



Case Review

HACCP quality control on the Ferry to Newfoundland



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The Challenge:

Closing the information gap, while providing cost-effective monitoring and quality control for unattended Martin-Brower (M-B) Moncton, NB trailers and product during their 16 to 20 hour round-trip ferry journey to the remote island of Newfoundland, Canada. McDonald's restaurants in Newfoundland depend on M-B Moncton to provide product and store supplies.



The Proposed Solution:

Outfit M-B trailers with fully HACCP compliant Ameriscan X2 recorders, providing live position as well as ambient air and product temperature data throughout the Journey.

The Outcome:

M-B Canada concluded that the Ameriscan X2 recorders were able to fulfill the required need(s) and permanently equipped their entire Newfoundland fleet with the Ameriscan System. The successful test has enabled M-B Moncton to change operational procedures allowing for its trailers to be (remotely) monitored, yet remain without driver supervision during their ferry journey to Newfoundland, leading to a reduction of a yearly projected 5,400 labor hours and annual savings estimated at a minimum of \$140,000. The trial led M-B Canada and M-B America to extend the recorder testing to other M-B delivery routes and to consider the installation of the Ameriscan X2 recorder on a wider scale in order to provide Quality Control and HACCP compliance throughout North America.



Trial Summary

Test Equipment:

Original: Ameriscan X2 Temperature Recorder with separate GPS and GPRS antenna's

- 8 sensor unit (4 temperature, 4 digital)
 - Temperature Sensors Installed: 2 (reefer output, reefer return)
- GPRS antenna mounted at the bottom of the X2 unit casing
- GPS antenna mounted on top of the trailer
- FIDO SIM Card

Final: Ameriscan X2 Temperature Recorder with a combination GPS/GPRS

- 8 sensor unit (4 temperature, 4 digital)

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- Temperature Sensors Installed: 2 (reefer output, reefer return)
- Product Probe Installed: 1
- GPS/GPRS antenna mounted on top of the trailer
- O2 global Roaming SIM Card

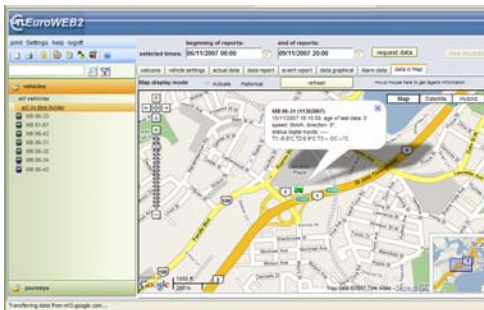
M-B Moncton Trailer: Great Dane Multi-Temp Trailer with a Thermo King Reefer

In their own Words:

Project recapitulation provided by Wayne Dingee - Operations Manager The Martin-Brower Company, L.L.C. and lead M-B contact for Ameriscan during the trial period.



What was the need?



With increased focus on food safety and HACCP we recognized that there was a gap in temperature monitoring/data recording from the time the product left the warehouse until it was delivered at the customer. Although temperatures were recorded manually at each delivery, any fluctuations during transport could not be verified until the route had returned and the data logger downloaded.

Martin-Brower Moncton also made operational changes that introduced “dropping” trailers at Marine Atlantic ferry terminal for delivery to the remote island of Newfoundland. Prior, trailers always traveled with a power unit and driver and temperatures could be monitored manually over the five day trip. By dropping trailers Martin-Brower required a product that would allow us to monitor temperatures in real time ensuring product integrity.

What were the Specific M-B System requirements?

- a) the System had to be live/real time data so that we could react in a timely manner if any issues were to occur*
- b) because of the remoteness of Newfoundland and the travel on the ferry, the system had to provide coverage in all areas*
- c) the System had to fulfill the HACCP requirements*





- d) *the System had to be flexible to work with Canadian metric system (i.e. Celsius/Kilometers)*
- e) *the System had to be capable of reading multiple temperature zones (i.e. for Multi-Compartment Trailers)*
- f) *the System had to be cost effective*
- g) *the System had to be able to work on the trailer as a stand alone unit and not rely on the tractor since trailers left unhooked*

What are the benefits for M-B?

- a) *The X2 data retention capabilities allows for easy retrieval of historical temperatures for credit claims.*
- b) *The GPS function allows us to view location of trailers. This feature is especially helpful in determining if trailers were loaded onto a specific ferry since schedules are inconsistent.*
- c) *The data printer allows us to provide instant proof (a delivery receipt) to the customer of continuous cold chain and temperature documentation eliminating the requirement to manually probe products.*
- d) *The X2 recorder are fully HACCP compliant which eliminates the requirement of downloading and printing documentation on all routes manually.*



What Problems did M-B encounter during the Trial?

- 1) *The American X2 system was a new concept/technology and therefore we had to find a local vendor willing to read up on the product and install the test units. The Installation required some trial & error in order to locate the best placement for the temperature sensors.*
- 2) *Initially several X2 units would loose connection to*





the Ameriscan server. The units had to be reset manually by unhooking and then reattaching the power supply in the recorder.

- 3) *Limited flexibility with SIM card providers occurred since the X2 recorder transmits data via GPRS. The result was some network coverage issues in remote areas.*
- 4) *Unexpected large amounts of data being communicated on some X2 units meant extra costs from the SIM card vendors.*



Problem Resolution:

- 1) Sensor Location - The M-B Distribution Center in Moncton was not satisfied with the original suggested placement of the product probe sensor.

Solution: The M-B, decided to test the best sensor location possible, for their particular trailer set-up and was able identify, during the trial period, the preferred location of the sensor and made the necessary adjustment.

- 2) The Ameriscan X2 temperature recorder did not print, lost power to the display and showed possible memory loss from the flash drive.

Solution: The problem proved to be a timing issue between the processor and the memory which caused the memory to malfunction at high temperatures (90+ C). The Ameriscan engineers were able to reproduce the problem quickly and provide a firmware upgrade within a day which solved the problem satisfactory.

- 3) Two recorders transmitted unexpectedly large amounts of data, resulting in extra cost from SIM card vendor.

- 4) Coverage Problem. Due to the remote location in which M-B trailers were operating some network coverage issues arose, resulting in 'blind spots' during the journey.

Problem 3 & 4 Background: Due to the fact that the X2 recorders transmit data via the GPRS network a suitable SIM card provider and network partner had to be found in Canada. This being the first trial of its sort in Canada, and with international roaming charges eliminating USA SIM cards, a local replacement had to be found. The choice fell to FIDO, a provider with whom Ameriscan had no prior experience. Additionally the relatively poor network coverage for GPRS technology in North America, in comparison to Western Europe resulted in some test recorders constantly 'loosing connection' and having to 're-connect' in order to establish a communication's link. This process created larger than normal data traffic.

Solution: The solution to problem 3 and 4 was two-fold: Ameriscan was able to introduce a) a more powerful second generation GPS/GPRS combination antenna and b) a new SIM Card provider. The new GPS/GPRS antenna allows for a better antenna placement on the trailer itself, providing better reception. Additionally the new antennas are more powerful and thus have a greater coverage area, fewer or no blind spots and are more 'efficient' transmitting data (i.e. less data packages are required to send the information across the network). In conjunction the new SIM card provider offers an unprecedented "Global Roaming" package. This allows for the SIM cards to utilize any available GPRS network (not only FIDO) in addition to the option of crossing over to the USA and Mexico without increased cost due to roaming charges.

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Overall Comments:

Since initially testing the Ameriscan X2 recorder on one of our trailers in 2006, we have added nine more units to our fleet, and thus equipped all our Newfoundland bound trailers with the system. Ameriscan Inc. has met and surpassed a lot of our expectations in the search of a temperature recorder capable of several of our key requirements. The units have worked great, with no issues during the harsh winter conditions in Newfoundland, Canada.

Support from Ameriscan Inc. has been great with immediate resolution on most issues and continuous improvements and upgrade of the equipment on both hardware and software during the trial. Not only has Ameriscan Inc. allowed Martin-Brower to assure our customers of an uninterrupted cold chain, it has put us in a position of being able to provide unmatched distribution and logistics services.



I see Ameriscan Inc. being a valuable partner as Martin-Brower continues to lead the temperature controlled transport industry and providing our customer with guaranteed food safety and product integrity.