

**THE TRUCKING INDUSTRY  
AN OVERVIEW  
BY BILL BANNON, CFO**

October 20<sup>th</sup>, 2005

**OVERVIEW**

**Truckload carriers, in the simplest sense, pick up a full truckload of freight from point A and deliver it to point B.**

**Simple in explanation, but complex in execution.**

**EXECUTION**

- Driver
- Tractor
- Trailer
- Fuel
- Authority
- License(s)
- Insurance
- Permits

**GOVERNMENT INTERVENTION AND REGULATION**

- EPA
- DOT
  - Hours of Service
  - Logging Requirements
  - Equipment

**METRICS**

- Rate per Mile
- Cost per Mile
- Revenue per Tractor
- Tractor Utilization
- Trailer Utilization
- Driver Productivity
- Tractor/Trailer Ratio
- Lane Density
- Dead Head/Empty Miles
- Out of Route Miles

## **MAINTENANCE/FUEL EFFICIENCY**

- Preventative Equipment Maintenance
- MPG
- Fuel Purchasing
- Fuel Tax
- Key to keeping maintenance low and efficiency high: Effective rolling of equipment life and financing

## **TECHNOLOGY**

- Hardware
- Software (Systems)
- Communications
  - GPS
- Load Tracking
- Fuel Purchasing Optimization
- Load Optimization

## **TRADE NAMES**

- Innovative Computing Corp. (ICC)
- TMW
- Qualcomm
- Inter-Tax
- Rand McNally
- PC Miler
- Smart Fuel
- Comdata
- EFS
- Pilot
- TA
- Flying J
- Pegasus
- Trip Pak On Line

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Second meeting with Bestway Systems, Inc.

Mienie de Kock, Kent State University, February 4<sup>th</sup>, 2006

Although there are a number of factors to consider in order to reduce the cost for this company, it has been decided to concentrate on minimizing fuel expenditures. Bestway Systems Inc, makes use of a decision support software program called “Expert Fuel” in order to determine fuel stops. Expert Fuel is a Windows-based decision support tool that provides an optimal fuel purchase plan at the time of dispatch. It evaluates each fuel

purchase location and determines the quantity of fuel to be purchased. The user has the option to optimize fuel purchases to minimize total cost or to maximize savings on fuel purchases.

The following factors are considered during the decision making process:

- 1) Vehicle fuel capacity (Gallons)
- 2) Vehicle fuel level (Gallons)
- 3) Vehicle fuel consumption rate (Miles/Gallon)
- 4) Vehicle route
- 5) Fuel tank fill policy
- 6) Minimum vehicle fuel level requirements
- 7) Out of route Mileage Allowances
- 8) Customized routing for entire fleet of or by route
- 9) Taxes
- 10) Negotiated Network deals

Bestway Systems, Inc. paid \$50 000 to buy the program and pays \$12 000 annually for maintenance to Expert Fuel. The problem is that some employees from Bestway Systems claim that the software program does not work. This statement is also supported by drivers. The claim is that by using one's own judgment, one could save more on fuel purchases. Unfortunately, the drivers are not aware of the negotiated prices at certain fuel stops. So they only observe the posted price, whereas Bestway Systems, Inc. might get a better price.

Given the dissatisfaction with the software program, Bestway Systems, Inc. feels strongly towards dropping the software program. Bestway Systems, Inc. is currently on an extension of their contract with Expert Fuel (the contract expired sometime in January). The extension period will run for approximately another two weeks. In order to be certain that the program is not working, Bill Bannon will run an experiment for the next two weeks. The experiment involves taking similar drivers, trucks and routes and determine which of the two methods

1. Using the software,
  2. Using one's own judgment
- provides the best results in reducing the cost of fuel.

During the two weeks, Joel and Dr. Andrew Tonge and I will meet with the previous software manager and try to find out more about the code of the program. Hopefully we can assist Bill Bannon in his decision to drop the software or to keep it.

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Third Report on Bestway Systems, Inc.

Mienie de Kock, Kent State University, March 13, 2006

Bestway Systems, Inc. decided to drop the software program, Expert Fuel, on recommendation of one of their vendors. They did a retroactive study by comparing fuel prices during November 2005 based on the OPIS 90 day average price against a price determined by using discount rebates and low cost fuel stops. According to this study the current price for fuel is \$2.7683 per gallon. The proposed average price is \$2.7391 per

gallon. The current number of stops is 583 whereas the proposed number of stops is 261. According to this study the annualized savings could be \$111,340.27.

The recommendation is to drop the software program and rather fill up at fewer stations with the emphasis on stations that offer a good discount. The vendor proposes that 84% of the fuel purchases should be done at PILOT (previously 64%) and that some companies should be dropped completely, for instance PETRO and AMBEST (previously 4% and 2.79%, respectively).

Because of this study, Bestway Systems, Inc. did not feel it necessary to perform the experiment proposed during the previous meeting. We agree with this decision, since it is clear that the software program is not optimizing the cost of fuel. Bill Bannon, controller of Bestway Systems, Inc. suggested that we close the optimization problem of cost of fuel. This makes sense, since the proposed suggestion is definitely a considerable improvement.

Instead, we will concentrate on the back-haul problem. Bestway Systems, Inc. has a well-managed system for the transportation of goods TO the destination. The problem is to fill the truck with a load on the returning trip (i.e. FROM the destination). In this case Bestway Systems follows the policy of: "Anything is better than nothing." This is an interesting and solvable problem. The main problem is to find a client on very short notice. We will work with Chris Williams in the Hudson office and for now concentrate on transportation for Joann Fabrics, a store selling fabrics and sewing accessories.