



**Rationalising the movement of wet dyed leathers:
The automatic guided vehicle carrying two containment vessels.**

The automatic movement of leathers after dyeing

Luca Tisato, Feltre, Italy

The movement of leathers following retannage and dyeing has always been problematical. Each day there are various dyeings taking place, hence the risk of staining between different loads – both from spashing and from contaminated containers.

Moreover, hides and skins have to be unloaded from the drum into a container with the wash float. When these goods are moved this water is spread around the factory, and this can cause health and safety issues.

There are other high costs involved:

- The containers are often damaged while being moved around.
- Forklifts incur high maintenance costs and have short life as they operate under wet conditions.
- There is a need for a forklift operative.
- There are time delays between unloading and the next machine operation.

Movement of wet leathers rationalised

The movement of goods has been rationalised using an automatic guided vehicle (AGV). This has been called Caravel, the name of small ocean-going sailing vessels that moved goods between Europe and the Americas.

In one example – comprising four lines of five drums – the unloading bin supported on the first AGV is positioned underneath the specified drum. The goods are tipped into this bin, and, if the drum is at the far end of the line, then transported beneath the other drums in process to the front of the line. The bin is covered at this time to prevent contamination from any drips that may occur.

Once clear of the drum-line, the bin is ready to transfer to a second AGV. This runs at right angles to the tracks beneath each drum row, and serves the four lines of drums.

Once the bin is moved onto the second AGV, a clean empty bin is automatically shifted from the second onto the first AGV; this is then available to position as required ready to receive the next load from the drum line.

The second AGV then moves the container filled with wet leathers for positioning in preparation for the samm/setting operation. At this stage a third transfer of the bins can take place to optimise movement of the leathers.

Once the samm/setting operation is complete, the empty bin is cleaned and returned to the system.

Onboard rechargeable batteries power each of the AGVs, and the movement controlled by simple hand controls through a WiFi system. 🌐