Leather Working Group
Saturday 2nd April 2016

Individual Hide, Skin and Split Traceability

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The Ideal Identification System

- ❏ Hygienic, safe, for application in a kill floor or tannery
- ❏ Can be applied while the hide is still on the animal
- ❏ Human Readable / Human Decodable
- ❏ Application device connected to the internet
- ❏ Code can be externally generated
- ❏ Selectable number of digits eg 4, 5, 6, 7
- ❏ Lasts through to finished leather
- ❏ 100% Retrieval
- ❏ Readable with hair on and hair off
- ❏ Machine Readable
- ❏ Unique code on each piece
- ❏ Applied and readable on the grain and the drop

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Some colleagues and I, some years ago, brainstormed what we thought was the "Ideal Identification Scheme". This is a very comprehensive list, and I might add it is a difficult one to achieve. However for the sake of this exercise, let's assume we have an identification system which can deliver all of these things. If that is the case, what are the economic, societal and environmental benefits it might bring. In other words, can it play a part in delivering a more sustainable supply chain.

How can the Ideal Identification System bring benefits to the supply chain?

There are several ways in which individual identification can be used to eliminate waste in the supply chain. Elimination of economic waste, societal waste and environmental waste is the key to attaining sustainability.

Such simple things as efficiency in stock control, in contract tanning, and in settling claims are all dramatically enhanced when you have individual traceability and a good data base to back it up. I won't go into too much detail about these, but ways you can make more money out of your business using individual identification can be found on our website, www.gibsonbassstamper.com.

One of the benefits of individual identification I will talk about is the capacity for hide improvement.

I recently read a quote by Dr. Gerhard Wolf of BASF:

"Raw stock is the single most important and valuable resource in the production of leather. Every attempt to increase the added value by upgrading low-quality leather brings immediate benefits".

In other words, any attempt to improve hide and skin quality eliminates waste and adds value. The leather industry's greatest area of waste is hide and skin damage. There is huge potential for improving the quality of hides and skins, and also less directly splits, by feedback of information. This of course can only be achieved when there is an individual hide skin and split identification system in place.

I am sure everyone is aware of the "double whammy" effect of poor quality hides and skins. They cost more to process because you have to try to disguise the problems, but they sell for less. And often the yield is less as well. This is a massive economic cost to the industry.

Every farmer I have spoken to always thinks their hides and skins are the best, and of course when you look closely, you often find they are not; however nearly every farmer I have spoken to when faced with the reality of the quality of their hides or skins, is keen to do something about the hide or skin quality, especially if they get some reward for it.

What I can say is, if you have individual identification, and can trace back that hide, skin or split to the farmer or the meatworks, you have a potentially very powerful database of knowledge that can be used to make things more efficient, and hence more sustainable. For example let me explain some work done in Australia in this area.

Some Examples of real data

Taken from one alliance over 4 months

I have some real data from one of the supply chains we developed.

The Worst

- **Supplier 1 31/8 Lot 4008 24 hides**

Brands	Scratches	Parasites	Score
4.8	1.9	4.9	59.9

- **Supplier 2 1/8 Lot 5019 37 hides**

Brands	Scratches	Parasites	Score
5.0	2.2	4.5	62.3

- **Supplier 3 25/8 Lot 1012 25 hides**

Brands	Scratches	Parasites	Score
4.9	2.6	4.2	64.2

We developed an objective quantitative grading system. This grading system allowed us to give hides a score out of 100. Each of the hides was given a score out of 5 for brands scratches and parasites. 5 was the best score and 1 was the worst. We also graded for tannery damage and abattoir damage, but we did not feed this information back to the farmers, as they had no control over this damage. We stamped the hides at the slaughterhouse, and when they got to the tannery we graded them and recorded the stamp number. Through the software we were able to match the grading to the body and therefore to the farm. We were able to clearly identify the worst hides, and where they came from. Some of these were dreadful, but when they are mixed in with a couple of thousand other hides they do not stand out, but when they are individually identified and traced back a clear picture emerges.

With regard to animal husbandry, these hides with average scores around 2 were very badly treated. They were not treated humanely, and would have been in pain for most of their lives.

The Best

Feedlot 1	11 Deliveries		2/7/XX - 16/9/XX
Brands	**Scratches**	**Parasites**	**Score**
5.0	3.5	4.7	79.5
5.0	4.5	5.0	93.2
5.0	4.3	4.8	94.5
5.0	3.7	4.9	82.7
5.0	3.8	4.9	84.0
5.0	3.7	4.8	81.7
5.0	4.0	4.9	86.7
5.0	4.3	5.0	91.4
5.0	3.8	4.9	84.7
5.0	4.7	5.0	95.8
5.0	4.9	4.4	95.1

We were also able to identify the best hides. This particular feedlot produced consistently wonderful hides. Much better that the average. It was like a goldmine for the tannery, but they had never known it before. Having this sort of knowledge allows the innovative operator to make all sorts of decisions that cannot even be contemplated without individual identification.

Just to give you a brief idea of some of the data analysis that you have access to if you have individual traceability back to the body. You can analyse the data by sex, by breed, by live fat measurements, by season, by region etc etc. Traditionally hides have been just a lottery. We know there is variation, and we know that it costs us money, but that has been all we know. With individual identification and traceability we can analyse the source of that variation, and take action to minimise or prevent it.

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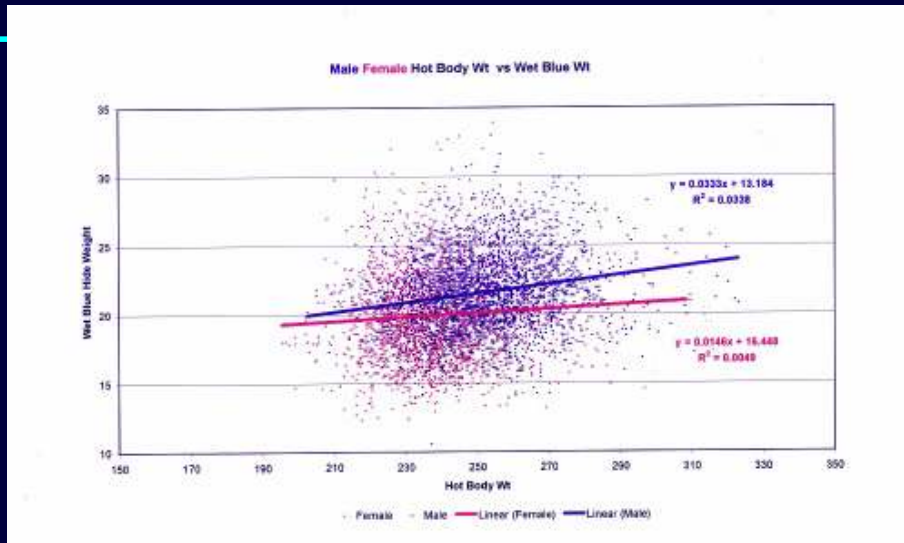
In one network I worked with, the hides were paid for based on the hot body weight of the cattle. While there was a correlation between the hot body weight and the eventual wet blue hide weight, it was quite different from the one being used for calculation of the price, as well as being quite different for male and female cattle. This is just one of the many types of analysis that is possible when you collect this type of data. It can be an immensely useful source of information and knowledge to use to get a competitive advantage for your business.

So after looking at the economic benefits of the "Ideal Identification System", what about the societal and environmental benefits. This turns out to be the biggest advantage of such a system.

I must admit that several years ago I would have struggled to draw a link between traceability and societal and environmental waste. There is no problem with many aspects of the tanning industry in identifying preventable waste in these areas, but how does Traceability play a part? Well the work that has been done by the Brands and through the Leather Working Group certainly has changed my thinking on this.

As has been shown by the LWG, traceability is one of the key weapons in being able to prove that a leather supply chain is environmentally and socially responsible. The giant leaps made in rewarding those supply chains that put in place systems to ensure no leather comes through them unless the societal and environmental responsibility is documented and proven have been immense.

Which brings me to the subject of split identification. There are many gold members of the LWG who have in place an identification system, which is not based on individual identification, but which does, in part, link their products back to the origin. They may be able to say that they know where the hides did not come from, but cannot truly trace the origin back to the individual body. These batch or paper based identification systems provide a form of provenance, but I would argue at a level which nowhere near approaches what is needed for achieving true sustainability. They do however preclude achieving many of the other economic benefits I have talked about that individual identification brings. But the main problem with these batch based systems is that they exclude a large part of the industry from attaining true sustainability, and that is those tanners who process splits.

The LWG protocol states "*Splits are not thought capable of being subject to physical identification and it is therefore anticipated that Grade B is the highest grading achievable by organisations working with splits.*"

Of course if there was an Ideal Identification system available, such as I described earlier, where the individual identification was applied on the grain and the drop, this caveat, this enduring relegation of split tanners to B Graders in the eyes of customers, could be overcome, and they could at last achieve Gold. If there were a system that allowed individual identification of both the drop and the grain at the same time, then the industry could get the full impact they are after in creating sustainability, rather than settling for something which, while it holds sustainability as a lofty goal, admits that it is unachievable.

So let's return to my Ideal Identification system and see if it is achievable. To help with that, firstly let me describe the Gibson Bass Stamper to you. It is a computer controlled stamping system which stamps individual letters, numbers or codes onto a hide or skin or split at virtually any stage of the tanning process, but is most useful if applied on the kill floor, at the abattoir, or at the tannery before or after fleshing.

The Gibson Bass Stamper

7 Individual cutters, each one driven independently by a hydraulic piston as programmed by the software
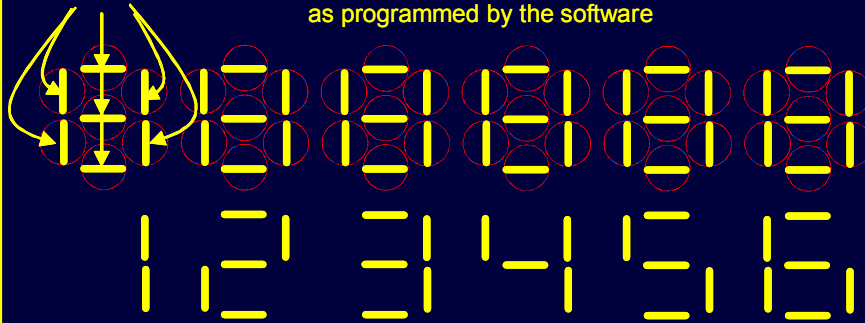
Examples of seven segment digits and their translation into individual numbers

The stamper is made up of several digits, in this case 6. Each digit has seven cutters that make up seven segment numbers, letters or codes. Each cutter has its own hydraulic cylinder which puts a force equivalent to 20 kg on the cutter, forcing it through the hide. The computer decides which cutters will be fired off on each stamp, making any number or combination of numbers and letters.

The Gibson Bass Stamper

The numbers are very clear to read in wet blue.
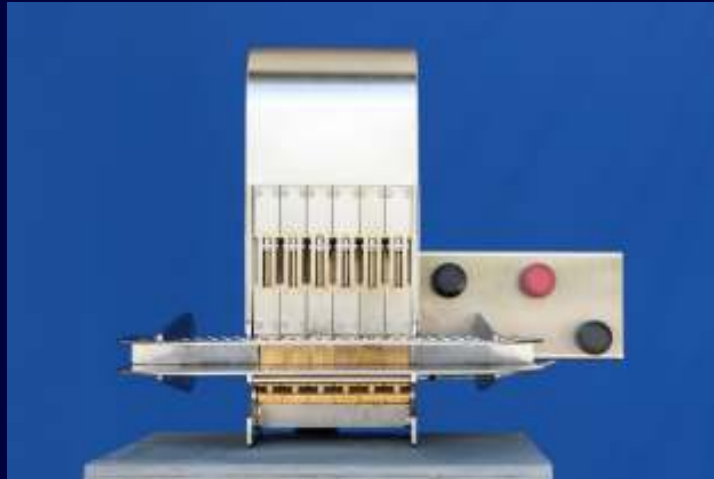
The Gibson Bass Stamper

The stamper has a facility to allow the stamping of any number for the purpose of trials.

The Gibson Bass Stamper
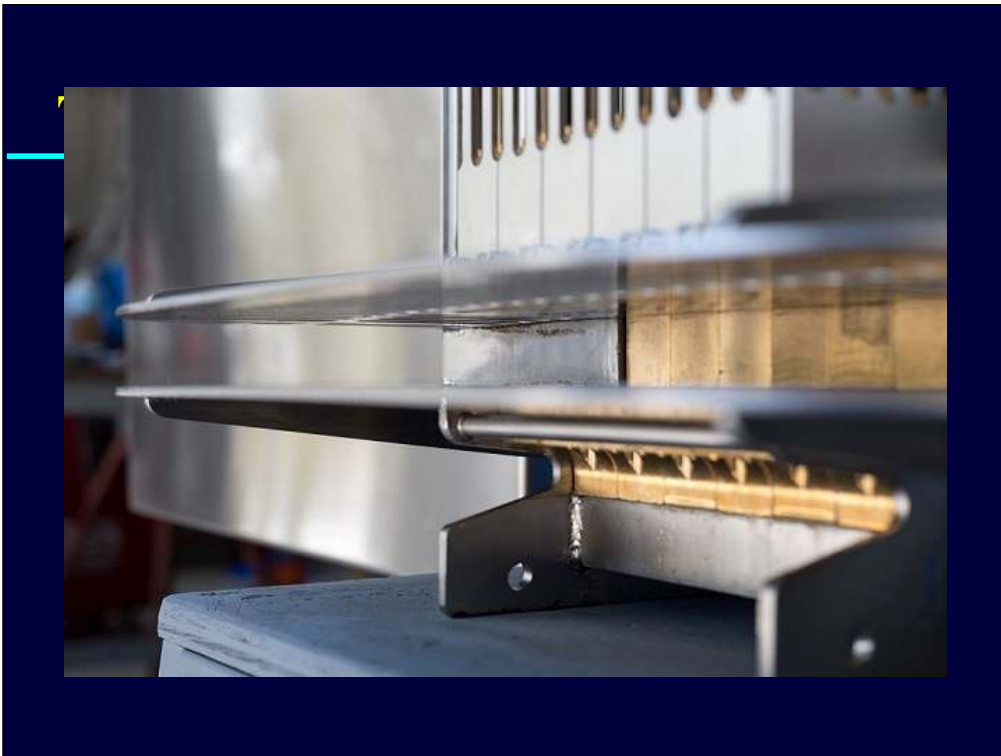
The Gibson Bass Stamper

The stamping head.

The Gibson Bass Stamper

Close up of the stamping head.

Close up ot the stamper's jaws.

The Gibson Bass Stamper

The Gibson Bass Stamper

The stamper cuts seven segment numbers letters or codes into the hide, skin or split. The cutters go right through, and hence are still there when the hide is split. The bottom image shows the exit marks on the flesh side.

The Gibson Bass Stamper

The machine is computer controlled and has an Ethernet connection for remote communication with the outside world. The touchscreen provides operator setup. I could go into a lot more detail, but there is a web site available for those who have interest – gibsonbassstamper.com

The Gibson Bass Stamper

Some electronics.

The Gibson Bass Stamper

Hydraulic gauge.

The Gibson Bass Stamper

Hydraulics in the control box.

The Gibson Bass Stamper

Stamping at a wet blue plant. This plant fleshed at 600 per hour, and the stamper was easily able to keep up with it.

The stamper at a hide store in Sweden.

The Gibson Bass Stamper

The stamper on a kill floor in Kansas, USA.

The Gibson Bass Stamper

In this installation, at the bottom of the hide chute at the abattoir, the kill floor computer sent the number to be stamped to the stamper.

The Gibson Bass Stamper

Once the kill floor sent the next hide number to the stamper, it was able to stamp. It could not stamp another number until the kill floor computer sent it another number. The integrity of the stamp is crucial when it is being matched back to the individual body. As one customer said, "every hide must have a number, and every number must have a hide". We go to great lengths in the software to make sure the right number goes onto the right hide.

The Gibson Bass Stamper

When the stamper is manufactured, it fits neatly onto a pallet for shipment by air to the customer.

The Ideal Identification System

	Gibson/Bass Stamper
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❏ Lasts through to finished leather	✔
❏ 100% Retrieval	99.9%
❏ Readable with hair on and hair off	Possible
❏ Machine Readable	Possible
❏ Unique code on each piece	✔
❏ Applied and readable on the grain and the drop	✔

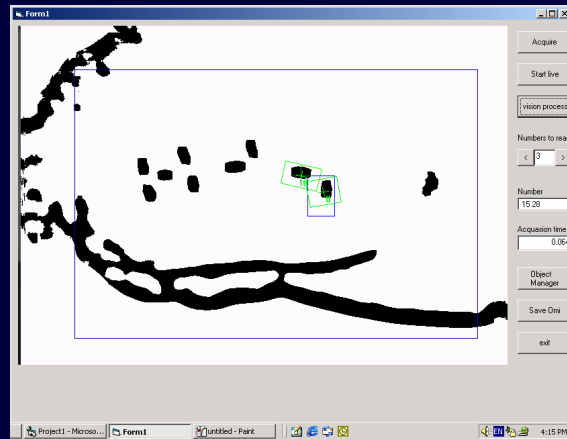### Joe Gibson
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So how does this stamper system measure up under the Ideal Hide Identification protocol? To see this in more detail, see
http://www.gibsonbassstamper.com/ideal%20identification.html

The Ideal Identification System

Gibson/Bass
Stamper
Possible

❏ **Machine Readable**

This shows how the stamped number, converted onto a simple code, can be machine read.

The Gibson Bass Stamper

The stamper is very robust, suitable for the wet and corrosive conditions found in abattoirs and tanneries. This stamper has been stamping a million hides per year for 4 years, and every day is hosed down like this. These customers apologised for not getting in touch more often, but said they never need to talk to us because the stamper just keeps on stamping.

END

The Gibson-Bass Hide Stamper

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In summary, individual identification not only contributes to sustainability, but is an essential part of it. And at last the split tanners of the world have a window of opportunity to receive individually identified splits that so that they need no longer be seen as B Graders, and can graduate to Gold members of LWG, and hence make their full contribution to sustainability. For the split tanners to achieve this, it would require their suppliers to have hides which have this sort of identification on the hides that they split.

Is this level of cooperation possible in this competitive industry? We have seen reasons why it should be. Apart from providing split tanners an avenue to sustainability, there are also considerable economic benefits to be gained from individual identification that are not available from paper or batch based systems. I cannot answer the question as to whether any hide tanners will consider this option, but I do believe if individual identification is taken up seriously, the gains to be made in eliminating waste, and taking opportunities that are provided by the depth of knowledge it provides are truly immense.