure the metal removed.
3. Take a 200 cut heavy load test and measure the metal removed.
4. Repeat the light load test and measure the metal removed.
5. Repeat steps 2 to 4 on the other side of the rasp.
6. Repeat steps 1 to 5.



PART 2 of this article which will include “Results” and “Recommendations/Conclusions” will be published in the next edition of **Forge Magazine**, if you cant wait until then, they are viewable on www.easyssharp.co.uk (follow link to test results)

Ps.If you are wondering “ What the heck has this to do with The Battle Of Trafalgar “.....Easy Sharp Liquid is UN1805!



Further information
www.easyssharp.co.uk
www.hse.gov.uk/coshh/index.htm
<http://www.easyssharp.co.uk/Video.html>
<http://www.hse.gov.uk/chip/phrases.htm>
www.catra.org
www.boggstool.com/liquidhone.htm
<http://www.fishingpatents.com/chemically-sharpened-hook-patents-usa.shtml>
<http://www.artemischem.co.uk/>