

The ABCs of OBCs

THE

Applications

Benefits &

Cost

OF

On Board Computers in Fuel Delivery Trucks

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The late 20th and early 21st centuries will certainly be remembered as the era of the Information Revolution. Like the Agricultural and Industrial Revolutions, the Information Revolution is making a profound impact on humanity's ability to increase productivity. Computer, Internet, and Communication technology is driving this process. We all contribute to and benefit from these developments by deploying new technology and identifying new applications for new technology. Stationary computers have been making their mark for decades, and in recent years, computers have "left the building". Field computers are asserting their influence in every aspect of our lives. Still, many people remain reluctant to embrace this progress.

Field computers installed in trucks, On Board Computers (OBCs), offer the potential for significant productivity gains for fuel delivery and equipment service operations. The focus of this article is the **A**pplications, the **B**enefits, and the **C**osts of OBCs in fuel delivery trucks. Understanding the ABCs of OBCs will help you make an educated choice. Deploying the right OBC will allow you to cut cost, remain competitive, and drive profits.

Whether you deliver heating oil, motor fuels, marine fuels, aviation fuels, lube oils, propane, or any other metered product, the process involves the tracking of critical data. At a minimum, you must track who's getting the product, how much product is delivered, and what price, tax, or discount applies. It is no secret that computers handle data better than people. If the process of handling the critical data occurs on board a truck, and you want the best option to handle that data, then the computer needs to be on board the truck; you need an OBC.

The Applications:

Applications are the functions you want the OBC to perform; they include, but are not limited to:

- Communicate delivery information to the driver and/or the electronic meter register, including:
 - Customer account and/or tank ID number
 - Delivery address
 - Volume to be delivered (fill or preset amount)
 - Product to be delivered
 - Price, Tax or Discount to be applied
 - Customer specific instruction (such as: fill pipe location, where to leave copy of ticket, map location, etc.)
 - Delivery specific instruction (such as: pick up money, prime heater, key under mat, etc.)

- Capture completed delivery information, such as:
 - Product delivered
 - Volume delivered
 - Calculated total
 - Time/date stamps
 - Ticket sequence number
 - GPS or other geolocation data

- Generate an invoice.

- Store file in a downloadable format.

- Interface with office accounting package.

- Track inventory on truck.

- Generate shift and/or other productivity reports.

In addition to managing the mission critical data associated with the delivery, OBC applications could include capturing other critical vehicle data including: location, heading, speed, mileage, engine temperature, engine oil pressure, or other data generated by the truck. Some OBC applications are even experimenting with remote control of the vehicle; this would give the operator the ability to remotely shut down a truck if it were hijacked by a terrorist. The potential benefits of having an OBC manage or control truck functions in real or near time are rather impressive.

The Benefits:

A good application, running on a reliable OBC, greatly improves your ability to manage critical information; it allows you to minimize errors, maximize productivity, improve customer service, and drive profits. *(Typically, the OBC will work in concert with an electronic meter register. For an overview of the benefits of electronic meter registration, see 09/03 issue of FON, **Selecting a Meter Register.**)*

Using an OBC results in reducing errors since data is being handled automatically instead of manually. When the completed delivery data is captured in the field, it is then available as an electronic file to be reviewed and posted to the customer accounting system. OBC's produce clean, printed tickets eliminating the errors associated from sloppy hand-written tickets. Errors can be further reduced when the OBC is linked to a wireless communication system. In this scenario, the advantages of real time information kick in: you know where your trucks are, what stops are complete, what stops are not done, how much inventory is available, and which truck is best suited to receive additional work. An OBC linked to a wireless system also allows you to send same day orders to trucks already in the field as a data transmission instead of a voice transmission. This greatly improves the odds that the driver gets the correct information. Another option that is (or soon will be) available on OBC's is geoverification; this technology will allow you to electronically tag a delivery location and confirm that location prior to the OBC allowing the truck to pump product, thus eliminating the "wrong delivery" potential. Mapping, route optimization, and navigation technology are other options employed by some OBC providers; with these tools you reduced the odds of a driver getting lost.

Eliminating errors alone greatly improves productivity. But there are other aspects of OBC's that help drive productivity. The typical OBC will time-stamp each transaction; drivers are less likely to take unscheduled detours since management can now view the time trail. By replacing voice dispatching with data dispatching, orders can be sent to drivers in the field in seconds instead of several minutes. OBC's will print the detailed ticket; this saves the time needed by drivers to hand-write orders dispatched to drivers in the field. Clean, printed tickets save the office staff time by eliminating the research required to decipher the "occasional" sloppy hand-written ticket. A posting file can be created allowing for quick batch posting; this eliminates the process of hand posting individual tickets to the customer's A/R file. Invoices are generated by OBC's allowing for point-of-sale billing; this improves A/R aging and saves on postage and processing time.

The increase in productivity, along with quick access to good information about work assigned to the field, translates into better customer service. You can respond to the increasing demands of a more educated, better informed customer base. An OBC with a good wireless interface allows you to maximize the customer service benefits by providing immediate access to the most time sensitive information. How often is an oilman asked by a customer "What's the status of my order?". The typical answer is

vague and incomplete or comes at the cost of major disruption to the office and field operations. But, when the information is a mouse click away, the customer is more satisfied and the cost of providing that information is minimal. Better customer service translates into less attrition, greater natural growth, higher sales, and more profits. Customers are our greatest assets and the greatest benefit you will get from a complete OBC system is a tool to help attract new customers and retain existing customers.

The Costs:

The benefits of an OBC can be quite impressive, but the benefits must exceed the costs for an investment in an OBC to make sense. The costs of virtually any investment can be classified into four categories:

- Up-front cash or capital outlays
- Ongoing maintenance expense
- Deployment and training costs
- The cost of complimentary systems

The capital cost component of an OBC can range from a few hundred to several thousand dollars. Caution; the higher cost solutions do not necessarily give you more functionality, only more hardware. Some OBC providers employ rugged PC's with an end price approaching eight thousand dollars per truck, while at least one provider has developed a solution with greater functionality that runs on an inexpensive, rugged cell phone. In an age when hardware is obsolete the day after it is taken out of the box, it would be wise to take a close look at a less hardware intensive solution.

Ongoing maintenance expenses include some combination of license fees, software support fees, equipment service contracts, repair or replacement expenses, and preventative maintenance service charges. These fees will vary from provider to provider. Generally the hardware intensive solutions require greater attention and are more expensive to maintain. The complex hardware intensive solutions become more costly because they are more likely to result in vehicle downtime. (One small glitch in a complex hardware driven solution brings down the whole unit.) Look for an OBC with a minimal amount of hardware and a minimum number of components.

In addition, many solutions contain complete customer data lists that need to be loaded on the OBC. Keeping the data current could be time intensive and has its costs. For example, a simple price change in the product requires downloading that new data on all the OBC's in the fleet. Another disadvantage of an OBC that loads all your data on a field computer is that it exposes you to the potential of that data falling into the wrong hands. The costs here should be measured in terms of the risk of a competitor, employee or potential competitor, stealing the data or the OBC. A well designed wireless OBC addresses this concern by only loading customer data that is relevant for that day's work.

The least understood, but equally important, component of costs are the deployment and training costs. Look for an OBC that is easy to deploy and easy for drivers to learn and adopt. The downfall of some OBC systems is that they are complex hardware driven solutions with cumbersome driver interfaces. They are not only expensive because they require a massive investment in hardware and a significant ongoing maintenance budget, but they are expensive because they require a massive investment in driver training. The OBC should be intuitive and simple to learn. When it comes to OBC's in delivery trucks, less is better.

The OBC will not operate in a vacuum; complementary systems may be needed to maximize the potential of the OBC. Back office hardware, accounting software, communication devices, and the truck meter register may need to be replaced or upgraded. An OBC that is fully interfaced with an electronic meter register on the truck and the accounting software in the office will give the greatest benefits. The costs of these complimentary components need to be considered in your analysis of OBC systems. Look for a provider that is a complete systems integrator.

There are a number of OBC solutions available in the market; most offer many of the benefits mentioned in this article. Of the OBC's available today, the one that uses the least amount of hardware but gives the most in functionality is Digital Dispatcher (DD). The backbone of DD is software not hardware; the resulting solution is dynamic, rugged, robust, and simple. By shying away from the traditional hardware approach, DD offers a low cost OBC solution by default. The OBC of DD is the familiar handheld cell phone or radio drivers have used for decades. By using a phone, DD incorporates all the added benefits and security associated with a real time wireless device.

OBC's offer **A**pplications specific to the fuel delivery business. **B**enefits include: minimizing errors, maximizing productivity, improving customer service, and driving profits. **C**osts range from very high to very low, and what you pay, upfront and ongoing, is not necessarily proportional to what you get in return. A smart, low cost OBC will make you more competitive and more profitable.

About the author: Tom Duffey is an oilman; he runs Kelley Energy in Philadelphia. He occasionally teaches economic principles and energy economics at Temple University as an adjunct instructor. He is an avid supporter of OBC technology. He credits this technology to increasing his company's office and field staff productivity by as much as 20 percent. Tom Duffey is available for comments or questions about this topic at: tomduffey@kelleyenergy.com.

Editor's note: See related articles: "Selecting a Meter Register" 09/03 issue of FON and "Why Wireless, Why Now" 02/03 issue FON.