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Transporting swine: One Manitoba company's experiences through sixteen years of growth

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Introduction

Steve's Livestock Transport Ltd. was started by Steve Brandt in 1987 with a one-ton truck and gooseneck trailer. The initial client base was rural Manitoba cattle and hog producers. The company has grown and diversified over the last 16 years to include over 70 trucks and trailers, the operation of three wash companies, and a mechanic shop. Under the umbrella of these five companies, 175 people are permanently employed, and they provide services to over 250 customers. Over the years we have seen Steve's Livestock evolve from a transport company hauling an even mix of cattle and hogs to one that hauls nearly all hogs. Specialization in efficient hog transport has allowed fine-tuning of services, employee training, and biosecurity resulting in a service company prepared to evolve with the hog industry. Throughout the years, there have been changes and challenges that have required adaptation and fostered industry improvement.

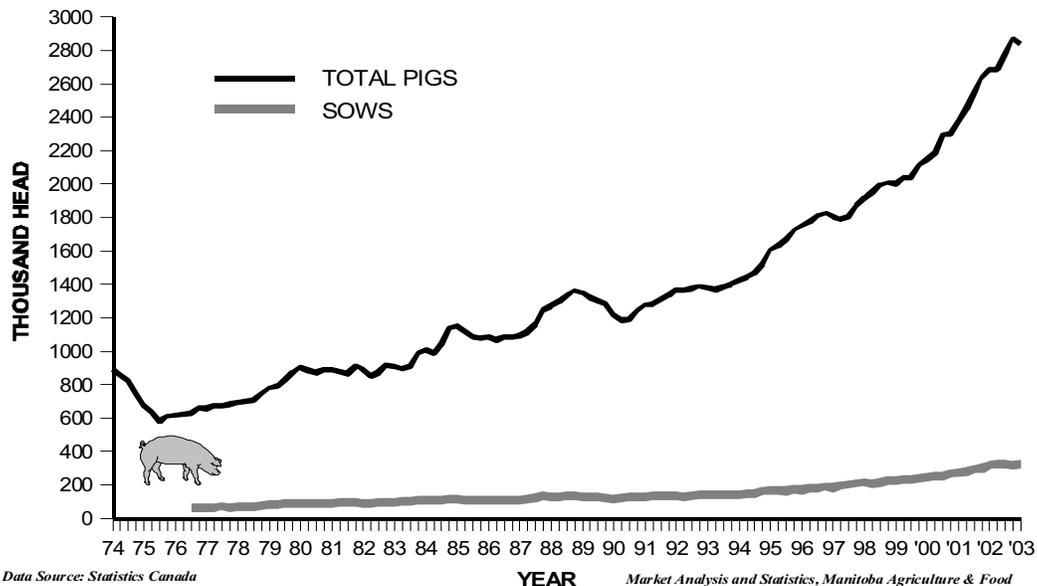
Improved skills, technologies, equipment, and distribution methods have greatly increased food production and

lowered food prices. Live animal production has been evolving in the last century, so much so that today only 3% of Manitobans are involved in primary food production, whereas in 1900 nearly 80% of the province's population lived on farms (Manitoba Government). As a result, producers are raising hogs not only for personal consumption, but to meet worldwide demands for Canadian pork. Pork production in Manitoba has steadily increased since 1975 (see **Figure 1**). Transport companies have seen a commensurate increase in contracts to transport these animals to the outside markets for which they are produced.

The introduction of the three-tier system of sow barn, nursery barn, and finisher barn in the hog industry demands a wider availability of transport vehicles and skilled drivers who can insure the production cycle is completed efficiently and with quality. Since the beginning of Steve's Livestock Transport Ltd., we have seen consistent increases in the demand for quality transportation and the subsequent emergence of quality programs throughout the hog industry. Throughout this time, we have made efforts

Figure 1

PIGS ON MANITOBA FARMS BY QUARTER 1974- 2003



to meet or exceed the quality standards of the transport industry.

Challenges faced in the transport sector

In 1987 one of the biggest challenges facing livestock carriers was the cost of transport. Producers shopped around for the best price on each load and contracted to the lowest bidder. Training, safety ratings, and biosecurity were non-issues and were given minimal consideration when hiring a commercial transporter. As farms became intensive production systems and larger companies involved themselves with these operations, quality throughout the production and transport process became a concern that was closely monitored. From 1996 to 2001 the number of hogs produced in Canada has increased by 26% whereas the number of farms in Canada has decreased by nearly 27% (Statistics Canada). For a transport company, this translates into a steady increase in the number of pigs to move, while dealing with a smaller customer group.

Changes in production methods have brought about a change in public perception of hog production, and, ultimately, the way transport companies service these operations. In the past, in an effort to avoid compromised health in breeding stock, most genetic companies transported their own internal and retail products. They believed that a contract transport company could not assist in preserving a high health status. The popular perception was that “clean” could not be achieved or maintained by a commercial livestock carrier.

We decided to challenge these popular perceptions. By improving employee training, developing state-of-the-art washing facilities, and increasing biosecurity measures, we've met the demands of a changing industry.

Rising to the challenges

Employee training

The Canadian Agri-Food Research Council states that “Employers have an obligation to properly train employees on humane handling, equipment use, transportation regulations and livestock care.” In our company's efforts to fulfil this obligation, we recognized two things:

- We needed outside certification for our training programs.
- We wanted one individual to oversee driver training.

In 2002, the National Pork Board implemented training programs for their Trucker Quality Assurance program (TQA). This program's mission was “To educate truckers on the importance of proper handling, loading and transporting of pigs, with attention to biosecurity and animal welfare, to optimize pork products for consumers”

(TQA facilitator's guide). The TQA program focuses on the following:

- Stress reduction on pigs during transport
- Extreme weather loading
- Techniques to handle downers or slows
- Biosecurity processes based on industry standards

This program addressed many of the concerns facing livestock carriers and met our need for outside certification. We embraced this program by certifying our Director of Quality Control as a trainer, who, in turn, certified our fleet.

The TQA program is a part of every new driver orientation session and certification which is a requirement for employment. In addition to the TQA training, orientation involves a “real-life” road test, a review of our safety program, a drug and alcohol program, and paperwork instruction. The orientation provides an introduction to company values and standards; it outlines expectations and policies for new drivers before they begin driving for the company.

In an effort to standardize driver training and teach company-endorsed skills, a full time trainer was hired to work with all new hires before they are allowed to drive alone. The trainer is also responsible for making follow-up phone calls to customers to monitor their satisfaction with a driver's performance. These follow-up calls are made within three weeks after a driver has completed training to insure protocols have been followed and to decide whether further training is necessary.

Equipment washing facilities and biosecurity measures

As the industry developed new sanitation protocols, the need for increased cleanliness during transport became apparent. In response to this, we built a wash facility in 1995. Owning our own wash facility allows us to control wash protocols and standards while improving our customer service by having the ability to comply with specialized health programs.

Our quality program in the wash bay has been intensely developed with the assistance of Dr. Mike Sheridan (Sheridan, Heuser Provis Swine Health Services) and enhanced with the hiring of a Director of Quality Control. Together, these two individuals have developed the “WISER” system for our wash process: Wash – Inspect – Swab – Examine Results. This standard operating procedure also incorporates a tracking system; packaged together, these quality services give customers the peace of mind that their trailer is clean.

Wash

The following steps describe our washing procedure:

1. Rinse wash bay floor before pulling trailer in
2. Remove all winter covers, decking planks, squeeze gates, and tools
3. Fire hose decking and inside of trailer
4. Apply cleaner to inside and outside of trailer, winter covers, decking, squeeze gates, and tools and allow to soak for 15 minutes
5. Wash all of the above with hot water
6. Fire hose wash bay floor
7. Fire hose decking and inside of trailer
8. Blow excess water out of trailer
9. Have shift supervisor inspect trailer; supervisor must complete inspection checklist (see below)
10. Apply disinfectant to all equipment and surfaces, soak for 20 minutes; for coroplast, disinfect both sides utilizing holding stand, insuring complete coverage
11. Return all equipment to trailer and secure
12. Disinfect deck planks again after they are installed
13. Pull trailer out of wash bay and park on the “clean” side of the yard

Inspect

Inspection of a washed trailer is critical to the quality process. The inspection involves standardized inspection sheets that insure each area of the inside and outside of the trailer is inspected and checked off as clean by the shift supervisor. The identification of any visible organic matter triggers a rewashing step. This process occurs before the disinfecting process, allowing any debris to be washed away prior to the application of disinfectant. If a trailer does not pass an inspection, it is rewashed and re-inspected. This process is recorded in a database allowing us to examine trends with different wash crews, compare rewash ratios, and pinpoint problem areas in trailers that show the highest number of rewashes. In addition to all washes receiving an inspection by the shift supervisor, 15% get an additional spot check by the wash bay manager.

After we established our inspection process, we realized the need for additional checkpoints in our quality wash process. We needed to take “clean” beyond just the visual test and examine the effectiveness of our wash on a deeper level.

Swab (bacteriological examination)

Dr. Mike Sheridan and Dr. Gopi Nayer (Manitoba Veterinary Services Branch) helped us design a method to test the surface of our trailers. The use of Rodak Plates was discussed; however, Dr. Nayer suggested we would get a

more detailed and accurate reading when testing the checker plate aluminum in our trailers if we used a dry swab method to get into all parts of the test areas. This swabbing process would reveal if we left anything behind after our wash and inspection process.

Our next challenge was to decide which areas of the 53-foot long trailers to swab so we could standardize our results and monitor trends in problem areas. We broke the trailer down into five different sections (front, middle, back, top floor, belly) and subsequently created four swab areas (side wall, floor middle, floor corner, ceiling) within those five trailer sections.

Once we defined these swab zones, we developed randomized test schedules for our wash bay managers. These schedules change every month to allow for all areas of the trailer to be tested on a random basis. For each wash facility we take five samples from one trailer weekly. We have used this sampling routine since fall 2001, and we believe it provides an adequate picture of bacterial contamination.

Two groups of five swabs (i.e., from two trailers) are submitted weekly to the provincial veterinary laboratory where they are processed in a manner that gives a semi-quantitative evaluation of the presence of bacteria of concern. Each swab is handled as a separate submission. Dry swabs are incubated for 24 hours in enrichment broth with 0.2% peptone. Incubated enrichment broth is plated out on blood agar and MacConkey agar plates for incubation at 37° C for 24 hours and also to Rappaport-Vassiliadis broth which is incubated at 42° C for 24 hours. The R-V broth is then sub-cultured onto Hektoen enteric agar, brilliant green agar, and XLT4 agar and incubated at 37° C for 24 hours. Plates are read at 24 and 48 hours. Bacterial identity is based on visual examination of typical colonies on specific agar and reported as positive or not detected. The bacteria species of concern are *E. coli*, *Strep. suis*, *Pseudomonas* spp., and *Salmonella* spp. Despite the 24-hour enrichment stage, many trucks show no growth on all five submissions.

The presence of *E. coli* on the swab would indicate fecal matter left in the trailer, and the presence of *Strep. suis* would indicate respiratory secretions left in the trailer after the wash process. Within the first six months of starting the program, we decided to test for *Salmonella* spp. as well. By examining our results and recording them in a database, we have been able to make adjustments to our wash process.

Examine results

There have been two prominent adjustments made to our WISER system since its inception. First, we now insure that the person doing the final rinse and disinfecting of the trailer stays in the trailer throughout the wash process. This reduces the chance of tracking debris back into

the trailer and eliminates re-contamination of the clean surface.

The second adjustment we have made to our process came about by looking at our rewash ratios. The percentage of rewashes after the spot checks was > 5% on several shifts, so, in an effort to bring this number below 5%, we increased the number of spot checks performed by the wash bay managers from 10% of all trailers receiving a complete wash each shift to 15%. By increasing the spot checks we have heightened the awareness of the wash crew, and, in turn, reduced the number of rewashes necessary after the second inspection.

Creating opportunity through challenges

Transporting livestock throughout North America and Mexico provides many opportunities to advance the transportation industry while meeting challenges faced in a constantly evolving industry. These challenges include dealing with drastic temperature changes, hauling animals of varying ages, hauling different health status animals, and transporting for breeding stock companies. Each of these challenges has offered us new opportunities to improve the quality of our business and stay current with the evolving hog industry.

Drastic temperature changes

Over the course of a single trip, ambient temperatures may change drastically. For example, during Canadian winters, absolute temperatures can fall below -35°C , and wind-chill can drop a trailer's effective temperature even further. When transporting animals south into the United States, a load may leave during a cold spell and run through two different temperature changes and trailer adjustments along the way. This translates into many stops by the drivers to monitor the condition of the animals throughout the trip. All of our trailers are equipped with boarding packages which allow drivers to adjust the air movement through the trailer without entering the trailer. If the temperature increases over the course of a trip, the driver can remove the boards on the sides of the trailers to increase airflow and animal comfort.

When transporting animals in hot weather, drivers stop to check on animals as well. Drivers must insure adequate airflow and water down the load when necessary. Our policy is to water trailers only when vehicles will be moving, because this encourages evaporative cooling. When vehicles are stationary, watering trailers is discouraged because this raises the humidity, resulting in higher apparent thermal load and poor air quality within the trailer.

Installation of thermometers in trailers to allow constant temperature monitoring has been discussed. We have not moved forward with this initiative, as this does not adequately take into account the effect of wind and airflow

on the animals. This is especially important with young pigs because they are very susceptible to the negative effects of cold weather. Our drivers are trained to stop regularly and physically inspect the load from outside of the trailer and insure their animals are comfortable. Our concern is that drivers will not stop as often to look at the animals if trailer temperatures are displayed inside the truck.

The challenges of drastic temperature changes has allowed for us to improve our training and resources for drivers. We have established guidelines for drivers when bedding their trailers down with straw and shavings. These guidelines change based on temperature and age of pigs; this allows us to optimize the transport of all ages of animals in all weather variations. All trailers are equipped with water tanks and hoses so drivers can water trailers down anywhere. Trailers that haul animals into the south are equipped with water nipples inside the trailer, providing fresh drinking water to all of the animals throughout the trip.

Transporting animals of varying ages

In an effort to increase the quality of our transport, our drivers are trained to transport different types of animals. The company trainer is responsible for training and authorizing drivers to haul the following classes of animals:

- Market animals
- Isoweans
- 50-pound weanlings
- Breeding stock

A driver is not dispatched to transport a class of animal until the trainer has given a driver approval to work with that class of livestock. This allows us to customize training for each type of animal we transport.

This specialized training has proven essential, particularly when transporting young animals and breeding stock. When transporting young animals, the most important factors to remember include the following:

- Load and unload with chase boards and rattlers
- Monitor temperature changes regularly
- Use ample bedding
- Board your trailer adequately

Our experience has shown that, when hauling isoweans, we double the amount of bedding used for market animals in all conditions. For 50-pound animals we increase the amount of bedding by approximately 50%. When the temperature falls to 0°C , we use both shavings and straw. The straw provides protection for the young animals by allowing them to burrow underneath and find warmth.

Transporting animals with varying health status

Transporting breeding stock raises similar issues as transporting young pigs, with additional concerns for biosecurity. Breeding stock companies are invited to submit and define their transport biosecurity policies so we are able to supply these to our drivers transporting their animals. Clean coveralls, boots, gloves, and hats are mandatory for every breeding stock load. In addition, stock prods are not used and specialized routes are used when transporting breeding stock.

Transporting for breeding stock companies

Contracts for internal and retail movement of breeding stock by genetics companies have been on the rise over the last several years. This has allowed us to dedicate trailers to specific companies based on logistics, minimum number of miles per month, and health protocol.

Providing dedicated trailers to specific clients has proven to be a cost-effective and customer-valued service, and it is an expanding part of our business. The process starts with accumulating the company's transport health protocols and understanding their production pyramid. Once this is established, downtime requirements and flow between units is examined. The final step is to map out the previous two month's orders in the sequence they were dispatched and moved and to adjust those movements based on how we would have moved them with dedicated units. This process shows an increased efficiency of truck use while maintaining the company's health protocols.

The benefits of dedicating units within a commercial transport company provides benefits for both the breeding stock company and for the transport company. Some of the benefits include the following:

- Increased efficiency of paperwork completion, as drivers are dedicated to one company and one set of paperwork for every load.
- Breeding stock companies are able to train their dedicated drivers on company-specific protocols and streamline the compliance-monitoring process.
- Increased customer service, as drivers become familiar with both multiplier barns and retail customers.
- Relationships are developed that evoke positive feelings and trust with the transport process.
- Drivers are specifically selected based on animal handling skills and biosecurity awareness.
- Efficiency is increased, as the maximum miles per unit are always a goal with dedicated units.
- Downtimes are decreased, health assurance is increased as the company is always aware of the status of all trailers and knows that only their animals have been inside the trailer.

- The transport company logistically plans all loads and insures the best units and drivers are dedicated, easing the pressures of trying to get the "right unit" to the "right place" at the "right time."

Future direction

The challenges our company has faced over the past 16 were viewed as opportunities, not obstacles. As the livestock industry continues to evolve, transport professionals will have many opportunities to not only adapt, but also improve. Because transportation is a critical step in the production chain, commercial livestock carriers can be a motivating force behind improving the standards of animal care and safety in general while providing excellent service based on specific customer needs.

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